

Connect

03

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2024



SERVICE

The new MiniTec webshop for business customers

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SPECIAL PURPOSE MACHINERY MANUFACTURE

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Simply more efficient: **MiniTec-Automation solutions**

When it comes to the automation of production processes very different technologies are required. In line with the motto "The Art of Simplicity", **MiniTec** offers complete solutions from a single source.

Whether robots, linear axes, conveyor technology or automated guided vehicles (AGVs): We combine the different worlds to create optimum overall concepts with which we can sustainably increase the productivity and efficiency of our customers in the long term.

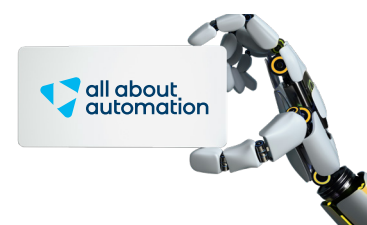
Our solutions are just as individual as the requirements. Find out more now during a visit at **Motek** or **all about automation**.

We will be presenting innovative concepts for automating processes at our stand. The focus will be on our flexible production cells, which can be used for any task.

We look forward to your visit!



Experience live now!
Motek Stuttgart, 8.-11.10.24
all about automation Düsseldorf, 1.-2.10.24
more information: minitec.de/service/messen-events





DEAR READERS,

The variety in special purpose machinery manufacture is as large as the range of requirements in operational practice. The design depends on the tasks or rather the goods to be produced. And these are very varied.

Individual solutions are also required for conveying technology and the design of workplaces. After all, the parts and components to be machined must arrive in the right place at the right time. A specific orientation is often necessary, for example, in machining or packaging processes. Efficiently operating machines and systems and a material flow that is optimally aligned with the needs of production are prerequisites for economic production and are thus essential for the survival of manufacturing companies.

To achieve this, many proverbial wheels must turn and mesh and the designs and workflows must be based on sound technical knowledge and experience. We at MiniTec have been active in the machinery and plant engineering sector for over 35 years. Our engineers, technicians and automation specialists are experts in numerous different fields and have the experience you need for your projects.

Special machines, material flow solutions and individually design workplaces cannot be ordered from a catalogue. Nonetheless, in this issue of Connect we show you several interesting customer projects that demonstrate how diverse the tasks and how clever the solutions can be. The focus is always on economic efficiency and the ergonomics of workplaces.

We would be pleased to discuss these tasks with you and work on the optimum solution together. If we do not have the specific expertise needed for part of the solution in house, we find the right experts in our extensive network. Thereby making sure that you get everything you need "from a single source".

We are pleased about your interest and look forward to your enquiries

Yours sincerely

A handwritten signature in blue ink, reading "A. Böhnlein".

Andreas Böhnlein
Director of Engineering

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The result was accelerated assembly, improved quality and a shorter induction period for new employees.



AUTOMATION FOR PLASTICS PROCESSING

The MiniTec customer apra-plast develops and produces all kinds of housings, panelling and parts. The machinery with which the company manufactures these are as individual as the products themselves. For many years, the company has therefore relied on MiniTec as its partner.



NEW: THE MINITEC WEBSHOP FOR BUSINESS CUSTOMERS

With the new webshop, the ordering process at MiniTec is easier, more digital and faster. It offers business customers immediate price transparency and even faster order processing for all shop products.

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TRADE FAIR CALENDAR - AUTUMN 2024

Autumn is almost here and with it, several interesting trade fairs and exhibitions. MiniTec will again be presenting itself at the most important trade fairs of its industry.



Easyfairs GmbH/flickr.com

all about
automation
düsseldorf

all about automation, Düsseldorf
01 to 02 October 2024
Areal Böhler in 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.

At the trade fair, MiniTec will be presenting systems, components, software and engineering for industrial automation and communication and MiniTec SmartAssist.

The innovative worker assistance system opens up to companies, completely new possibilities for interactive employee support. The MiniTec assistance system ensures faster learning of workflows, not only in the assembly department but also for packing in the warehouse and dispatch department and provides individual support during the work.

Another centre of attraction at the trade exhibition is on innovative concepts for the automation of production workflows. We focus on our flexible production cells, which can be used for any tasks. Always true to its motto "The Art of Simplicity",



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

The Motek International Trade Fair is the leading event in production and assembly automation, feed technology and material flow, rationalisation through handling technology and industrial handling.

Apart from the modular production cells, MiniTec will also be presenting its MiniTec SmartAssist worker assistance system at the trade fair.



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

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

The Florian trade fair in Dresden is all about fire brigades, civil protection and disaster control. Individual solutions are required for the equipping of fire and rescue stations. The modular aluminium profile system of MiniTec offers diverse options – be they mobile container racks, vehicle fitouts, breathing protection workshops or equipment storage.



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

THE MINITEC WEBSHOP FOR BUSINESS CUSTOMERS



Until now, customers visiting the MiniTec website had access to comprehensive information on the modular profile system, could place required items in a trolley and enquire about them. The product page has now become a real B2B shop, which went live in September!

The MiniTec webshop offers business customers immediate price transparency and even faster order processing. The MiniTec product range includes well over 3,000 items, many of which are so-called “shop products”. This means that they are available in the shop and can therefore be ordered directly. They are recognisable by the trolley symbol with an orange background. Enquiries for all other products can be sent to MiniTec as before. The user can also optionally “only” enquire about shop products, for example, if they are not authorised to place a direct order due to in-house requirements. If you only want to view shop products, simply click “Display direct order products only” to filter out this selection.

The shop offers diverse options, especially for the core components of the MiniTec modular system, the aluminium profiles in all their different variants. Therefore, in addition to individual profiles in standard manufactured length, complete packing units with whole rods or rods separated in the middle can be ordered – with a corresponding price advantage. It is also possible to have profiles cut to individual sizes.

Intuitive ordering process

Ordering through the shop couldn't be easier. Simply select the required products, choose the specifications and quantity and place them in the trolley, one after the other. Then proceed to the order checking. Here the user can see all the products they have selected with their respective prices in an overview and if everything is to their liking they click “send”.

They then receive automatic confirmation of the incoming order. After MiniTec has processed the order, it sends an order confirmation with all further details.

