



BAVARIAN ENERGY AWARD

GOES TO KURTZ ERSA

New business field

Kurtz Ersa builds 3D metal printer

Ersa Technology Forum successful

Presentations and live demos on the value chain

Automation on site

Already more than 100 projects

GLOBAL. AHEAD. SUSTAINABLE.

Just stop ...



Rainer Kurtz,
Chief Executive Officer
of the Kurtz Ersa Corporation

The economic situation this year was good for only a few companies. 2020 was largely dominated by Corona and was a crisis year like we have never had before. The virus has changed our lives. We were and are forced to change, to be thrifty and to put many things to the test. But the restrictions on personal contacts and

travel, the lack of freedom of movement and the renunciation of cultural enjoyment have also shown us new ways of communicating and living together.

At Kurtz Ersa, we have tried to think further ahead, to keep an overview and certainly not to fall into hectic rush. After all, difficult times also show the strength of our company: we stick together, consult together and obtain opinions and voices from all levels of the corporate hierarchy. The challenges were and are still enormous and the uncertainty is often great. The pandemic has changed a lot and the effects will be visible for a long time to come. There is no one right way, but those responsible at Kurtz Ersa are leaving no stone unturned in their efforts to implement the right measures with maximum attention.

Actionism or inaction, within this range comprehensible decisions must be made. Every organization, every company – including us at Kurtz Ersa – had to face the issue. This can only be done by considering as many aspects as possible. Unfortunately, it is not possible to please everyone. However, we were able to experience a high degree of willingness to cooperate and understanding in all this. And we are very grateful for that.

Hopefully the challenge we experienced this year was unique. We at Kurtz Ersa have sometimes simply stopped to think and reposition ourselves. We decided to take a completely new approach to sustainability, lean processes and the technological challenges. First results can already be found in this issue of Kurtz Ersa Magazine.

For 2021 we hope for a healthy, political and economic recovery. We are pleased about your interest in our company and thank you for your cooperation in the year that is coming to an end.

Glück auf!
Yours, Rainer Kurtz

A handwritten signature in blue ink, appearing to read 'Rainer Kurtz'.



Kurtz with focus on “Automotive”, “Protective Solutions” and “Additive Manufacturing”

The upheavals in drive technology in the automotive industry, the environmental debate on plastic packaging and new competitors from the Far East required a new strategic approach and adaptation of the company structure. In the future Kurtz will focus on mechanical and plant engineering in the application areas “Automotive” and “Protective Solutions”. The area of additive manufacturing is new. In September this year, the company entered into a cooperation agreement with Laser Melting Innovations GmbH from Aachen, Germany, and already offers its customers a functional metallic 3D printer, the Alpha 140.

Ersa focuses on connectivity

Soldering processes require not only the highest level of soldering know-how at the soldering point, but also the ability to coordinate the entire process chain. Service components such as maintenance, training or documentation are becoming increasingly important in addition to the performance of the soldering system or station. In addition, Ersa GmbH consistently moves in the direction of “Digital Production” and offers “Smart Services”, “Smart Machine” and “Smart Production” to significantly increase the technological sustainability on the customer side. In the future, this networking, which we call “connectivity”, will play an even greater role. Processes can then be coordinated, recorded and controlled seamlessly and much faster.

Automation and digitization of processes

Kurtz Ersä’s strategy is clearly focused on engineering. Only ten years ago, the former “Metal Components” business unit, consisting of several foundries, a sheet metal and contract manufacturing facility, was the largest pillar of the company. Today, the transformation to a pure machine builder with high process competence has been completed. The consistent digitization of processes and the integration of production with the most modern communication and information systems of Industry 4.0 increasingly form the basis for the sustained growth of Kurtz Ersä. From business with single machines, the trend is moving more and more towards complete systems including upstream and downstream automation of handling, testing, assembly, labeling and whatever else increases the productivity of our customers.

Process
competence
is in the
foreground



ELECTROMOBILITY.

DRIVEN BY KURTZ ERSA.

GLOBAL. AHEAD. SUSTAINABLE. Kurtz Ersa's new brand motto is both a claim and an obligation. As a GLOBAL player, we manufacture in an international network and offer our customers the best service worldwide – our services are AHEAD, i.e. leading and repeatedly setting benchmarks for others. The third pillar SUSTAINABLE combines several important components: sustain-

able management with a sense of proportion, reliable partnerships with customers and suppliers, and consistent optimization of the CO₂ footprint. Our services address important megatrends such as electromobility, autonomous driving and new communication networks via 5G. Here we offer our customers suitable solution concepts to optimize their production and guarantee perfect products.

TOWARDS A **SUSTA**

YOUR PRODUCTION. DRIVEN BY KURTZ ERSA is the new claim of Kurtz Ersa. We promise our customers worldwide to deliver the right solution for every task. We offer the right

approach for every production process to become more efficient and achieve better results. "Driven" can mean "lead and control", but it can also be understood as "implement" and "accompany".



Kurtz Ersa Vietnam Company Ltd. in Ho Chi Minh City

Global presence. Kurtz Ersa manufactures in Europe, Asia and North America and has more than 20 sales locations worldwide. Through its sales network, it is represented in over 90 countries. This not only enables us to provide a 24/7 service, but also allows us to directly address regional customer needs and incorporate them into product development. The newest locations are the Kurtz Ersa Vietnam subsidiary in Ho Chi Minh City and the Kurtz Ersa France sales office in 67500 Haguenau.

Technological leadership is Kurtz Ers's declared goal and being AHEAD is a permanent driver for our development departments. In recent years, the company has repeatedly demonstrated how creative ideas can be turned into world firsts with high marketing potential. The RF technology of Kurtz GmbH, which has won several awards and uses electromagnetic waves to fuse particle foam, thereby saving around 90 % energy, is a good example of this. Ers GmbH also offers soldering expertise and soldering systems and stations at the highest level. With the EXOS, the new vacuum reflow soldering system, a sign could be set here.

AHEAD is a clear commitment to innovation and performance with maximum customer benefit. Against this background, we are

very pleased that Wirtschaftswoche set our company as the world market leader in the category "Soldering".

