



Connect

02

June
2024



EVERYTHING UNDER CONTROL WITH KANBAN

Optimised assembly processes
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SOLDERING TECHNOLOGY

Fully automatic soldering machine for
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CONVEYING SECTION FOR COFFEE

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If only everything were that simple! **The MiniTec profile system**

When it comes to flexible constructions for a wide range of applications, the **MiniTec** profile construction kit offers you decisive advantages. The system has many special features and differences in detail that benefit you in practice. This starts with the unique connection technology, which does not require any mechanical processing. Changes and extensions to constructions are possible at any time.

But also in the design of groove and central bore or in topics such as pneumatics and ESD suitability, you benefit from the intelligent basic concept of the **MiniTec** profile system.

Particularly advantageous: thanks to uncompromising adherence to the modular principle, all components always fit together perfectly. This not only simplifies your design work, but also reduces your need for tools and small parts.

**When will you discover
the art of simplicity?**



www.minitec.de/en/products/profile-system



DEAR READERS,

In recent years, many companies in our industry have at times had to deal with hefty adverse headwind: High energy costs, skilled worker shortage, increasing bureaucracy and inflation rates not seen for decades. These were only a few examples. This list could be continued. During these times, not only good concepts were in demand, but also continuity. Continuity, for example, in partnerships. We at MiniTec have always opted for strong, trusting and reliable partnerships. This applies as much to our customers as our suppliers.

In times of the pandemic and rising prices caused by high energy costs, we had to levy a material surcharge on aluminium profiles and precision steel shafts. At the time, we promised that we would remove this price increase as soon as we registered cost reductions on the procurement side. We achieved this. This is why we were able to reduce our prices again in three stages and have now completely removed the material surcharge.

Unfortunately, not all market participants operate in the same way. We consider it fair for people's word to be kept in partnerships. You have been able to count on this with MiniTec for over 38 years.

A stylized, handwritten signature in blue ink, appearing to read 'S. Geyer-Altenkirch'.

Yours
Sandra Geyer-Altenkirch
Managing Director

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MiniTec developed and produced an individual material flow solution based on its flexible segmented chain conveyor system for a large roasting house, which enables the transport of coffee tins and packaging bags between the filling system and cardboard packaging.



EVERYTHING UNDER CONTROL WITH KANBAN

With the kanban principle for workplace systems, an efficient material flow results and workflows and processes can be optimised. Kanban logistics systems are perfectly suited for assembly and production processes.



FULLY AUTOMATIC SOLDERING MACHINE FOR RADIATORS

Flux-free soldering offers important advantages for certain applications compared to other joining methods. This is the situation at Zehnder GmbH in Lahr, where a corresponding MiniTec line is used for the manufacture of tubular radiators.

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INHOUSE 2024 – YET ANOTHER GREAT SUCCESS

MiniTec fans accepted the invitation to attend again this year. In fact, the number of people interested in attending exceeded our capacities. It therefore paid to register for the free event in good time. Many visitors praised the “all round successful event” afterwards. For many, the highlights included the tour of the company with a look behind the scenes, informative expert talks, practical demonstrations of automated systems and innovative technologies.



Many visitors were astonished at the diverse solutions enabled by the MiniTec modular profile system.

We thank all those who visited us and our employees for their commitment. Without them, such an event would not be possible.

In April our traditional in-house trade fair, InHouse took place again at our company headquarters in Schönenberg-Kübelberg. Numerous customers, partners and

However, as in the previous year, a large exhibition providing a good insight into the extensive MiniTec portfolio took centre stage.

ENTHUSIASM AT THE FUTURE DAY

In retrospect, the training day couldn't have been better. Numerous young people and potential applicants were present at the InHouse day at MiniTec and found out about the training options in our company.

Plenty was on offer for the visitors. Apart from interactive exhibits and guided tours, they could also talk to trainees and trainers at first-hand about the different opportunities at MiniTec.

Many thanks to our trainees and everyone else who contributed to the successful event.



The Future Day was really popular.



Many used the opportunity to gain an insight into practice.

TRADE FAIR CALENDAR AUTUMN 2024

MiniTec will also be exhibiting at the most important trade affairs of its industry in the second half of the year.

all about
automation
düsseldorf

all about automation, Düsseldorf
01 to 02 October 2024
Messe Düsseldorf, Stand 281

The theme of the regionally focussed trade fair for industrial automation is systems, components, software and engineering for industrial automation and industrial communication.



Motek, Stuttgart
08 to 11 October 2024
Messe Stuttgart, Hall 3 – Stand 3115

At the international trade fair for automation in production and assembly, MiniTec will be presenting solutions for assembly, handling and conveyor technology.



Florian trade fair, Dresden
10 to 12 October 2024
Messe Dresden, Hall 1 – Stand F 10

MiniTec will be presenting its firefighting technology solution for industry at the trade fair for fire safety, rescue and civil defence.



An up-to-date overview of all trade fairs can be found at
www.minitec.de/service/messen-events

NEW SITE MANAGER IN BERLIN



The new site manager of MiniTec Berlin: Gerhard Gase

A lot is happening at our Berlin site: Since November 2023, MiniTec Berlin GmbH has been based in Berlin-Schönefeld. With a larger hall area of 1200 m² and an office area of over 200 m², the new premises offer significantly more possibilities. The hall has a production area of around 1000 m², of which 200 m² is for assembly and 150 m² for mechanical production.

Since March, the site has also had a new manager: Gerhard Gase (60). He is Berlin born and bred and has plenty of experience in machine, structural steelwork and plant construction, has master craftsman training in several trades and has already worked as the works manager, site manager and managing director in other companies. Working from the capital, Gase will support existing and potential customers in Brandenburg, Mecklenburg-Western Pomerania, Saxony and Saxony-Anhalt. "I look forward to my new task and the excellent cooperation at MiniTec", he emphasised.



The new location in Berlin-Schönefeld.

CONFIGURATORS FOR LINEAR TECHNOLOGY



MiniTec linear technology is the perfect addition to the modular profile system and is compatible with it. The range extends from steel shafts to individual components, adjusting units and sliding guides, through to ready to install linear axes. With the configurators, the user quickly and conveniently reaches the component they require.

The choice of products is enormous, their required dimensions, features and properties can also be defined in detail. To provide our customers with the best possible support, we offer various options on the MiniTec website: If the customer already has specific ideas about the component required, they can call up the relevant item directly and select and define the individual parameters. Alternatively, multiple configurators are available. These allow the required product to be put together conveniently step by step without any preconceived definitions.

LR linear axis configuration

With the LR linear system, a whole family of linear components are available which are coordinated with each other. Apart from carriages, drives, pulleys, rails and

extensive accessories, the range also includes complete linear axes. These are ideally suited for use in handling equipment, measuring and adjusting devices and for the precise guiding of doors or large lifts.