Two-part trolley

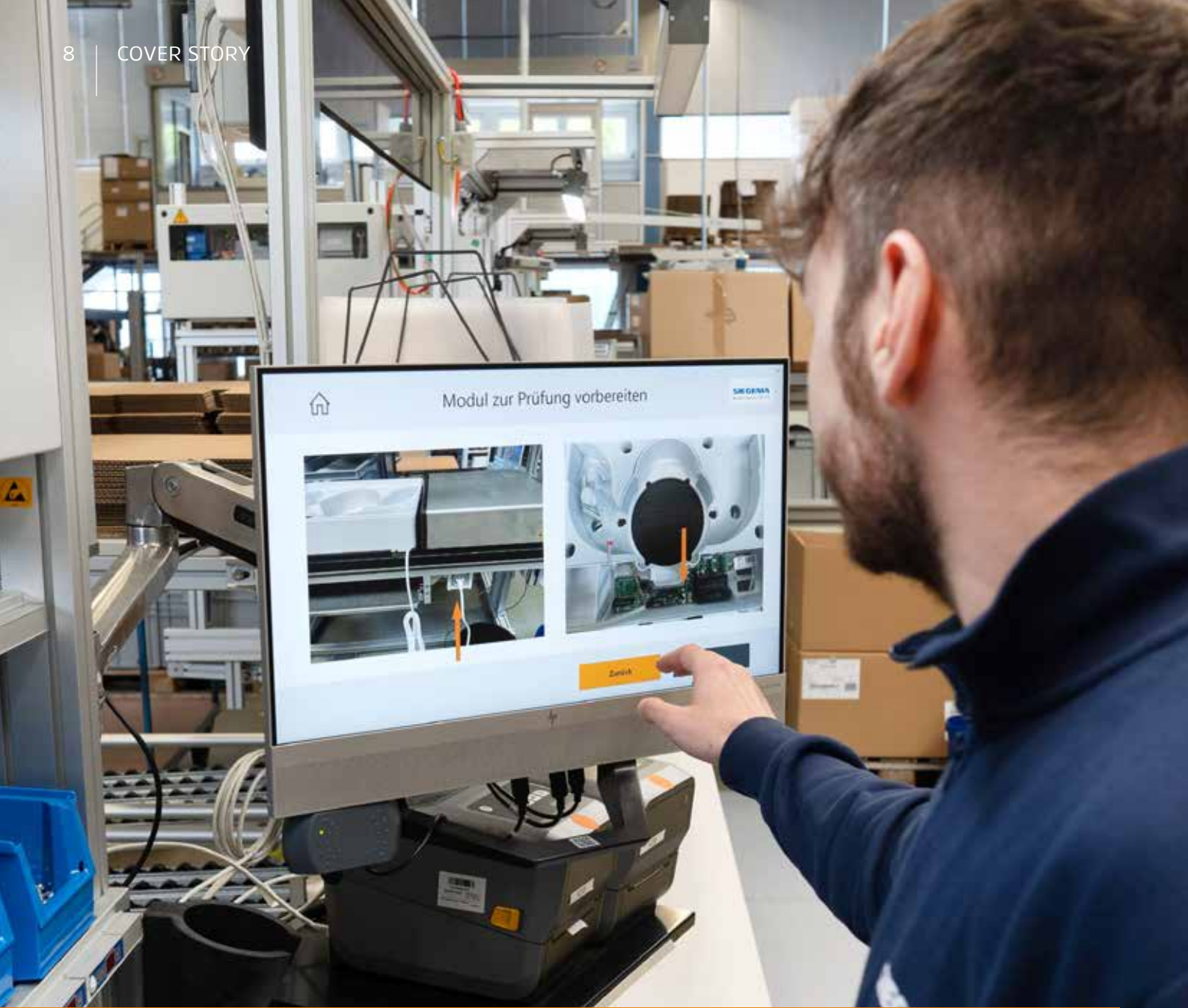
The trolley now has two areas – one for orders and one for enquiries. Accordingly, the items that the user wants to order are added to an “order list”, while products to be enquired about are placed on an “enquiry list”. If an order has been completed and there are still products on the enquiry list, the user is informed accordingly so that they can also close this process.

The history in the user account is now also divided into areas with an overview of all orders placed and one for all enquiries made. And just like the familiar enquiries, previous orders can be reordered at any time.

ACTIVATION AND USE

To use the MiniTec shop, you must be registered as a business customer. Which requirements must be met and what you have to do for the activation is described on a shop info page on the MiniTec website www.minitec.de/webshop





FLEXIBLE ASSEMBLY WITH DIGITAL ASSISTANCE

For the manufacture of a new room ventilator, Siegenia engaged MiniTec to build an assembly and packaging line, including the MiniTec SmartAssist worker assistance system. A progress report.

Siegenia dedicates itself to the topic of room comfort for which it offers solutions for windows, doors and sliding door systems and for ventilation and smart home applications. At its AERO/DRIVE site in the Westphalian town of Wilnsdorf (near Siegen), the company develops and builds decentralised air handling units. The production depth is enormous and not only includes building the ventilation components, but also the motor drives, producing the printed boards for the control unit and development of the corresponding software.

New product as trigger

The company has high innovative strength and continuously develops its product range. Accordingly, in 2022, it began working on the design of a new, extremely compact wall-mounted ventilator named the AEROPLUS WRG. This was to be placed on the market in the spring of 2024 and made available through the Siegenia online shop and other platforms.

The AEROPLUS WRG enables simultaneous regulation of supply and exhaust air in a single solution and has many other important features such as low inherent noise and high sound insulation. In addition, it has energy-saving heat recovery during the cold period thanks to a rotary heat exchanger.

The new appliance is made up of three components – a wall-mounted module (with the mainboard), a housing module and a tubular module. The modules are each assembled independently and are sent to the warehouse separately – to enable a flexible response to orders. The person responsible for the project, Tomm Groß, explained: “With this project, we also wanted to break the mould in the production. Because the new ventilator is planned to have a large number of different equipment options, we decided not to produce

it in a one-piece flow but in separate components”. This is also a matter of sustainability. This is due to the fact that there are different weather protection variants, of which several are normally enclosed in a box. Those that are not needed then end up in the rubbish bin. This is no longer to be the case with the new ventilator. Here an online configurator is the starting point for each order. The customer defines

MODULAR PRODUCTION REQUIRED

“their” ventilator and then only receives the parts they need.

Accordingly, the production had to be designed to be modular and flexible, while at the same time ensuring fast deliverability on receipt of an order. The three main components are to be produced independently of each other, but must nonetheless all fit together later.

Individual workplaces with worker assistance

When it came to choosing the project partner for the workplaces, the company quickly opted for MiniTec based on positive experiences in the past, Groß said: “We initially worked together to design a preliminary concept for the workplaces, which was fed into a development agreement for the elaboration of the detailed concept. During the concept phase, we were also introduced to the MiniTec SmartAssist worker assistance system and were immediately convinced. We particularly liked the fact that, with the MiniTec SmartEdi, we are able to create our own recipes – i.e. the interactive assembly instructions.”

Ergonomics is important

With regard to the workplaces themselves, the company opted for the implementation of three stations, to enable parallel assembly of the three components. Ergonomics played an important role in the design of the workplaces. All tables have electrical height adjustment, so that the employees can set them optimally for their own use.



With the modular system, the workplaces can be designed completely flexibly.



The assistance system provides step-by-step guidance through the assembly process.

Access to the materials was also considered: “The challenge was that we had to accommodate everything, from the smallest screw to the relatively large housing, within the employee’s field of reach – and do so in a way that works for people who are 1.60 m tall as well as for people who are 1.80 m

EASILY CREATE ASSEMBLY INSTRUCTIONS YOURSELF WITH MINITEC SMARTEDI

tall. MiniTec and its experience were an enormous help here”, said Groß. With that which was achieved, a new standard was clearly established for the manual workplaces, which has already received much attention and approval from other parts of the company.

The material provision for all small parts and the subassemblies, which are produced in SLCs (small load carriers), was switched over to kanban: “For the large components, which we receive on pallets, we integrated a pallet space at

each workplace, so that the employee can take the components directly from the pallet and install them. This saves us the effort of transferring and repacking,” explained Groß.

Different assistance modules

The MiniTec worker assistance system is used in all three workplaces. The interactive guidance of the employees through the assembly process is assisted in particular by touch monitors and pick-to-light light strips. The latter indicate to the employee from which container they must take which part and how many. The screen is then used to demonstrate where which part must be placed and assembled.

The new MiniTec SmartAssist “external tasks” module is also used, namely for the assembly of the wall-mounted components with the integrated mainboard. There are two versions of the printed board, “Basic” and “Smart”, with correspondingly different software settings. The latest version at the time of production is always loaded. After the employee has installed the mainboard, an external test process is initiated in a specific place from MiniTec SmartAssist – this is a kind of quality check, to determine whether the

right software is on the printed board, whether all connections are correct and whether everything works. If the result is positive, multiple copies of a label are then printed out so that it is possible to trace from which batch or series the product comes, if a problem should arise later.

Continuous digital process

The assembly processes at the MiniTec SmartAssist workplaces of Segenia are controlled completely digitally, all three workplaces are paperless.

The workflow for the aforementioned wall-mounted module is the most complex due to the integration of the external quality check. As with the other modules, the production order is initiated through the planning and scheduling department. The nameplates for the wall-mounted modules are generated via the production order. These all have a consecutive numerical code and a QR code that each contain the production order, the serial number and the semi-finished part number.

In each assembly area there is a PC with monitor, on which, in addition to MiniTec SmartAssist, the EOL software (end of line) and the IGH production control software also run. On the latter, all orders for the workplace are displayed on schedule from the top down and must be worked through accordingly.



The new AERPLUS WRG wall-mounted ventilator offers many innovative features.

The employee logs into the order at their terminal via IGH. With the login, the nameplate labels are printed out automatically, which indicates the number of appliances to be built. Based on the item number from the order, the employee now sees which recipe must be loaded in the assistance system. They select this at the touch monitor and off they go.