LONG LASTING QUALITY
SINCE 1779
ALWAYS THERE WHEN NEEDED
SOLUTIONS
PROCESS RESPONSIBILITY
RESOURCE- SAVING PRODUCTS

LONG TERM RELATIONSHIPS
ENERGY-EFFICIENT PRODUCTS
LONGSTANDING CONTACT PERSONS
RELIABILITY
SPARE PART AVAILABILITY

Sustainable since 1779. As a company whose foundation dates back to 1779 and which is now managed by the sixth generation, Kurtz Ers relies on a corporate policy of sustainable growth and the consistent development of innovations. For

more than 240 years, Kurtz Ers has been fulfilling its overall social responsibility and bringing economic, social and ecological interests into a harmonious balance. Our understanding of sustainability encompasses precisely these three aspects. In eco-

nomic terms, we pursue the goal of a sustainable and lasting increase in the value of the company. Social goals include the promotion of culture and science as well as the responsibility for our employees as the largest employer in the region.

INABLE FUTURE



Actively optimizing our CO₂ footprint.

Ecological issues are becoming increasingly important. We are therefore very pleased to help optimize the CO₂ footprint with innovative products. Recently won awards such as the Bavarian Energy Award or the EPS Award are proof of sustainable and ecologically relevant product development.



More than Green. Kurtz Ers is committed to becoming even more sustainable as a company and to consistently aligning its products and processes with sustainability goals. To this end, a project has been launched in which many managers and employees of the Group are working to make the company more sustainable. Not only do ecological aspects play a major role in this, but rather a holistic approach is being pursued around the topics of "developing", "procuring", "producing", "managing" and "living". A wide range of projects and initiatives have been launched in the individual subject areas and are already being fully implemented.

Excellent Soldering System

Ersa EXOS wins technology awards



Ersa received two prizes for his convection reflow soldering machine EXOS 10/26. The GLOBAL SMT Award in the category "Best Product – Europe" in the USA and the Mexican Technology Award 2020 in the category "Soldering Equipment – Convection". Due to the circumstances of the Corona pandemic, the awards could not be presented directly to the winners, instead they were announced during virtual award ceremonies. "We are very happy about the award for the EXOS vacuum reflow oven. This technology, combined with intelligent Ersa features and the multijet dispensing system, offers our customers a process that reduces voiding by 99 percent. This is another Ersa innovation that significantly improves quality and reliability for customers," said Albrecht Beck, President & COO of Kurtz Ersä, Inc. in Plymouth (USA).



Albrecht Beck, President & COO of Kurtz Ersä, Inc. (USA)

Occupational safety award

for Kurtz Ersä

Kurtz Ersä has won an occupational safety award in the category "Quality and Performance" for the first time. Since 2017, DPS GmbH has been presenting an award for outstanding performance in occupational safety every year, with the aim of motivating top industrial performance in terms of product quality and occupational safety. From the total of more than 1,500 cooperation partners, ten companies each year receive an award. Other award winners in 2020 include BASF SE, thyssenkrupp System Engineering GmbH, B/S/H Hausgeräte GmbH and Schmitz Cargobull AG.



Alexander Schmidt, head of the central occupational safety unit, and Rainer Kurtz

In addition to the occupational health and safety measures that have been taken and further developed, other factors are also included in the evaluation, such as clear, comprehensive communication, the corporate philosophy that enables this and the low error rate of operating resources. "We are pleased that our group-

wide occupational safety management has become significantly more professional since the creation of the central occupational safety unit in January 2019 and that we are now officially among the best in our class," commented Kurtz Ersä CEO Rainer Kurtz on the success.



Kurtz Ersä and Corona

Fast and targeted against Corona!

The SARS-CoV-2 virus has been keeping the world on tenterhooks for a good nine months now. During this time, many measures have been taken by the Kurtz Ersä Group to protect its employees and to maintain its ability to function and deliver. Time for a short review of the steps taken so far.

Shortly after it had to be assumed that this time the situation would not be as mild as it was with the swine flu in 2009, the first internal emergency plans were launched. A crisis team – the Corona crisis team – was convened for the first time on 18.03.2020 with the involvement of the works council. The first measures were decided and implemented promptly. As part of the crisis team, the Group Works Council Joachim Kraft recently remarked: "In all cases, the opinion of the Works Council was always sought and not only followed with interest, but also implemented. For example, the early suggestion to get mouth-nose protection masks for the workforce ..."

The result of the crisis team's work was that many political decisions were clearly anticipated. It was not until April 16, 2020 that the

Federal Ministry of Labor and Social Affairs (BAMF) issued the binding SARS-CoV-2 occupational safety standard with a corresponding catalog of measures. At that time, almost all of these measures had already been implemented within the Kurtz Ersä Group, which speaks for the effectiveness and speed of the crisis team. It should also be noted, however, that all measures will remain ineffective if the workforce does not cooperate. It is only thanks to the disciplined and consistent behavior of all concerned that Kurtz Ersä has got off lightly so far. It is to be hoped that the "lockdown light" recently adopted by the government will help to get the infection figures under control again. It is also clear, however, that a return to normality will only be possible once a vaccine is available on a mass scale.

KURTZ ERSA HAMMER ACADEMY FOUNDED

On 01.08.2020, the Kurtz Ersa Group grew: The subsidiary Kurtz Ersa Hammer Academy GmbH was founded and has been a fundamental pillar for the future of our family group since September. The new company was founded for one primary reason: the merger of apprenticeship and further education. As a central training platform, it is an important part of the Group's future viability.

Verena Alina Frankl, in her capacity as Head of Central Division Human Resources and Chancellor of the Hammer Academy, is the logical choice as Managing Director of the training company. She shares the management with Thomas Mühleck. Training has always been a figure-head for Kurtz Ersa – the constant training quota of over 10 % per year proves its high importance. In order to continue to build on this, our training must keep up with the times, be modernized and rethought – this has been done with the founding of the new training company. In addition to a new Group-wide training concept, 2020 also saw the launch of a new training team with four full-time trainers: Vivianne Pabst is the Commercial Training Manager, who is also responsible for the administrative processes related to apprenticeship. Nicolei Ruff is the Training Manager for

the industrial-technical professions and leads the team of trainers. Frank Adam, Trainer Mechanics, and Jonas Halama, Trainer Electronics, will supervise the training workshop and teach the apprentices there not only practical but also

theoretical basics, so that the apprentices no longer have to travel to the far-away FABI courses in Niederstetten.