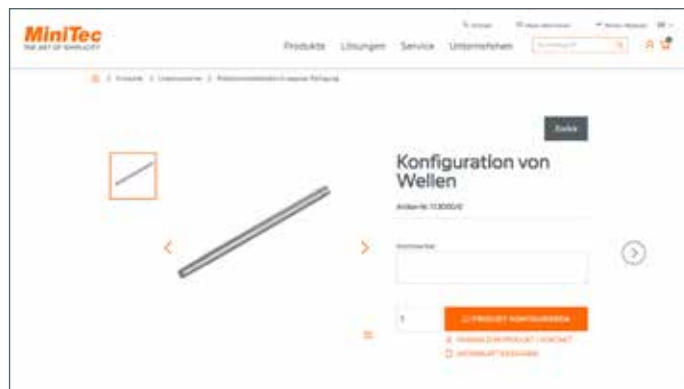
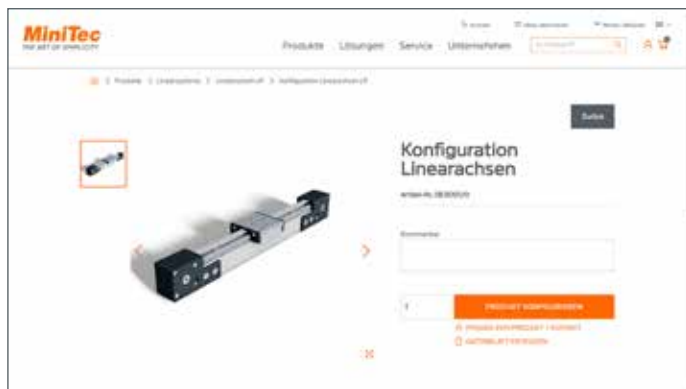
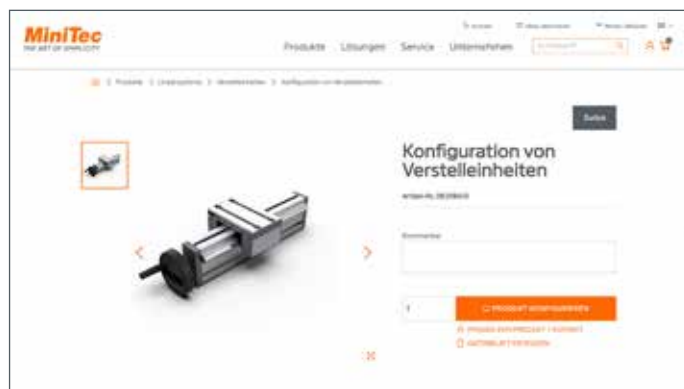
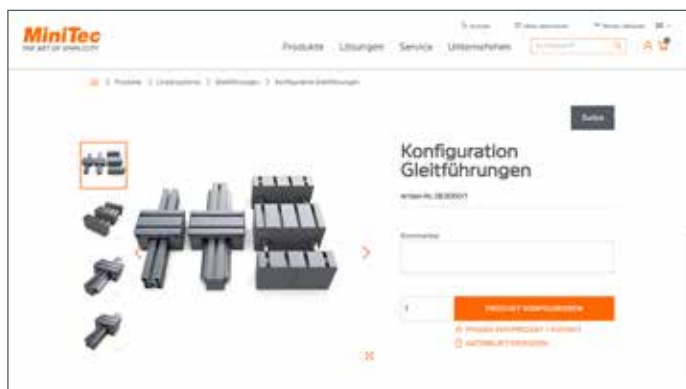
There are three different types of ready-to-install linear axes: LR 6, LR 12 and LR 16. The abbreviations refer to the thickness in millimetres of the integral steel shafts, which is important for the load-bearing capacity. The various axis item variants are completely predefined – only the stroke length and pulleys have to be defined.

Anyone who needs more flexibility uses the relevant configurator. All specifications for the required LE linear axis can be individually defined

here, starting with the material, to the rail through to the carriage. The

**MINITEC LINEAR
TECHNOLOGY:
EVERYTHING FITS
TOGETHER.**

configurator enables the right linear axis to be defined from the LR linear system, conveniently and tailor-made.



Everything in view when configuring sliding guides, linear axes, adjusting units and shafts.

Configuration of adjusting units

The MiniTec adjusting units are the right choice for adjusting conveying equipment, for the adjustment of feeders and for adjustable jigs in the linear system. The ready to install modules, based on the modular principle, are assembled with precise fit from standard elements of our profile system. They are used as standard elements in mechanical engineering, the packaging industry, in filling plants and in testing technology. You can configure your adjusting unit from a large number of versions with different cross-sections or with different slide guides – whether as standard elements in machine construction, packaging technology, filling systems or in testing technology.

Configuration of sliding guides

MiniTec sliding guides are suitable for a large number of linear technology applications, in which high loads are required. These include the adjustment of light barriers, reflectors and lateral guides; other simple linear units and feed units are also ideal fields of applications. Use the configurator to easily put together your own sliding guide.

Configuration of shafts

Shafts are basic elements in linear technology. The configurator allows you to individually define the product you require. Whether individual parts, small or large series – choose from shafts in all standard diameters (5-100 mm) and materials

(including Cf53-1.1213, Cf53 HV-1.1213, X46-1.14034, X90-1.14112) and complete it with suitable turning, drilling and/or milling.

Everything fits

The MiniTec modular philosophy is a large advantage: No matter which parts and components are combined – everything fits together and is compatible. This ensures that the respective linear unit fits seamlessly into the design.

HOW TO ACCESS THE CONFIGURATORS

You access the configurators for the various linear components via the respective product areas of the MiniTec website.



*In addition, you will find an overview of all configurators and accesses here:
www.minitec.de/service/configurators*



CONVEYING SECTION FOR COFFEE

MiniTec not only supplies conveyor components and sections, but also implements high-quality material flow solutions, as the example of an industrial coffee roasting facility shows. Many food production guidelines had to be met and all kinds of different goods and packaging must be transported. The coffee products are transported quickly and reliably along a 1.2 kilometre length, on different levels, at high speed and is extremely smooth and quiet running.

Coffee is by far the most popular drink in Germany. According to the statistics, 146 litres of coffee are drunk per person and year. Many transport and production steps are necessary before the exotic bean reaches the cup as a hot drink. The roasting house plays an important role in this process. The path from the complex roasting process to the shop shelf is long. Technical problems must be solved and many regulations observed, which are specified by German food legislation and the IFS Food (International Featured Standards Food). The transport of the coffee products within the roasting facilities must also be properly planned and implemented professionally. Coffee varieties in different packaging must be transported from the filling system to the packaging station.

Extensive requirements

At the request of a large German coffee roasting house, MiniTec developed a comprehensive material flow solution, which perfectly met the diverse requirements. One advantage was that MiniTec has been specialised in solutions for material flow and automation for many years and with its segmented chain conveyor system GFK, the modular profile system and components such as spiral conveyors, it is ideally equipped for these topics.

The need was for an individual intralogistics solution, which was to enable the transport of coffee tins and packaging bags between the filling system and cardboard packaging. Around 1.2 kilometres on different levels and at high speed and extremely smooth and quiet running – these were only a few of the wishes.



MiniTec planned, developed and installed an individual material flow solution for a large roasting house.

SETUP AND COMMISSIONING IN ONLY TWO MONTHS

Well equipped with segmented chain conveyor system

With the flexible and energy-efficient segmented chain conveyor system GFK, MiniTec has created a system for such requirements, which enables diverse solutions. Conveyor lengths of more than 1,000 metres with diverters and separators can be achieved.

