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2019

Kurtz Ersa Magazine

For Customers and Business Partners of Kurtz Ersa Corporation

kurtz ersa

Rainer Kurtz,
Chief Executive Officer
of the Kurtz Ersa Corporation

Ready to go!

The special exhibition year 2019 was an excellent opportunity for Kurtz Ersa to position itself as a technology leader. We were able to maintain a dialogue with countless customers and interested parties at a total of over 50 trade fairs throughout the world. The feedback we received there encouraged us to continue and confirmed that Kurtz Ersa had set the right topics in development, sales and service.

Despite all the dark clouds in the economic sky, despite the still unsolved problems in the European Community, despite the uncertainty caused by American foreign policy, we have focused on medium and long-term growth. We have significantly expanded our production capacity in Germany and in China and have further broadened our product range – here even with some quantum leaps in terms of increasing efficiency and reducing the "total cost of ownership". Sustainability is also becoming an increasingly important issue in our products, so that we too can make our contribution to environmental protection.

At the turn of the year, we would like to thank our customers, suppliers, business partners and all employees for their pleasant cooperation. We wish all readers of the Kurtz Ersa Magazine health, happiness, satisfaction and fun at work for the year 2020! ■

GLÜCK AUF!
Your Rainer Kurtz

Representatives of the Kurtz Ersa Management at the opening of the extension building at the site in Zhuhai.

GRAND OPENING IN ZHUHAI

Kurtz Ersa Asia Ltd. inaugurates new extension building

On 05 December 2019, Kurtz Ersa Asia Ltd. celebrated its 15th anniversary in China and at the same time opened its extension building in Zhuhai. The company is thus meeting the increasing demand from Asian customers for Ersa and Kurtz machines. The expansion had become urgently necessary as the existing production facilities had long since reached their capacity limits. In the last five years alone, around 1,000 reflow machines have been built, approx. 1,000 Kurtz machines since the site was founded in 2004.

The official celebrations took place as part of a traditional Chinese celebration. Around 500 guests, including numerous government representatives, international customers and suppliers, as well as employees of the production site, were present when the factory was inaugurated with a dragon dance and ceremonial speeches. CEO Rainer Kurtz congratulated the Asian team on the considerable capacity expansion and stressed the importance of the Chinese business for the worldwide success of the Kurtz Ersa Group. "We are very proud that we can inaugurate the new building today after a short construction period – this was an open-heart operation that we were only able to successfully accomplish through our highly motivated team and the help of our business partners," says Bernd Schenker, President Kurtz Ersa Asia.

On 06 December, a Technology Innovation Day followed for customers, at which product innovations such as the EXOS, a HOTFLOW reflow soldering system with vacuum technology, and the revolutionary RF technology, an absolute world first for the production of moulded parts from particle foam, were presented. A new four-storey building has been constructed on the site of the demolished machine hall and paint shop. With a total area of around 10,000 m², the extension covers an area of around 6,500 m² and an increased production capacity of up to 1,200 machines per year. The production was designed according to the lean production and kanban principle and has recently been certified with ISO 9001. Efficient production processes and high flexibility of the production lines are important prerequisites for being able to respond directly to individual customer requirements. A delivery time of less than four weeks also remains the goal. "I would like to thank all employees and business partners for their support. Without them, we would not have been able to achieve the historically highest production figure despite the new building," Bernd Schenker said at the end of his speech. ■

Zhuhai, an economic zone with about 1.5 million inhabitants, is located in the province of Guangdong in the immediate vicinity of Hong Kong, Shenzhen and Macao.

Key handover in Zhuhai during the opening ceremony of the extension (from left to right): Kurtz Ersa CEO Rainer Kurtz, Bernd Schenker, President Kurtz Ersa Asia, and Zhuhai Plant Manager Sam Ho.

Moulding Machines hold Tech Seminar in Mexico

At the end of October, Kurtz Ersa México, S.A. de C.V. held a well-attended technology seminar in Monterrey on the topics of expanded polystyrene (EPS) and expanded polypropylene (EPP). Almost 100 participants from all over Mexico, Bolivia, Colombia and the USA took part in the two-day event. The training was led by process engineer Eusebio Calva, who has more than 30 years of industry experience – the focus of the event was to give participants a deeper understanding of their EPP/EPS moulding processes. Participants learned about the chemical properties of their raw materials, the way in which pre-expansion occurs, and the aging process of materials. Kurtz machines were also used to discuss moulding and block moulding in detail – including the range of services offered and the impact of the raw materials on the quality of the end product.

GROWN KNOWLEDGE ABOUT KURTZ MOULDING MACHINES

After the successful conclusion of the seminar, the participants left Monterrey with significantly increased know-how about Kurtz Moulding Machines, related processes and the variables that can influence the quality of the end products. In this context, the correct elimination of problems and the optimal performance of necessary maintenance work on Kurtz machines were also important. “It was a great opportunity to meet, share knowledge and respond to the needs of our customers,” said Marcelino Espelosin, General Manager of the Americas, expressing his satisfaction that Kurtz customers are using the knowledge they have gained to improve processes and the quality of their moulds. ■

Responsible for the 2-day technical seminar in Mexico: the team of Kurtz Ersa México, S.A. de C.V.

EVENTS 2020

EUROGUSS
14.-16.01.2020

Interplastica
28.-31.01.2020

APEX EXPO
04.-06.02.2020

EPS Expo
11.-13.03.2020

Productronica China
18.-20.03.2020

Foam Expo
North America
24.-26.03.2020

Nepcon
22.-24.04.2020

SMT Connect
05.-07.05.2020

Metal+Metallurgy China
13.-16.05.2020

Litmash
09.-11.06.2020

Conline GmbH becomes Kurtz Ersa Automation

Official contact point for automation from January 2020: Kurtz Ersa Automation.

Experienced engineers in the fields of robotics, image processing, mechanics and software have been developing intelligent handling solutions for industrial production for several years. From January 2020, "Kurtz Ersa Automation" will be the official and central contact point for automation competence as a system integrator within the Kurtz Ersa Group.