The nameplate labels have a QR code, from which it can be seen which software must be loaded onto the appliance. The employee uses a hand-held scanner to scan the QR code and the EOL software then starts. It loads the correct software based on the scan and decides which tests are to be performed.

If the employee has finished the assembly of the wall-mounted module, they are prompted by the assistance system to initiate the test process, which they do directly from the MiniTec SmartAssist. After completing the test, they receive feedback on the test result, which is displayed on the screen.

If all tests have been completed correctly, a test label and a shipping label are printed. And at the same time, a test record is filed with the date and all relevant data. This ensures traceability at all times in case of problems.

Easy maintenance using the editor

Groß creates the instructions with the MiniTec editor himself: "I initially created all the recipes at my workplace using the CAD data. We then repeatedly refined and optimised them based on their practical use."

And how did he get on with use of the software? Very well, stated the production specialist: "Here, MiniTec delivered precisely what it had promised. It really is relatively easy to implement the recipes in the MiniTec SmartEdi. You can create your own images, file them, upload them and drag them in. Our own layout was also created quickly. This simplicity also continues in the addition or repositioning of pick-to-light strips. They can be unclipped and clipped back on in any place required. Within an hour, we had installed one more pick-to-light module."



Cleared up: Everything in its place.



Clear assembly instructions



The material is supplied from the back by kanban.



When everything's finished the appliance is sent for packing – also assisted by MiniTec SmartAssist, of course



WITH THE MANUAL WORKPLACES, TOMM GROSS AND HIS TEAM HAVE CREATED A NEW STANDARD.

High acceptance by the employees

The employees are also very keen on the digital assistance during assembly. Following their initial scepticism, they are now pleased with the interactive support, Groß said: "It makes them more assured and increases their certainty that they are doing good quality work. At the beginning, we naturally had a learning process, for example, to find out how streamlined the work instructions must be. But because we involved the employees in the optimisation, the system is now very well accepted."

Certainty during the assembly also plays a large role against another background, Groß said: "Certain ventilation appliances are produced less often than others. Here our challenge used to be how an employee could have the routine required for high quality assembly if they haven't produced an appliance for several weeks. Thanks to MiniTec SmartAssist, we now have the advantage that the instructions are directly available and fault-free assembly is ensured."

Not only the assistance system is well received by the employees. According to Groß, from the outside alone, the workplaces always look neat and tidy, because each part is always where it should be: "When the employee is finished, they no longer have to put away tools, do not have to clear up anything. The workplace is always equipped. Each employee only needs to enter their required height and can then get started. This is all positive."

Faster assembly, higher quality

According to Groß, digitalisation of the workflows in MiniTec SmartAssist ensures an improved cycle time and also higher quality: "Until now, the worker had a printed-out version of the respective workplan, which they tended to consult rarely during assembly.



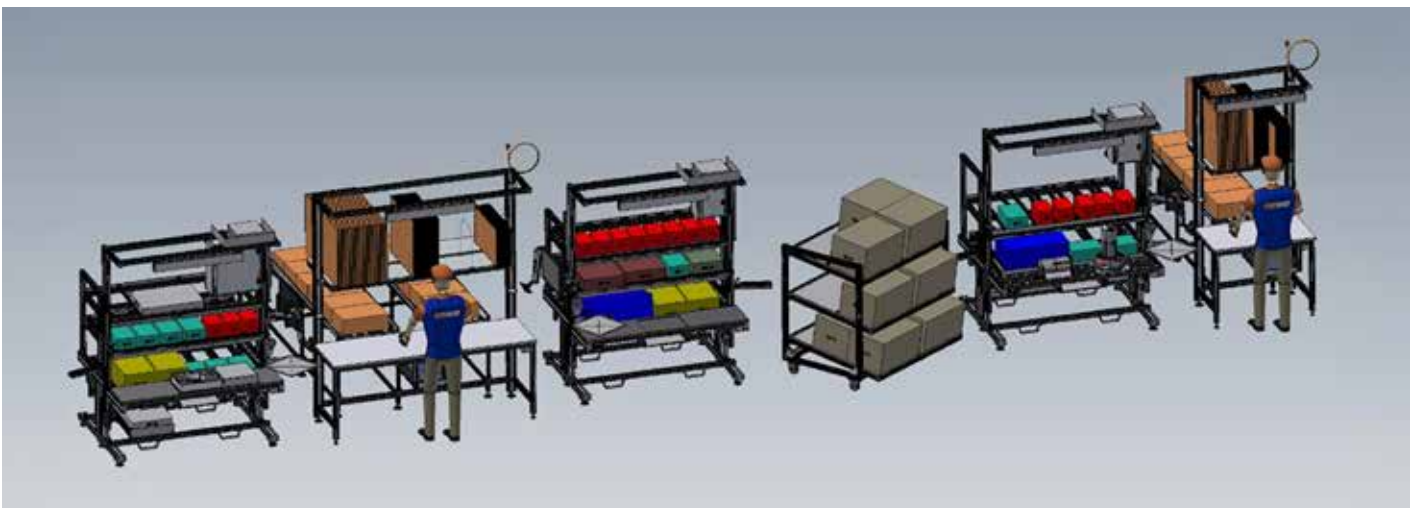
Worker guidance by pick-to-light: Light signals indicate from which box the next material is to be taken.

Thanks to MiniTec SmartAssist, they have the required steps within their sight at all times. They are therefore far more in the flow, are simply also surer about what they are doing. This makes the quality even better!"

Training time shortened significantly

The induction period for new employees has also been reduced with the assistance system, Groß said: "Our supervisor recently told me that he has never needed less effort to train new employees. He merely showed them the steps once and from the second appliance the employees were able to assemble it on their own."

According to Tomm Groß, due to the positive experiences, Siegenia will opt for MiniTec again in the future, not only with regard to the assistance system but also workplaces in general.



The workplaces in the model: Ergonomics plays a large role in the design.



MATERIAL FLOW: MORE THAN JUST FROM A TO B

Material flow plays a central role in factory automation, warehousing and feeding technology. The tasks are diverse: among other things, they include fulfilling transport tasks optimally, concatenating machinery and workplaces and buffering goods. MiniTec offers an extensive portfolio of components and solutions in this area.

Material flow is an integral part of production and intralogistics, in order to structure and organise the in-house processes in a factory. If it is designed effectively, production processes can be optimised and waste avoided. Finally, material flow enables the connection of machinery or machining stations and conveyor sections and is even suitable as a buffer area in production, in order to control manufacturing efficiently. All kinds of different conveyor systems are used which, for example, enable workpieces to be brought to the right place at a defined point in time so that they can be machined, assembled or equipped. In addition to tailored solutions, MiniTec also offers a wide range of components for conveyor belt constructions which can be made to meet the respective requirements.

Integration as the key

An important aspect, especially in smaller and mid-sized companies, is also to integrate manual workplaces into production processes effectively and economically. After all, each interruption in work processes leads to a loss of time in production and thus also increases unit costs. It is therefore necessary for sufficient material to be available on hand at the workplace, so that the worker can concentrate on their assembly task.

Large companies even use assembly workplaces grouped together and concatenated to form assembly islands to optimise workflow.

The modular system as the basis

Time and again, for many years, this is an area in which the concept of the MiniTec modular system has proven to be a major advantage. Alongside the standard profiles, it provides all the necessary components: From simple assembly trolleys and handling equipment through to complex conveying equipment. The material flow experts of MiniTec help customers to work out assembly processes, design assembly workplaces, which ergonomics, warehouse logistics, the transport of goods and the provision of information.



The TSG transfer system is very frequently used for automation.

WORKPLACES FOR THE DISABLED

MiniTec offers ergonomic workplaces for the disabled in the modular system. This covers the complete workplace range through to digital assistance and training systems and thus supports integration in companies and in workshops for the disabled.

