

# MIWE impulse

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One topic that has been repeatedly dealt with here over the past 16 years is thinking in a broader context. Today, I revisit this idea, because there is no better way to describe the challenges currently faced not only by us as manufacturers of bakery processing plants, but also by you as baking customers.

Even prior to the digitalization trend, successive process islands have become deeply interlinked components of complex process sequences. "(Work) flow" is the key word of the moment. Only those who know how to organize material, personnel, energy and production flows precisely will be among the winners of tomorrow. Within this context, interfaces are not fundamentally bad if they represent real solutions. Of course, it is even better if you do not even need them since you have a technology partner who is not just an expert for a particular island, but rather has the entire process in its entirety in view.

We at MIWE have always been at home as active designers on both sides of key interfaces in baked goods production: for example, in production and in the store, in refrigeration and oven technology, and in loading and transport technology. This allows us to develop and implement bakery concepts from a single source for you. Where others have withdrawn into niches, we offer the whole range of technologies in the interests of objectivity and in the service of the diverse interests of our customers – naturally including thermal oil technology or vacuum conditioning. We do not just actively follow new developments, we shape the future as trendsetters, from the low energy bakery to the digital services of MIWE connectivity.

Thinking outside of the box, considering and including adjacent process steps is of fundamental importance to us in everything we do. Because this way, and by drawing from our expertise and mastery of process relationships, we can offer our customers better solutions. This is also how we fulfil the promise we have made to ourselves and to you:

Better baking, better business.



Sabine Michaela Wenz

**Welcome to the new  
MIWE live baking center.  
Read more on p. 12.  
We look forward to your visit!**





# Get the big picture

*What MIWE can do  
for you today*

**What do you think of when you hear the name MIWE? Top-quality ovens? That's all well and good. But it's only a very small part of our range of services and products. Think bigger!**

**We want to show you here how MIWE can help you create better processes, better products and ultimately better business with**

**our comprehensive expertise and holistic consulting approach.**

Granted, good baking results require a good oven. But even the best oven is not enough if there are weaknesses in the process sequence upstream (or downstream): process interruptions for example, or interface problems, organizational bottlenecks, batch collisions, energy waste or,



most challenging: insufficient information flows.

That's why MIWE offers you a much broader approach beyond pure oven or bakery refrigeration technology – one that takes a closer look at your production and logistics processes and, from this perspective, provides models of holistic processes without weak points and interfaces.

In other words: optimized system concepts from a single source.

That we are able to do this (and to do so better than many of our market competitors) is thanks to our comprehensive baking expertise and our wide range of products and services.

You didn't know that?

Another reason to read on. ►



### **The whole world of baking – from production to outlet**

We are equally at home in production and in the outlet – with cutting-edge processing plant technology and holistic solution approaches without the usual interface problems. We know the logistics requirements that arise between the two worlds. And we know from experience when a problem in one world may be best

addressed in the other world.

This is a measurable advantage for our customers, because the procedures in production and the outlet must be finely attuned to each other in order to ensure the consistently high quality of the baked goods. This will be an even more pressing need in the future than it is today.



### **The whole world of processing technology**

The MIWE Convenience Levels\* are a comprehensive map of modern baking (and at the same time an expression of our comprehensive mastery of all processes), from fresh production to the various long-process proofing methods to production processes with freezing or vacuum conditioning. This is what today's baking business models draw on. With this map in mind, complete production and logistics concepts for the bakery and the outlet can be de-

veloped and implemented. We know the pros and cons of the individual paths very well (also with regard to the necessary investments). We know which technology is necessary and recommended for which process, and we can design and implement the necessary production lines and process sequences, all tailored to your business model and your individual needs.

Who else can offer you that?

\* Posters (70x100 cm) with an overview of the MIWE Convenience Levels can be sent to you free of charge upon request.



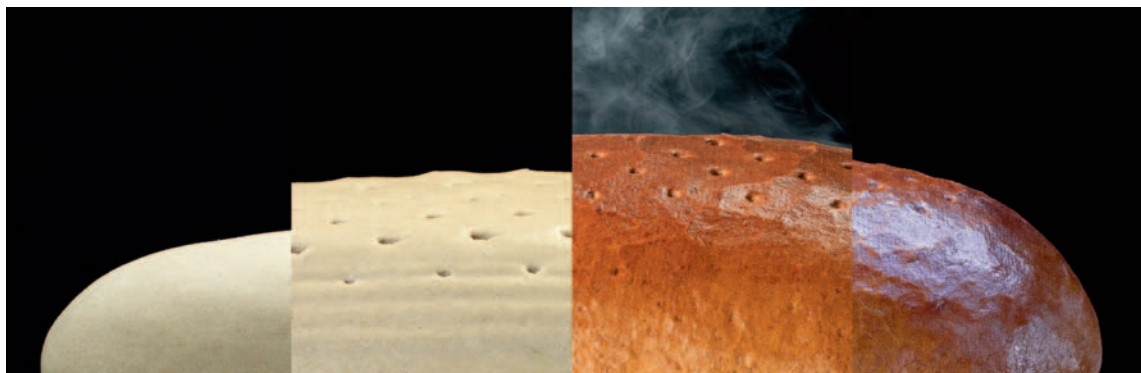
There is no such thing as a universal technology that makes it easy to produce every product optimally – even if niche providers like to claim this, for obvious reasons. Take ovens, for instance. Modern oven systems such as the MIWE ideal with the variobake function are in fact much more flexible to control than before with regard to their baking characteristics.

Nevertheless, every baker, especially with regard to his A-class products, will always prefer the baking technology that best brings out the desired traditional character of his bakery products, while at the same time being best suited to the existing or planned business organization of his bakehouse (rolling, belt, ...).

For more than twenty years, therefore, it has been perfectly natural for MIWE to not only offer a wide variety of flue-gas fired ovens but also high-performance systems that are heated with thermal oil – as a deck oven (MIWE thermo-express), as a wagon oven (MIWE thermo-static) or as a tunnel oven for continuous or step-wise production of large quantities (MIWE thermo-uniroll or MIWE thermo-polyroll).

This wide variety enables us to provide our customers with completely unbiased advice and to help them determine exactly the process sequence that is best suited for their products and their sales.

### **The whole world of technologies**



Proofing – cooling – baking – freezing: these are the climatic processes of baking, in which a precisely timed

control of temperature and moisture creates optimal conditions for first-class baked goods. And it's precisely

### **The whole world of climatic processes**

here, in the critical phase in which the product quality is decisive, where the core competence of MIWE lies.