The whole system, including the drives, is modular and provides standard solutions for every configuration. And like all our products, this technology is also based on the tried and tested MiniTec modular system: All components perfectly fit together for extensions, attachments or any necessary protective devices or guards. For example, a substructure, side guides, sensors, collection trays and attachments can be easily installed at any point and flexibly adapted to the circumstances on site. The special requirements of the food and drinks industry and specifications for packaging lines, cosmetic production, the pharmaceutical industry and machine construction can be implemented.



Complex conveying tasks

Within the short period of only two months, the MiniTec engineers developed a complete conveying system for the coffee roasting facility, which is designed for the transport of coffee in tins (PAD tins) and in coffee bags (whole beans up to 1000 grams). The conveying capacity had to be very high, in line with the production circumstances with up to 180 tins per minute on the workpiece carriers. The requirements for the feeder (20 metres per minute) and removal (40 metres per minute) were also set very high.

Reliable running along 1.2 kilometres

As soon as the coffee packages from the filling station in the roasting facility start their 1.2 kilometre route, height differences must be overcome, diverters and distribution stations passed, mostly in a very confined installation space. The design advantages of the GFK system, which is equipped with modular belt chains in track widths 152 and 229 millimetres for use in the food industry, are particularly evident here.

The many standard components of the modular system, which enable horizontal and vertical curves to be achieved, are advantageous here. As are cam wheels for tight radii, flat chains made of plastic or steel, roller, driver and accumulating chains and different motors. And drives with frequency converters are available for continuously adjustable conveyor speeds.



A large part of the conveyor system was installed under the ceiling at a height of three to five metres.

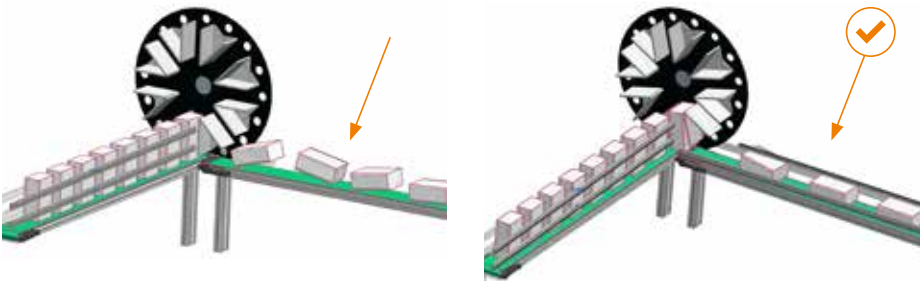
Across peaks and valleys with spiral conveyors

The local circumstances posed a challenge for the material flow, as a large part of the conveying system had to be installed under the ceiling at a height of three to five metres. Fire protection regulations also had to be considered. These extended the routing of the conveyor sections through fire walls with fire gate and intumescent bodies in confined space conditions. To this end, nine storage towers, each with a 50 metre conveyor section, were integrated to ensure constant material flow even at full load. The production buildings of the roasting house are crossed by conveyor sections on multiple levels. In addition to long sections, height differences must also be overcome. An elegant and useful component for such applications is the MiniTec WF 3000 spiral conveyor. With this system, conveyor height differences of up to three metres can be bridged. The spiral conveyor also has another major advantage: It serves as a store or buffer for conveyed goods on a very small footprint. On the conveyor section of up to 50 metres, with a space requirement of only around three square metres, such systems also allow constant material flow even at full capacity utilisation.

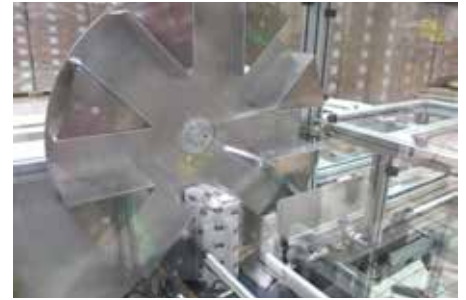


The nine storage towers, each with a 50 metre conveyor section, ensure constant material flow even at full load.

Two electric motors are sufficient to operate the installation, which has a noticeable positive effect on the energy balance. State-of-the-art control technology is used for the synchronisation or coordination of the motors, which enables dynamic speed applications. With design features and optimised slide rails, the entire installation is also geared for extremely quiet operation. By using high-quality components, virtually maintenance-free use is possible, the spiral conveyor is also extremely resistant to dirt. Combined with the energy-saving motorisation, high economic efficiency is therefore achieved in the production.



Simulated: In the first implementation the coffee packages left the "star wheel" disordered, after the simulation, all packages were in the required position.



The "star wheel" in action.

Energy consumption reduced

High-energy efficiency was also one of the requirements set by the customer. The MiniTec engineers were able to achieve this with economical electric motors, demand-actuated speed control and section shutdowns in case of no load. To achieve high fail-safe protection, high-quality drives and controls were installed in addition to the MiniTec quality components. 74 SEW drive motors with field distributors 7 and Profibus actuation are used, the control tasks are undertaken by a Siemens S7 Safety PLC with 180 inputs and outputs.

Always in the right position

Another special feature arose during operation of the system: The coffee packages should always be placed in a defined position. Special feature: The

packets had to be turned over so that the bottom of the packet faced the front; this was initially achieved with a bumper rail. However, this process was no longer fit for purpose, because it was planned to increase the cycle time from 40 to 60 units per minute.

The MiniTec engineers developed a "star wheel" for this. This is a circular construction in which the coffee packets are turned over to face the front by the turning of scoops. However, before implementing this solution, it was necessary to test whether it worked in practice. Especially due to the high cycle speed, the objective was to ensure that problems caused, for example, by packets getting stuck or breaking open, did not occur later.

A simulation solution was used for this, which enabled a digital trial run. The knowledge acquired from the simulation resulted in various changes being made to the model system until it worked smoothly. For example, guide rails were installed so that the coffee packages remained in the track and did not fall off the belt.

The effort was worthwhile: The workflow in the finally installed system was completely problem-free from the outset. By the way, this procedure also reduced the total lead time for the project.

Experience in material flow and automation

A conveyor system of this order of magnitude not only needs precise planning, the installation and fine adjustment must also be extremely precise. In this case, MiniTec customers benefit from the engineering team's longstanding experience in automation and system engineering in many industries. The setup and commissioning on the coffee roaster's premises was completed in only two months. Since this time, the coffee products have kept on track: With the required smooth and quiet running at high speed and absolutely reliable.



The requirements were very specific: Around 1.2 kilometres on different levels and high speed with extremely smooth and quiet running.

SCHULZ FÖRDERTECHNIK EXPANDS ITS PORTFOLIO

MiniTec took over Schulz Fördertechnik GmbH in Waldmohr at the beginning of 2024. This is resulting in useful additions to the portfolio and also access to new markets.

Schulz Fördertechnik GmbH was founded as a regionally operating business to supply customers in the German states of Saarland and Rhineland-Palatinate and adjacent border areas with local conveying technology products and services. Although the company is located in the immediate vicinity of the MiniTec headquarters in Schönenberg-Kübelberg, there was no overlapping or competition to speak of on the respective markets and in the product portfolios. Quite the opposite, communications between the companies had been good for years and numerous projects were completed jointly. "In general, these were projects in areas in which we

were not involved or very large material flow solutions with automation tasks. They were not our core strengths", said Wolfgang Wasemann, Managing Director and owner of Schulz Fördertechnik GmbH.