Non-ergonomically designed workplaces are frequently the cause of employees' health problems. This is particularly applicable to the disabled. Beyond the avoidance of health impairments, particular requirements apply to workplaces for the disabled. Ergonomic workstations and worker assistance systems have been one of MiniTec's core competencies for many years. The specialists for workplace design at MiniTec develop workplace systems to the newest insights, including with regard to the requirements of digitalisation. Particularly for people with disabilities, the systems open up

new opportunities for their occupational participation in companies or in workshops for the disabled (WbfM). With the help of suitable assistance systems from MiniTec, employees are enabled to carry out work independently, even after a short induction period. As independent working is an important step towards increasing or regaining performance or rather the ability to earn a livelihood and integration in work life. This is also often supported by appropriate continued vocational training and further development of the employee concerned's personality.

Individually adapted

In workshops for the disabled (WfbM), the focus is on participation of the employees in work life. This can be very different depending on their disability. Accordingly, the workplaces must meet the specific requirements and personal skills of the individual persons. This ranges from ergonomic adjustments through to interactive assistance systems. In some cases, specific tasks are created and suitable apparatus is developed to integrate an employee in the world of work.





With MiniTec SmartAssist, completely new possibilities for interactive employee support open up for workshops.

MiniTec has been equipping workshops with tailored workplaces for many years. These are not off the shelf solutions, but instead the solutions specifically deal with the limitations and needs of the employees within the context of their tasks.

Systematic workplaces

All MiniTec workplace systems are based on the proven and flexible MiniTec modular profile system. A comprehensive range of accessories and the complete freedom of the MiniTec modular system enable individual implementation of single or team workplaces, which are exactly adapted to the special needs of the employees.

This is a fundamental condition, especially in workshops for the disabled (WfbM). Height-adjustable workplaces prevent tension and postural defects caused by incorrect sitting positions and allow alternating working in a sitting and standing position. The workplaces must also provide a variable underclearance for wheelchair users. At the same time, the arrangement of tools, measuring equipment and workpieces must be adaptable to the physical circumstances of the employees.

ERGONOMIC WORKPLACES WITH ASSISTANCE SYSTEMS OPTIMISE WORK PROCESSES

The workplaces can be supplemented with Pick2light, a system that uses different coloured light signals to indicate the required components in the supply shelf to the employer. This enables identification of the storage locations and the required number of items in the shortest time and with great certainty. The modular system is robust and is characterised by its high user friendliness and easy installation. The system can be put into operation in the shortest time without any programming knowledge.

Worker assistance at the workstation

With MiniTec SmartAssist, completely new possibilities for interactive employee support open up for workshops. The assistance system ensures faster learning of workflows for the assembly and individual support during the



MiniTec is specialised in workplace systems and thus contributes to the integration of people with disabilities.

work. It guides the worker through the assembly process step by step by displaying the respective required tasks on the screen with the help of texts, graphics, photos or videos. There are various options available for process support and interaction, as the system is modular and allows the activation of all kinds of different hardware components, for example, PickToLight lighting strips, touch monitors, laser projectors or hand-held scanners. At the same time, MiniTec SmartAssist is used for quality checking and documentation. Orders with smaller lot sizes or more complex tasks can also be implemented with them. A special feature is the intuitively operable MiniTec SmartEdi editor. This enables workshops to easily create the respective work instructions themselves.



All MiniTec workplace systems are based on the proven and flexible MiniTec modular profile system.



EVERYTHING'S FINE WITH MINITEC CONVEYOR TECHNOLOGY

Peter Kwasny GmbH is a leading manufacturer of paint sprays. Segmented chain conveyors from MiniTec are used so that the cans are transported reliably through the production and are buffered if necessary.

Professional aerosol paint systems are the métier of Peter Kwasny GmbH. The family-run company with 450 employees produces paint sprays, paint sticks and preparation products for all kinds of different requirements and markets. Around 35 million spray paint cans leave the factory each year. The customers are the international automotive and paint industry, specialised trade, the manufacturing industry and DIY stores. In addition to its headquarters in Gundelsheim near Heilbronn, the company has a logistics centre in Sinsheim and several branches abroad.

The production has an unusual vertical range of manufacture and extends from mixing the paints through to the finished, labelled can. After the manufacture and finishing, the paints are first filled into containers with all kinds of different sizes, from the IBC (Intermediate Bulk Container) to the five-litre tub. These are then sent for aerosol filling. After filling the spray cans, they are sealed with valves and gas propellant is added. In the next area, the packaging takes place,

i.e. the spray head cap is fitted and the label and coding are attached. Finally, the finished products are palletised in an automatic carton sealing machine.

Longstanding partnership

The cooperation with MiniTec goes back a few years. Michael Seidler, chief production engineer at Kwasny, remembers: "We started in 2016 with a project in which we equipped continuous scales and spray head machines with segmented chain conveyors. We built accumulation sections behind the machines, where the cans are buffered for the next assembly step. Two years later, we extended this constellation with larger conveyor sections in several lines. All four continuous scales and all four spray head machines were equipped with these. In 2020, a new machine was added, our special 2-component production in which we equip a spray can with a hardener cartridge. This system, i.e. the whole can transport and turning process, was again completely concatenated by MiniTec."

Good reasons for MiniTec segmented chain conveyors

Kwasny has a continuous production system in which the spray cans are manufactured in a “first in, first out” line. They must be evaluated by the quality assurance according to the production order and also coded by date and time. Here the MiniTec segmented chain conveyors have proven to be the best solution, because they make sure that the cans are transported tidily in a line.



MiniTec segmented chain conveyors have proven their worth, because they make sure that the cans are transported tidily in a line.

SMALL CURVE RADII, HIGH BUFFER VOLUME

Previously, Kwasny opted for conveyor sections based on steel frames, but these are increasingly being replaced by MiniTec systems. The reasons for this are diverse, Seidler said: “One advantage of the segmented chain conveyors from MiniTec is that they allow very small curve radii, which means we can buffer more tightly. In addition, as a result the section route can be easily redirected and continued in another direction.

And as we are very confined, we can also easily install an offset or deflect a bit to the left or right and not only run in a straight line.” The flexibility of the MiniTec system is a further beneficial advantage: “We frequently reconfigure details in the production processes. And as the machines can be very easily tied to the profile system, we can simply integrate small additional solutions such as stoppers, etc. In case of changes, holes repeatedly have to be drilled in the stainless-steel sheets, some of which look like Swiss cheese.”

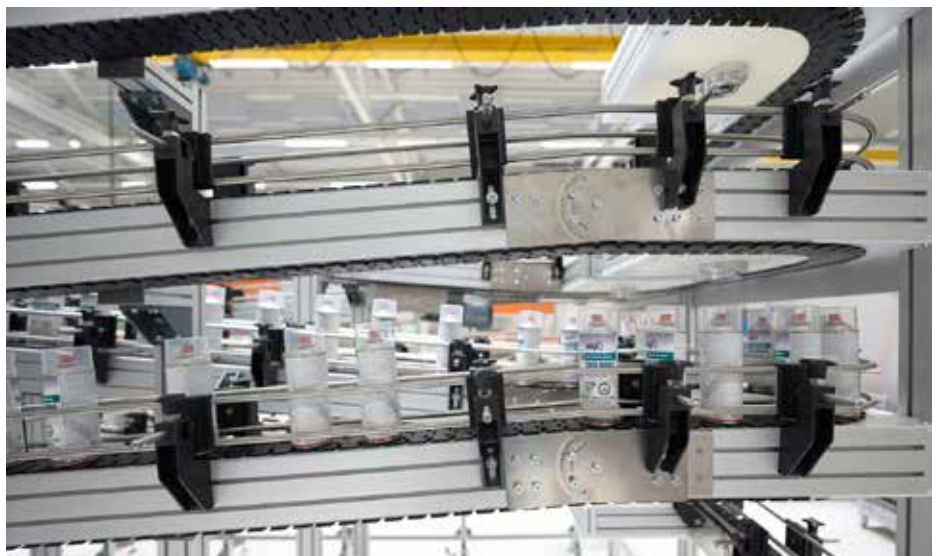
Last but not least, the MiniTec conveyors are easy to clean: “With paints, a minor accident occurs quickly, i.e. something leaks somewhere. Such contaminations are very easy to remove from the aluminium profiles and this is another reason why we are very satisfied with this system”, added Seidler.