In close cooperation with the established brands Kurtz and Ersa, the Kurtz Ersa Automation team positions itself clearly in the market and makes a clear promise to its customers: the usual high quality of Kurtz Ersa products and technical innovation combined with outstanding worldwide service. We benefit greatly from the international recognition and high value of the Kurtz Ersa brand. Our professional project management enables us to implement the tasks on schedule. The products are assembled and tested by specialists in our own halls. "At Productronica, the world´s leading trade fair for electronics manufacturing in Munich, customers perceived us as a team with a joint Kurtz Ersa product portfolio. Our automation team identifies 100 % with the new orientation that we already carry in the name 'Kurtz Ersa Automation'," says Automation Managing Director Ralph Knecht. ■

04TH "HAMMER EXCELLENCE" EVENT

Learning from Tech-Start-ups at the TU Berlin

A 30-strong Kurtz Ersa delegation of decision-makers, sales representatives and developers travelled to Berlin at the end of November to attend another edition of the "Hammer Excellence" events. The topic of the workshop was "Corporate culture and speed" – the Centre of Entrepreneurship of the TU Berlin acted as a link and brought four start-ups into play that focus on artificial intelligence, data-driven process optimization or wireless charging. The four pitches were followed by a creative workshop for the 30 participants, in which cross-company teams dealt more closely with the start-up business models. The workshop showed how important agility and the ability to adapt the business model are. "We wanted to raise awareness of how inspiring and gripping it can be to build something completely new as a start-up – from which even established companies can learn a lot. Many thanks to the Centre of Entrepreneurship and the TU Berlin for making this exciting appointment possible," said Kurtz Ersa-CEO Rainer Kurtz, who himself studied mechanical engineering at the TU Berlin. ■

Ersa at productronica: huge interest in the solutions presented during the entire trade fair.

GLOBAL. AHEAD. SUSTAINABLE.

Spectacular performance for Ersa at productronica

After four intensive days in Munich, productronica, the world´s most important trade fair for electronics production, came to an end on Friday. The 2019 edition of the trade fair underscored its claim to be the world´s leading trade fair with a significant increase in exhibitor numbers and exhibition space – more than 1,500 exhibitors from 44 countries presented their innovations for the production and development of electronics. In the end, 44,000 visitors from almost 100 countries came to the Bavarian state capital. As the No. 1 system supplier, Ersa GmbH took up 600 square metres with its trade fair stand alone in order to be able to present its uniquely comprehensive range of products and services in an appropriate manner. "Even the generous 600 m^2 were not enough to present all the innovations as exhibits. Therefore, the trade fair visitors had the additional opportunity to literally immerse themselves in our products in our Virtual Reality Studio," said Rainer Krauss, a completely satisfied Ersa General Sales Manager.

Many visitors brought concrete questions with them to Munich, which had already been discussed further as a form of project at the trade fair stand. With the highlights presented – from the EXOS vacuum reflow soldering system to the VERSAFLOW selective soldering world, from automation solutions such as ROBOPLACE and SOLDER SMART soldering robots to the new family members of the rework family HR 500, HR 550 XL and HR 600/3P – Ersa once again confirmed its leading position in the electronics.

Also and especially in view of the increasing share of technology trends such as 5G mobile

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telephony, autonomous driving, e-mobility, robotics and automation, Ersa presented comprehensive solutions for innovative customers.

"Despite the tense overall economic situation, we expect Ersa and electronics production to continue to raise sales in view of the increasing need for digitization. Our presence here at productronica is impressive proof that our systems and products are at the pulse of electronics production and meet the needs of our customers all along the line – many thanks to our customers and interested parties for the fantastic response," said Ersa Managing Director Ralph Knecht at the end of four highly intensive days at the trade fair. The evening before, the entire Ersa trade fair team had already celebrated the successful productronica appearance together with customers at the stand party with live music. At the moment, they are already working together again on the follow-up to the trade fair in order to transform the numerous enquiries into real projects. ■

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1 At productronica, Ersa General Sales Manager Rainer Krauss (left) honored the English Ersa agency Blundell Production Equipment Ltd. for 25 years of successful cooperation – Blundell Area Sales Manager Keith Gummer Keith Gummer accepted congratulations.

2 globalPoint: Leading supplier of measurement technology for all soldering processes, represented in Munich by Nico Zachmann (left) and Felix Bolg.

The Ersa reflow soldering system HOTFLOW 3/14 is an integral part of the Smart Factory at ASM Singapore.

Smart Factory gets reality at ASM Singapore

ASM is one of the well-known industry leaders in SMT manufacturing and is focusing with all efforts on the Integrated Smart SMT Factory for its global customer base. With its five SMT Centers of Competence around the globe and a close network of innovative customers and industry partners, ASM is taking the lead in the step-by-step implementation of the Smart SMT Factory and in offering its customers proven solutions for total integration already today. This requires strategic partnerships between electronics manufacturers, competent digital transformation experts and trusted process partners.

Connectivity and integration are the new challenges in the Smart SMT Factory, but smart equipment is and remains the basis of every efficient electronics factory. Thus is it by no surprise that the ASM Electronic Manufacturing Operation in Singapore opens its door with a completely networked, highly agile production line. An integral part of the smart manufacturing is a HOTFLOW 3/14 provided by electronics systems supplier Ersa. The high-performance reflow soldering system, which offers outstanding thermal performance and an impressive energy balance, relies on the protocol-based IPC-HERMES-9852 standard, which quickly became the global standard for M2M communication. "We are proud to be part of this groundbreaking lighthouse project and to be on this path with ASM. With the integrated IPC-HERMES-9852 standard, we are relying on an open interface for horizontal machine-to-machine communication to supply the ASM Smart Factory with a fully integrated data management system," says Ulrich Dosch, Manager Key Accounts & Business Development Kurtz Ersa Asia. ■

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JOINT ERSA AND LPKF TECH SEMINAR

PCB prototyping – simple, flexible, fast!

After the first meeting at SMTconnect, LPKF Laser & Electronics AG and Ersa GmbH followed up with their first jointly organized technology seminar on 24 September in Wertheim. LPKF develops and provides laser manufacturing solutions, e.g. for use in electronics production, Ersa is the no.1 system supplier for electronics production – an excellent basis for an event on in-house PCB prototyping with the title "From the idea to a prototype – simple, fast and flexible".

Bruno Blum, Key Account Manager Rapid PCB Prototyping at LPKF, gave an overview on the broad spectrum of PCB prototyping, which ranges from PCB structuring using lasers and circuit board plotters to through-hole plating and solder paste application. He explained the advantages of in-house solutions with LPKF hardware such as the ProtoMat D104 or S104 circuit board plotter. Above all there is the greater flexibility to produce a PCB prototype whenever required – whether digital or analog, one or two-sided in FR3/FR4, multilayers consisting of up to eight layers, RF and microwave prototype or flexible circuits. Downstream processes such as solder resist, solder paste printing, semi-automatic pick & place and table-top reflow ovens were also discussed.

Ersa Area Sales Manager Manfred Wolff finally presented components, materials and soldering processes in prototyping – also in connection with an optimal use of Ersa equipment such as soldering irons, soldering and desoldering stations to create reliable solder joints. In the afternoon the group moved to the adjacent application center, where practical demonstrations were held using hardware previously introduced in the presentations. There was also great interest in the Ersa hybrid rework system product range, which enables successful rework from the smallest chip (01005) to the largest BGA right from the very first process. "The development of new products requires iteration steps in the shortest possible time. The participants of our tech seminar got to know new ways on how to move from the idea to the finished electronic product in a fast and cost-efficient way," explains Jörg Nolte, Product Manager Soldering Tools, Rework and Inspection Systems with Ersa. Like his colleagues, he is open for a continuation of these technology seminars. ■

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1 Bruno Blum, Key Account Manager Rapid PCB Prototyping at LPKF, talks about the possibilities of in-house PCB prototyping.