Each baker is well aware that the parameters of the individual process steps are closely interrelated. For example, slightly underproofed goods must be baked differently than fully proofed ones, parbaked goods need another treatment than single-duct baked goods. Therefore, it is also advisable to involve MIWE experts not only as specialists in isolated sub-processes such as baking or bakery

refrigeration, but as partners in the design of the entire production process, right through to energy optimization.

This way you can benefit from our entire expertise, and we can build up a process sequence with you that is optimized at every single step, is free of any interface problems, and which consistently lays the groundwork for reaching the desired end results.



### **The whole world of automation**

To make sure that not only the individual process steps are compatible, but also that their interconnection can be organized as rationally as possible, we have a whole range of different transport and loading systems on offer (with differing performance levels) that round off our bakery concepts and ensure the right flow in the bakehouse – from the simple loading aid, which minimizes physical strain, to wagon oven loading systems such as the MIWE assist, or the high-performance gantry loading system such as the MIWE athlete, which can be used to implement largely automated process lines even for large throughputs.

But that's not all: landing, transfer and removal belts, docking stations, crawlers, spray belts, chutes, draw-plate trolley loaders or plank feeders (to name but a few of the available variants) bring just the right thing to the right place.

And did you know that we can also implement complete proofing and freezer systems for you – for instance as a spiral, paternoster, step or cover system, or as a pan or hanging system?

Many years ago, we launched MIWE energy, a distinct business unit, which has exactly that in mind.

That's good for your reputation.  
And definitely good for your business.

## The whole world of energy



Knowledge is power, as the saying goes. The fact is, only those who know what happens when, how and why have the full overview and can, if necessary, react as needed. The more you know about your processes and their sequence, the

easier it is to identify weaknesses in the system and resolve them in a controlled manner, regardless of whether they concern the organization and sequence of processes in the bakery or the handling of many distributed systems in the outlets. ►

## The whole world of data

With MIWE connectivity, we were able to meet the prerequisites early on for recording and consolidating process data and preparing it as the basis for optimized system management and monitoring.

This applies to MIWE remote, the remote monitoring system for our bakery refrigeration systems. This also applies to the MIWE eco:control, which makes all the energy flows in your bakery transparent. Of course, this is especially true of the MIWE shop baking suite (sbs), which allows a large number of distributed baking stations to be

managed and supplied in the simplest and most centralized way with baking programs, settings and other control data.

Even if baking 4.0 is not at the very top of the agenda for you at present, its development is proceeding rapidly. Therefore, if you do not want to find out tomorrow that you bet on the wrong horse, you should pay particular attention when selecting your supplier to ensure that you are provided with a solid path to the future at this critical point.

MIWE can do this.



### Prepared for change

The world of baking is undergoing rapid transformation. Who knows that better than you? The only constant is change. What today promises flourishing sales and a healthy return may well be an outdated approach tomorrow. Therefore, it is good to look for a partner who has the economic strength to work with you to solve the challenges that lie ahead. And on the other hand who demonstrates the agility required to constantly adapt to changing market situations. This can mean, for example, integrating a new trend product into your production process at short notice. Or turning over a larger variety of products

with smaller batches. Or in addition to highly automated process lines also installing one with purely manual components. Or helping you to profit from the prolonged freshness of vacuum conditioning and increasing the corresponding optimization potential in the interplay between production and branch outlets. Or... or... or...

Whatever your challenges may be tomorrow, no matter what your product portfolio looks like in the future, one thing will remain a certainty: with MIWE, you will be prepared.



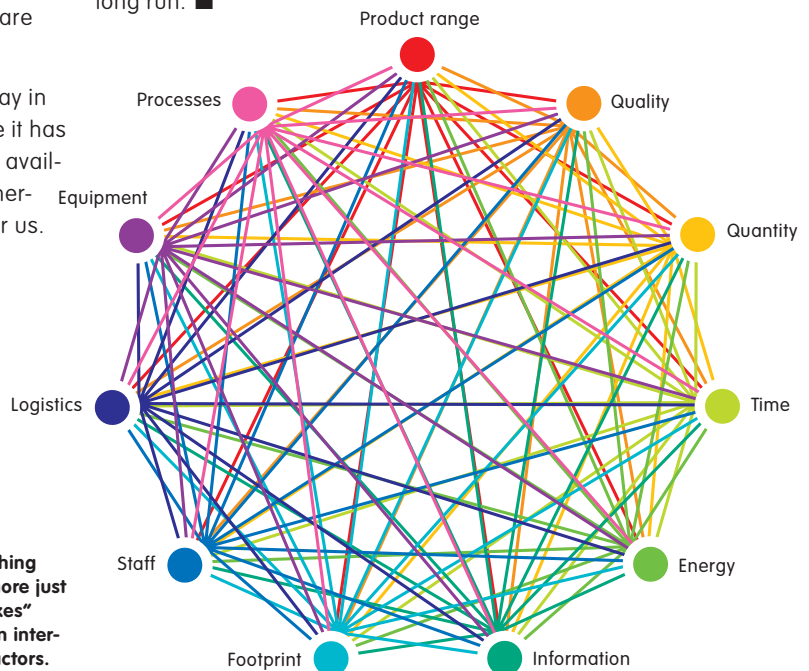
Life Cycle Management is not a puzzling foreign term for us, but a fully embodied way of working. We always keep the entire life cycle of products in mind.

On the one hand, this applies to the continuous development of our products and services on the basis of constantly changing and new requirements from our markets. That's why with MIWE systems, you can always rest assured that you are investing in systems that are at the cutting edge both technically and technologically and that are future proof in every respect.

But that also applies to the way in which we treat a system once it has been delivered. "Uptime" (i.e. availability) and "Total Cost of Ownership" are guiding concepts for us.

During product development, we ensure trouble-free operation by using materials and a design that are not only sufficiently robust but also allow for easy accessibility to all maintenance-relevant units. If, contrary to expectations, a fault should occur, our service and spare parts organization – which has widely been praised as outstanding – will ensure that the system is fully available again as soon as possible. As a result, MIWE systems are among the most economical in the long run. ■

### Now and in the future



**The "bakery circle" shows: everything is related to everything. If you ignore just one aspect, you will get "quick fixes" that may have dramatic effects on interactions between the remaining factors.**

# Meet the experts

A low-angle photograph of a modern building with a white facade and a prominent yellow roofline. The sun is shining brightly from behind the roof, creating a lens flare effect. The sky is a clear, vibrant blue with a few wispy white clouds. The building's name, "MIWE live baking center", is mounted on the white wall in large, dark blue, three-dimensional letters. The letters are slightly angled, following the slope of the building's facade.