Space-saving vertical buffering

Kwasny had to further increase its productivity to meet the rising demand for its spray cans. Which is why it wanted to automate the previous



Michael Seidler is convinced of the advantages of the MiniTec solution.



Solution in the tightest of spaces: By conveying vertically, the accumulation capacity has been increased enormously.

line still further. Thus, the most recent project to be started at the beginning of 2024 was a buffer section for the last remaining assembly line. There the cartons are currently still packed manually, but will soon also be automated. And this required the MiniTec buffer section – to buffer the spray cans during the format change.

In the newest installation, alongside a normal segmented chain conveyor section, an additional unit with ascending conveyor is used. “The reason for us moving vertically for the first time is that so little space was available. The area was simply not sufficient to buffer the cans on it. The concept of conveying the workpieces vertically and then back down again means that we gain an enormous amount of capacity in a very small space”, explained Seidler. A further measure to gain space and use space optimally in the new installation involved raising the upstream, normal conveyor section so that large boxes with material can be stored under the conveyor section. Our buffer capacity has increased enormously with the new installation. Depending on their diameter, up to 400 cans can be buffered on the section before the packing. Up to 600 cans can be parked on the section with the vertical buffer, which runs between the packaging and the planned packing system.

Goal achieved

The whole project was completed within a few months; Michael Seidler praised the good cooperation: “That was completely unproblematic, MiniTec is always easy to reach. The exchange of drawings and arrangements worked very well. The installation on site was also completed very smoothly, everything fitted!”



MiniTec segmented chain conveyors allow different curve radii.

After three months of practical operation, the chief production engineer verified that the installation is running very well

PLENTY OF CAPACITY IN THE SMALLEST SPACE THANKS TO ASCENDING CONVEYORS

to date: “Admittedly, the system will not be complete until the new automatic packing system has been implemented. But the MiniTec installation already provides a noticeable improvement. We can buffer more. The employees no longer need to rush. Because there are larger buffer areas, they can now go to a fault stress-free, because the whole plant doesn’t come to a standstill. That was the intention of the buffers and it works very well.”

Flexible cooperation

In general, in projects with MiniTec the configuration of the respective conveyor solution and the task sharing differ from case to case, Seidler said:

“Sometimes we have only a conveyor system with a drive motor, in other cases a control is also included. Everything takes place hand-in-hand, in close consultation and cooperation. The most recent installation included the MiniTec control cabinets, and Kwasny created and integrated a few interfaces for this. Where another stopper has to be fitted, etc. so that the back pressure does not become too high.” In such cases, the in-house electricians reconfigure a bit, because it is only when the production process is up and running that you see whether there is still a need for optimisation.

Other projects are being planned

Due to the successful cooperation in every respect in recent years, the next projects with MiniTec are already being planned, Seidler said: “On the one hand, we will change over several conveyor sections from steel belts to the MiniTec system. In addition, we are currently planning an automatic depalletiser, which places empty cans on an assembly table. And as we – as mentioned – are very confined in the production hall, a so-called omega conveyor is in consultation, which conveys cans vertically and back down again so that a passageway is created. There is still much to do.”



PRODUCTION LINES FOR PHOTOVOLTAIC MODULES

Photovoltaics (PV) is currently experiencing a large renaissance. Climate change, the energy transition and decarbonisation are causing a highly increased demand for PV modules worldwide – and thus for significant expansion of the production capacities in the solar industry. In this area, MiniTec is specialised in production facilities for photovoltaic modules.

The demand for solar systems increases consistently. As a consequence, an ever-growing number of photovoltaic modules are bought. Whereas in the past, the leading production companies were mainly Asian, production in Europe is now increasing again. Even though this is politically intended and is subsidised, it is nonetheless necessary to produce at competitive prices. Highly automated production facilities are the key to survival in the market.

MiniTec has been specialised in production systems for photovoltaic modules (PV) since the mid-nineties. The modular solution concept ranges from individual component parts to complete production lines. The MiniTec flexible modular profile system makes sure that the system can be very individually adapted to the customers' requirements. From the layout of the system to the design, assembly on site, commissioning and training of employees. MiniTec offers everything needed from a single source.

Designed and installed to fit perfectly

Photovoltaic modules are manufactured in typical substeps. Such a system basically consists of workstations, buffers and conveyor sections between them. In addition, special equipment is also required. MiniTec implements all this as an efficient complete solution. Where in-house products are not available for individual areas, for example, for stringers, lay-up or laminators, proven components of efficient partners are integrated.

MiniTec shows that, particularly in this field, new technologies for the energy transition can also be created and marketed successfully in Europe or rather Germany.



Temporary storage in the production is highly automated.

CONTINUOUS PACKING

The MiniTec modular system with profiles, linear technology and components for many areas of use offers flexibility and freedom for all kinds of constructions. In cooperation with MiniTec, the drinks bottling company has developed and implemented packing machines with conveyor sections that have proven their worth in daily use.



With the help of MiniTec, the drinks bottling company Raumland has automated the packing of wine bottles.

Winemaking combines tradition and modern technology. Even if wine is basically still produced in the same way as it was a hundred years ago, much around the winemaking has changed – from the use of tractors through to automated bottling plants and packing machines. Ultimately, each winemaker must operate economically in order to survive on the market. One traditional company is Raumland; the family-run company has not only produced wine for many generations, but is also a very successful drinks bottling company. The drinks bottling company, Getränkeabfüllbetrieb Raumland GmbH, and the sparkling wine producer,

Sektkellerei Raumland GmbH, were formed from the former vineyard, Weingut Raumland, in Bockenheim in Rhineland-Palatinate. With the present-day service company, a competent, committed team of oenologists, drinks technologies and technicians has been available for winegrowers and wine cooperatives since 1996. Around five million bottles a year are now filled.

Thanks to its many years of experience in handling wine, sparkling wine and other types of drinks, customers can rely on the expertise of Raumland. The range of services is large and, among other things, includes the bottling of drinks

through to labelling and packaging as well as work such as filtration, alcohol reduction and laboratory tests or storage of the drinks.

From winemaker to bottler

“As winegrowers, we have always been involved in the filling of bottles,” recounts Sebastian Raumland, Managing Director of the company for ten years and added: “We are not only winegrowers, but also technicians. We developed and built the first bottling and packing machines many years ago.” He himself studied oenology and system electronics. “My father also had a passion for technology and mechanical engineering, so that we have always developed the machines we need ourselves. Although we have much know-how, we still need a partner to assist us.” The Palatinates found them in MiniTec.

The choice of partner is decisive

“After looking around for a suitable machine builder and partner, we luckily found MiniTec,” Sebastian Raumland remembers. They quickly established what high design know-how the new partner had and the advantages that the modular profile system provides. This not only includes standard profiles, but also all necessary components for



The wine bottles are transported to the packing station on a conveyor section.



Managing Director Sebastian Raumland programmed the system.

“THE PARTNERSHIP WITH MINITEC IS VERY CONSTRUCTIVE AND UNCOMPLICATED”

machine and plant building. They can be used to build everything, from machine frames and guards through to conveying equipment and whole plants.

Teamwork

In the meantime, two packing stations have been created in cooperation with MiniTec. The concepts for the installations are developed by father and son Raumland on the basis of decades of experience. The ideas are recorded in drawings and are then dimensioned. This is where the MiniTec technicians come into play. The Raumlands discuss the concept of the installations with them, receive tips for improvements and information, and which components from the modular system can be used. After all, for decades, MiniTec has acquired many experiences in numerous projects as a machine builder.

The MiniTec designers then implement the concepts quickly with the help of the iCAD Assembler design software. The standalone program can be used to design complete installations quickly and straightforwardly, as it includes the complete library of the MiniTec profile and linear technology product range. The software creates parts lists automatically and contains configurators for frequent applications. The program uses automated planning routines to calculate, design, change and list parts and checks the plausibility of the inputs.