2 Ralf Walk, Ersa sales engineer for soldering tools, rework and inspection systems, at the demonstration of the HR 550 rework system..

3 Practical demos at the hands-on part during the joint LPKF and Ersa tech seminar in Wertheim.

With two crucibles optimally equipped for highest possible throughput: Ersa VERSAFLOW 3/45 in the HUND production.

HELMUT HUND GMBH RELIES ON ERSA FOR ELECTRONICS PRODUCTION

Fully automatic pollen monitor alleviates allergy symptoms

With a focus on electronics, optics, optical fiber technology, plastics technology and precision mechanics, Helmut Hund GmbH is at the centre of scientific and technical innovation. An interdisciplinary team of scientists and engineers guarantees the safe implementation of complex and innovative solutions under the claim "We bring technologies together". The Wetzlar-based EMS service provider HUND relies among other things on support from system supplier Ersa.

The BAA 500 pollen monitor from Helmut Hund GmbH provides relief for millions of allergy sufferers in Germany. The HUND Innovation was developed over many years with the support of the Fraunhofer Institutes FIT, Sankt Augustin and ITEM Hannover and brought to series maturity. This is how the BAA 500 works: The electronic measuring device extracts pollen fully automatically from the ambient air sucked in, deposits it on special sample carriers and carries out an analysis under an automatic light microscope. Result: high-precision determination of allergologically relevant pollen in real time, independent of temperature and season, without human intervention in the detection process, data retrieval 24/7 via Internet and app. Thus, allergy sufferers receive information in real time in order to be able to plan their daily routine in flowering times of birch, oak, ash, alder, hazel & Co. In addition to the Wetzlar location, information on pollen flight can also be retrieved for Berlin, Munich, Wiesbaden or Leipzig; further pollen monitors are planned. Only recently, an electronic pollen information network (ePIN) based on HUND pollen monitors was put into operation in Bavaria. One of the eight pollen monitors installed in Bavaria is located very close to Ersa in Wertheim. The data can be called up online at www.epin.bayern.de. Both in the "pollen business" and in the core business of the company, OEM production, Ersa supports as a system supplier with efficient soldering technologies from selective to reflow and soldering tools.

HELMUT HUND GMBH, FOUNDED IN 1967

The beginnings of Helmut Hund GmbH go back to the peak of the economic miracle in 1967 – Helmut Hund founded his company in Wetzlar at the age of 17 in this Golden Age. The first product was a patented start-up current limiter for electric motors. In 2015, almost 50 years after Helmut Hund founded the company, Verena Schön, daughter of the founder, and Dr. Stefan Schäfer took over the management. The product range has changed during this time and has become much more complex: In accordance with the

Tunnel vision: Feeding of a PCB into the Ersa VERSAFLOW 3/45.

HUND location in Wetzlar, central Hessen.

Expert talk about electronics production between HUND and Ersa.

company claim "We bring technologies together", HUND combines technical components from the fields of optics, glass fibre optics, precision mechanics and plastics technology to form high-performance assemblies and devices according to customer requirements. However, the focus is on OEM business, the manufacture of assemblies for system solutions in the fields of medical technology, sensor technology, automation and environmental technology. Today, Helmut Hund GmbH employs 110 people and has a production area of 3,000 m² (www.hund.de).

FIRST CONTACT TO ERSA VIA THE WAVE

The first contact between Helmut Hund GmbH and Ersa GmbH came about in the mid-1990s with the purchase of a wave soldering machine, which today still reliably produces small and very small series. The question arose in 2012: Wave soldering machine upgrade or purchase new selective soldering machine? After a thorough examination, the decision was made to purchase an Ersa selective soldering machine. "Due to the throughput, we opted for the VERSAFLOW 3/45 with two crucibles. This allows us to process products at the fastest possible speed," says Alexander Müller, Head of Production Electronics. Since different soldering tools can be placed on the crucibles of the mini-wave soldering machine, high flexibility with short cycle times is guaranteed. This allows filigree assemblies with double-sided assembly to be processed as well as surface soldering.

Last year, as part of investment planning, the existing and outdated reflow soldering system had to be replaced by a new one. Due to the positive experience with the Ersa machines already installed and the established relationship between the two companies, Ersa was included in the decision-making process. They met at the Wertheim Ersa Application Centre, just 150 km from the HUND site, for a test appointment. Traceability, which is particularly important in medical technology, was right at the top of the list of requirements. "To date, we have seen Ersa as a strong manufacturer, especially in the areas of selective and wave soldering. We were more than positively surprised when our requirements for a reflow soldering system were best met by Ersa HOTFLOW 4/14," says HUND's process technology.

GOOD PARTNERSHIP: HELMUT HUND AND ERSA

The special thing about the connection between the two business partners Helmut Hund GmbH and Ersa GmbH is that both companies are customers and suppliers at the same time. Hund GmbH manufactures the camera systems, which are installed in the Ersa stencil printer VERSAPRINT 2 Ultra³, in the only printer on the market with integrated 100 % inspection in 2D or 3D. "This give and take characterizes our long-standing business relationship and creates a high degree of trust on both sides," summarizes Alexander Müller, Head of Production Electronics at Helmut Hund GmbH, and adds: "In the meantime, we have converted our entire soldering technology to Ersa. Everything comes from one source, including the hand soldering irons." ■

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ERSA CUSTOMER REPORT: TRIDONIC GMBH & CO. KG

Ersa equips new Tridonic production facility

Light is the passion of Austrian Tridonic GmbH & Co. KG. The Dornbirn-based company is one of the world´s three leading suppliers of lighting components and lighting management systems. At the end of July 2018, production started at the new Niš production site in Serbia.

Since the first light-emitting diode (LED) was used in niche products such as high-mounted brake lights at the end of the 1990s, the technology has developed rapidly. LEDs are mankind´s most efficient, long-lasting light source to date – with completely new possibilities in lighting design. As flexible as the previous luminaire design was, so standardized were conventional light sources. "Today, virtually anything is possible with LEDs," explains Stefan Kerber, Director Global Engineering at Tridonic. "If a customer comes up with the requirement for a heptagonal, curved luminaire, we will supply the LED light source in any required version with the appropriate control gear." Since the introduction of LED technology in 2001, Tridonic´s product range has included not only control gear but also the manufacture of light sources: LED modules, sensors and software.

FLEXIBLE INTELLIGENCE, EXCITING INNOVATION

Light can take on a wide variety of forms, but the idea of efficiency is also important – intelligently controlled lighting management systems today save up to 80 % of energy. For the communication of individual elements in the lighting infrastructure, the DALI standard has established itself in the lighting industry on the basis of Tridonic (DALI short for Digital Addressable Lighting Interface). The control gear communicates via this interface with the luminaire and sensors. Software is used to dim, switch light on or off. The interface also displays error and maintenance messages.