**MIWE** live baking center

**A picture is worth a thousand words so it is said. However, we believe that even a great many pictures cannot replace your own practical experience. That is why we have created a fully equipped demonstration bakery for our customers and interested parties at our Arnstein location. Here, MIWE technology can be experienced and tested like nowhere else.**

After a construction period of one and a half years, we officially opened the new MIWE live baking center in August. On 6,500 m<sup>2</sup> of land and with a usable area of around 1,600 m<sup>2</sup>, the MIWE live baking center is a fully equipped production bakery with seminar and meeting rooms, a modern test laboratory, offices, storage and changing rooms and a baking studio, where the complete range of products for in-store baking is available. "Meet the experts" is the motto of our demonstration bakery, because that's exactly what it is about: cooperation and exchange of experiences among experts.

The opening was planned to coincide with iba 2018 – a plan that has come to fruition, and the MIWE LBC is coming alive. Our master bakers and dough technologists, our advisers, regional and key account managers are all well prepared to plan and organize a visit for you.

What you can expect from the MIWE live baking center:

experience it during live demonstrations under practical conditions. From bakery refrigeration to ovens. From MIWE energy and the MIWE eco:nova right up to our complete range for shop baking and snacks. From loading technology to vacuum conditioning, from the production control room to the MIWE shop baking suite and other digital services – everything is there. For the area of dough making and processing too. And, of course, our master bakers and dough technologists will be on site, focusing exclusively on you and your personal concerns.



#### Tests:

You don't like surprises? That's good! Take your time to put our equipment and systems through their

paces. By all means, in comparison with each other. What makes the deck oven roll different from a rack oven roll? What product character can be achieved particularly well with thermal oil? What are the consequences for recipes and processing? Bring your own raw materials or use ours. Whatever technology

*Where the baking world meets:  
the MIWE LBC*

**Tests. Workshops. Product and process development. Services on top of that. The MIWE LBC leaves nothing to be desired.**



#### Concentrated product presentation:

We are represented at more than 60 national and international trade fairs each year, but nowhere as extensively as in the MIWE LBC. Here, you can take a close look at our complete product portfolio and





you want to test, the MIWE LBC makes it possible. Day after day. Week after week. Year after year. When would it suit you?

#### Expert workshops:

Would you like to know more about Atmospheric Baking and how this feature makes you

independent of weather conditions? Would you like to experience live how MIWE variobake can control the baking characteristics of a multi-level oven much more flexibly? Perhaps you would like to have the advantages of vacuum conditioning, the wide range of products for the bakery snack business or the organizational convenience of the MIWE shop baking suite demonstrated in practice?

**In the MIWE LBC you can use our entire product range. And we encourage you to take a look "behind the scenes" (see above).**

You will learn more about these and many other hot topics in the baking world at the MIWE LBC.

Intermittently, we will conduct advanced training courses and workshops held by professionals for professionals. On topics that expand your scope and open new horizons.

#### Product and process development:

Anyone who develops a new product or new

processes reasonably does not immediately go into series production with customers. Instead, they perform tests and optimize on the basis of smaller batches initially. They also explore alternatives at the same time. Whatever you want to test and try out in practice



on a small scale, we are happy to provide you with the MIWE LBC for your product and process development. And, of course, we respect your confidentiality wishes, as befits a reputable supplier.



#### Services on top:

No matter whether you want to come to us alone, as a company team, as a regional, association or Erfa group: We want your visit to the MIWE LBC to be as pleasant and comfortable as possible for you. That's why we will gladly take care of hotel bookings and the organization of a shuttle service or a social program. On request, we can also plan factory tours in Arnstein or in Meiningen for you.



Interested? Then simply scan the QR code with your smartphone. This will take you precisely where you need to go:



In addition to bakery equipment and refrigeration technology, our entire range of baking stations is represented in the MIWE LBC

[www.miwe.de/lbc-en](http://www.miwe.de/lbc-en)



# Think outside the box!



*Vacuum conditioning opens up completely new avenues for you*

Some technologies just take a bit longer to get your head around.

This is especially true when – like vacuum conditioning – they radically turn habitual thinking patterns on their heads.

The advantages of the process are quite obvious. And from now on, MIWE customers will also be able to benefit from them with the new system MIWE VC.



Temperature, moisture, time – these are the classic tools of the baking process. But a vacuum? “What’s that?” some bakers ask, completely overlooking the fact that temperature and moisture are pres-

sure-dependent variables. This is exactly what vacuum technology utilises, meaning it has a whole host of previously unattained advantages for the bakehouse. ►

### Here's how vacuum conditioning works

The basic principle of vacuum conditioning is easy to describe: (par)baked goods are put into the vacuum chamber of the MIWE VC while they are still hot from the oven, preferably directly on the rack on which they were baked. When the door is closed, the air pressure in the vacuum chamber is rapidly reduced (depending on the product down to 80 mbar), held briefly and then raised again in a controlled way to the ambient air pressure. This takes about three to six minutes, depending on the baked goods. By this point the products have been cooled down to a temperature of about 40°C.

The physical operating principle behind the method is well known: the boiling point of water depends on the ambient air pressure. At average air pressure at sea level (about 1 bar), the boiling point of water is known to be 100°C. In the thin air of Mount Everest (8848 m above sea level), however, with an air pressure of about 300 mbar, water boils at about 70°C (which is why you can't boil an egg there). The pressure in the evacuated MIWE VC is even lower than at the peak of Mount Everest, over eight thousand metres above sea level – so water evaporates completely without secondary heating even at temperatures between 20 and 65°C (depending on the vacuum level). The energy required for the evaporation process is taken from the product as heat – and the cooling effect is complete.

Now, the attentive reader may ask: evaporation – doesn't that remove moisture from my product? In principle, yes, but in a very different, much more positive way than with conventional cooling. In order to explain this, however, we cannot completely do without a short digression into physics.

Conventional passive cooling always involves moisture transport from the core to the outside; it is driven by the temperature and moisture difference between the surface of the baked goods and the surrounding air, which is quite high here for a long time. The water balance in the product (crumb > crust) is determined by the moisture difference of the two layers, with the temperature difference acting as the accelerating factor.

However, with vacuum conditioning, moisture is very quickly removed from the surface of the product (which improves the crispiness and at the same time the stability of the product) and it is cooled very quickly. The temperature difference between the dough surface and room temperature therefore falls significantly faster than with conventional cooling or even disappears completely. All balancing processes slow down and the evaporation rate drops. The difference in moisture between the crust and the crumb therefore remains very high – in other words: in the end, there will be more moisture in the crumb, and at the same time the crispiness is more pronounced and will last longer.





### 1. Time savings

Most obvious is a significant time saving associated with products that are to be processed further (cut, coated, topped, filled, ...) or packaged. While loaves of bread usually take one to two hours to cool passively at room temperature before they can be sliced and/or packaged, cooling to approx. 40°C with vacuum conditioning – depending on the weight of the product – takes no more than a few minutes at most. The same applies, for example, to rolls that are to be sliced open and topped, or to Danish pastry, which must be finished and packaged.