The know-how and product portfolio of the two companies complemented each other well, whereby MiniTec was always the significantly larger company. It was an obvious move for MiniTec to respond when the opportunity for a takeover arose. In search of a suitable business successor, Wasemann had turned to MiniTec. After a thorough comparison of the Schulz



Conveyor system for an industrial bakery for transporting pretzels and other dough pieces.

range of products and services with its own portfolio, MiniTec decided in favour of the takeover, which was completed in January 2024.

Special solutions for selected industries

Managing Director described the special features or business focuses very compactly: "We are mainly involved in making components and produce customised solutions, very often in the food and pharmaceutical industries, but also in very specialised industries such as tyre, ceramic or glass manufacturing. These are mostly large companies that ask us for conveyor technology solutions."

In general, they involve conveying sections within the production. Or as Wasemann says: "We are given to task of transporting something from A to B. Among other things, we must observe regulations of the food and pharmaceutical industry and other production areas, keep to cycle times for the linking with packaging machines or also deal with very individual conveyor sections with a predefined route."

High requirements of the food industry

Wasemann reports that the most difficult goods to transport in conveying technology include, for example, food and gives an insight into the challenges of this industry: "Particularly the manufacturers of meat, fish and finished products must meet high hygiene and quality standards. The conveying technology solutions therefore play a central role: Regardless of whether fresh or chilled – conveyed packaged or unpackaged, conveyor belts move everywhere." They have a key role in the conveying technology, as they are in "contact" with the food and must deliver with pinpoint precision for further processing and be robustly resistant to mechanical loads. An important point in operation is cleanliness or rather hygiene. Regular thorough cleaning alone is not sufficient to meet hygiene regulations without compromise, not only during transport but also for the cleaning of the conveying systems. And this while at the same time meeting increasingly stringent requirements for sustainable, resource-efficient action in all areas of the company.

This gives an indication of the challenges that Schulz Fördertechnik is confronted with in these specific industries. Due to its decades of experience, the conveying technology specialist has earned itself a good position in the market.



Schulz Fördertechnik is specialised in conveyor systems with steel and stainless steel frames.

Service counts

Another positive aspect, apart from its expertise in the planning and construction of conveyor systems, is their maintenance and repair. If conveyor systems are stopped, a whole production or assembly line is often held up, perhaps even the whole production. "Our customers therefore value our service. Because we deal with repairs and maintenance as quickly as possible. Also important: We maintain a large stock of conveyor belts. At least 25 belt types are always in stock and we have around 5,000 m² inventory on hand for these materials. We always find a solution for our customers."

New markets

The takeover made sense for both companies: New opportunities for conveyor systems and access to attractive markets are opened up. All employees of Schulz Fördertechnik were kept. New prospects open up for them within the MiniTec group of companies. Their colleagues in the parent company are pleased with the reinforcements and look forward to working together with them.



Schulz Fördertechnik is now part of the MiniTec group with Wolfgang Wasemann (left) and Managing Director Sandra Geyer-Altenkirch.



WITH MINITEC WORKSTATIONS FOR A HEALTHY CLIMATE

HygroMatik GmbH offers humidifier systems for highly different areas of use. Two years ago it started to reorganise its assembly and material flow with MiniTec – with great success. A report by HygroMatik factory manager Heiko Ehrlich.



Everything at the assembly stations is ergonomically arranged and easy to reach.

HygroMatik GmbH is a service-oriented small to mid-sized enterprise (SME) in mechanical engineering with 54 years of market experience. At the company's base to the north of Hamburg it develops and produces sustainable humidifier systems, which are sold worldwide. The certified units and systems are used wherever humidity is decisive for well-being, hygiene or product quality. Among other applications, this includes air conditioning systems for office buildings, museums, hospitals and laboratories, and industrial and process areas in which a controllable room climate is indispensable for processing and quality. Another area of use is spa and wellness premises. More information about the different areas of use and the product portfolio is available at www.hygromatik.de.

Order-based assembly

At its site in Henstedt-Ulzburg, HygroMatik and its team of experienced employees produces equipment for all aspects of humidification. Various types of humidifier are assembled solely to order – depending on the requirements of the customer or rather their process. Despite these individual requirements, short delivery times with the highest quality standards are guaranteed. To continue to meet these market requirements in the future, in 2022 the company began a complete restructuring or reorientation of the assembly including the material flow concepts.



Roller conveyors and ball transfer tables for transporting workpieces between the workstations.

Individual solutions needed for restructuring

It was clear from the outset that no standard solution would be found for the task of the new equipment. The focus was on workplace ergonomics and flexible use of the new tables, jigs and shelves purchased, as a new equipment series is launched on the market every five to seven years.

The company therefore looked around the market for individual solution providers and its attention was drawn to MiniTec. After the initial discussions with the consultant Andre Hintz, it quickly became clear that MiniTec is the right

RESTRUCTURING WITH FOCUS ON WORKPLACE ERGONOMICS AND FLEXIBLE AREAS OF USE

partner to implement the requirements. The ideas for the assembly tables were discussed together with the MiniTec design department. These were transferred into the initial design

drawings quickly and in top quality. The order for the assembly tables could therefore be placed quickly.

Optimum workstations through close coordination

After the delivery and implementation, the HygroMatik team was delighted. Even difficult to reach assembly steps were now easily possible with the height-adjustable and tiltable workstations. This concept was continuously followed up in the ensuing years and other tables, shelving and transport trolleys were designed and ordered.



Special solution: height-adjustable vice.



Factory manager Heiko Ehrlich is convinced by the MiniTec workplace system.



Transport trolleys for cable reels.



The rollable storage shelf allows the shelf spaces to be moved easily.

The basic principle was always the same: The employees gathered their wishes or requirements for a new workstation based on their experience and discussed them with Andre Hintz. He implemented what had been discussed with his MiniTec design team and so even the