From virtual to real

The 3D CAD models can be used to check the installation and make changes, if necessary, before the components are provided.

MiniTec can also undertake the electrical design, however, in this case it was done by Sebastian Raumland who emphasised: “The partnership with the MiniTec technicians is very constructive and uncomplicated. We can decide how much input comes from us and where MiniTec assists us. The modular system is a perfect basis for us.”

This year a new packing system was created in the shortest possible time, and was supplemented with a conveyor section made from MiniTec components. In addition, a labeller, a collection table and a robot (cobot) are used for the palletising.

Increased efficiency

Use of the new installation has increased efficiency in the bottling machine significantly: Until now, the bottles were packed by four employees by hand, one worker is now sufficient. The filled wine bottles are transported to the packing area on a conveyor section and are then placed in a box and are sealed. At the next station, the boxes are labelled and placed on the pallets by a robot.



After packing the cartons are sent for automated labelling.

The modular system with the MiniTec aluminium profiles is also used elsewhere: “It can be used to build almost everything that a company like ours needs. It is also practical that – thanks to the flexible connector – we are also able to dismantle constructions and reuse the profiles”, emphasised Raumland. Product development and SME cooperation can be so simple and efficient.

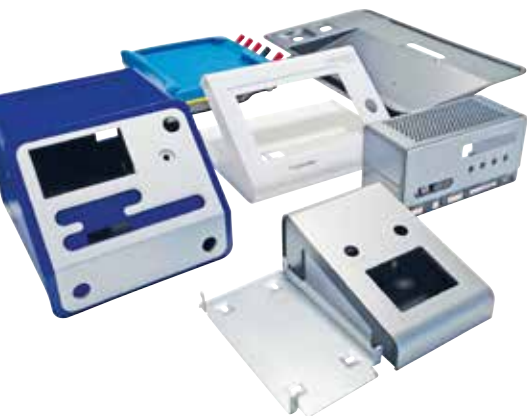


A robot places the wine boxes on pallets.



AUTOMATION FOR PLASTICS PROCESSING

apra-plast sees itself as a provider of solutions for all kinds of housings, panelling and parts. The machinery with which the company manufactures these are as individual as the products themselves. Special know-how is therefore also required here. For many years, the company has therefore relied on MiniTec as its partner and special purpose machinery manufacturer – as was the case for a semi-automatic groove cutting system.



The housings of apra-plast are used in many very different areas.

Manufacturing plastic housings, with round or angular edges, with large or small radii – that is the core competence of apra-plast. The company, based in Daun-Pützborn in the German Eifel region, belongs to the apra Group, which has around 470 employees in several locations, some 85 of whom at apra-plast.

Individuality is key for the products, said Managing Director Jürgen Könen: “We do not have any standard items, but manufacture the housings individually to the customers’ requirements. Wherever smaller to medium quantities of plastic

housings or panelling are needed, we are the suitable partner – also because in most cases we do without tool or mould costs.”

The areas in which the housings are used are diverse and range from enclosures for dental laboratory cutters to display housings, ticket reading equipment of an airline, tens or EEG equipment through to all types of measuring equipment. They are also often needed for the controls or control units of systems or equipment.

Different manufacturing technologies

Depending on the requirements, in addition to the cutting/bending technique, thermoforming or the vacuum casting methods are used if necessary. 3D printing also plays an important role. One advantage of the cutting/bending technology is that there are no tool or mould costs. Here the housings are made from a plastic sheet that passes through various machining steps. Accordingly, they offer a high degree of flexibility especially for smaller quantities, production of different variants or if different printing is involved – from all of which the customers of apra-plast benefit.

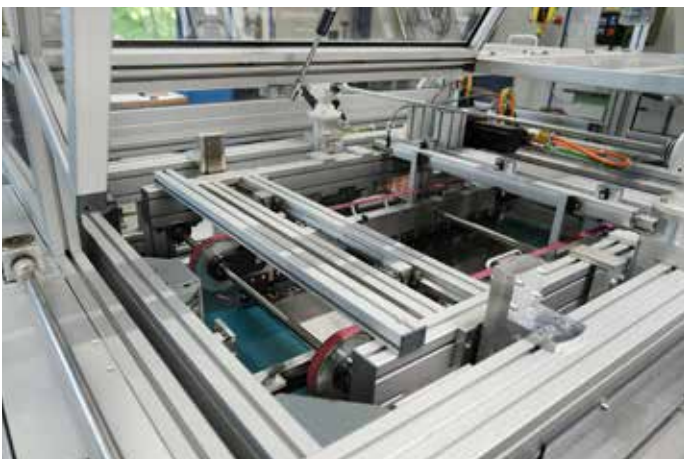
However, the company is not tied to this, Könen said: “With the deep-drawing technique, 3D printing and vacuum casting, we have other manufacturing technologies, which we can also use in combination for our customers’ solutions. In addition, through our parent company apra-norm, we are also able to offer metal components such as mounting plates, floor plates, rear walls, stiffening profiles and similar items.”

Longstanding cooperation with MiniTec

MiniTec has already built many installations used in the production of apra-plast. “The cooperation has existed for over ten years,” said Könen. And added: “They were very different projects, for example, a groove cutting system, an automatic bending unit or currently a heating unit for our round bending technology, which we are developing together.” There is also frequently a need for new units, as there are no off the shelf machines for the specific requirements, he said. “We have a very individual type of production and the machines and tools we use are thus also almost all in-house developments or special parts.”

Groove cutting machine for housing machining

An interesting example of such a MiniTec automation solution is the groove cutting unit mentioned. The task of this machine is to cut a precise groove in plastic sheets whose width,



Two different groove cutters can be fitted in the machine at the same time.



On inserting the components, a stop ensures their precise orientation.

depth and length correspond to the exact requirements for the respective component. The groove can be used later, for example, to predetermine the bending line for a housing part – i.e. the line at which the component is bent in the next work step.

apra-plast had already had a unit in use for this task for a long time. However, there were increasing problems with the procurement of parts. Above all, the machine’s performance and options were highly outdated. All adjustment options, for example, were still made manually. “We knew that completely different speeds can now be achieved and hoped to introduce more automation and thus a higher throughput rate with a new unit”, explained the managing director.

Concept study as template

apra-plast first tasked two students at the University of Applied Life Sciences Kaiserslautern with the development of a rough design for such a machine, quasi as project work. On the basis of this, an appropriate unit was to be implemented later. In the search for a suitable partner, they were quickly found with MiniTec. A requirements profile was drawn up from the concept, on the basis of which MiniTec then designed and built the new machine, including the control. The housing for the control naturally came from the apra Group – specifically from apra-Gerätebau, as it was a metal control cabinet. The control for inputting key data and traversing paths was in turn contributed by apra-plast itself.

After the factory acceptance inspection a MiniTec, the machine was delivered. The unit ran stably from the outset, Könen said: “Apart from a few fine adjustments, everything was OK and the unit is still successfully in use today, around five years later.”



The finished machined parts emerge from the machine.

NC approach saves tool changing

The groove cutting machine from MiniTec is an NC tool machine. “We have different mould geometries as groove cutters that are required along complete component lengths. On the machine we can use all kinds of different groove cutters on two drive units, in order to then reflect these profile contours in the material. For example, we have a bent groove cutter that produces a 90-degree groove, which must be very sharp and burr and swarf-free”, explained Könen. The machine also has closure and fixing systems where groove cutters can be used in combination with different tools. This could basically also all be achieved with a CNC machine, but this would then have to have two to three tools in use. “With our solution the advantage is that we can complete the task with a special groove cutter in only one work operation and with very much higher feed rates”, he added.

The MiniTec machine operates semi-automatically. An employee tools-up the machine by fitting the suitable groove cutter. There are two drive units, which means they can fit up to two different groove cutters on the machine. They then use the control unit to set the depth and the stops. They then stack the components and start the machine.

The parts are drawn into the machine, are machined and emerge at the back. At the end, the employee removes the finished parts and places them on a stacking trolley.