Vacuum conditioning not only accelerates all subsequent processes, but also saves valuable (cooling) space in the bakery. Products can now be processed almost immediately and packaged for distribution.

Or the other way around: if your bakery products had to be fully baked at midnight in order for you to be able to continue processing them after they had cooled down normally, it is now sufficient if they are fully baked shortly before 2 a.m. This reduces night-time working hours and thus night shift premiums. And the goods are two hours fresher in the morning on top of that!



### 2. Energy savings

A second important point: vacuum conditioning allows you to drastically reduce your energy costs without losing flexibility. Under normal circumstances, if you want to uncouple production and sales processes for parbaked goods, there is really only one option: shock freezing and subsequent freezing logistics, including the transport from bakehouse to branch outlet. All of this costs a lot of money – both in terms of the initial investment as well as the upkeep.

With vacuum conditioning, you can get along just fine without freezing and still achieve baking ranges of several days. After vacuum conditioning, parbaked goods packaged at room temperature (20-25°C) can be stored for 3 to 4 days and then finish baked – without special logistics and without additional electricity costs. With refrigerated storage (5°C), the storage range is even extended by another 2-3 days.

Production and dispatch planning are thus simplified – with consistently high product diversity, improved product quality and, ideally, significantly reduced returns to the outlets. ►

**The new MIWE VC:**  
Compact, efficient, energy-saving, and with hygiene-friendly surfaces





### 3. Better product quality

The improved (and extended) crispiness and the higher moisture content of the crumb have already been highlighted and explained in the functional description. Incidentally, vacuum conditioning also gives rise to other positive effects on the quality of the baked goods, e.g. an increase in volume and, especially in puff pastry and Danish pastry, significantly improved lift.

Where the fine layers of dough tend to stick together in conventional baking, especially under heavy fillings, vacuum conditioning with its negative pressure ensures a uniform lift and a fine separation of the layers. For the same reason, other products also benefit from a generally improved volume and outstanding stability (e.g. buns, rolls, baguettes).

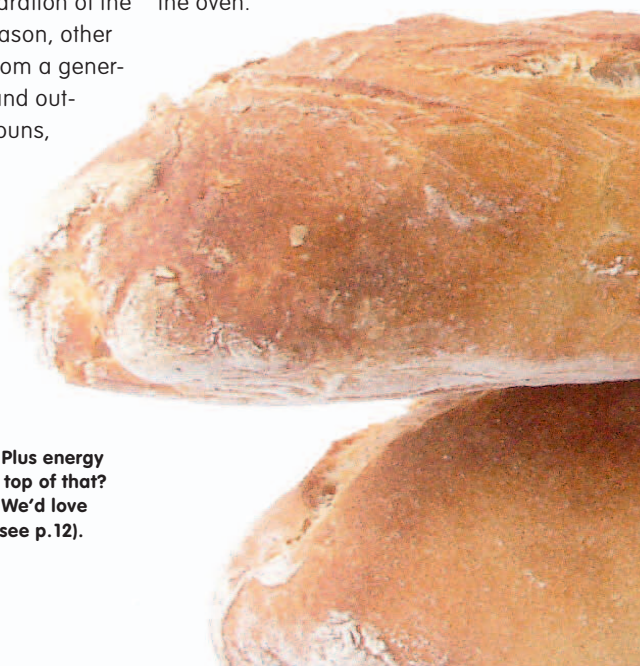


### 4. Improved logistics organization

More moisture in the product and extended crispiness? This means nothing less than significantly prolonged product freshness.

And this can possibly be used to lay a new foundation for the entire branch supply. A few products, which until now had to be partially baked and frozen in the bakehouse and then stored in the shop until baked to completion, can now also be delivered fresh because the added freshness thanks to vacuum conditioning eliminates the need to bake them in the store – the result is still products that taste as if they had just come fresh out of the oven.

**More time for you – more freshness for your customers! Plus energy cost savings. Shorter baking times and fewer returns on top of that? And up to 30% more oven capacity? Sounds incredible? We'd love to show you how – in the new MIWE live baking center (see p.12).**





### **5. Shorter baking times, more oven capacity**

Depending on the product and the other production processes, the regular baking time can be reduced by up to 30% with subsequent vacuum conditioning for both parbaked and fully baked goods without any loss of quality.

In the case of parbaked goods that are delivered at ambient or chilled temperatures, it is also possible to reduce the baking time in the branch compared to conventionally frozen goods. Conversely, this means you gain a good quarter of additional oven capacity without any additional investment.

As with any new technology, it is also advisable in vacuum conditioning to not switch the entire product range right away, but step by step and starting with the products where the sum of the benefits is the most obvious. After all, customers should also have the opportunity to get used to the new, generally improved product quality.

With MIWE, you always have a partner at your side who has the special technological expertise to work together with you to develop the optimal process steps for each product.

Optimally fresh goods at any time of the day, reduced organizational and energy costs, reduced risk of stock shortage and reduced returns at the same time – all this looks very much like a mix that branch outlet operators should be very pleased with.

Assuming, of course, they are willing to think outside the box. ■



# Make your sn a succe



► The capacities at a glance (left to right):

- ① MIWE gusto  
3 trays
- ② MIWE gusto:snack  
3 trays
- ③ MIWE gusto:flash  
1 tray
- ④ MIWE cube:air  
3 / 5 / 10 trays
- ⑤ MIWE cube:fire  
1 tray
- ⑥ MIWE cube:steam  
3 trays
- ⑦ MIWE cube:stone  
2 trays
- ⑧ MIWE econo  
4 / 6 / 8 / 10 trays
- ⑨ MIWE aero e+  
4 / 6 / 8 / 10 trays

**It has long been rumoured that a well thought-out snack concept not only significantly raises the purchase amount listed on the average receipt and speeds up the periods of slower turnover, it also improves business as a whole. When it gets down to the nitty-gritty, however, all sorts of questions arise before you can successfully make the leap into the snack business. We provide guidance through the jungle of snack products to snack bakers and those looking to become established in this area. And we show you which equipment best fits your business model.**

Just like with conventional bakery products, a variety of factors determine the success or failure of a snack business concept: the product

range, quantities and qualities, staff and space requirements, location and target audience, but also logistics and equipment – to name only the most important aspects – all play a crucial role. They mutually affect each other in a rather complex interaction and therefore allow a variety of promising concepts in very different constellations.

Depending on the individual circumstances (and therefore a reasonable starting point is a thorough analysis of the current situation, the framework conditions and the objectives), there is no doubt that a successful concept can be developed for almost every use case. As a MIWE customer, you have several advantages, because alongside expert advice we can also offer you the most comprehensive range of

# Snack business

*The right concept  
for every business model –  
and the right equipment*



thermal “snack machines” for all applications from a single source.

