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December
2014

Kurtz Ersa Magazine

For Customers and Business Partners of Kurtz Ersa Corporation

kurtz ersa

Happy and grateful

For Kurtz Ersa, the year of 2014 was completely under the sign of the 235th anniversary. The arc of suspense went from the past via the present into the future in the anniversary year. With our company chronicles, presented in the month of foundation, March, and new premises for our company archive and, naturally, the hammer museum with the restored hammer mill, we have made our history come alive at the company's origin in Hasloch.

The present gave us an extraordinarily good year in 2014 – we have grown way above the average of mechanical engineering in Germany, have further increased our productivity and created more than one hundred new jobs. This also and above all became possible thanks to our customers, with whom we are often connected by years of partnerships – our sincere thanks for this and for a number of constructive cooperations! And to secure our future, we have further extended our technology leadership and gained numerous new customers.

There was a great atmosphere at the large employees' festival in September on the "Barthelsmühle". But there was still time to look into the future together with the renowned Swabian professor Dr. Hans-Jörg Bullinger and at the large technological and societal challenges waiting for us there. For Kurtz Ersa, 2014 all told was a year in which we were able to show ourselves from our best side. We are happy and grateful for this. But after the anniversary is before the anniversary. We at Kurtz Ersa know from years of tradition that you have to work hard for such anniversaries with consistent top performances. We do this with a sporting ambition and joy in the cooperation with our customers and partners. This issue of the Kurtz Ersa magazine also reports on some interesting highlights.

A contemplative Christmas period,
a good start to 2015 and
last, but not least have fun reading!

Good luck! Yours, Rainer Kurtz

235 YEARS
living technology

Jubilee in the jubilee year – 10 years of Zhuhai

On 31 July, Kurtz Zhuhai Manufacturing Ltd. (KZM) celebrated a wonderful jubilee event in the newly-erected production hall. In the very spot where reflow ovens are now being built, our staff and a number of business partners celebrated 10 years of presence at the Chinese site.

"What started off as Project Ricecorn has developed into a fertile rice field and is on its way to becoming a huge plantation," said Bernd Schenker, head of Asian operations, in his speech. Then Rainer Kurtz introduced the guests to the 235-year company history of Kurtz Ersa. What then followed was something which is regularly on the agenda in the German sites, but which was a first in the history of KZM: Staff members were distinguished for their 10 years of service with the company. KZM started up with 25 staff 10 years ago; 13 of whom were now celebrating their "10-year jubilee" – a rare occurrence in China.

The undisputed highlight of the event was the fashion show prepared and initiated by the staff themselves – the repertoire of the amateur models from production, logistics, engineering and bookkeeping ranged from traditional Chinese costumes to workwear and on to the German football strip. Our subsidiary in China thus celebrated a worthy jubilee in the jubilee year 2014 – an impressive yardstick for future celebrations with a similar background. The organisation of the extraordinarily successful event lay in the capable hands of Bernd Schenker, Michael Chan und May Wong. ■

CEO of Kurtz Ersa – Rainer Kurtz (right), the Heads of Asian operations – Bernd Schenker and Michael Chang (2nd from right) together with May Wong at the 10th anniversary party in Zhuhai.

Kurtz Ersa Corporation

Kurtz Ersa opens Hammermuseum in Hasloch

www.hammer-museum.de

The day at the end of June when Kurtz Ersa opened its Hammermuseum in Hasloch, directly at the company's origin, was radiant. At the "Eisenhammer", the company which has risen to become a global player shows its origins – and makes its future visible at the same time.

Sure, the repair work on the historical centre was connected with considerable costs. "This is a decision for which the "return on investment" account was not looked at all that precisely. But in life you should not try to weigh up everything in Euros and Cents", said Kurtz Ersa CEO Rainer Kurtz in front of 300 invited guests. For 30 years, the three brothers Bernhard, Rainer and Walter have successfully run the family company in the sixth generation. The opening of the museum in the anniversary year of 2014 marked "a highlight for our joint work".

Official opening:
The three brothers Rainer, Walter and Bernhard Kurtz (l. to r.) open the Kurtz Ersa HAMMERMUSEUM.

Thilo Brodtmann, Executive Vice-President of the VDMA and Chief Executive Officer from 2015 on (left), talking to Kurtz Ersa CEO Rainer Kurtz.