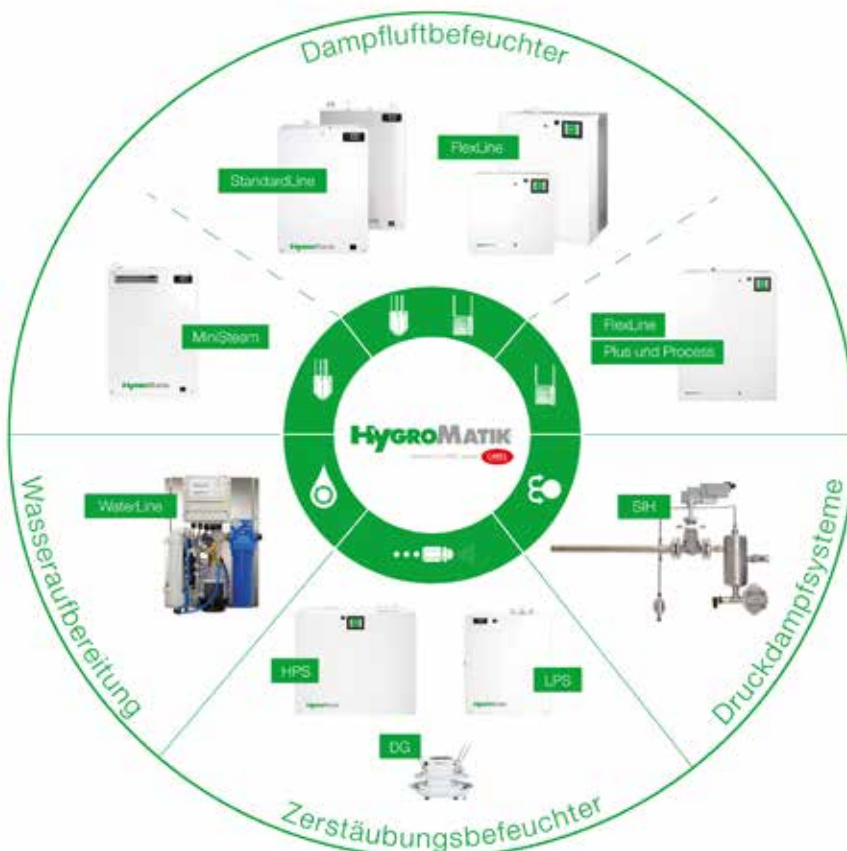
most difficult requirements and wishes could be implemented together step-by-step.

As a result of this very high-quality and constructive collaboration based on partnership, in the middle of this

year a completely re-equipped assembly hall will have been created, which gives HygroMatik a secure position for the future and meets all the individual needs of the colleagues.

Efficiency increased by over 10 percent

The willingness of the Italian parent company, the Carel Group, to invest despite the difficult conditions in recent years (corona, supply bottlenecks, wars, etc.) has paid off. Efficiency increases of more than ten percent could only be achieved by changing the material flows and by changed assembly sequences. This enabled the at times massive cost increases for material, energy as well as personnel to be passed on to the customers to only a limited extent. The investments in the future will therefore be continued in the future too and the focus will be on worker assistance systems. MiniTec has also positioned itself outstandingly well here in recent years and so the whole HygroMatik team looks forward to successful, joint collaboration in the future too!



HygroMatik offers humidifier systems for highly different areas of use.

ACROSS ALL LEVELS AND THROUGH CURVES



Segmented chain conveyors are used to set up production lines as well as assembly and testing systems that are divided into several stations. The conveying technology also enables a curved section layout. Even upward slopes are easy to achieve for the feed systems. Segmented chain conveyors allow fast transport of the same unit loads and provide good accumulation capability for buffering the workpieces.

Segmented chain conveyors (GKF) are used for a large number of in-house transport tasks. When workpieces are transported, the route is not always straight ahead. No problem for the MiniTec segmented chain conveyors (GKF). They enable flexible routing, in which even curves are easily possible. The curve angle can be individually adjusted, from a 45° bend to a 180° cam wheel, by using different elements.

Yet segmented chain conveyors offer even more: This technology has particular advantages, especially for longer distances or for setting up accumulation sections. As not only upward slopes but also high speeds are possible. The systems are particularly ideal for large and complex systems, which can also be divided between multiple stations. In addition, segmented chain conveyors can be easily combined with other MiniTec conveyor technologies, for example, with conveyor belts or spiral conveyors. The systems are available in a wide range of sizes, with polymer or VA segmented chains.

Versatilely usable

MiniTec segmented chain conveyors are available with several different plastic and stainless steel chains, as flat, accumulator or driver chain; thanks to the special surface texture, small components can also be transported. If the conveyor system is fitted with stainless steel chains, the GKF withstands extreme temperatures and can be used within the range from -60 to +120 °C. All chains have in common that they are not only suitable for direct unit load but also for workpiece carrier transport. The system is designed for conveying speeds up to 30 m/min depending on the conveyed goods, the routing and chain.

Like all MiniTec system designs, the GKF series is also based on the variable and robust MiniTec modular system. As a result, the possible combinations are almost limitless. Existing conveyor sections can also be added to at any time.



Segmented chain conveyors are particularly suitable for large and complex system.

EVERYTHING UNDER CONTROL WITH KANBAN

With the kanban principle for workplace systems, an efficient material flow results and workflows and processes can be optimised. Kanban logistics systems are perfectly suited for assembly and production processes.

Lean production and kanban are topics high up on the agenda of many production companies. The introduction of these principles does not usually require any large capital outlay, it is more a matter of new forms of organisation, which if they are implemented consistently very quickly pay off through lower administrative costs and work and shorter throughput times.

Kanban is Japanese and means "card". Kanban management stands for cost-optimised and flexible control of production along the entire value-added chain. This method of production process control is based on the pull principle. The pulse for triggering the order is triggered by the respective downstream segment by returning the "kanban" – here in the form of the empty container.



The KanTainer offers the ideal prerequisite for implementing the principles of lean production using Kanban control.

Kanban according to the pull principle

MiniTec has addressed the topic of workplace design and the optimisation of assembly processes for many years. A workplace system based on the modular profile system was created that combines ergonomics with economic efficiency and a high degree of flexibility. Kanban functions here according to



the pull principle and is based on the actual consumption of materials in the provisioning area and place of consumption. It is based on self-controlling control circuits and helps to reduce the stocks of primary products significantly.

MiniTec enables the implementation of kanban at the assembly workstation, for example, by the FRS (flexible roller carrier system). The material is provided via rollers.

Equally important are the KanTainers, for implementing the principles of lean production by kanban control. These are designed for maximum use of space in the warehouse with simultaneous optimum material provision at the workplace.

WORK MORE EFFICIENTLY WITH KANBAN

Small box, large benefits

The KanTainer is made up of the container, the fold-out tray, the divider and a cover. The practically designed tray enables effortless removal of small parts. The divider can be used in two positions for the simultaneous storage or provision of complementary goods – such as connectors and screws – or for single bin kanban. At the same time, this divider can be used as a metering disc. To this end, the bottom half is simply separated and the resulting metering disc is pushed into the required position in the guide grooves provided for this purpose. The transparent, adjustable disc enables the employee to meter the material replenishment and to check visually whether residual quantities of the previous order are still in the bin. The cover protects the goods from dirt and mixing of the parts during transport and storage. At the same



Thanks to the closed design, the MiniTec KanTainer offers up to 25 percent more storage volume than conventional semi-open fronted storage boxes.

time, the cover serves as protection against unintentional opening of the tray. Thanks to the closed design, the KanTainer offers up to 25 percent more storage volume than conventional semi-open fronted storage boxes.

Everything within reach

The front and back of the boxes are labelled for error-free identification of the parts in the warehouse and at the workplace. Especially when filling in the flow rack, reliable avoidance of mix-ups is important. The bin also has a retaining strip at the back so that the KanTainer can be arranged in the ergonomically optimised inclination at the workplace. The locating pins on the top and retainers on the underside allow the boxes to be safely stacked. At maximum fill weight, up to 7 boxes can be stacked on top of each other. The

KanTainer meets all the requirements for making storage, order picking and assembly easier and more reliable.

It was never so easy to implement kanban in the assembly. The MiniTec experts are available if you have any questions regarding the suitable compilation of an FRS system.