In the future, this new team will manage the Group-wide training, which differs from the previous training in one point in particular: Up to now, our apprentices have each been employed in one of the various subsidiaries and have spent

most of their training time in this company. Since last September, all new apprentices have been employed by the training company and will get to know the entire Group until their release. This enables us to provide an even broader-based training program than before, to adapt the take-over of ap-



New apprentices at the start



From left: Training Manager industrial-technical professions Nicolei Ruff, Trainer Mechanics Frank Adam, Trainer Electronics/Mechatronics Jonas Halama, Training Manager commercial professions Vivianne Pabst, Managing Director Thomas Mühlecke, Managing Director Verena Alina Frankl

prentices to their inclinations and interests, and to create uniform company regulations for all apprentices and dual students, for example with regard to remuneration or working hours. Thanks to the new training company's headquarters in Baden-Württemberg, all apprentices can attend the same and nearby vocational schools and no longer have to travel long distances for lessons.

The training workshop will also be modernized with the new Group-wide training concept and will open in spring 2021 as a new training workshop in Wiebelbach. This training center will provide basic training, exam preparation, and specialist courses, for example in control technology, PLC and robotics for all mechanical and electronic training professions. Compared to the previous training workshop, the new training center will therefore not only offer opportunities for task processing from the



CAD drawing of the new training hall

mechanical and machining areas, but also its own electrical workshop and a modern laboratory for practical tasks. The reason for this is that existing job profiles are increasingly shifting as a result of increasing digitization in the Group.

Whereas in the past, training was mainly provided for professions in the field of mechanics, the focus is now increasingly on electronics engineers, mechatronics engineers and IT specialists.

The entire training concept was revised when Kurtz Ersa Hammer Academy GmbH was founded. As a result, our Group remains well equipped for the future, is ready for

developments such as Industry 4.0 and can optimally prepare our skilled workers of tomorrow for their future careers. The future can come!

I-CON PICO HOTFLOW 3 VERSASCAN VERSAPRINT 2
POWERFLOW N₂ POWERFLOW PRO ECOSELECT
SMARTFLOW EASY ARM VERSAFLUX 3 HOTFLOW 4 HOTFLOW 4
POWERFLOW 4 ERSASCOPE M ECOCELL EXOS HR 550 XL
VERSAFLUX 4 HR 600 XL HR VARIO VERSAEYE

Strong solidarity between Sales and Development: Erska Sales Director Rainer Krauss (left) and Erska Development Director Dr. Alexander Mühlig (right)

Erska Development + Sales

Excellent solutions, *quickly realized!*

In recent years Erska has grown massively as a system supplier for electronics production – so much that a new organizational structure had to be implemented in mid-2019. The Kurtz Erska Magazine spoke with Erska Head of Development Dr. Alexander Mühlig and Erska General Sales Manager Rainer Krauss.

What does the new Erska organizational structure look like?

Dr. Alexander Mühlig:

Regardless of whether it's development, production or sales, we basically want to develop together and increase our agility in a targeted manner. To this end, we set up a new organizational structure in Erska Development at the beginning of the year. With small, powerful teams, we are concentrating on the various product divisions and are thus gaining considerable speed. Our product development process has also been adapted. We continue to develop our products with interdisciplinary teams and in regular coordination with sales. In this way, we are always close to current events, which naturally results in the best solutions.

What challenges has this created for sales?

Rainer Krauss:

The reorientation of development is an advantage for our customers. The annual production of 1,200 soldering systems has created additional requirements, which we can now continue to meet adequately with the new organization. We are now as agile as a speedboat and as stable as a deep-sea tanker! Thanks to our global service and partner network, we always have our ear to the ground in the respective market and can serve our customers individually.

What current topics is your team working on at the moment, what new developments are there?

Dr. Alexander Mühlig:

At the moment our development department is working on three new products in the technology areas of reflow, soldering station and selective. We are also massively pushing ahead with overriding topics such as Industry 4.0 and connectivity, which are cross-cutting functions that run through the entire portfolio and are becoming increasingly important. We are aiming at the transparent system that is easily integrated into a superordinate factory organization and provides meaningful data for optimal industrial electronics production.

Rainer Krauss:

With our large network behind us, we can live up to our claim as the world market leader for electronics production under the motto "GLOBAL. AHEAD. SUSTAINABLE.", we can not only maintain our claim to be the world market leader in electronics manufacturing, but also meet and further expand the demands of our customers worldwide, many of whom have been with us for many years.

How does the new cooperation work?

Dr. Alexander Mühlig:

Cooperation between Sales and Development is very, very important – it can only work in close cooperation and permanent exchange. In large development projects, this takes place in monthly meetings, where new requirements can also be discussed. Equally important, however, is the day-to-day business, where we maintain a "flexible standard" through which we often implement individual modifications for customers. We have a very lean organization with extremely short lead times – this is only possible if the entire process from development to production works flawlessly.

How do you see the development of electronics production for next year? Where is Ersa heading?

Dr. Alexander Mühlig:

Ultimately, it's all about implementing excellent solutions as quickly as possible, both today and tomorrow. As Ersa, we are excellently positioned for this with our new organization – an excellent basis with which we not only want to maintain our technological lead, but also further expand it.

Rainer Krauss:

The electronics manufacturing market will be completely transformed by 2030 through increased electrification, digitization and automation. We have already set the course for this today: with new production facilities at the Wertheim am Main and Zhuhai sites in China, but above all with our new organizational structure for development and sales.



The Kurtz Ersa Magazine in conversation with Development and Sales



Dr. Alexander Mühlig, Ersa Head of Development at the company since May 2020, wants to realize the best possible products as quickly as possible with his development teams



Ersa General Sales Manager Rainer Krauss sees the close exchange with the development department as extremely important for the further growth of the company.



With 18 technical presentations over two days, the Erska Technology Forum 2020 offered an attractive and high-quality lecture program for the participants

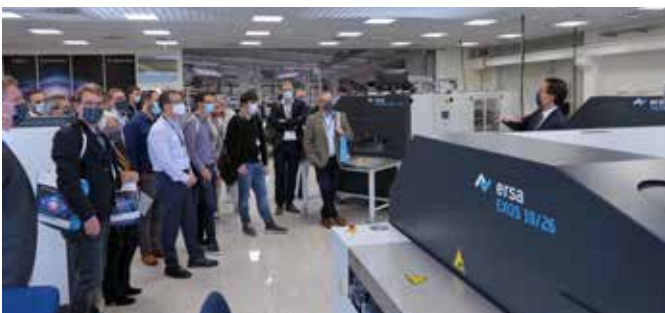


As part of the Technology Forum, factory tours of the Smart Factory soldering machine production in the new Erska Plant 2 were offered

Great popularity for ***Erska Technology Forum***

Technical presentations and live demos on the
entire electronics manufacturing process chain

At the Technology Forum at the end of September, Erska General Sales Manager Rainer Krauss was able to welcome a total of around 120 customers, business partners and interested parties in Wertheim am Main – one of the first real meetings for the Electronics family in 2020. An important signal for customers and business partners alike – although in compliance with a strict hygiene concept.