Family headquarters since 1800

The Eisenhammer and the Kurtz family – a very personal connection for a long time now. Also for the sixth generation, who often played here as children, caught fish in the stream and hid in the smithy, the carriage shed or the coal barn. This also includes the manor house built in 1834, in which Walter Kurtz lived with his family until recently. But it was time to reposition the company's origin. "At the beginning, we did not even know that something like a museum was to originate here", said Rainer Kurtz. Some points had to be taken into account in the reconstruction of the historical centre: the company needed additional conference rooms, the company archive and the Anna Göbel and Otto Kurtz Foundation needed a home, the historical hammer mill had to be repaired and the history of Kurtz Ersa was to be made visible – in short: "For the Kurtz Ersa Group, a historical centre was to be created, reflecting the unique history of our company", Rainer Kurtz summarised. A complex task, which the project team, created specifically for this purpose, approached with commitment – with professional support from the outside, e.g. the historian Dr. Robert Meier, who drew up the extensive company chronicles, Dr. Andrea Schneider, who kept the project on course with clever advice from her experience as the Managing Director of the Corporation for Company History, or Dr. Thorsten Smidt from expo2508, who implemented the complete exhibition concept in the hammer museum in the former coal barn with his team. At the end, a museum which is much more than a museum resulted – with a heart which is still beating in the fully functional hammer mill.

Shining in new splendour: The renovated hammer mill with its new roof.

Right after the doors had opened the visitors enjoyed the exhibition in the Hammermuseum in the former coal barn.

Iron hammer in a new shine

Dead on time for the opening, the iron hammer from 1779 appeared with a new shine thanks to the tireless work of many craftsmen: with a new roof, repaired hammers and a reinforced floor: "For our customers, employees, business partners and visitors, Kurtz Ersa is presenting itself with a distinctive new face from now on. As a technology leader, we have to prove that our production technique means benefits for the customers on the world markets – and for this future, we have made our origin visible at this place", said Rainer Kurtz. The last iron hammer in the Spessart region, witness of times long passed, shows the visitors how industry in the Spessart originated, how Kurtz Ersa developed into a group of companies active all over the world in the course of time and the innovative technologies with which the current position is being strengthened and further extended.

Giving something back to the region

By creating the museum, Kurtz Ersa wants to give something back to the region, as the Spessart is a good location for an industrial company, where "very down-to-earth, hard-working, but also inventive people live". Yes, the employees: Kurtz Ersa's success is above all also based on the commitment of its employees, who have often worked for the company for generations. After the casting of the hammer bell and a benediction, the three Kurtz brothers officially opened the hammer museum. In the course of the decades, innumerable bell tongues have been forged on the iron hammer and have sounded near and far away. Rainer Kurtz promised: "The bell will not silence, even if the iron hammer becomes a museum!" ■

Kurtz Ersa Corporation

More than 1,100 guests celebrate the 235th anniversary of Kurtz Ersa in a huge party tent measuring 65 x 21 m.

235 YEARS
living technology

Freshly formed on the occasion of the employee party: the hammer brass band.

Huge 235-year anniversary party for the employees

Kurtz Ersa celebrates a hammer of a party!

There is no party without them: the hammer choir.

2014 was the year in which Kurtz Ersa celebrated its 235th anniversary – from the registration celebration (March) via the opening of the Hammermuseum (June) down to the employees' festival on September 19, which was celebrated in a large tent on the Barthelsmühle.

On a late summer's evening, the host Rainer Kurtz welcomed more than 1,100 guests in Hasloch: members of the family, partners and board members, the mayor and all the employees, with or without accompaniment. "Today, the Kurtz Ersa flags are flying full of pride. We can also carry this pride in ourselves, as we are celebrating 235 years of existence – not an everyday occurrence. Dear employees, this is your festival", said Rainer Kurtz in his address.

He also looked back to 24.03.1779 – to the day of founding of the "iron hammer", from which a group of companies active all over the world has developed in the course of time. "Being one of the big boys was never our objective – we attended to niches and that is where we are amongst the best in the world", Rainer Kurtz sketched out the traditional company's business strategy. You can see where Kurtz Ersa comes from with the historical centre with the hammer mill, Hammermuseum, manor house and the extensive company chronicles – company history to touch. "In the past, we have had to redefine ourselves again and again. We have taken chances again and again – and have been rewarded at the bottom line: we are the last active iron hammer in the Spessart, we are the most modern foundry in the Spessart, we are a highly innovative special machine builder with a world-wide presence", Rainer Kurtz told the guests. He said that they have experienced successes, but also failures and crises together. Again and again, they had to fight, look how things carry on, products and processes had to be further improved. And Kurtz Ersa still exists. Even more: in the anniversary year of 2014, Kurtz Ersa will achieve the best results in the company's history with around 200 million Euros. "A strong team performance – for which I thank everyone on the management's behalf: employees, apprentices, pensioners", said Rainer Kurtz.