The lighting industry is highly competitive. Manufacturers of individually combinable lighting components have to position themselves broadly in order to survive in international competition – also on the production side. The production sites at the company´s headquarters in Dornbirn, Spennymoor (Great Britain) and Shenzhen (China) were joined in 2018 by the plant in Niš, Serbia. On a production area of just under 10,000 m², 350 employees mainly manufacture high-volume, price-sensitive products for Central and Eastern Europe and the Middle East.

CHALLENGE: ONE-SIDED SETUP

In Europe today, PCBs assembled on both sides with many components (mainly SMDs) and

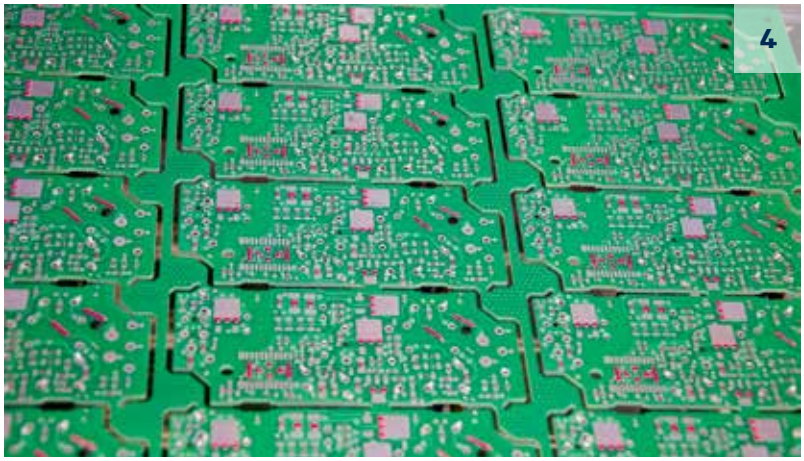
some plug contacts are widely used. Highly automated manufacturing processes in the SMD sector with paste printing and reflow soldering. Depending on the proportion in the assembly, machine selective soldering or traditional manual soldering is used for THT components. Tridonic, on the other hand, frequently uses one-sided PCBs with a high proportion of axial and radial THT components. All component connections are on one side, only one side is laminated with copper. These PCBs are considerably cheaper to purchase. A one-sided setup, however, means that existing SMD components are also sent through the wave soldering machine. Challenge: Fixing the SMD components on the PCB. Solution: They are glued.

INDIVIDUALLY ADAPTED MANUFACTURING EQUIPMENT

Four years ago, together with Ersa, a production process was developed for the Dornbirn plant, which is now also used in Niš. First, the PCBs are fitted with THT components and the connections are crimped. The SMD adhesive is then applied to the PCB, and a VERSAPRINT P1 stencil printer with a closed print head ensures that the adhesive is applied in an acceptable cycle time due to the large number of adhesive dots. The integrated SPI inspects the print result: In addition to the presence of the adhesive between the landing surfaces, it also checks that the connecting surfaces for the SMDs are free of adhesive. Printing and inspection run in parallel, saving cycle time – faulty assemblies are detected directly and excluded from further processing. The SMD components are then inserted into the adhesive dots on the assembly so that the component connections rest on the landing surfaces of the PCB. Then the assembly is smuggled into the HOTFLOW 3/20, the adhesive cures due to the heat in the reflow oven. The SMD components are now fixed for the following wave soldering process.

Tridonic's requirements for the HOTFLOW 3/20 have also been individually adapted. In order to prevent the components from deflecting, centre supports are usually fitted to the PCB. This was not feasible here due to the component density. Therefore, the center support is provided by the components of the assemblies. As their height varies, the centre support in the HOTFLOW furnaces at Tridonic can also be adjusted by 20 mm in height. This is followed by the actual soldering process – due to the large quantities in the wave soldering machine. The Ersa POWERFLOW was chosen for the Niš plant, followed by another system in spring 2019.

Tridonic sets the highest standards for its products, which are known for their quality, reliability, efficiency and precision, in order to survive in the face of tough competition. "The systems must work, downtimes must be low and support must be available as quickly as possible if required," says Stefan Kerber, explaining Tridonic's requirements. "That's why we deliberately chose a European supplier that we can be sure will still be on the market in five years' time," says Kerber. The Ersa team is particularly proud to be Tridonic's partner in Serbia for stencil printing, reflow and wave soldering. The hand soldering workstations there were also equipped with Ersa equipment.



1 Line with VERSAPRINT P1 and HOTFLOW 3/20 for bonding processes in electronics production at Tridonic in Niš.

2 Double track transport of the HOTFLOW 3/20. Special feature: centre support height variably adjustable between 0 and 20 mm.

3 Glue application with the VERSAPRINT P1 stencil printer.

4 Printed adhesive nests on the PCB panel.

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SUCCESSFUL CUSTOMER PROJECT OF KURTZ FOUNDRY MACHINES

Cylinder head in low pressure? It works – even twice!

Nemak is a leading provider of innovative lightweight solutions for the global automotive industry, specializing in the development and manufacturing of aluminum components for powertrain and body structure applications. Headquartered in Monterrey, Mexico, the company employs more than 22,000 people at 38 facilities worldwide generating revenues of USD 4.7 billion in 2018. Nemak is a Tier 1 supplier to major OEMs and is among the world´s 60 largest automotive suppliers. The plant in Izmir, Turkey, produces oil sumps and brackets for leading automotive manufacturers in high pressure die casting as well as cylinder heads in gravity and now also in low pressure, supported by Kurtz foundry equipment.

Nemak, a world-renowned manufacturer of engine blocks and especially cylinder heads, has decided to further expand its production of cylinder heads. Due to a special design of the cylinder head, the ideal process in this case was not gravity as before, but low-pressure. Since greenfield construction was not possible at the Nemak Turkey production site, the capacity expansion was carried out as a brownfield project – this means existing halls were converted accordingly. The integration of the low-pressure process for cylinder heads took place quasi at the "open heart": During ongoing production, the foundry was rebuilt and the new casting line prepared. Even for the assembly and commissioning of the first part in low pressure as a prelude to series production, ongoing production was not interrupted for a second.

BROWNFIELD PROJECT: A TIME AND SPACE CHALLENGE

This project was anything but standard for both Nemak and Kurtz. In addition to the extreme time pressure, the limited space available presented us with major challenges, which is typical for brownfield installations. Together, we ultimately came up with ideal solutions – a small excerpt from the implemented measures: Height reduction and adaptation of the cooling installation to the casting machines as well as adaptation of the overall layout of the FSC casting line.