In three exhibition rooms, the participants were able to inform themselves live about the latest machines and systems for electronics production. Erska process experts were available to answer questions and provide explanations



The topics of quality assurance processes and automation solutions could also be examined and discussed live at the Erska Technology Forum



The Customer Care Center also showed great interest in the exhibits from the various technology areas, for example the Erska SOLDER SMART hand soldering robot



In the field of rework soldering, Erska offers the complete range from the inexpensive entry-level model to the fully automated system for XL-size electronic assemblies. The high process reliability of the systems is impressive

"It was the first event in this format for Erska – we did everything we could to completely map electronics production with printing, assembly, soldering," said Rainer Krauss. In addition to technical presentations and live exhibits on all process areas of electronics manufacturing – reflow, selective, wave, automated rework, Industry 4.0, automation and hand soldering – the participants followed guided tours of the new Erska Factory 2 to see how the soldering systems are produced in state-of-the-art flow-cycle production. One floor up, there were live demonstrations of Erska systems and electronics production equipment from business partners (assembly, exhaust air filtering).



In the Erska Application Center, visitors had the innovative technologies of the machines ready for demonstration explained to them in detail

At the beginning there were presentations about wave and selective soldering as well as stencil printing. Under the title "Selective and wave soldering: highest flexibility for every requirement" the soldering processes for through-hole technology (THT) were presented. In addition, the interaction of relevant process parameters (solder temperature, wetting time, solder wave height, solder nozzle diameter) and solder joint boundary conditions were discussed – as well as the defined, programmable no-clean flux application.

In the case of stencil printing, the focus was on "errors in the printing process and consequences in the SMT line". In order to prevent minor problems in the course of individual process steps from becoming major problems in real production, numerous influencing variables such as the PCB, components, process, equipment used and the environment must be taken into account in addition to the printing and reflow process. A high first pass yield (FPY) can be achieved with a sophisticated strategy that combines productivity and quality, but also keeps an eye on costs. In the further course of the event, "Industry 4.0: Ready for the digital future with Kurtz Erska CONNECT" presented a central gateway solution for all digital solu-

tions, ranging from entry-level solutions ("quick wins") to completely networked production. The experts from Kurtz Erska Automation presented "Key Solutions for THT electronics production", including quality check solutions, pick-and-place handling and soldering system peripherals such as lifting, lowering or rotating stations, height compensation modules as well as transport routes and workstations in-line and offline. Best practice solutions in the field of automation including robot handling were also presented.

Behind "Void-free vacuum soldering for future applications: 5G. E-mobility. LED lighting technology. High Current Technology." concealed reflow soldering with vacuum chamber, which further perfects the soldering quality.

This begins even before the soldering process by steps that build on each other, such as layout and printing of the PCB and subsequent assembly. This is followed by a quality assessment by X-Ray or AOI.

Erska Tools also presented its areas of hand soldering, rework and inspection – topics were "Hand soldering & solder fume extraction – safe manual processes and health prevention at the workplace", "Automated piston soldering with the SOLDER SMART – repeatable and reliable" as well as "Automated rework – ultimate flexibility from 01005 to big boards", which allows components of 22 x 22 mm and PCBs of 150 x 150 mm to components of 60 x 60 mm and board formats up to 625 x 1,250 mm to be processed safely and reproducibly. After a lot of soldering technology input, the Technology Forum participants strengthened themselves at the end of the day with a Barbecue. On the second day all those presentation appointments that had led to overlaps on the first day could be taken up. All participants were positive about the Technology Forum with in-house exhibition, so that a repetition next year is already decided.

Convincing sample soldering all along the line



In use after successful test soldering at Ka-Ro electronics: Erska VERSAFLOW 4/55

Ka-Ro electronics relies on Erska VERSAFLOW 4/55

Advantages of selective soldering compared to wave soldering: improved quality, higher process reliability, lower energy and solder consumption, reduced thermal stress for the PCB and greater design possibilities per solder joint. The extent to which a selective soldering system meets customer requirements is demonstrated by initial use on site – or by trial soldering directly at the machine manufacturer's premises. Ka-Ro electronics GmbH was about to switch to selective soldering technology, agreed on a sample soldering and in the end was completely convinced by the VERSAFLOW 4/55.

The portfolio of the Aachen-based EMS service provider, founded in 1987, was expanded in 2000 to include the product area "Computer on Module". Three ultra-modern production lines and multi-stage quality controls result in a monthly production capacity of over 16 million electronic components. The full-service offer ranges from development and prototype production to series production. During the passed business year 2019, more than 2,000 customers were supplied with approx. 350,000 modules through a worldwide dealer network. Computer on Modules (CoM) are small embedded computers that are soldered or inserted onto a carrier board. All relevant functional units of a full-featured computer – processor and graphic unit, RAM and program memory, communication interfaces – are located on the Ka-Ro modules, which are especially optimized for mobile applications in the industrial, medical and test equipment sector.

Economic selective production

The existing wave soldering machine of the THT production should be replaced due to increased requirements. "Our wave soldering machine was optimal for assemblies equipped only with THT. Today, with assemblies being equipped on both sides, there is quite simply no way we can do without selective soldering if we wish to continue economic production," says Thomas Wahnberger, THT/Test Field Division Manager at Ka-Ro. With the selective soldering technology, the high product quality should be further optimised and a higher throughput should be achieved. After initial contact at Productronica, the company quickly came

up with the VERSAFLOW 4/55. A special feature of the modular machine generation is the second pot, which adjusts automatically in Y-direction, thus adapting to the product benefit and enabling higher throughput.

In order to clarify which options are necessary on the basis of an own assembly, a Ka-Ro team came to Wertheim for sample soldering. First of all, all relevant data for the cycle time was recorded, since in selective systems, the slowest process determines the cycle time. Then the subareas fluxing, preheating and soldering were focused on individually. "During sample soldering, customers get to know the machine under real conditions. They are involved from the very beginning in the process of creating the soldering program or setting the parameters for their applications, and thus experience various options," explains Erska Area Sales Manager Philipp Haar.