## Snacks from a bakery perspective

As a snack supplier, bakers generally start from an extremely favourable starting position. For good reason, they have enjoyed a good reputation and confidence in their snack expertise among consumers for years. With their baked goods, they also have a wonderful base of ready-to-eat products or ones that are ideal to be refined into snacks.

According to a common definition, baked goods that are perfect snack products even without further processing are considered **baked snacks**.

To this group belong several bakery products which were originally not intended as snacks, but which have

long since made a career out of being a break-time snack as a companion to a cappuccino or coke or as take-away or on-the-go food (from croissants to soft pretzels).

And of course the category of baked snacks also includes baked goods that were specifically developed for the snack business: specially filled products (turnovers, croissants or rolls e.g. with ham-cheese-pineapple filling), products with spicy toppings (pizza, tarte flambée etc., and savoury tray-baked topped breads e.g. with vegetable topping) or those with savoury ingredients that are baked in the dough (e.g. rolls, sticks, croissants with ham, cheese, salami cubes, herbs). ►

**The basis of the snack business is products that can be sold as a quick snack immediately after baking – without further processing**



Products from this category are sold either cold or after being quickly crisped for immediate consumption.

In addition to baked snacks, **grilled snacks** are another important success factor in the snack business: bread rolls, baguettes and ciabatta halves or sliced toast, topped for instance with tomatoes and mozzarella, ham and cheese, tuna or spicy spreads and then baked.

Products that are baked in a second stage after "refinement" are more complex



The third category of bakery snacks is **filled snacks**, yet we will only just give a mention to the well-known old-school favourites (meatloaf, meatballs, sausage, ...). Even the simplest processing or refinement of baked raw materials can generate an extensive range of snacks. Simple example: The "sandwich". With only three basic baked goods (bread rolls, seeded rolls, cheese rolls) in combination with three toppings (salami, cheese, ham), we already have nine different snacks. With four baked goods and four toppings, we have 16. With a little imagination and maybe a certain degree of generosity in measuring out the ingredients, we have sales-friendly, modern inter-

pretations of snacks that can be "individualistically" labelled and that bear no resemblance to the good old, tried-and-tested sandwiches in any way: "egg with herb mayonnaise", the vegetarian "cheese on a crusty seeded roll" or the Italian-inspired "Tuscan salami baguette" for example.

Gastronomically ambitious snack bakers and the operators of related food service concepts are of course not only focusing on their range of baked goods, but are also expanding their assortment especially with regard to midday and evening business (depending on opening hours ...) with non-bakery (warm) foods, e.g. soups, pasta, egg, meat or fish dishes, roasts, casseroles, etc.

The range of possibilities is immense in any case. At the same time, it leads us to the question of how best to organize all of this in the interaction between your (own) central production and the outlets.

### Convenience levels of snack-making

Similar to baking (where we refer to the MIWE Convenience Levels MCL), we have also summarized the conceivable organizational forms of central production, logistics and decentralized production into levels, the so-called snack levels, for the food service and snack business. And just like there, the greater the number of the convenience level, the greater the level of "convenience" of the mode of production, thus reducing the effort required in the outlet. In the following overview, we consciously focus on baked goods. However, the levels apply analogously to non-bakery snacks.

The portion of work in the outlet

is highest at snack level 0. Baked goods are delivered parbaked; other snack products are delivered ready for use or preparation. All further steps (e.g. baking, filling, refining, topping and / or garnishing) are carried out in the outlet. This considerably increases the space and personnel costs in the outlet, depending on the volume of snacks, but also brings consumers closest to the freshly prepared products.

At snack level 1, baked goods are delivered ready-baked and then refined or topped at the outlet either to build up stocks or according to demand. The baking effort is eliminated. Toppings can be pre-produced centrally (deli-meats in a lettuce leaf); however, the final touch is given in the shop.

Conversely, snack level 2 is when the snacks are delivered (practically as convenience products) fully prepared from central production, but are typically freshly baked in the outlet (and then stored, for example, in a heated display case) or, at least, are heated at the customer's request. This includes the majority of the products listed above among the baked or grilled snacks.

Snacks in snack level 3 generate the least amount of effort in the outlet: Here, the snack is delivered completely pre-produced from the central production and, if required, heated again briefly at the customer's request.

### The various thermal processes of the snack bakery

You may well have noticed: in all four snack levels, thermal processes play a role, from baking at snack level 0 to the customer-

friendly quick heating of a fully pre-produced snack at snack level 3, not to mention the cooking process required if you also want to enter the world of non-baked snacks.

As a snack baker, be sure to avoid taking the thermal freshness too lightly, even for baked goods. Spontaneity is a characteristic of the snack business; in other words, snacks are typically impulse purchases. Therefore, in addition to their appearance and the way in which the goods are put on display (are the toppings clearly visible?), the impression of freshness is particularly relevant to success. And heat is not only a unique signal of freshness, but is also known to intensify the flavour.

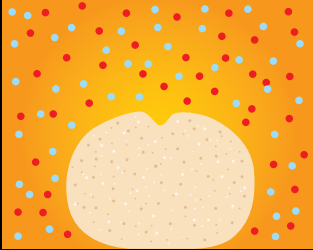
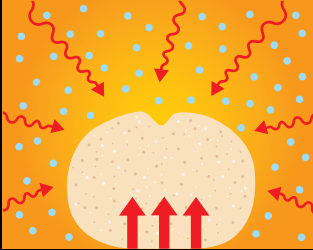


In the table on the next double page, we have listed the thermal processes used in the snack bakery along with the applications and products with which they are commonly used. As you can see, with today's MIWE baking stations, you can easily master all the methods you need for the snack bakery. They are available with various capacities (see p. 22 on the left) and can be combined so as to perfectly meet your needs and your process mix. ►

With sandwiches, you can create countless variations with just a few ingredients



You will also be pleased to hear that, for example, all components of the FreshFoodSystem MIWE cube have the same footprint and can therefore be stacked on top of each

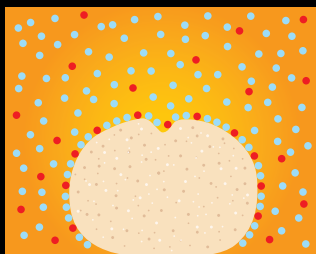
other in various combinations. This also applies to the individual variants of the MIWE gusto. As you can see, this side of the snack business is not that complicated.