SIGNIFICANTLY FASTER ORDER PROCESSING AND MORE FLEXIBILITY

Numerous improvements

During the introduction of the new machine the tooling-up time was optimised, optimisations of the swarf extraction were also made. Könen explained other improvements: “We are now able to use parts with a larger cross-section and thicker material can also be machined. The old machine could process material up to 3 mm thick, we can now increase this up to 8 mm. The old machine was also completely manual. Today, everything can be entered electronically, which ensures higher precision and also for significant tooling-up time minimisation.”

Faster throughput

Order processing is significantly faster with the MiniTec machine than it used to be. The throughput is highly dependent on the part size, the managing director said: “The machine has a certain feed rate, which ultimately predetermines the cycle time. But there are components with a length of 100 mm and those that measure 600 mm. And accordingly, different job times result.”

Advantage of MiniTec

In addition to the engineering know-how of MiniTec, the apra-plast boss also praised the advantages of the modular profile system: “Because our machines really are one-offs, the profile construction makes us very flexible and we can make changes or further optimisations relatively quickly.” Accordingly, he is positive with regard to further machine projects with MiniTec: “We virtually only have individual machines, which were specially built for us. And in the future, there will also always be applications where we need special solutions. We will certainly opt for MiniTec as a reliable partner.”



The groove cutting machine provides many advantages for apra-plast Managing Director, Jürgen Könen.

NEW BREATHING APPARATUS WORKSHOP FOR PIDING'S FIRE SERVICE

For many years, MiniTec has supplied fire services with a well-engineered range for the equipping of breathing apparatus workshops. In May 2024, the voluntary fire service of Piding was able to move into its new fire station in time for its 150-year anniversary and consign a new breathing apparatus workshop to its intended purpose.



The voluntary fire services, especially in rural regions, are indispensable for fire protection, technical assistance and civil protection, in view of the fact that there are only around 100 professional fire services in the whole of Germany. The Upper Bavarian town of Piding also has a voluntary fire service. It is called out 80 to 100 times a year, one of the focal areas in which it is deployed is the A8 München-Salzburg motorway. Around 39 of the almost one hundred firefighters are also breathing apparatus wearers. Much has been invested in the fitout and equipment needed to carry out the tasks of a voluntary fire service.

Alongside modern operational vehicles, in 2021, work started on building a new fire station. This also needed a new breathing apparatus workshop (ASW). The MiniTec sales partner "BAS Vertriebs GmbH Brand- und Arbeitsschutz" in Planegg near München was ultimately found. Working together with the regional sales representative of BAS, MiniTec took care of the whole "breathing apparatus workshop" project on the basis of a modular profile system, from the initial discussions to the 3D concept, the implementation through to installation and commissioning on site.

Installed to fit precisely

The focus of the new breathing apparatus workshop is the so-called black area where contaminated breathing apparatus and the corresponding masks are cleaned and disinfected after use. Thanks to the flexibility of the MiniTec modular profile system, the breathing apparatus workshop was ideally adapted to the spatial circumstances and requirements of the fire service in order to achieve an ergonomic workflow. For optimum logistics within the new fire station, MiniTec also supplied various cylinder trolleys and mobile tables. The furniture elements from the range of products for equipping breathing apparatus workshops are easy-care and are also characterised by their high wear resistance and durability.



Everything fits together in the breathing apparatus workshop.

Peter Haiker, 2nd in command at Piding voluntary fire service and responsible for the project was extremely satisfied with the cooperation with MiniTec "The workshop really has become a real gem, especially thanks to the furniture from MiniTec. We will definitely present it with pride if someone wants to take a look around and we will recommend MiniTec."

ASSEMBLY WITH ROBOTS

MiniTec UK cooperates with AGD Systems (a manufacturer of traffic systems), to automate the assembly of pelican crossing switches, which are used throughout the world. In the new assembly process, the precise positioning of the cast parts on the product is ensured. The Techman Robot TM12S cobot (collaborative robot) is used for this purpose and ensures precise positioning of the covers on the housings. This ensures uniform distribution of the silicone, in order to create a reliable, watertight seal.

The key to this innovative solution was the integration of MiniTec 45F profiles with the practical connectors, resulting in a robust workstation tailored to the TM12S-Cobot and the OnRobot gripper.

The VGP20 gripper, equipped with a double quick-release, which enables uniform distribution of the silicone, plays a decisive role in the improvement of efficiency and accuracy.

The decision in favour of the TM12S-Cobot was made due to its advanced AI capabilities and the built-in camera, which are perfectly matched to the project's precision and reliability requirements. The robot's range of 1300 mm and payload of 12 kg also ensures its future viability for larger projects during the year.

"The partnership with AGD Systems was an unusual opportunity to show how automation can rationalise and improve production processes",



MiniTec UK opts for robot support for the assembly of traffic lights.

commented Gary Livingstone, Managing Director of MiniTec UK.

SUMMER FAIR AT MINITEC AUTOMATION USA



Those who work a lot can also celebrate occasionally! Under this motto, on 1st August, MiniTec Automation in the US American town of Clarkston (Michigan) held an extensive summer party that focussed on food and fun. The participants in the many different sports and play activities were in very good spirits. A real American barbeque rounded off the highly eventful day.

A successful summer fair with sports interludes and barbeque at MiniTec Automation.



Sergej Hofmann built a crosscut and mitre saw on the basis of the MiniTec modular system.

Ergonomic, even during lengthy machining times.



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. Sergej Hofmann, Key Account Manager, designed and built a crosscut and mitre saw on the basis of the MiniTec modular system. The complete frame makes do with an area of W=1200 x D=1000 x H=1600 mm.

The baseframe for the crosscut and mitre saw was specially developed to enable ergonomic working. This makes the machining of workpieces easy and tension-free, even for long periods. The innovative design makes sure that even longer wooden planks (up to 6 metres) can be machined easily, while at the same time, the space needed in the workshop is minimised.

Easy cleaning, high stability

The materials and surfaces are chosen so that they are easy to clean. Dirt and sawdust can be removed effortlessly. The baseframe is made from the robust aluminium profile 45x45G to ensure a stable work area. This means that heavy pieces of wood can be worked on without wobbling or warping.

Thanks to the integrated roll elements, the baseframe is easy to move if necessary. It can be positioned anywhere in the workshop to ensure maximum flexibility.

Easy handling

Operation of the baseframe is intuitive. The extension frames can be folded out and adjusted quickly and without major effort.

The baseframe is equipped with two continuously extendable extension frames, which can be attached on the right and left. These enable very long workpieces to be supported and contribute to the stability.



The baseframe for the crosscut and mitre saw combines ergonomics, stability and mobility in a well thought out design.



The SASA volleyball team has now risen to the highest league in its age group nationwide and also became the city champions in Nairobi. The next goal is the East Africa Championship.

SOCIAL COMMITMENT IN KENYA

MiniTec has been engaged in Kenya for many years. Above all, Bernhard Bauer, founder and longstanding managing director of MiniTec, supports the Arnold Jansen Elementary School. The school was founded by Steyler missionaries in 2007. The missionary Karl Schaarschmidt from the Palatinate, a school friend of Bernhard Bauer, essentially initiated and managed the project. The private school relies on sponsors. At the beginning, around 100 students were registered, who all had sponsors in Germany or the USA. The school now has 980 students. The costs are 30 euros per month, including food, learning materials, school uniform and payment of the teachers.

In June, Bernhard Bauer visited the site again to check the sustainability of the support measures is ensured. "It is very pleasing that the school is now to a high degree self-funding. Thanks to their good education, numerous school leavers have found jobs in the city as gardeners, tradespersons, in the health system or in UNO offices", he reports. The former students in turn support their relatives to enable them to attend the better school. Today, only around 90 students still have sponsors abroad. By selling water from the well, built with donations ten years ago, several students can also be funded in emergencies.

Support for the volleyball team

MiniTec has supported an initiative of the Arnold Jansen School, the SASA volleyball team, for many years by providing equipment. SASA is a sports club that was especially founded for girls aged 10 to 18 from the slum. However, there was no volleyball court. Promoting the girls is a particular cause of the managing director of MiniTec. With her donation of around 8,000 euros, a volleyball court can now be built.