An Erska HR 600 rework system is also used, especially for prototype construction, to maintain the added value of the increasingly complex electronic assemblies



During soldering trials, the customer gets to know the machine under real conditions and is involved right from the start

With years of experience to achieve the ideal soldering result

According to Philipp Haar, the transparent process without detailed advance information on the assemblies is a unique selling point for Ersa, with over 90 percent of the orders being completed. This approach is also a challenge – the application engineers do not know in the morning which soldering tasks have to be solved by midday. The key to this: Years of experience plus process know-how lead to perfect soldering results.

For the Ka-Ro team, the day at the Application Center was the decisive criterion: “We had an EMS production order with us, about which we had not exchanged any information with Ersa in advance. The soldering on site worked su-

per, that convinced us,” says Thomas Wahnberger. Thanks to its modular design, the VERSAFLOW 4/55 used at Ka-Ro can be expanded at any time for even more flexibility or an increasing order volume. The company’s satisfaction with system supplier Ersa is also illustrated by the use of an Ersa rework system HR 600/2, which Ka-Ro uses mainly for prototype construction.

“Competent contact persons, transparent communication and quality-enhancing results – the complete Ersa package has inspired us and the customer feedback confirms that we have made a good decision with this investment,” summarizes Thomas Wahnberger.



Thanks to its modular design, the VERSAFLOW 4/55 used at Ka-Ro can be expanded at any time – making it even more flexible and ready for an increasing order volume



Ka-Ro electronics GmbH at a glance:

- founded 1988 in Aachen
- 2019: over 2,000 customers worldwide and 350,000 modules annually
- 3 state-of-the-art production lines for 16 million electronic components monthly production capacity

FROM MICRO TO MME

Automated rework solutions for small components and XL boards – from 01005 components to 625 x 1,250 mm board size

E-mobility, automation, autonomous driving, 5G communications and Industry 4.0 are the megatrends that are leading to extensive digitization. This requires increasing computing power in systems and devices, and great potential for developers and manufacturers of such technologies. At the same time, demands on the electronics manufacturing process are growing. Reworking and repairing electronic assemblies is also becoming more demanding, and new concepts and automated systems are in demand.

As a specialist in electronics manufacturing, Erska has been involved in professional reworking since the late 1990s. At that time, when the Ball Grid

Array (BGA) was still a young package type, the process knowledge for selective processing of SMDs in rework was developed. Today, BGA are an integral part of modern, high-performance electronics. Standard in numerous fields, essential for high performance electronics. For 5G applications BGA with 110 x 110 mm edge length and 0.6 to 1.0 mm pitch are used. At the opposite end

are the tiny electronic circuits: passive, discrete, two-pole SMD components. 01005 chip capacitors or resistors with dimensions of 0.4 x 0.2 mm have long been common.

The challenge for electronics production, in view of the flexible range of component shapes, is to be able to process all components in the line process and to be able to fall back on appropriate repair concepts in case of failure. Although plant and process technology has become more and more sophisticated in recent decades, new challenges are being added all the time – such as steadily decreasing

pitch dimensions or increasing circuit complexity. Solder paste printing is still responsible for many soldering defects on SMT assemblies. Therefore, modern stencil printers with sophisticated stencil technology and integrated 3D inspection are recommended.

What to do in case of defects?

Depending on the size and nature of the component, all electronics can be reworked successfully with solder joints that are on a par with the quality of the faultless manufacturing process. The “Guide Rework of Electronic Assemblies” of the ZVEI (German Electrical and Electronic Manufacturers’ Association) proves that processes for rework can be qualified and reliably carried out. Whether very small assemblies (e.g. hearing aids) or extremely large assemblies (server boards, 5G modules) – the demands on the repair process are increasing. Current Erska Rework Systems can process assemblies up to 625 x 1,250 mm (24 x 48 inch) in size. The now very high degree of automation ensures high process reliability and repeatability. Whether 01005 or large BGA: The components are picked up for placement, automatically aligned by image processing, set down by means of an axis system and then soldered.



Placement of a 01005 chip with the Erska Hybrid Rework System HR 600/3P





For BIG BOARD rework: With the Ersa HR 600 XL, assemblies up to a size of 625 x 1,250 mm and BGAs with edge lengths of 120 x 150 mm can be processed automatically

For processing chip components, the Ersa HR 600/3P is equipped with ultra-fine nozzles and a tape feeder. Solder paste can be refreshed by a dip transfer. For large BGA such as Land Grid Array (LGA), the identification of the connections is also fully automatic. With the help of the Dip&Print Station, the component connections are automatically dipped in flux or printed with solder paste using a suitable stencil. While chips are usually easy to remove and insert, large components require a larger heating head and high pull-off force for desoldering – the solution here is offered by the Ersa HR 600 XL with a powerful vacuum system with large nozzles or double nozzles. Especially for very large boards, the homogeneous heating of assemblies is important. Ersa's revolutionary heating technology ensures homogeneous heating with minimal distortion – the IR matrix bottom heater on the HR 600 XL brings the assembly to temperature with 25 individually controllable bottom side heating elements. Peripheral areas of the board can be heated more than the center, while individual areas can be heated less than others ("cold spot").

In profile-controlled soldering processes, Ersa system

heaters follow the measurements of the leading control sensor on the board and automatically ensure reproducible results. In addition, the system user gets a clear view of the solder joints through reflow process cameras. With comprehensive process knowledge from line processes, Ersa offers suitable rework solutions for the rework of modern assemblies – from 01005 to 625 x 1,250 mm!



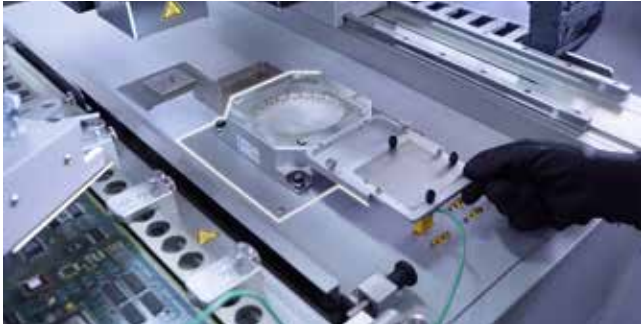
The XL heating head of the Ersa HR 600 XL is suitable for components up to 150 x 120 mm edge length



Matrix underheater of the HR 600 XL with warmer edge area



Matrix underheater of the HR 600 XL with "cold spot"



Dip&Print Station on the HR 600 XL – for defined flux application for BGA



Virtually connected with partners: Ersa Sales Team from Wertheim to the world

Ersa virtual

International Sales Meeting 2020

Nothing can replace us physically being together. Nevertheless, the Ersa Sales Team has managed to bring together its worldwide network of agents as it does every year. Whether representatives from Poland, Italy, Chile, Thailand or the USA – over 150 people took part in the International Sales Meeting 2020, which this year took place virtually. The welcoming address by General Sales Manager Rainer Krauss and Hansjürgen Bolg, Head of Soldering Tools, Rework & Inspection, was followed by various technical presentations covering the entire Ersa portfolio. From Wertheim, where the sales team met, the presentations were transmitted via livestream. This enabled the partners not only to follow the event live, but also to interact, ask questions and actively participate in the discussion. A highlight was the virtual tour of the new buildings and production facilities in Shenzhen and Wertheim. Rainer Krauss and Hansjürgen Bolg also put the sales team in the mood for the upcoming 100th anniversary of Ersa GmbH next year, for which preparations are already in full swing. The entire team hopes to meet again in person soon – but the feedback on the virtual event was positive throughout.