After talks, musical performances by the hammer choir, the freshly formed hammer brass band, a buffet and ventriloquist/comedian Andreas Römer, the mood in the festival tent was outstanding and was warmed up even further by the eight-man live band – the "Goodfellas". The party and the dancing at the Barthelsmühle went on well into the night – a party that everyone will remember for a long time. ■

Ready for change

On the occasion of the 235-year employee party Kurtz Ersa invited an outstanding personality to give the anniversary speech: Prof. Dr.-Ing. Hans-Jörg Bullinger, work scientist and former long-standing President of the renowned Fraunhofer-Gesellschaft. In his clever and unique Swabian way Bullinger outlined the future development of the global economy. He emphasized the importance of innovations for Germany in order to compete successfully today and tomorrow.

According to Bullinger only top-quality products which are, at the same time, energy-efficient, safe and environmentally friendly will succeed. In order to keep our standard of living here in the centre of Europe we would have to become much faster and better. Only those ready for change and innovation would have the necessary tools for the future – just like the Kurtz Ersa group that had been able to repeatedly set trends in its business areas during its 235-year history.

Professor Dr.-Ing. Hans-Jörg Bullinger during his speech on the future development of the global economy.

Kurtz Ersa presents itself as an attractive employer from the region

Enjoying success!

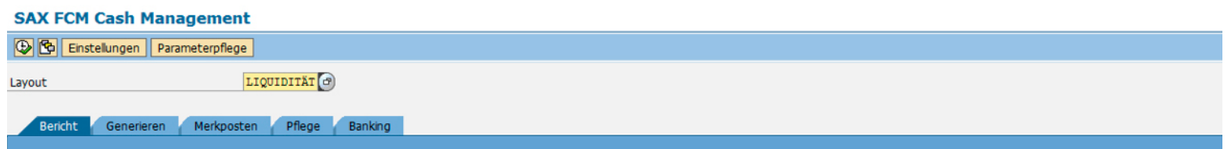
Representatives of the printing press and TV during the press conference at the manor house in Hasloch.

In the course of the VDMA action week "WIR UNTERNEHMEN WAS", under the patronage of the Minister of Economics Sigmar Gabriel, Kurtz Ersa invited the press to a discussion in Hasloch in mid-September. The main topic was: "Employee binding and development".

Kurtz Ersa wants to keep growing healthily – for which it needs employees who pull along and enjoy doing their job. In brief: the company has to go down well with its employees. This is why the company actively involves its employees in decision processes and provides its own concept for personnel development. An important pillar in employee development is the apprenticeship with which the company trains its own next generation of expert workers. More than 20 job descriptions are up for choice – from an industrial mechanic through to mechatronic. The broad range pays its way, the apprenticeship quota has been above ten per cent for years – with more than 100 apprentices to be counted at Kurtz Ersa at the moment. More than ever before! The fact that the quality of the training is right can be proven: regularly, Kurtz Ersa apprentices are awarded prizes. Talents – be it an apprentice or a regular employee – are actively supported at Kurtz Ersa, targets are agreed and prospects explored at regular employee discussions, in-house careers are the order of the day.

Tradition and technology leadership

Kurtz Ersa is an attractive employer in the Main-Spessart region, offering its employees 235 years of tradition, technology leadership plus international alignment on the one hand. On the other hand, it stakes on flexible working hour models, success premiums, social payments and extensive training and further training! In future, the company wants to extend its degree of popularity even further, in order to come into the focus of engineers, designers and programmers even more. Last year, that already worked very well: 70 new employees joined, with a total of 110 new jobs being offered in 2014. "We are doing a good job, but it has to be a pleasure as well. And if there's something to celebrate, we celebrate it together", CEO Rainer Kurtz puts it very concisely. ■



Liquidity planning – SAP-integrated, prompt, purposeful!

Thomas Mühleck, CFO of Kurtz Ersa, increases efficiency of all administrative processes by means of SAP ERP.

The Kurtz Ersa Group pursues a clear strategy. Its vision is: "Our technology lead optimises our customers' manufacturing processes" – and according to this motto, all administrative processes are also to be technological leaders and efficient. Wherever possible and sensible, they are therefore portrayed in the SAP ERP system.