SEVEN MONTHS TO THE FIRST SHOT

The highest commandment was the adherence to the schedule. "We only had seven months from the award of the contract to the first shot, which is absolutely unusual for such complex projects. Such a goal can only be achieved if both sides are passionate and give their all. The cooperation during the project and planning phase, the assembly time on site, where everything ran hand in hand, up to commissioning, was simply super," says Lothar Hartmann, Head of the Foundry Machines Profit Center at Kurtz GmbH, looking back on the extremely ambitious project. This was the only possible way to meet the time schedule despite the one or other small hurdle. On technology: Nemak

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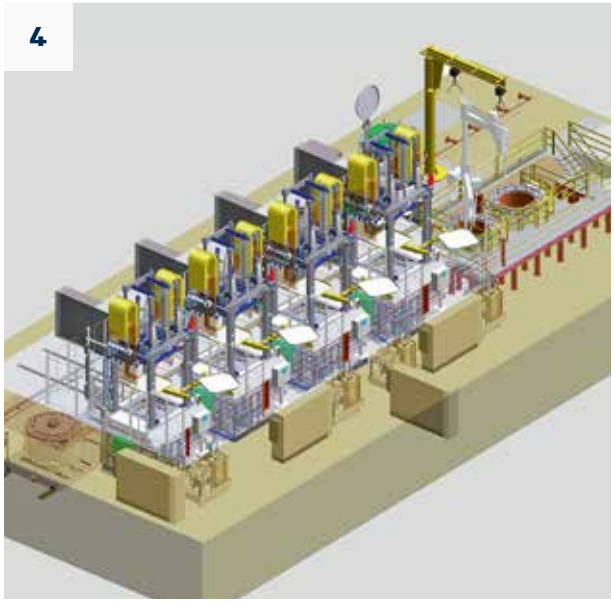

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1 Ready for shooting after seven months: the first low-pressure casting machine at Nemak Turkey.

2 Nemak Turkey in Izmir: Oil pans, engine mounts and cylinder heads are produced here.

3 Cylinder head casting with two cavities by Kurtz low-pressure casting..

4 Layout of the Nemak casting line with fourAL 18-16 FSC low-pressure casting machines..

opted for a Kurtz casting line AL 18-16 FSC. The highlight of the line is the cooling technology with 48 regulated water circuits, which can later be extended to 96 circuits if required. Cooling is controlled by temperature and time. Thanks to the large low-pressure casting furnace with 2,800 kg aluminium capacity and the additional machine equipment, Nemak can produce frames and structural parts as well as cylinder heads in two cavities. In the final stage, the casting line will consist of a total of four machines and will be completely installed by June 2020. "With the Kurtz AL 18-16 FSC, Nemak is well equipped for future castings – both for light-weight construction and e-mobility. We would like to take this opportunity to express our sincere thanks for this extraordinary cooperation – a cooperation you can only wish for. All the best for Nemak and good luck for the future," stated Kurtz Managing Director Uwe Rothaug.

Highlights Nemak low-pressure casting line

- Furnace logistics via Kurtz furnace shuttle
- Holding and degassing station
- 4 Kurtz low-pressure die casting machines AL 18-16 FSC
- Low-pressure furnace with a capacity of 2,800 kg
- 48 regulated water circuits, temperature and time controlled
- Fast FU-controlled hydraulics

K-FAIR DÜSSELDORF

Kurtz Particle Foam Machines in Hall 13 crowded with visitors

The K 2019 was a huge success for Kurtz Ersa. Contrary to all discussions about the use of plastics, we were able to inspire our customers with product innovations and live production. The booth of Kurtz GmbH was well attended from the beginning and during the whole fair. This resulted in numerous concrete inquiries – now we have to get the orders and convert them into real projects.

With the revolutionary RF technology, Kurtz presented an absolute world novelty that caused a sensation in the plastics industry. Under the motto "CIRCULAR FOAM – THE FUTURE", the steamless processing technology impressed the trade visitors with daily live demonstrations at a packed exhibition stand, which often led to in-depth discussions. Further exhibits and stations also impressed the international trade visitors, leaving plenty of room for customer questions and detailed advice from the stand team.

INDUSTRIAL IOT FOR PARTICLE FOAM PROCESSING

As a digital highlight, Kurtz presented its POWerBoard for the machine world of particle foam processing for the first time. Only presented to the foundry customers of Kurtz GmbH at GIFA in June, the K visitors were also convinced of the new Industrial IoT software solution within a very short time. With the POWerBoard, the overall system effectiveness can be increased many times over after previous data collection and subsequent evaluation. As a secure, globally available cloud solution, the POWerBoard offers many advantages, especially for remote maintenance and remote monitoring on the service side. It also offers a customer portal, downtime tracking options, a ticket system for service requests and modules for artificial intelligence such as self-directed learning and correlation detection. With the POWerBoard, Kurtz GmbH also paves the way for particle

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1 Kurtz Highlights K 2019: Kurtz exhibits such as the steam-free WAVE FOAMER or the EPP all-round talent PRO FOAMER.

2 + 3 CIRCULAR FOAM – THE FUTURE: The booth team in numerous discussions about the new Kurtz processing technologies.

4 Efficiency increase: Kurtz expands its portfolio with the POWerBoard with an "Industrial IoT" solution and artificial intelligence.

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foam processing customers to achieve greater efficiency and productivity. Kurtz was one of the few exhibitors to present an IoT solution at K 2019, once again underlining its leading role as an innovation driver in the industry.

MARKET LEADER CREATED IN EPP PROCESSING

With the PRO FOAMER, Kurtz Particle Foam Machines have for decades set the industry standard for automatic moulding machines for EPP processing up to 5 bar. The WAVE FOAMER with its impressive removal station was just as popular in Düsseldorf as the WAVE FOAMER. Two-density foaming, skinning of moulded parts and skin moulding – the PRO FOAMER realises almost everything with ease. At the same time, it takes into account current requirements for reduced energy consumption and the shortest cycle times. The optimised assistance system Kurtz Insert/Eject Control 4.0 carries out an optical insertion and removal control and thus supports the high availability of the line. Another top highlight was the completely new "KurtzSoft" control and visualisation software, which permits an extremely flexible machine process, is open to all conceivable extensions and offers simplified role-based user guidance. The Kurtz systems thus become industry 4.0-capable, are prepared for predictive maintenance and can communicate via OPC-UA.

PRE FOAMER 4300: NEW PRE-EXPANDER SERIES

The third machine exhibited at the Kurtz booth was the PRE FOAMER 4300. The pre-expander system is considered the most innovative on the market and stands for fast and reliable pre-processing of EPS beads. The pre-expander system also incorporates state-of-the-art technology such as an integrated silo control system, SCL database connection, an octabin station with sensors for calculating the residual batches and the precise weighing device with proportional technology (0.0005 % accuracy) with mechanical self-calibration function.