Method / Heat transfer	Baking by convection	Baking with top/bottom heat
Schematic overview of the type of heat transfer		
Applications	<ul style="list-style-type: none"><li>• Baking</li><li>• Frozen dough piece baking</li><li>• Finish baking of pre-baked products</li></ul>	<ul style="list-style-type: none"><li>• Baking</li><li>• Grilling</li></ul>
Products	<ul style="list-style-type: none"><li>• Complete bakery range</li></ul>	<ul style="list-style-type: none"><li>• Complete bakery range</li><li>• Soft pretzels</li><li>• Pizza</li><li>• Tarte flambée</li><li>• Quiche</li><li>• Cake</li></ul>
Baking stations	MIWE aero MIWE econo MIWE gusto MIWE gusto:snack MIWE cube:air MIWE cube:steam	MIWE condo MIWE cube:stone MIWE cube:fire (conditional)
		

Incidentally, our gastronomically trained application engineers are always there for you if you are on the lookout for the most suitable concept for you – even beyond mere

plant technology. After all, we want you to be successful in the snack business. ■

### Gastronomic function (steam condensation)



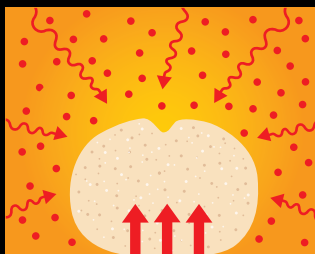
- Cooking
- Steaming
- Reheating

- Eggs
- Sausages
- Meat dishes
- Fish dishes
- Vegetables
- Pasta
- Gratins
- Casseroles



MIWE aero (with gastronomic function)  
MIWE econo (with gastronomic function)  
MIWE gusto:snack  
MIWE cube:steam

### Quick Serve (convection and top/bottom heat)



- Grilling
- Crispy heating
- Gratinating

- Grilled baguettes and other breads
- Crispy sandwiches
- Pizza



MIWE gusto:snack

### Flash Heat/Speed (microwave + impingement\*)



- Grilling
- Crispy heating
- Gratinating
- Regenerating (also pre-baked frozen snacks)

- Grilled baguettes and other breads
- Crispy sandwiches
- Pizza
- Gratins



MIWE gusto:flash

\* Impingement: Hot air is blown onto the product through fine nozzles from the top and bottom

# Yes, it does exist: the thermal oil alternative



**We at MIWE have always been convinced that oven manufacturers who want to advise their customers objectively and without prejudice can't just have one oven technology on offer, but in all fairness must know and master the entire range of technologies available today at the highest level. This is the only way to succeed, both individually and in close cooperation with the customer, in developing the optimum system concept for the customers, their products and production procedures, and to achieve a smooth production flow with perfect bakery products.**

That's why, for the past 25 years, MIWE has offered its customers not only gas, oil and electrically heated rack, wagon and deck ovens with flue gas heating, but also first-class thermal oil baking oven technology and complete production concepts from a single source. We are convinced that you should have a real alternative.

In each of our thermal oil ovens there is a great deal of experience and expertise and a whole range of innovative advances and developments. We have the developers and engineers who have been dedicated to thermal oil technology for years and who have therefore extensive experience in this field. We have the welding expertise essential for thermal oil technology in-house – in the form of specially qualified employees and dedicated equipment and testing technology. We have a whole network of highly trained service professionals with special thermal oil expertise to make sure you can rely on our technology day in, day out, year after year.

And of course, it is our master bakers and application technicians who, based on their confident mastery of all technologies, can weigh up the respective advantages and disadvantages and, on the basis of sound judgement, can work with you to develop the ideal process path for you.

Word has gotten around in the industry that ovens are at the heart of our product range, but by no means are they the only thing that you can expect from MIWE.

We – like you – always keep the big picture in mind. We connect processes and thus ensure interface-free, smooth operations from a single source, regardless of whether it is bakery refrigeration technology, oven technology, energy-saving technology, transport and loading technology or the digital services of MIWE connectivity. In the bakery, this results in a uniform overall perspective and, as a result, consistently smoother working process landscapes.

With this in mind, we are not honestly surprised when especially the discriminating customers, who are interested in maximum product quality, repeatedly opt for MIWE thermal oil solutions and commission us to design entire bakery concepts. Because such a broad solution approach from a single source is only available at MIWE.

We would like to take this opportunity to briefly introduce you to the various MIWE thermal oil oven systems. ►



Thermal oil bakers appreciate the special characteristics of their oven systems, especially their "gentle" baking characteristics. This is due to the fact that, because of the high energy content of the liquid oil, it is possible to bake at significantly lower temperatures than for instance in an oven heated with flue gas. Therefore, there is also a tendency for more moisture to remain in the product – a freshness advantage that not only applies to parbaked goods.

It goes without saying that MIWE thermal oil ovens can also be used for "powerful" baking – the high proportion of radiation during heat transfer makes this possible.

For physical reasons alone we consider the idea that thermal oil is the optimal solution for every task and that with a thermal oil oven – as various market competitors claim – any desired temperature curve can be realized for a custom-made baking process to be complete nonsense. We believe that the desired product determines the ideal baking process.



**Tidy, central and service-friendly: The central boiler unit, here in industrial design, is also available in a space-saving compact version**

### ■ MIWE thermo-express

The thermal oil deck oven from the best

Top-class thermal oil deck oven with static baking atmosphere (and optionally selectable turbulence). Universally suitable for all baked goods. Impresses with outstanding baking properties, exceptional evenness and the soft heat typical of thermal oil. Up to 12 oven decks with various clearance heights, therefore also suitable for tall baked goods. Baking area up to 60 m<sup>2</sup>. The separate central boiler unit can be heated with oil, gas or electrically.

On request, we offer the MIWE thermo-express with up to five self-supporting, stable draw-plate oven decks. The MIWE draw-plate trolley loading system also allows entire discharge trolleys to be removed from the decks to position them at the height of the work table and feed them in again after filling. After all we want to make baking easier.

Wherever process rationalisation and automation are required, the MIWE athlete automatic feeding system is the ideal addition to the MIWE thermo-express.

### ■ MIWE thermo-static

The thermal oil wagon oven for gentle baking

Gentle baking characteristics and great evenness are its strengths. Thermal oil heated wagon oven with steady baking atmosphere. That leads to fewer baking losses and longer freshness, optimal crust formation, better oven spring and excellent crumb structure. For two or three wagons with seven to ten trays in three tray sizes. Suitable for baking the entire product range,

**MIWE thermo-express with three standard and two draw-plate oven decks**



**MIWE** thermo-static





**With the MIWE assist loading system, a whole battery of thermal oil wagon ovens can be fed effortlessly – optionally even with stone plate frames**

from heavy rye breads to small wheat rolls.

Atmospheric baking that finally puts an end to weather-related disturbances is only available from us. Achieve optimal evenness and better baking quality, whatever the weather. Standard in the MIWE thermo-static.