At Kurtz Ersa, the classical modules such as Sales (SD), Material Management (MM), Production Planning (PP) or Finances/Controlling (FI/CO) are exceeded – even processes not contained in the core system are included, e.g. liquidity planning. It is produced as a routine in a 13-week rhythm on the basis of income and expenditure. The Ltclcash tool from Litreca, which has been completely integrated into SAP, accesses all the data available in SAP and transfers them to a planning tool. The liquidity planning has a precision of ±10% and can be produced within two hours on a Monday morning – ideal preconditions for a purposeful and interest-optimised finance planning. In this way, Kurtz Ersa also sets standards in this area and acts as a benchmark. At this year's "Structured Finance", the leading congress for modern corporate financing and structured financial products, Kurtz Ersa CFO Thomas Mühleck presented the much-noticed concept on liquidity planning in Karlsruhe on November 12/13, 2014. ■

VI at one sweep

Another major order for the Ersa soldering specialists, successfully delivered to a tight schedule. The customer: Gree, one of the largest air conditioner manufacturers in China. The shipment: six XXL selective soldering machines from the VERSAFLOW 3/66 series.

These are by no means simply equipped machines, rather double track systems with six soldering modules and over eight meters in length. Orders of this kind do not simply fall into your lap! After a period of intensive consultation, preliminary trials and tests, a small series of printed circuit boards was manufactured and tested under production conditions in the application centre. Only then did Gree order a VERSAFLOW 3/45 selective soldering machine. Over a number of months, the finalised and guaranteed parameters, throughput, soldering quality and much more besides were tested in Gree's primary plant. Ultimately, the results exceeded expectations and Gree ordered six VERSAFLOW 3/66 dual track selective soldering machines for simultaneous delivery. The machines are to be deployed in different plants within China and will commence three-shift operation after Chinese New Year. ■

Six Ersa VERSAFLOW 3/66 selective soldering machines go to China, to the air conditioner manufacturer Gree.

Technical discussion between two experts: Phoenix Contact production engineer Heinz Krantz (rear) and Ersa Area Sales Manager Stefan Wurster (front).

At the beginning of the relationship between Ersa and Phoenix Contact stood the POWERFLOW N2 full-tunnel wave soldering system; pictured here is the current model POWERFLOW N2.

Phoenix Contact und Ersa GmbH

Inspiring System Partners

By opening its electronics innovation center in 2007, Phoenix Contact, the leading supplier of components, systems and solutions in electrical engineering, electronics and automation, concentrated all activities of its business areas automation systems and interface technology at one location. And just as long the company relies on the support of Ersa for all standard soldering processes.

Suitable for a wide range of applications: the Ersa POWERFLOW N2 wave soldering system.

Phoenix Contact was approaching technical boundaries in their production of the Contactron. A group of engineers started to look for a supplier who could offer efficient wave soldering systems meeting the demands of Phoenix Contact. Equipment evaluations picked up speed, an intensive market analysis was conducted, and finally the other business units of Phoenix Contact were queried for their standard soldering processes needs. "This represented a substantial effort, yet it is standard procedure for us. After all, the issue we were dealing with was no longer the purchase of a single system. We also investigated to what extend a supplier for wave and selective soldering systems could cover all our demands for standard soldering processes", states Dietmar Dux, Senior Specialist Process Engineering Interface Components of Phoenix Contact.

System Partners for Standard Soldering Processes

At the end of the evaluation, Phoenix Contact selected Ersa's full-tunnel POWERFLOW N2 wave soldering system. Since its installation, the POWERFLOW N2 has been soldering the thermally demanding assemblies of the Contactron hybrid motor starter. Aside from the wave soldering system with split conveyor segment, Ersa could further score with its innovative range of products and services – all in all a coherent package, where Ersa's international worldwide sales and service network proved to be perfect. Of equal importance to Phoenix Contact: standardized, identical processes, since there are production facilities in Germany, China, the USA, India and Brazil. "Having recourse to a modularized system is of extreme importance for us, since such equipment can be duplicated far more easily. The flexibility in configuring Ersa equipment has met our demands for standard soldering processes to nearly 100 percent", says Georg Beretitsch, Director Strategic Production Industrial Electronics of Phoenix Contact.

ECOSELECT follows POWERFLOW

In 2012 the first POWERFLOW N2 was followed by a second system, which was installed in the Chinese facility of Phoenix Contact. Selective soldering systems for a number of Phoenix Contact facilities followed: four ECOSELECT units and one VERSAFLOW. The system partnership, which had started with a wave soldering system, grew and started to take shape. For the first two ECOSELECT units, the demands were for equipment suitable to manufacture Interface Modules with a large number of different versions. The ECOSELECT, with its superior flexibility and short retooling time, proved to be the ideal system for this application.