Harald Sommer, Head of the Particle Foam Machines Profit Center, draws a positive conclusion from the trade fair as a whole: "As a traditional machine manufacturer, we are proud to gradually expand our portfolio to include complete solution concepts in order to be able to offer our customers an all-embracing care package. By focusing one of our lines of business on automation, Kurtz will in future be in an increasingly better position to offer the increasing demand for handling systems and automation concepts in-house. This will enable Kurtz customers to obtain sustainably competitive overall solutions from a single source." ■

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KURTZ THERMO FOAMER

Particle foam, show yourself!

Moulded parts made of particle foam have excellent properties. They are very light, can retain heat or cold and at the same time reduce a lot of force at short distances. If you think of electrically powered vehicles, lightweight construction, sound and heat insulation play an even greater role alongside shock absorption. This is why particle foam parts are used in many vehicles, but are usually hidden behind other components. Why? Because the surfaces of most particle foam parts in the past looked visually unattractive. For years, attempts have been made to achieve better surface qualities of the particle foam parts on standard automatic machines by using textures in the foaming tool. Unfortunately, this was usually associated with high reject rates. Injection moulding (Solid Plastic) was temporarily regarded as a sensible process, but could not score points in terms of weight, energy absorption and insulation.

NOT EVERYONE CAN PRODUCE BEAUTIFUL FOAM PARTS

With the THERMO FOAMER, Kurtz has developed a variant for the Kurtz FOAMER family and EPP processing that focuses on the process-stable production of thin-walled

parts and first class surface quality. The THERMO SELECT process allows temperature zones to be regulated separately, thus enabling the production of high-quality surfaces and an attractive design for the vehicle cab. Even without a physical exhibit, the Kurtz Moulding Machine generated a great deal of visitor interest at the FOAM EXPO EUROPE in Stuttgart and the K trade fair in Düsseldorf in autumn 2019 – it achieves a steam chamber volume that is up to 80 % smaller than that of the standard mould and can produce innovative combination components from EPP and thermoplastic.

On the THERMO FOAMER, premium moulded parts can be produced reproducibly within narrow tolerances. In the future, foam parts will no longer have to hide behind other components. The Kurtz THERMO SELECT foaming process is used to produce EPP moulded parts that not only have a good surface but also low shrinkage. This means, for example, that moulded parts can be overmoulded immediately after the manufacturing process. Or – where connection technology is required – an injection-moulded element can be inserted directly into the foam part. In addition to sophisticated body parts and EPP applications in vehicle interiors, the technology is also used, for example, in medical equipment or electronic housings.

LESS INFRASTRUCTURE REQUIRED, MORE AUTOMATION POSSIBLE

Further advantages of the Kurtz specialist are a closed cooling system with variable and constant temperature control unit and a significantly smaller infrastructure. Robot systems for inserting and removing the moulded parts, a quality inspection station, e.g. for weight determination or optical measurement, the allocation of bar codes and conveyor systems for connection to a packaging line allow a process sequence with more automation. Furthermore, the THERMO FOAMER can also be connected to the Industrial IoT solution Kurtz POWerBoard. This allows individual machines as well as the entire production hall to be kept in view – after evaluation and interpretation of the data and processes, the entire production chain is further optimized. ■

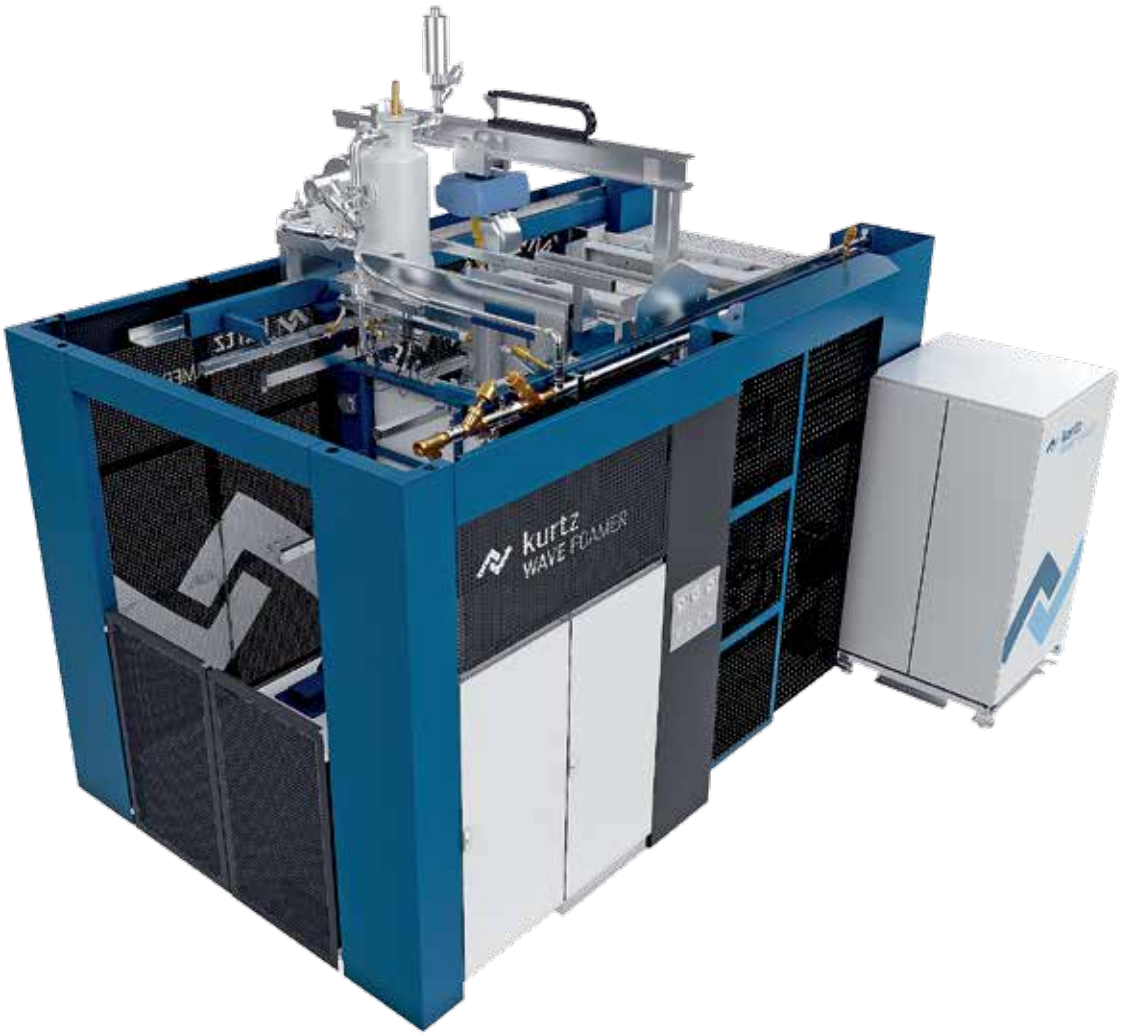
Sturdy and lightweight: A-pillar cladding, woolly and with laser texture.