Superior steam technology: MIWE atmo-jet. The water is transformed into tiny droplets using compressed air before it is fed into the steam device. That creates high-pressure saturated steam particularly efficiently and rapidly for optimal product quality and best sheen.

A true helper: The MIWE assist automated loading system with a stone plate frame (optional) takes the load off. And it lets you market the bread baked on it as "stone-oven bread".

Simultaneous loading of all or selected decks. Product reception from boards via a docking station.

Where more crispness is required, we recommend the two-stage turbo system (optional), which adds convection to the chamber and is simple to integrate into the baking program. Stage one for gentle browning, stage two for power air circulation and forced de-steaming.

#### ■ **MIWE thermo-static integro**

The thermal oil wagon oven with integrated boiler

Has everything that makes the MIWE thermo-static special. And on top of that, it has its own boiler unit. So that you can start right away without having to worry about piping and separate space requirements in the smallest of spaces.

### ■ MIWE thermo-uniroll

The gentle giant  
for continuous production

The MIWE thermo-uniroll is the thermal oil tunnel oven of choice when large quantities of similar products are to be continuously baked at the highest level. Its gentle baking characteristics, achievable throughput, continuous mode of operation and exceptional consistency, which is typical of MIWE, make it particularly recommended for use in industrial production of high-quality baked goods.

With its large baking surface (up to 145 m<sup>2</sup>), it can achieve hourly outputs of up to 30,000 rolls and more. Depending on the product range, we can supply it with a special hinged plate belt, a mesh belt or

(optionally) a stone plate belt, on which stone oven bread can be baked.

In continuous production, the baking time is more or less automatic due to oven length and belt speed; the oven speed control (PLC) can be used to individually adjust the belt speed and baking time. This also applies to the high-performance steam, whose parameters (time, quantity, quality) are continuously monitored by the process; after the steam zone, an optional turbulence zone can be set up.

Speaking of steam: it contains a great deal of valuable useful energy, which you can tap into with a specialized heat recovery system like the MIWE eco:nova directly on the efficient steam extractor.

**Continuous production at maximum throughput: the MIWE thermo-uniroll easily bakes 30,000 rolls/h on up to 145 m<sup>2</sup> of baking surface**



The innovative MIWE construction principle of floating baking chambers and heat exchanger plates allows for a completely stress-free thermal expansion, which – together with the soft start of the frequency-controlled drives or the newly developed smooth-running roller chain – benefits the reliability and durability of the oven.

The MIWE thermo-uniroll is available with a large number of convenient pick-up, transfer and removal solutions right through to the integration of complete proofing, cooling and freezing sections and is so popular with some of our customers that they have several of them in their bakeries.

#### ■ MIWE thermo-polyroll

Our non-plus ultra: gentle baking culture on several levels

The MIWE thermo-polyroll is our multi-chamber thermal oil tunnel oven and always the first choice when large quantities of the most varied products are to be baked at the highest level in stepwise operation. Thus, the highly flexible batch production of first-class baked goods of medium variance is possible even at high and maximum throughputs. Stepwise operation also makes it possible to ensure virtually continuous production by means of a sophisticated activation of loading and transfer systems.

The MIWE thermo-polyroll offers standard up to 7 levels and 5 temperature zones for baking areas up to 250 m<sup>2</sup>. It is just as well suited for un moulded products as it is for trays and tin products. Its standard step length is 1.20 m, although special step lengths are possible at any time. Depending on the product range, we can supply it with a spe-

cial hinged plate belt or with a steel mesh belt.

Like all other MIWE thermal oil ovens, this multi-chamber deck oven impresses with its typically gentle baking characteristics, which are particularly beneficial for parbaked products (stability, expansion, volume, long-lasting freshness), and its outstanding uniformity, which among other things is due to the fact that the same quantity of oil is moved at the same flow rate in each oven of the system.

Like its single-chamber colleague, the MIWE thermo-polyroll shares the innovative MIWE design principle of floating baking chambers and heat exchanger plates, which allows for completely stress-free thermal expansion. Together with the gentle start of the frequency-controlled drives, this benefits the operational safety and service life of the oven.

This oven is also available with a wide range of convenient loading and transfer solutions, including the integration of complete proofing, cooling and freezing sections.

#### ► Summary

If you really want to know how well and reliably MIWE thermal oil tunnel ovens bake in practice, you might not want to ask us first. And certainly not one of our market competitors. But one of your colleagues instead. Best of all, ask one of the well-known bakers who have been so satisfied and successful with our ovens for so many years that they have long since been operating a second, third or even fourth line with it. They do this because, as far as their baking quality is concerned, no other thermal oil system on the market can even come close to

**The MIWE thermo-polyroll:  
our all-rounder for highly  
flexible top-quality batch  
production**

matching the MIWE systems.  
So don't let anyone pull the wool  
over your eyes. Thermal oil technol-

ogy from MIWE is among the best  
you can get on the market today. ■



# Everc



*With MIWE everclean you don't have to worry about cleaning agents anymore*

**Without a doubt, regular cleaning is a necessity for baking stations. But refilling cleaner during operation? Monitoring supply levels and thinking about reordering in time when they run low?**

You can safely forget about all of this. As long as you are using a new convection oven like the MIWE aero. Its supply of cleaning agent is now so generously metered that it suffices for the MIWE service team to simply refill the cleaning agent when it does regularly recurring maintenance work. Just another thing that you don't have to worry about anymore.

There are two reasons why the cleaner has to be refilled so rarely

(it is calculated to provide you a minimum of a year's worth of reliable cleaning).

On the one hand, there is the incredible efficiency of our ovens with respect to cleaning agent consumption (not to mention that the powerful liquid cleaning agent MIWE cleaner is completely biodegradable!). And on the other, there is the large-volume cleaning agent tank, which is integrated directly into the baking station, requiring no additional space either at the side, rear or anywhere else.

So forget about everything that has anything to do with your convection oven's cleaner. There is no need

# lean!

to keep an eye on the remaining amount or provide a timely refill. You do not have to store it anywhere or transport it back and forth. You do not have to stack any empty containers and eventually dispose of them. You do not even come into contact with it – our service technician will automatically take care of all of this along with the maintenance work. A maintenance contract is therefore the only requirement for this additional service.

MIWE everclean.

We just like to make baking simpler.

**Fully automatic cleaning is good  
– never having to think about  
cleaning agents again is even better**



# The new star in the baking universe

*MIWE proudly presents: The all new rack oven MIWE orbit*

For many bakers there's no question: If you are looking for a rack oven, it is best to go to MIWE. This special kind of high regard is the result of many years of hard work, beginning with us making this rationalization-friendly oven type known and familiar throughout the whole of Europe and beyond. Followed by us launching the MIWE roll-in rack oven and consistently further developing it, thus making it both the pinnacle of the technologically feasible and, at the same time, still the probably most economical rack oven in the world. It is for many simply the rack oven par excellence.