Apart from the school, for the past ten years, MiniTec has also supported the Githunguri Mother Care Clinic, which has led to sustainable success. The original barrack building has become a clinic with 50 beds, which provides care for around 30,000 people. Thanks to this clinic, in particular, the maternal mortality rate in the region has decreased significantly. With around 80 births per month, the clinic is largely self-financing. The costs for a birth with medical care are 70 euros, 210 euros is charged for a Caesarean section. Health insurance is available for people with a job, otherwise the whole family must pay for the costs. The clinic therefore also benefits from the school. During his visit, Bernhard Bauer was able to hand over a donation of 30,000 euros to pay for a well for the clinic.

MINITEC EN ROUTE TO THE FUTURE



The world is permanently changing and economic events in particular are also intensively affected by this. Markets change, the underlying conditions are repeatedly redefined.

We at MiniTec therefore want to deal with future topics intensively and prepare and align the company with regard to new and partly still unknown challenges. With the support of an experienced corporate consultant, we are en route to increasing focus on our values and skills and to using these more for our continued development and strategic orientation.

This comprehensive project is called "Mission future – help shape it now". This makes clear that all MiniTec employees are involved and actively participate.

With the Mission Future, we create the basis on which we can be an efficient and innovative partner for you, our customers and suppliers, in the long-term too – and be a future-orientated employer for our employees.



Brainstorming for new approaches and ideas.

NEW TRAINEES HAVE STARTED



The new trainees look forward to their career entry at MiniTec.

Top-qualified employees are MiniTec's most important capital. When it comes to young skilled employees, we therefore always attach great importance to training in-house, which is confirmed by a constantly high training rate. Whether in the commercial or technical sector – MiniTec offers excellent prospects for a successful start in working life. In addition to attending vocational college, the newcomers are also prepared for their future tasks in in-house manual training. Many trainees completed their training in the past with above-average examination results. The new yearly intake started their occupational career at MiniTec on 1st August 2024 – seven new colleagues began their training, including a technical product designer, a cutting machine operator, three industrial mechanics and two industrial management assistants.

We welcome them all!

LONG-SERVICE EMPLOYEES AT MINITEC



"15 years after training at MiniTec, daily learning is still ongoing. In a technical environment, development does not stand still."

- Benjamin Baier, Sales



"In the meantime, I can look back on ten years. I completed my training at MiniTec and in the meantime am able to enjoy the company's support for my part-time study."

Christopher Barz, Quality Management

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:

- Martin Dahl (Engineering): 25 years
- Klaus Oppelt (Zirndorf): 20 years
- Sarah Calabrese (Dispatch): 20 years
- Benjamin Baier (Sales): 15 years
- Martin Hiege (Engineering): 15 years
- Jennifer Müller (Engineering): 15 years
- Uwe Globke (Field sales): 15 years
- Christopher Barz (Quality management): 10 years
- Maksimilian Beller (Shaft machining, milling): 10 years
- Fabian Emrich (Digital innovation): 10 years
- Maurice Jung (Digital innovation): 10 years
- Anna-Lena Schorr (Accounts department): 10 years
- Christian Thome (Engineering): 10 years
- Rainer Denhof (Assembly/automation): 10 years

EUROPEAN CHAMPIONSHIP SWEEPSTAKE

Even though the German team were not the winners in 2024, the European Cup was nonetheless a success. We invited you to join in the European championship sweepstake and many participated. Walter van Schie of Safeline GmbH led the field with his tips. We congratulate him and asked him several questions:

Mr van Schie, what is the secret of your high success rate?

I live and work in the "positively football mad" city of Dortmund. In our sales office, I am surrounded by cumulative football expertise. The tips were created collectively ... Spain was our favourite for the European champion title from the outset.

How do you rate the Euros 2024 in retrospect, did you enjoy the tournament?

I really enjoyed the tournament. The introduction of the no referee-mobbing rule was a particularly positive surprise. The participating teams presented fast and straightforward football.

And what do you say about the departure of the German team?

As a German team you are not automatically booked for the final. The "smaller" teams have now also internalised fast changeable playing and counter-attack play. Reaching the quarter-finals can therefore also be rated a success.



Walter van Schie is pleased with his prize, a DFB home football shirt.



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Andreas Böhnlein, Lauren Claiden, Stefan Graf,
Sergej Hofmann, Michael Schmaltz,
Christian Stemler

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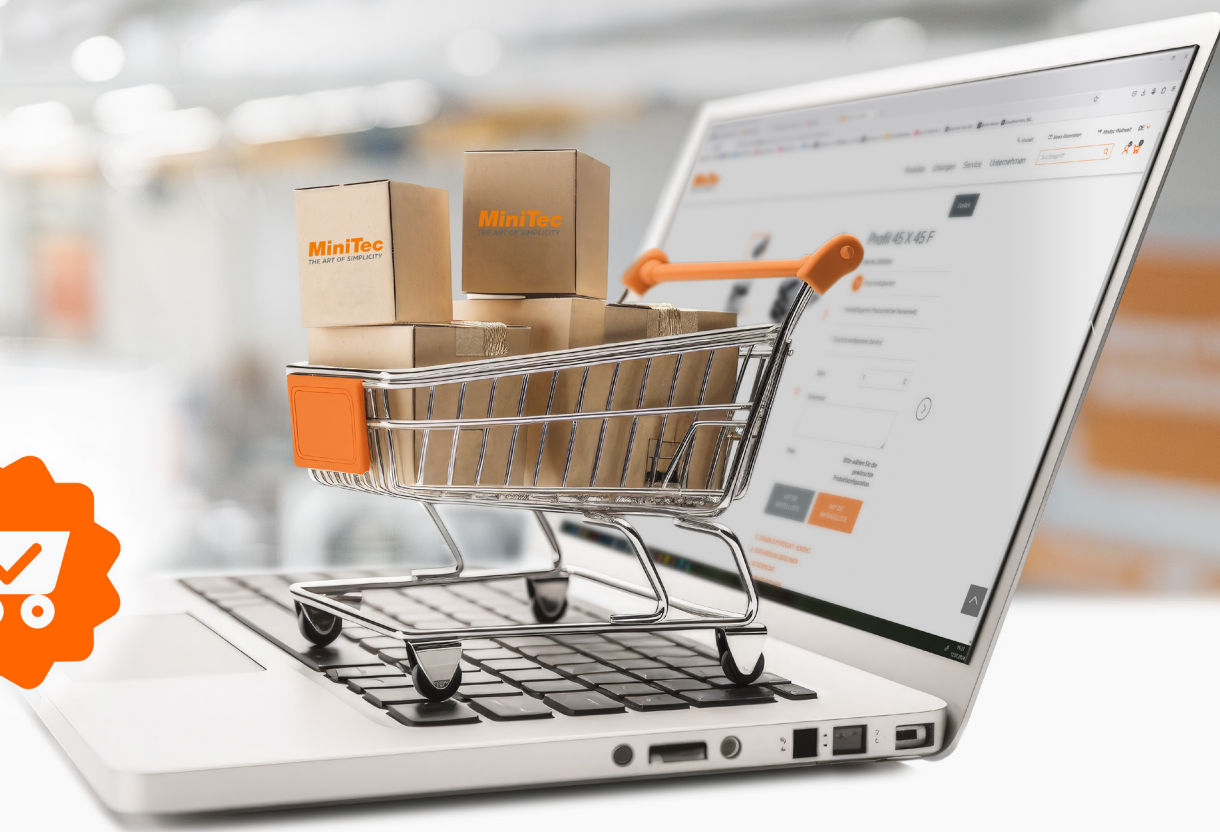
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With MiniTec aluminum profiles, you can order individual bars as well as complete packing units with whole or centrally separated bars - with a corresponding price advantage. It is also possible to order individually cut profiles.

As with the inquiries, you will find all orders in a clear history within your user account and can initiate them again at any time - even with changes.

To be able to use the MiniTec shop as a corporate customer, you must be registered and activated. You can find out what the requirements are, how to proceed for activation and how you can tell whether you are already activated on our store information page.

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