A high flyer not only in the automotive sector: the combination of EPP and plastic is also worthwhile for saddle production.

The THERMO SELECT process of the Kurtz Moulding Machine produces premium surfaces and also permits the direct insertion of injection moulding elements due to its low shrinkage.

Cooperation with T.Michel Moulds

The "In-Mould Particle Foam Coating" (IMPFC) process recently introduced by T.Michel GmbH also requires the THERMO SELECT process. In a single-stage process, EPP moulded parts are equipped with a PP coating that enables different colors and is also UV-resistant. Equipped in this way, a moulded part made of particle foam can literally be seen in the future.



KURTZ WAVE FOAMER

New perspectives for particle foam moulded parts

Over a good six decades, little has changed in the processing of particle foams. In view of the increasingly littered seas and harmful microplastics, there was a need for action and a new process was required. The Kurtz engineers therefore developed a revolutionary automatic moulding machine that reprocesses a remarkably high proportion of recycled material. At the end of October, the world premiere based on sustainable criteria was presented at K 2019.

The WAVE FOAMER opens up completely new possibilities for particle foam processing, where from the multifunctional beads of EPS, EPP, EPE & Co. insulation panels, packaging and automotive components are produced – such as seat elements, bumper elements and roof beams. Unlike the previous energy-intensive bead-welding process, which required steam and complex installations, the WAVE FOAMER leaves well-trodden paths and takes a completely different approach that is steam-free and energy-efficient. Experts and those outside the industry alike immediately recognise the potential associated with the new technology – it saves up to 90 percent of energy, provides clean energy for the process and conserves resources.

ELECTROMAGNETIC WAVES INSTEAD OF STEAM

Kurtz GmbH has invested several years to develop a stable process based on electromagnetic waves – thanks to the steam-free process the WAVE FOAMER removes previous limitations and opens up completely new production and product worlds. Even engineering plastics with high temperature resistance can be processed with the new

Kurtz Moulding Machine. The functional principle: The foam beads are heated by high voltage excitation in the form of radio waves. An alternating dielectric field causes polar molecule chains to oscillate – the resulting friction generates heat. Polar additives are added to work with a non-polar material. The technology is suitable for new materials with process temperatures of up to 250 °C, which corresponds to a vapour pressure of 40 bar. Unlike the steam process, welding takes place from the inside to the outside. This also makes it possible to process very compact compressions and recyclates. High-quality moulded parts with a 70 percent recycled content can already be reliably produced today. Apart from energy savings and a higher proportion of recycled material, the WAVE FOAMER delivers moulded parts with better welding, higher dimensional stability and greater tensile strength.

HUGE POPULARITY AT K 2019

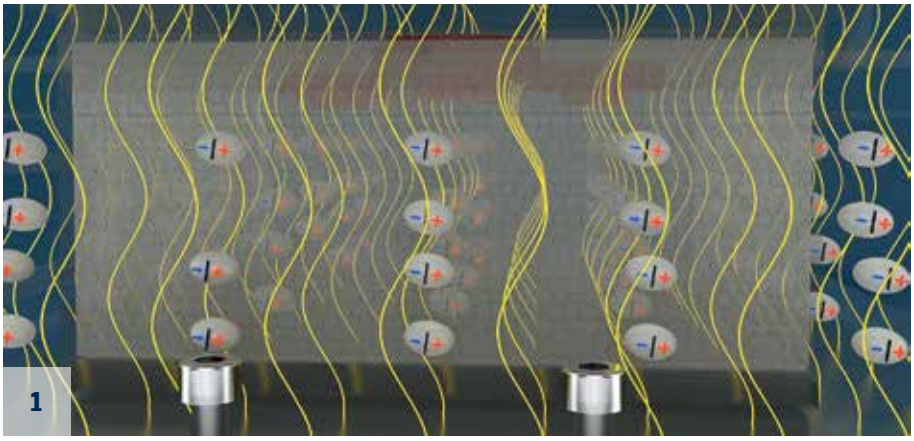
"Following the in-house development of the WAVE FOAMER to technical maturity, we have developed laboratory machines that are already in use at raw material manufacturers and scientific institutes and are working on new materials that can be processed with our technology," explains Kurtz Managing Director Uwe Rothaug. The live demonstrations of the WAVE FOAMER at the Kurtz booth, which were held four times a day, were really stormed by the visitors, and the interest in the new technology was huge. "This shows that we have recognized the signs of the times and are once again pointing our industry in the right direction in the form of a lighthouse technology," said Kurtz Managing Director Uwe Rothaug in retrospect of the successful appearance in Düsseldorf.

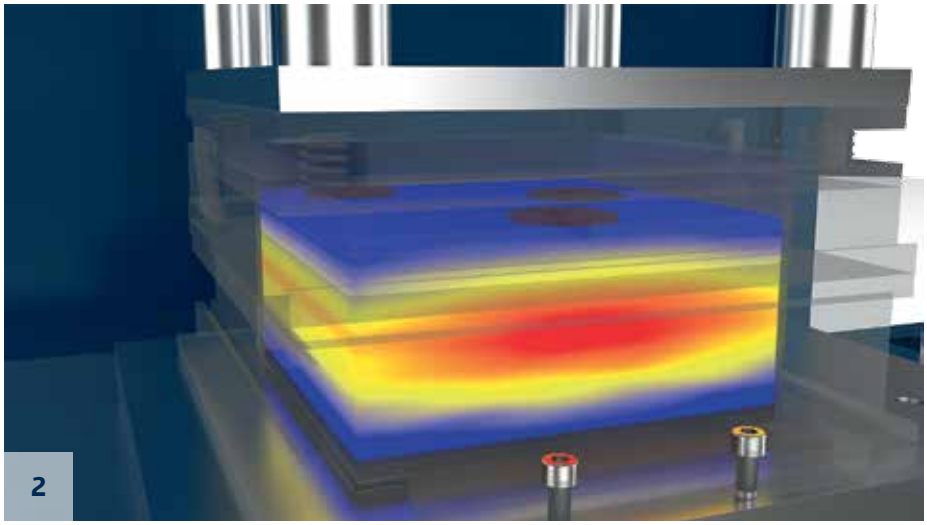
NEW PRODUCTS IN SIGHT

EPS processing is already possible today with the WAVE FOAMER, and soon EPP will become feasible – biodegradable plastics can then be processed, such as BASF's ecovio©, which consists of the biodegradable plastic ecoflex® and polylactic acid (PLA) obtained from renewable, sugar-based raw materials. With the new Kurtz process, processors can save up to 90 percent energy compared with the steam process – depending on the number of moulded parts, the return on investment can be calculated quickly. The technology is also worthwhile for new installations, as no complex steam installation with water treatment or separate cooling water installations are required for the operation of the plant. Thanks to their light weight and excellent mechanical properties, numerous applications for materials such as PET and polycarbonate are within easy reach, for example in electromobility or aviation – the process also brilliantly meets the high requirements for fire protection and temperature resistance. ■

1 High voltage of up to 10,000 V at a frequency of 27.12 MHz stimulates the polymer chains to vibrate so that the foam pearls heat up from the inside to the outside.