Why are we then, with the MIWE orbit, now offering a completely new, second product line? Quite simply: The world of baking has become colourful and varied. The MIWE roll-in will continue to have its loyal fans and enthusiastic users wherever it comes to bringing the last bit of



quality out of baked goods with a variety of sophisticated (and sometimes complex) control and intervention options. Yet many bakers would be very satisfied with a rack oven which provides them with reliably excellent baking results and the simplest operation for years. No more and no less.

This is precisely where the MIWE orbit comes into play. And immediately scores points with its selection of two versions: It is available both with a rotary plate (standard) as

As is true for all our products, the MIWE orbit was developed with our most important goal in mind: ...

... delivering perfect baking results!



# MIWE orbit



well as a rack lift system for lift racks (optional). So you can confidently stick to your preferred system and continue to use your existing racks.

With its 4-stroke high-temperature steel heating coil, a completely re-developed high-performance steam generator and its intelligent air flow, it delivers top-quality baking results and ideal gloss with optimum volume from the start in both cases. It's a good thing that the control panel is ergonomically angled so that you have a clear view of the display and the baking chamber at the same time. That way, you will not miss out on the quality and uniformity of the MIWE orbit.

What is more, it is heavenly easy to use. The modern MIWE TC touch control system with its large 7-inch display is easy to use, even for inexperienced users, especially if you choose (instead of the MIWE classic standard user interface) the multi-award winning interface MIWE go! option adopted from the baking station world. This makes it easy even for semi-skilled personnel to achieve the right result straight away.

Both variants support three different user roles: easy mode for the average user, professional mode for the experienced master baker and manual mode, in which temperature, steam and time are entered manually. This allows every user to get their desired results. Especially since the MIWE orbit comes standard with 20 sample baking programs, so that you can get started right away.

In two ways, the MIWE orbit shows you its most economical side. Firstly, there is the space requirement.

Let's take a more detailed look:

The MIWE orbit has a modest footprint, and yet all of its technology (burner, heater, water installation, ...) is easy to reach for maintenance from just one side, namely from the front. If necessary, you can enclose it on three sides (left, back, right), for example in a niche or in a row. So every square centimetre of space is used optimally.

And secondly, in terms of energy consumption. You can experience for yourself how thoroughly we have optimized the insulation of the MIWE orbit by simply placing your hands on it, with no fear of getting burned. But above all, it can be felt when you review your business figures. Because less energy loss and optimal energy use translate into excellent combustion efficiency and thus lower energy costs.

Of course you are already prepared for the future with the MIWE orbit. You can connect it to a network and



**Your door to success  
is heavy and solid,  
but very easy to open**





- ① **Easy to maintain:**  
The entire mechanics are accessible from the front
- ② **Universal:**  
with rotary plate (standard) or
- ③ **rack lift system** (option)
- ④ **Hygienic:**  
Even the inner surfaces of the door are designed to be easy to clean
- ⑤ **Intuitive to use:**  
7" touch display with three user modes: Easy, professional and manual
- ⑥ **Future-proof:**  
Networkable thanks to USB and ethernet connections

then access it remotely. For example, to query the current oven status. Or to manage your baking programs with a special software solution. Or to store your baking data long term and to evaluate it with the aim of quality monitoring. The data sky is definitely wide open for you with the MIWE orbit.

Anything else would be peculiar. After all, the MIWE orbit has been developed and built by one of the world's most renowned rack oven manufacturers. According to the state of the art, which is what the brand "Made in Germany" stands for.

Because it is well known that nothing can replace experiencing it yourself, we make the first contact with this new star in the baking universe as

easy as possible. "See it. Touch it. Test it." – is the motto. For example, the best opportunity to see and touch it is at the iba 2018 in Munich at the MIWE booth. If you are also interested in test baking with it, please contact us: We can tell you where the next MIWE orbit is waiting to convince you. ■



- ▶ **iba**  
Munich / Germany  
15. – 20. 09. 2018
- ▶ **HACE**  
Cairo / Egypt  
15. – 17. 10. 2018
- ▶ **World Food**  
Almaty / Kazakhstan  
31. 10. – 02. 11. 2018
- ▶ **Gulfood Manufacturing**  
Dubai / UAE  
06. – 08. 11. 2018
- ▶ **Alles für den Gast**  
Salzburg / Austria  
10. – 14. 11. 2018
- ▶ **SIGEP**  
Rimini / Italy  
19. – 23. 01. 2019
- ▶ **Sirha**  
Lyon / France  
26. – 30. 01. 2019
- ▶ **Modern Bakery**  
Moscow / Russia  
12. – 15. 03. 2019
- ▶ **Internorga**  
Hamburg / Germany  
15. – 19. 03. 2019
- ▶ **FBK**  
Bern / Switzerland  
17. – 20. 03. 2019
- ▶ **Hotelex**  
Shanghai / China  
01. – 04. 04. 2019
- ▶ **Bakery China**  
Shanghai / China  
06. – 09. 05. 2019
- ▶ **Seoul Food & Hotel**  
Seoul / Korea  
21. – 24. 05. 2019
- ▶ **Fooma**  
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09. – 12. 07. 2019
- ▶ **IBIE**  
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08. – 11. 09. 2019
- ▶ **südback**  
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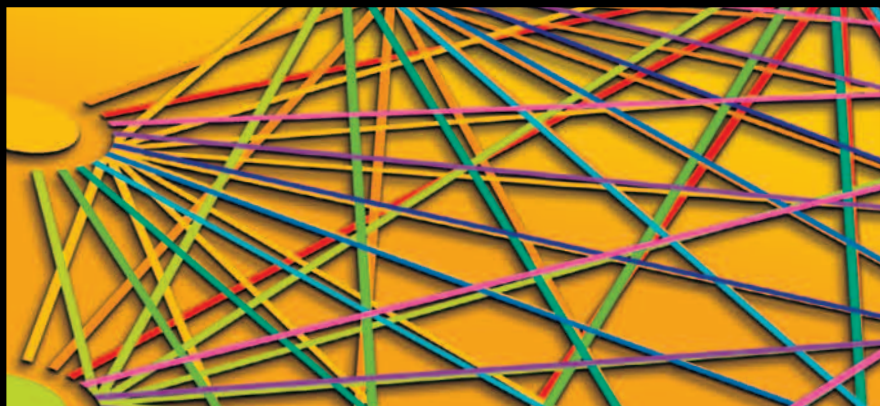
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