The flexible roller carrier system enables a particularly variable solution for kanban.





LABELLING MACHINE FOR MAXIMUM PRECISION

Maximum accuracy is required when attaching adhesive labels. This is also the case with a label for a new component of a manufacturer of plumbing products. Therefore, together with NOVEXX Solutions, MiniTec produced a partly automated labelling solution that ensures exactly this.

The customer's fittings, shower heads and shower systems are known for their attractive design and high quality and are used in many buildings. The company is also characterised by its high innovative power, which also benefits installers. For example, it developed a particularly practical base for the in-wall installation of water control in bathrooms.

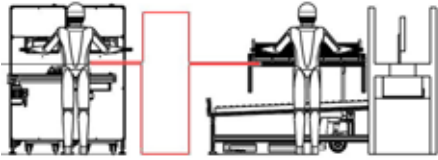
Partly automated machine as the goal

When installing the base, its correct alignment in the wall is important. To ensure this, there is an adhesive label on it, which describes the installation in pictures and at the same time, serves as an aid for correct positioning. This in turn makes it necessary for the label to be attached to the base with maximum precision.

The customer therefore engaged NOVEXX Solutions in the Bavarian town of Eching to produce an automated labelling machine for attaching the adhesive label on the plaster cap of the base. The company is a specialist for marking and labelling solutions and offers numerous products in this field. The XLS 206 labelling system proved to be the ideal answer to meet the requirement for a complete solution.

Hand in hand

However, this only takes care of the labelling process per se – but a complete solution was needed, which covers the whole process from feeding in the products, their handling and labelling and conveying them out of the machine. NOVEXX therefore brought MiniTec on board as its project partner. The two companies have been working together successfully



The machine is positioned between two manual workstations.

for many years. MiniTec had the task of realising an automated system on the basis of the NOVEXX labeller.

HIGH POSITIONING ACCURACY AND EFFICIENT PROCESSES FOR LABELLING

Clear specifications for processes and cycle time

The customer defined their wishes for the overall process and the associated indicators in a requirements specification. The maximum throughput time for the complete processing of a product should be 12 seconds. Occupational safety also played a role – so the machine sound level must not exceed 80dB(A).

Working closely with the customer and NOVEXX, MiniTec implemented the required complete solution. It is positioned between two manual workstations. The base is assembled at the first workstation. From here, the employee places it on the conveyor belt of the labelling machine, which also serves as a buffer section – with space for up to eight components. The process now starts. The component is first conveyed automatically into the bonding station. There the label is

applied centrally, also automatically. The finished base is then conveyed out of the station and is removed manually at the removal station.

High process reliability and flexibility

After the commissioning, the customer was extremely satisfied with the solution. It ensures high positioning accuracy of the adhesive labels and efficient and flowing processes. At the same time, it is designed to be exceedingly easy to maintain, not least thanks to the MiniTec modular profile system as the design basis. The individual areas of the unit are easily accessible for service purposes, all assemblies and wearing parts can be easily replaced. The successful implementation is also the result of a functioning partnership, as the know-how and expertise of NOVEXX Solutions as a marking specialist and MiniTec as an automation expert complemented each other ideally for the realisation of the unit.

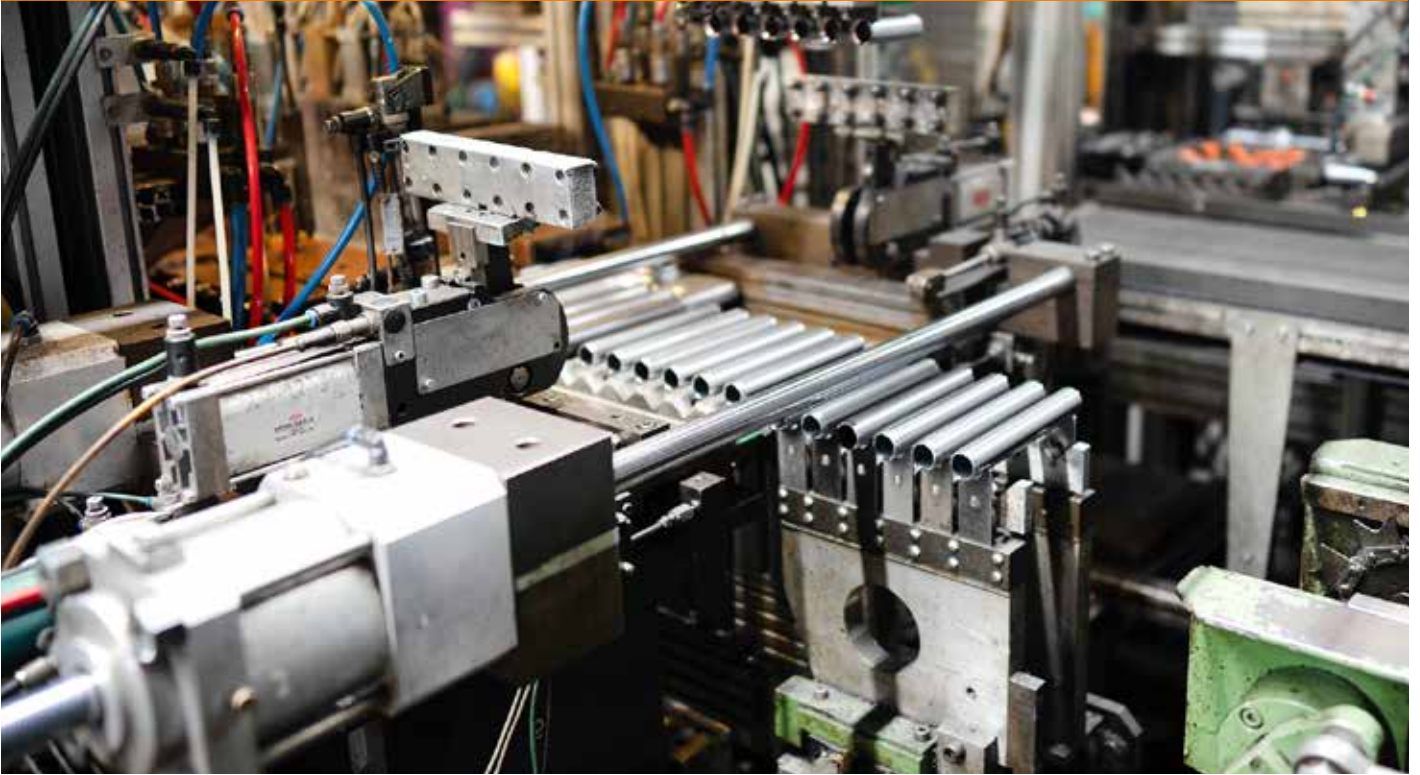


The labelling machine has an impressively compact structure and is also movable.



The conveyor belt also serves as a buffer section.

FULLY AUTOMATIC SOLDERING MACHINE FOR RADIATORS



Flux-free soldering offers important advantages for certain applications compared to other joining methods. This is the situation at Zehnder GmbH in Lahr, where a corresponding MiniTec line is used for the manufacture of tubular radiators.