2 Fusion of material beads from the inside to the outside for a perfect core fusion.





Process highlights:

- No complex media installation necessary
- Steam generation system and cooling tower installation with water basin no longer required
- Moulded parts made of up to 100 % recycled material
- Energy saving up to 90 %
- Homogeneous welding of the moulded part from the inside to the outside for optimum part quality
- Particularly suitable for high temperatures and high material densities

KURTZ ERSA AUTOMATION

We automate Industry!

The team of Kurtz Ersa Automation is dedicated to tasks around applications for Kurtz and Ersa customers. On the basis of an intelligent modular system, individually tailored process optimizations are created through perfectly coordinated handling and automation solutions.

In the course of basic development, series solutions are developed which, after completion of an intensive test phase, find their way into the product portfolio of Ersa and Kurtz. A further focus is overall plant automation, where Kurtz Ersa Automation appears as a system supplier of turnkey

solutions – in such cases, all process-relevant areas are fully automatically embedded in a tailor-made customer solution. Kurtz Ersa Automation covers all conceivable automation steps – from the arrival of the components at the logistics gate to the packaging of the end product before it is handed over to dispatch. Unpacking, testing, assembly, screwing, parts handling, transport, packaging – Kurtz Ersa automation experts have the right solution for every application!

TARGETED FEASIBILITY STUDIES

Our customers address the respective tasks to the familiar sales structure – the contact person therefore remains the same. The necessary communication is kept to a minimum, which saves our customers valuable time and the coordination of different suppliers. "Even if there is only a vague idea or the naked problem description – contact us. Our Kurtz Ersa developers from the areas of robotics, image processing, linear handling, programming, I4.0 data handling and design are happy to work out targeted feasibility analyses for you, on the basis of which the further course of the project can be coordinated," says Andreas Fischer, Head of Automation Development at Kurtz Ersa Automation. ■

1 ROBOPLACE: Fully automatic THT component placement machine with vision-based component validation;
product development Ersa:
In conjunction with a modular transport system from the Kurtz Ersa Automation product portfolio, the ROBOPLACE enables fully automated THT component assembly in the run-up to the soldering system. The component feed on the rear side of the module can be individually adapted to customer requirements.

2 Multivision system:
Fully automatic test cell with integrated multivision and robotic component handling. Designed as a module that can be integrated into a complete line when linked together, but also offers the possibility of manually feeding components into the system by an operator for further/separate inspection. The design of the entire system is designed in such a way that the customer can inspect 100 % of the products manufactured in his line.

3 Fully automatic assembly system with integrated soldering machine; turnkey solution Ersa: Kurtz Ersa Automation implements an automated solution in the field of electrical module assembly for a large 1st tier automotive supplier, including individual development of the necessary infeed and outfeed palletizing technology to provide the components of the assembly chain fully automatically. Eleven six-axis robots assemble and handle the assembly up to the soldering process and feed the product to component testing. The result: a completely interlinked assembly solution that enables the customer to achieve full automation with minimum space requirements.

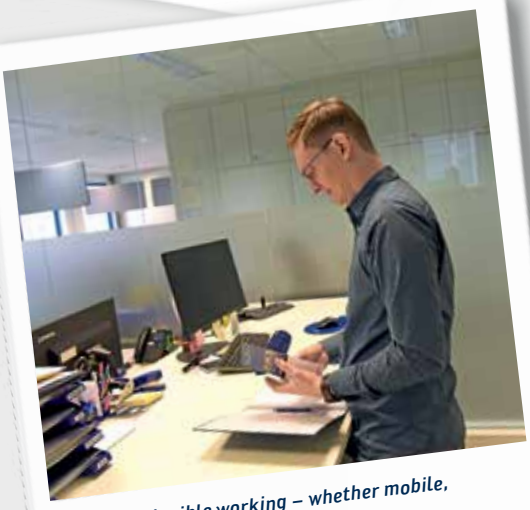
First contact for applicants

240 years of successful company history, owner-managed in the sixth generation, 1,300 employees, globally active as a technology leader in business fields such as "Electronics Production Equipment" and "Moulding Machines", recently distinguished as Germany's top employer and best training company. Sounds good on paper, but how does it feel for the individual? Kurtz Ersa Magazine interviewed Sebastian Fleck, who has been working for Kurtz Ersa's Central Human Resources department since the beginning of November.

Sebastian Fleck had already been active in the human resources department of a medium-sized family business for some time during his vocational training as an office clerk. This continued with his business studies at the University of Applied Sciences Würzburg-Schweinfurt, where the 30-year-old chose to focus on human resources management and controlling and worked as a student trainee in human resources. During his master's degree in business education in Bamberg, he also worked as a freelance lecturer at the vocational training centre, bfz. From the job advertisement on stepstone.de to the application to the invitation to an interview and recruitment, Sebastian Fleck not only felt it was fast, de facto it only took 13 days. The new employee received a written invitation including an agenda for the first two onboarding days before the first day of work. "It was great to get to know the individual subsidiaries and their production right from the start – especially the historic iron hammer, the origin of a globally active group today," says Sebastian Fleck. A start-up is certainly cool for many, but the business educator finds a traditional family business like Kurtz Ersa more fascinating, which, in addition to a long tradition, has values that have grown over many years.

Sebastian Fleck collected many positive impressions in the first few weeks – there was good teamwork, a flat hierarchy and a pleasant working atmosphere. Apart from the applicant management also the publication of job advertisements belong to its field of activity for the specialist of personnel development. As a contact person, he is happy to answer any questions applicants may have. Other tasks include organizational management via SAP and the organization of honors for long-standing employees. The latter is particularly important to the family company Kurtz Ersa in order to appreciate the outstanding performance and loyalty of its employees. From January 2020, Sebastian Fleck himself will be responsible for the onboarding of new colleagues and will take over the supervision and recruitment of working students, (university) school interns and holiday workers. "Every day is fun and I am looking forward to playing an active role in the further personnel development of the Kurtz Ersa Group as an HR employee in the team of the Central Human Resources department," he said on his farewell.

In conversation with CHR colleague Corinna Sommer, who accompanied Sebastian Fleck during the initial period.



Flexible working – whether mobile, standing or sitting.

Sebastian Fleck at his workplace in the CHR office.

Sebastian Fleck (back right) at the common CHR lunch table in the Schwarzer Bock in Hasloch.

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Technology fan? Passionate interest in industrial history?

The story of Kurtz Ersa comes to life in the HAMMERMUSEUM – let yourself be infected with the enthusiasm for technology that still marks us out in the 21st century.

We're looking forward to your visit!

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