Participants about the virtual sales meeting

"The ISM 2020 was very well organized as usual, in spite of the fact, that due to Covid-19 it was virtual."



Peto Csaba – Microsolder, Hungary

"Great Job everyone!"

Todd DeZwarte – Kurtz Ersa, Inc. (USA)



"The way all are participating is great, feels like a big family!"
Gustavo Perez – Kurtz Ersa Mexico, Mexico



"Great job putting together a virtual ISM. Nothing will replace physically being together, but the past two days were a close second. Thank you!"
Daniel Hahn – Kurtz Ersa, Inc.



"As always a pleasure to see and hear from all the Ersa family. I hope that for the next ISM it will be in Germany. The ISM was OK, but I miss touching the machines and seeing the new things there are."

David Chen, Kurtz Shanghai Ltd., China

Additive Manufacturing

Kurtz Ers and LMI join forces

The Laser Melting Innovations GmbH & Co. KG (LMI) was founded in 2017 – it is the result of a project of the Aachen Center for 3D Printing, which was set up by the Aachen University of Applied Sciences together with the Fraunhofer ILT. The LMI team has more than 20 years of experience in the field of additive manufacturing and has set out to make it easier for small and medium-sized companies to access metallic 3D laser printing. Development of the Alpha 140 printer began three years ago – the market launch has now been successfully completed and the first models are in production. “Our goal is to democratize 3D metal printing in order to provide SMEs in particular with a low-cost entry into the new world of digital manufacturing,” explains Professor Dr.-Ing. Dipl.-Wirt.-Ing. Johannes Henrich Schleifenbaum, one of the LMI founders.

How did this happen? For some time now, the machine building and technology group Kurtz Ers had been looking to complement existing business areas. “3D metal printing is an excellent complement to our relationships in the manufacturing scene,” explains CEO Rainer Kurtz. The Alpha 140 is manufactured at Kurtz Maschinenfabrik in Kreuzwertheim and is available immediately through the worldwide Kurtz Ers sales network – as is a 24-hour service. “This cooperation enables us to achieve a fantastically short time-to-market,” says Kurtz Managing Director Uwe Rothaug, who was instrumental in preparing the cooperation. A classic win-win situation: For Kurtz Ers, LMI’s process know-how in the field of additive manufacturing was the key to entering the new business segment. For LMI, as a young technology company, Kurtz Ers’s sales and

service channels and the experience of the established machine manufacturer offer the ideal complement to the roll-out of metallic 3D laser printing.



New cooperation partners (from left to right): LMI: Dawid Ziebur, Sven Scheres, Steffen Stahlhacke, Prof. Dr.-Ing. Johannes Henrich Schleifenbaum and Kurtz Ers: CEO Rainer Kurtz, Technical Director Victor Romanov, Managing Director Uwe Rothaug



New product in the portfolio: Kurtz Ers enters the metallic 3D laser printing market with the Alpha 140 from LMI

 **kurtz ers**



© Bayern Innovativ/Astrid Schmidhuber

Presentation of the Bavarian Energy Award 2020 by Minister of State Hubert Aiwanger at the Ministry of Economic Affairs in Munich



Kurtz Ersä is main winner of the Bavarian Energy Award 2020

Award for radio frequency technology of Kurtz GmbH

Every two years, the State of Bavaria awards the "Bavarian Energy Prize" for outstanding achievements in the field of energy. After Kurtz GmbH had prevailed over its competitors in the category "Energy Efficiency in Industrial Processes and Production as well as Energy Efficiency Networks", Kurtz representatives were also able to accept the main award from eight prize-winner categories at the Ministry of Economic Affairs in Munich on 22 October.

The RF technology convinced the expert jury with the project "Chemical-free recycling of EPS material by RF fusion technology". Kurtz Ersä CEO Rainer Kurtz was extremely pleased about the award: "Fusing particle foams by electromagnetic waves is highly promising and revolutionizes the production of moulded parts. The award is both an honor and an incentive at the same time and a welcome building block of our ambitious sustainability program."

ped with a fully electric drive. The use of electromagnetic waves in the radio frequency range ensures optimal fusion. In addition, new materials and biodegradable materials can be processed. This processing was not possible in standard machines until now due to the high pressures required. Top advantage of the RF fusion technology: Only by mechanical "shredding" can the particle foam material be returned to the cycle. The WAVE FOAMER convinces with a reusability of up to 100 %. With EPS in the previous steam process, a maximum of 20 % recycled material can be reused.

RF fusion technology saves 90 % energy



Chemical-free recycling and energy savings of up to 90 %: Kurtz WAVE FOAMER with radiofrequency technology

For years the plastics industry has been looking for alternative manufacturing processes. The fusion of particle foams using highly efficient radio frequency technology is revolutionizing processing: Compared to the manufacturing process using steam, up to 90 % energy can be saved. By eliminating the previously necessary steam generation equipment, it is possible to significantly improve the CO₂ footprint of particle foam manufacturers. The machine is also equip-



The reduction of CO₂ emissions is the main goal of current corporate strategies to sustainably curb global warming. For the plastics industry Kurtz Erska offers significantly better emission values with its radio frequency fusion technology.

There is a rapidly growing awareness worldwide that more must be done to protect the climate. The plastics industry in particular urgently needs innovative solutions for a climate-friendly production and more environmentally friendly end products. RF technology, which forms particle foams based on electromagnetic waves, is paving the way for a more sustainable production. The “hardware” for this is provided by the

Kurtz WAVE FOAMER, which significantly reduces CO₂ emissions on the customer side – in terms of CO₂ footprint, but also in terms of energy and water consumption. Compared to the conventional process with steam, the RF technology saves up to 70 % CO₂. In direct comparison with an EPS steam machine, this results in an annual saving of over 9,000 tons of CO₂ – equivalent to the consumption of more than 1,000 people in Germany per

year! Especially with regard to the “green deals” of leading countries and regions this is a breakthrough. The European Green Deal calls for net CO₂ emissions to be reduced to zero by 2050, making Europe the first continent to become climate neutral.