Zehnder is an internationally operating full-range supplier of air conditioning system solutions and a healthy indoor environment. The product portfolio is divided into design radiators, convenient room ventilation, heating and cooling ceilings and air cleaning systems. At its site in Lahr near the Black Forest, among other things, the innovative company produces its tubular radiators of the type "Zehnder Charleston" for customers throughout Europe.

For many years, Zehnder has used a fully automatic soldering machine to join the smaller radiators, which operates with a flux-free process. It was originally

"NO MATTER WHAT THE CUSTOMER WANTS, WE CAN IMPLEMENT IT."

purchased from the Berlin specialists W&P Wolf & Partner GmbH, which was taken over by MiniTec several years ago.

Good reasons for soldering

The head of element production, Thierry Krebs, explained why they had opted for this soldering technique and a corresponding system at that time: "The

small radiators used to be produced in a special welding process. However, major problems with dirt and necessary rework such as deburring, etc. always occurred, also due to the confined space conditions. We therefore contacted Wolf und Partner to carry out tests with soldering as an alternative joining method." The aim was to produce clean radiators with less effort, less rework. The present day system resulted after more than a year.

Large in-house production depth

Most of the steps for manufacturing the radiators take place on the Zehnder site. Mainly the raw material, i.e. the tubes and coils (wound metal strip) come from external suppliers. The coils are first punched by Zehnder to form half-shells and are then welded together to form a header. At the same time, the tubes are processed to produce different lengths. The soldering rings are now placed in the headers.

The headers are then put together with the tubes and the soldering process is started. A header is soldered on each end of the tube group resulting in an element. The soldering process for each element lasts twelve seconds. Accordingly, 1000 to 1500 elements per shift are soldered – also depending on whether they have two, three or up to six tubes.

High degree of automation of the soldering machine

The soldering machine operates fully automatically – there is only one employee who takes care of the machine and a grinder, who checks the quality. The individual parts arrive, are placed in position, soldered and carried out again. The required number of tubes are provided as a bundle. The headers are removed from the boxes automatically and are fitted with the soldering rings.



The finished soldered elements are initially placed in temporary storage.



The tubular radiators of the type "Zehnder Charleston" are available to match every ambience.

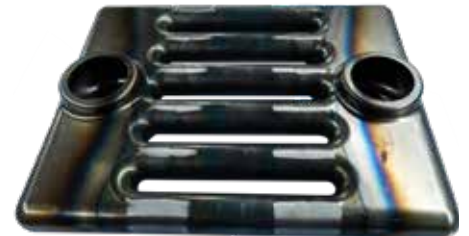
After the subsequent soldering process the parts emerge from the soldering machine and are first cooled. They are then automatically ground. An employee then tests the finished parts for 100 percent leaktightness and their visual quality.

If this is confirmed, the soldered elements are first placed in a warehouse. They are removed from there on a customer order basis and the radiators are produced using a stitch welding machine. After completion, the radiators are immersed in a water bath to test whether they are one hundred percent leaktight. They are then hung up and pass through various other process steps from priming to painting through to packaging and finally to the carrier company.

Many different radiators in the product range

There is a simple reason what the soldered elements are first stored temporarily and the actual radiators are only produced from them after a customer order is received, explained Krebs: "We offer our customers a large degree of flexibility in the configuration of their radiators. In addition to the various standard types, special shapes and sizes are also possible. A radiator

bent around a pillar, a radiator with five angles, a curved or s-shaped radiator, a four or five metre high radiator – whatever the customer wishes, we can implement it! In addition, there are more than 700 different colours to choose from."



No rework necessary: Flux-free soldering produces a clean result.

Soldering machine with clear advantages

The soldering machine is used especially for smaller radiators with an overall height of 260 to 400 mm. There it ensures fewer process errors and greater machining accuracy. Its advantages are obvious for Thierry Krebs: "With the machine we are able to produce significantly more precise elements than before. All parts always look the same. There is no longer the problem of slag or weld sputter getting into the



Thierry Krebs is satisfied: The soldering machine ensures high production quality of the radiators.

**“THE MINITEC
SOLDERING MACHINE
WITH THE FLUX-FREE
METHOD DELIVERS
OPTIMUM RESULTS
AFTER ALL THIS TIME,
WHICH WOULD NOT
BE POSSIBLE WITH
OTHER JOINING
TECHNOLOGIES.”**

process where the tubes are joined to the header. I always have the same result and also the best quality.”

Induction process

A flux-free method is used in the MiniTec soldering machine. In conventional machines, flux is used so that the solder spreads uniformly. However, it is also very harmful for the environment and for health. In addition, it constitutes a certain “time bomb”, as rust appears on the soldering point after a certain time. For these reasons, an increasing number of users want to do without flux and for the same reasons, for years, MiniTec has also only used flux-free methods. Krebs added another advantage: “The process would be much more complicated with flux. It wouldn’t be possible to produce the required quantity and with the required cycle time.”



Everything fully automatic: the soldering machine in use.

In the case of Zehnder, the workpiece is heated with the help of an inductor – and only in the place in which the heat is needed. The solder heats, and as there is always a shielding gas in the soldering chamber, it spreads uniformly over the soldering surface. It also gets into gaps and joints due to the capillary effect.

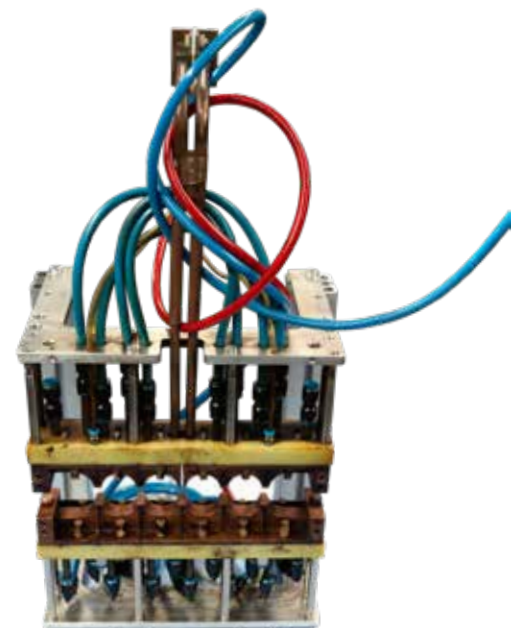
High reliability, even after many years

The soldering machine has been in use continuously since it was commissioned around 20 years ago. Thierry Krebs praised the reliability of the machine, but also the MiniTec service: “Working with MiniTec is decidedly positive. We are still optimising the machine, even though it has already reached a certain age. The responsible MiniTec employee, Sergej Hofmann, is extremely competent and customer focussed. He visits us time and again, revises drawings and discusses the relevance of certain changes with us.

The quality we demand is there and the optimisations have always led to the required result. The last part, which we have now installed, also functions really well and fault-free.

It was a complete inductor set, which MiniTec built for us. It was a challenging project as there are no drawings available. And then MiniTec had the

great idea of printing the inductor with a 3D printer.” Even after the many years of operation of the soldering machine, Krebs is still convinced of its advantages: “The MiniTec soldering machine with the flux-free method still delivers optimum results after all this time, which would not be possible with other joining technologies. For our small radiators it is still the best there is.”



MiniTec inductor from the 3D printer.

E-SCOOTER GARAGE WITH PROFILE



Indoor and outdoor version of the e-scooter garages.