Green Deal Solution

RF technology improves CO₂ footprint

Innovative technologies such as RF fusion technology provide significant support for this project and are therefore supported by the European Union. Leading economic nations such as China and the USA are also aware of the importance of greenhouse gases and are working to reduce CO₂ consumption, especially in densely populated and industrialized regions.

Innovation leader for a greener world

With the RF process, there are no longer any limits to particle foam processing. Kurtz Erska is continuously developing applications for the recycling loop and thereby enters new markets. The use of the Kurtz WAVE FOAMER enables the processing of urgently needed biological and biodegradable alternatives. With RF you save today and win for tomorrow!



The bicycle core made of eTPU is produced at Schaumaplast Nossen GmbH, Gewerbestraße 10, 01683 Nossen, Germany, on machines from Kurtz GmbH. The technology can be found in all Ergon core saddles for touring (ST Core), city (SC Core), mountain bike (SMC Core) and e-mountain bike (SM E-Mountain Core). www.schaumaplast.com



eTPU revolutionizes seating comfort while cycling

.....

In sports, particle foams have a wide range of possible applications. The elastic eTPU in the bicycle saddle, for example, provides back-friendly cushioning and, as a tire for scooters or scooters, for resistant, long-lasting locomotion. But also as sports equipment for gymnastics or rehab in form of balls or fascia rolls, eTPU shows its individual strengths. In addition, particle foams in sports, bicycle or mountaineering helmets as well as in joint protectors offer reliable protection against impact damage.

A very successful application for eTPU particle foams are the back-friendly, full-surface cushioning and movement-supporting "core" bicycle saddles of the Ergon brand. The saddle is still the number one problem zone. Nearly all cyclists know the manifold seating problems on long and short bike tours. Anatomically, the complaints often differ between men and women. Feelings of numbness, pressure and back pain often reduce the riding pleasure considerably. The solution is an innovative bicycle saddle with an ergonomic core made of eTPU – embedded in a revolutionary new construction principle. This relieves the back, effectively dampens unevenness as well as shocks and prevents the well-known seat complaints. The saddle adapts to the rider's mo-



© T. Michel Formenbau GmbH & Co. KG

vements and provides a completely new riding experience. The bicycle ergonomics specialist Ergon from Koblenz (sales via RTi Sports GmbH) developed the concept for this innovative product in cooperation with the Schaumplast Group, BASF, the mould maker T. Michel Formenbau GmbH & Co. KG and the German Sport University Cologne.

The innovative Infinergy® material from BASF with its many, very light and highly elastic foam particles is ideal for damping and suspension. As with the Boost shoe, the eTPU saddle core returns to its old shape extremely quickly – and remains much more durable than conventional damping materials, even under extreme long-term stress.

KURTZ POWERBOARD

As early as 2018, Kurtz Ersä launched the "P01" project in order to derive the greatest possible benefit from digitization for the Group and to become even more competitive for its customers around the globe. In conjunction with the awareness that the Industrial Internet of Things (IIoT) will change all production processes and the entire manufacturing industry in the future – especially those of our customers – we developed a scalable, secure solution: the Kurtz POWERBoard, which was presented very successfully for the first time at GIFA 2019. The visitors were enthusiastic and the reactions were positive without exception.

For further development we then put the Kurtz POWERBoard through its paces under real conditions with our long-standing customer and cooperation partner CSA Herzogenburg GmbH. Our customers can now see the added value of this dynamic control tool directly on their plants and, for example, their overall equipment effectiveness (OEE) can be permanently and directly viewed on the basis of defined parameters for quality, performance and availability. With the Kurtz POWERBoard, customers now have the opportunity to carry out a detailed, cross-site comparison within the company via a secure and certified cloud solution. On this basis, measures to increase efficiency can be derived, implemented and then the successes determined.

Location-internal system comparison

For each user of the Kurtz POWERBoard, a comparison of plants within a production line as well as between different locations is possible, so that foundries of any size can get a clear added value from the Kurtz POWERBoard. In addition to OEE comparisons, digitized downtime tracking, for example, can be used to analyze in real time why a plant has a higher availability than a comparable one. Was there possibly a failure of a cooling system? Did the mould have to be reworked or brought back to temperature first? The Kurtz POWERBoard provides meaningful answers to these and many more questions.

The Kurtz POWERBoard was developed as a tool for all levels of organization. The plant operator, for example, does not have to keep cumbersome paper lists for downtime tracking, but intuitively and quickly selects the downtime reason directly in the machine visualization. In management, it offers the possibility of obtaining an overview of the OEE of individual casting lines, for example, at the click of a mouse. And in the event of a service call, the maintenance department can transmit necessary information such as serial number and message history directly to Kurtz Service via the ticket system at the push of a button and receive immediate support.



IN PRODUCTION



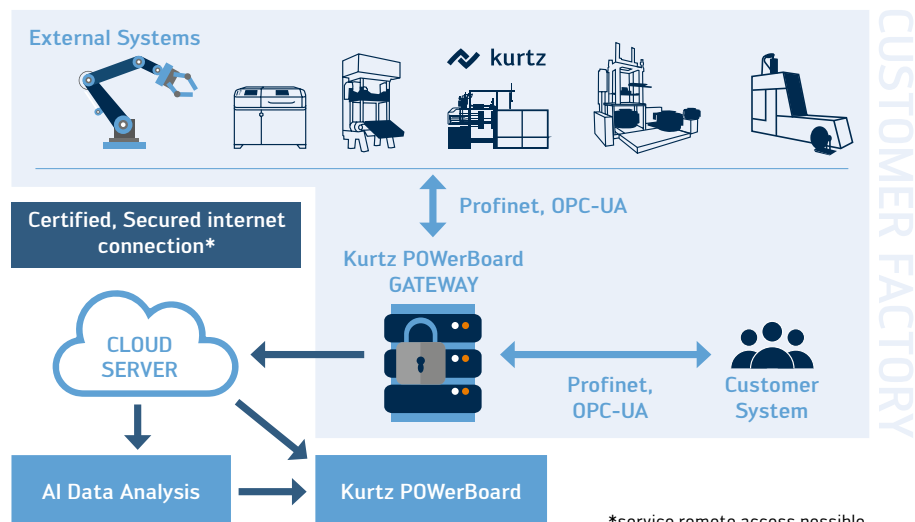
OEE-Dashboard

Process Monitoring
Temperature & CoolingProcess Monitoring
Temperature & PressureService Request
with Ticket System

With the Kurtz POWERBoard Gateway, an industry 4.0-capable OPC UA server is optionally available, which allows the simple and secure integration of any Kurtz plant as well as third-party machines into the customer's local network. The development of the Kurtz POWERBoard – like the digitization itself – is far from being finished. Further functions are continuously being developed for all plants listed in the Kurtz portfolio.

Expanding optimization potential with Kurtz Quality Management System

Who would not like to be automatically informed when the same or very similar components are produced in different qualities on the same equipment, regardless of the production location? Where is the optimization potential in the production process? All this can be realized by means of Kurtz POWERBoard in combination with the Kurtz Quality Management System. Industry 4.0 – we are right in the middle of it, are you too?



*service remote access possible.



KURTZ Ersa AUTOMATION *ON SITE*

The Kurtz Ersa Automation team has successfully implemented more than 100 automation projects. Consultative during the inquiry, constructive during the development phase and customer-oriented during commissioning – Kurtz Ersa Automation solutions set high standards on the customer side throughout the entire process chain, always taking individual customer requirements into account.

By using digital tools, project meetings, acceptance events, concept presentations and workshops were and are still possible even under difficult conditions due to the unfortunately still prevailing pandemic situation. Whether robotics, transport technology, vision solutions or large-scale projects with a mix of different requirements – Kurtz Ersa Automation is always looking forward to new customer requirements and project ideas.

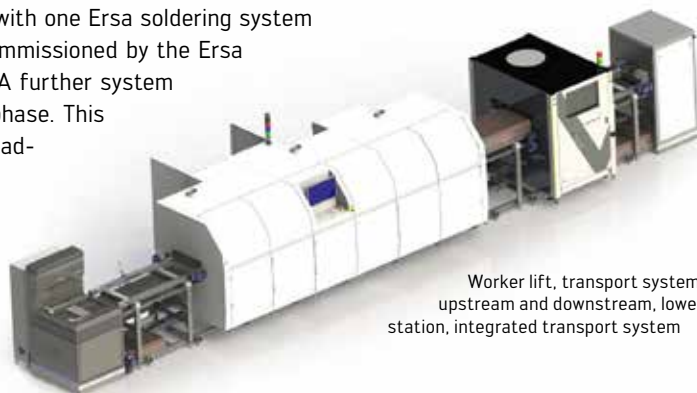
Please contact us directly:
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Automotive and commercial vehicle industry

For a French big player in the automotive and commercial vehicle industry, Kurtz Ersä has meanwhile been able to realize three automation projects in combination with one Ersä soldering system each. The first two systems have already been successfully commissioned by the Ersä Service Team at different production plants of the customer. A further system is currently undergoing the final steps of the commissioning phase. This important customer is now continuously relying on the technical advantage of automation systems from Kurtz Ersä – and thus enjoys the advantages of being able to plan, purchase and install the entire project scope from one source.

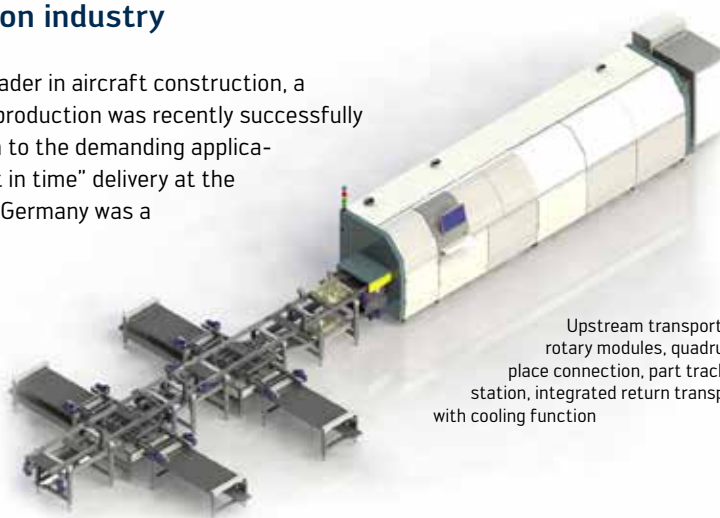


Worker lift, transport system upstream and downstream, lowering station, integrated transport system



Aviation industry

For **THE** European industry leader in aircraft construction, a system plant for electronics production was recently successfully put into operation. In addition to the demanding application, the coordination of “just in time” delivery at the customer’s plant in Northern Germany was a significant project content.

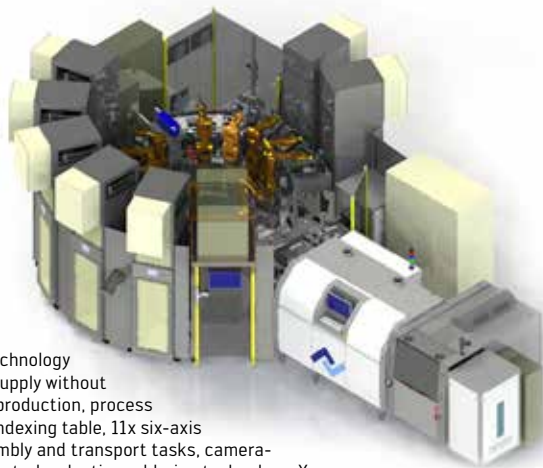


Upstream transport system, rotary modules, quadruple workplace connection, part tracking, lowering station, integrated return transport system with cooling function



Automotive industry

For a first-tier supplier in the automotive sector, the Kurtz Ersä team contributed a large part of the handling technology as well as the selective soldering equipment to a fully automated assembly line. Palletizing, gripping, depositing, transporting, camera technology and laser marking form the automation scope from Kurtz Ersä in addition to external process steps from the field of test engineering.



6x palletizing technology for single part supply without interruption of production, process flow via rotary indexing table, 11x six-axis robots for assembly and transport tasks, camera-based quality control, selective soldering technology, X-ray inspection, transport system, laser marking, palletizing technology for component removal without interruption of production



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Technology fan? Passionate interest in industrial history?

In the HAMMERMUSEUM the history of Kurtz Ersä comes alive – experience the enthusiasm for technology with which we are also successfully on the move in the 21st century. Please refer to our website for current opening hours.



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