Lucas Banaste and Maxime Giraudon.

The story begins in 2023, as the city administration of Paris banned the rental of electric scooters. The people who had got used to this electric mobility gradually bought scooters to travel on. Lucas Banaste, who worked in a high-rise building in Défense, faced a recurring problem: There was nowhere to park his e-scooter near his office. MiniTec France

produced a solution and developed two variants of a garage for electric scooters: an indoor and an outdoor version. Prototypes and preseries models were created in a minimum time and the way was paved for series production. The startup company Park'in then decided to develop marketable parking solutions: the "Park In" and the

"Park Out" version. MiniTec France not only provides production support, but also contributes technical knowledge and helps to arrange strategic partnerships. The result is a strong and very promising partnership.

INTERNATIONAL SALES MEETING



Relaxed mood at the ISM 2024.



MiniTec partners from all over the world are guests in Schönenberg-Kübelberg.

The world has become a global village. Whether corporation, SME or start-up: For many companies, international networking with customers and suppliers around the globe is the now standard, for MiniTec too. Customers on all continents can therefore trust in our product range and solutions competence. Against this background, intensive exchange with

our international locations and partners is indispensable, both by phone and in person. In April, the International Sales Meeting (ISM 2024) took place in the headquarters.

Apart from current product developments, the focus was also on the MiniTec SmartAssist worker assistance system and innovative installation

concepts. The participants also benefited from the exchange of experiences with the project management and with practical implementation issues.

And last but not least, meeting in person naturally also promoted the common "MiniTec spirit". No grandiose words are needed to describe the inspirational atmosphere.

FIT FOR THE WORKING DAY



Together with the Barmer Krankenkasse health fund in Kaiserslautern, an all-day event on the topic of health was held for our employees in April. There were many offers, which were very well received and were also obviously pleasing.



The KangaTech can be used to test muscle groups depending on the symptoms or a prior injury.

Mens sana in corpore sano is Latin and means "a health mind in a healthy body". This is particularly true for work life. After all, we spend a large part of our time in our workplace. Here too, a lot can be done for our health and for our emotional balance.

Physical checkup: which side is stronger?

Every person always has two sides: front and back, left and right, top and bottom, which should have a certain muscular relationship to each other. However, the strength distribution on these two sides is mostly different as a result of one-sided everyday posture such as sitting, sport activities or injuries/illness. This is called muscular imbalances, which

can lead to pain during sport or in everyday life. These side differences were determined at the health day using the "KangaTech", which gets to the bottom of the imbalances.

Body analysis: for a healthy centre!

A body check was used to determine the body "composition" in ten minutes, and what can be done to change something. To this end, these values were determined and discussed: body mass index (BMI), body fat percentage, visceral fat percentage, total body water, muscle mass and basal metabolic rate.

Healthy and ecological nutrition

A talk by the nutrition expert Miia Susanna Klein from Saarbrücken provided practical tips for an environmentally aware lifestyle without having to go without. It was also shown how each individual person can make a contribution to health and environmental protection through aware nutrition. The tips for healthy and tasty smoothies were suitable for this. The rule of thumb is: "Five a day". As fruit and vegetables should always be on the menu. The "brainfood" at the Barmer info stand in the company canteen was also very popular. Nuts and dried fruits are doping for the brain and are always healthier than a chocolate bar. Everyone was convinced of this.



There were also many individual tips.

DOERS WITH PROFILE

We at MiniTec are not only creative for our customers and repeatedly find a suitable solution their requirements. Many of our employees are also inventive in their private lives. Over the years they have created astonishing constructions on the basis of our modular profile system. Many of them show what bright and creative minds work at MiniTec.

Several interesting constructions were available to admire at this year's "InHouse" trade fair

We (the editorial team of "Connect") are of the opinion that many of the creations are worth presenting here. We

will be doing so at irregular intervals starting with this issue.

STABLE AND WEATHER RESISTANT

The profile swing of Harald Jann,

who works in the MiniTec organisation (IT) department, shows that it is not only the engineers and technicians who have good ideas and are skilled hobby mechanics.

He designed and built a swing for his garden, which is so stable that both children and adults can use it. The swing made with 90x90 profiles can be loaded with up to 450 kilograms. A major advantage of these materials: They are very stable and absolutely maintenance free and weather resistant.



The "generation swing" of Harald Jann.

THANK YOU FROM KENYA

Anyone who makes donations and supports campaigns is naturally pleased to receive feedback on their commitment. We are always pleased to receive news

about our social commitment in Kenya/Africa. MiniTec has been supporting the Saint Arnold Sports Academy (SASA) there for several years. It is a sports

club that was especially founded for girls aged 10 to 16 who are from the slums of Soweto.

The SASA volleyball camp in April 2024 provided much pleasure for the participating girls and motivated them to return to school. MiniTec again sponsored the volleyball camp.



The team with its trainer; MiniTec sponsors the sports activities.



LONG-SERVICE EMPLOYEES AT MINITEC



Dirk Kohlmayer has been working in the field for MiniTec for 20 years.



Stephane Coyen in the engineering department:
Since 10 years at MiniTec.



Since 5 years in the preassembly:
Patrick Faber.

We are pleased to celebrate with our employees who have work anniversaries this quarter and thank them very warmly for their many years of support and loyalty to the company:

- Vladimir Spuling (shaft machining, turning): 30 years
- Carsten Ehlhardt (shaft machining, turning): 25 years
- Dirk Kohlmayer (field service): 20 years
- Michael Malerow (assembly): 20 years
- Markus Zimmer (engineering): 20 years
- Waleri Witt (caretaker): 15 years
- Stephane Coyen (engineering): 10 years
- Patrick Faber (preassembly): 5 years

CONNECT READER SURVEY



In the last issue of "Connect" we asked our readers for feedback on the MiniTec customer magazine. The editorial team makes every effort to find interesting, informative and even entertaining content for each issue and to present it attractively. We were interested to find out whether the readers see it the same way. The first 50 submissions received a MiniTec tape measure and have been notified.

We were very pleased to receive numerous submissions and basically positive feedback.

A few facts and figures:

- 98 % of the survey participants read "Connect" regularly
- The articles on products (100 %) and solutions (92 %) are particularly popular
- 83 % of the readers use the topics and tips in their everyday work

We were particularly pleased about the ideas we received:

- More ideas for small equipment building and apparatus for workshops
- Insights into production processes
- Application examples, that you would not think of initially

We thank you all for the active participation and look forward to including the suggestions made.



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Easier from A to B: **MiniTec conveyor technology**

When it comes to getting workpieces to the right place and in the right position at the right time so that they can be machined, assembled or fitted, **MiniTec** is your competent partner: We offer a wide range of components and conveyor systems that meet all requirements in the areas of factory automation, material flow, material handling and intralogistics.

What all solutions have in common is their flexibility, because the **MiniTec** modular profile system allows them to be changed and reconfigured at any time. You can either design your conveyor systems yourself or make adjustments to them. make adaptations to them, or you can entrust **MiniTec** with the implementation of turnkey systems up to commissioning on site.

**When will you discover
the art of simplicity?**



October 08-11, 2024 | Fair Stuttgart | www.minitec.de/en/motek2024