A third ECOSELECT system followed: Dedicated to one production line, a value system design representing a fully automatic inline concept was requested, in which all processes, starting with the SMD-populated assemblies, should be executed in a production island. Due to the line speed, it was necessary to solder two assemblies simultaneously, and through the installation of a second solder bath and a second flux head it was possible to achieve the required cycle time for the soldering process. In the case of the VERSAFLOW, installed in 2012, Ersa proved that they are willing to go beyond the usual demands by designing customized conveyor and material handling features. Here again a variety of special demands were placed on the equipment, for which Ersa was able to supply optimal solutions. Whether POWERFLOW, ECOSELECT or VERSAFLOW – over the last years, Ersa was always able to provide leading-edge technical solutions.

New Roads to Innovative Solutions

In 2014 another project with a selective soldering system for an in-line product has been finished. The starting point: an existing system functioning with certain limitations – yet it no longer conformed to today's technological level. In close dialogue, both companies found a solution: "For dip-soldering we entered new venues in regard to nozzle technology, since this product contains extremely fine structures. The possibility existed that components could be desoldered from the board with the standard soldering process", says Stefan Wurster, Area Sales Manager of Ersa GmbH. Ersa and Phoenix Contact have found a solution to produce the required quantities and to ensure the desired solder result for this difficult layout: components requiring high soldering temperatures embedded in a thermally limited plastic material. Another win-win situation for both sides, out of which further innovative solutions will surely arise. ■

After having purchased two POWERFLOW wave soldering systems, Phoenix Contact ordered a number of ECOSELECT and VERSAFLOW selective soldering systems within a short period of time. Pictured is the current model ECOSELECT 2.

Ersa dual pot systems offer high throughput and superior flexibility in very confined spaces.

PHOENIX CONTACT

Facts

- Founded 1923 in Essen, Germany
- Headquarters: Blomberg (Nordrhein-Westfalen) and Bad Pyrmont (Niedersachsen)
- Turnover 2013: 1.64 billion Euros
- Employees worldwide: 13,000 employees
- Sales network: 50 subsidiaries, 30 sales partners

Whether wave or selective: Ersa also scores as a system partner, for example in the areas of conveyor systems and material handling. Pictured is the current model VERSAFLOW 3/45.

Rainer Kurtz is chairman of the new VDMA-professional association "Electronics, Micro and Nano Technologies"

Within the framework of the restructuring of the VDMA professional associations Micro Technology und Productronic, the members resolved the fusion of the two professional associations to a new association "Electronics, Micro and Nano Technologies" at the inaugural meeting on 30 September, 2014 in Frankfurt. Rainer Kurtz, CEO of Kurtz Ersa, was appointed Chairman. Dr. Thomas Weisener, Managing Director of HNP Mikrosysteme GmbH (Schwerin), was elected Deputy Chairman. "In addition to the existing activities, we intend developing and deepening additional synergies in the form of interdisciplinary topics, in order to offer members in the electronics and semi-conductor sectors, as well as microproduction and microcomponents, platforms which are customer and application oriented," is how Rainer Kurtz described the main focus of future association activities.

The executive board of the new VDMA engineering association "Electronics, Micro and Nano Technologies" (from left to right): Volker Pape (VISCOM AG), Dr. Stefan Rinck (Singulus Technologies AG), Prof. Dr. Wolfgang Schmutz (ACI AG), Dr. Reinhard Degen (Micromotion GmbH), Rainer Kurtz (Kurtz Ersa), Dr. Thomas Weisener (HNP Mikrosysteme GmbH), Thilo Brodtmann (VDMA General Management Board), Hans-Ulrich Kurt (Güdel AG), Dr. Joachim Heck (Ehrfeld Mikrotechnik BTS GmbH).

Picture: VDMA

SisTech growing with Ersa in the USA

SisTech with headquarters in Bend (Oregon) is an ambitious US company which has made a name for itself in the tough competitive environment of contract electronics manufacturing. On the customer side, large companies and fast-growing start-ups trust in the over 30 years of experience of SisTech in high-tech assembly and design of electronic component assemblies.

Ersa has been instrumental in the success of SisTech: Only recently, SisTech acquired two machines from Kurtz North America. The reason: strong growth. With an ECOSELECT 2 and a HOTFLOW 3/20 reflow oven, the production capacity has increased in the sectors "surface-mounted device" (SMD) and "through-hole technology" (THT). Brad Kennedy, Vice President SisTech, said on the subject: "The decision for Ersa is simple – Ersa offers the best solution in every soldering process and helps ensure that our customer requirements are met or exceeded."

Growing flexibility and efficiency

The Ersa ECOSELECT 2 is based on the same selective soldering technology as the large Ersa VERSAFLOW systems – with no comprising on quality or precision. The high-precision axis system and the no-maintenance, electromagnetic soldering pumps, together with top and bottom-side pre-heating, offers the highest performance capacity and best repeat accuracy. This permits a 1:1 transfer of the soldering programmes to all Ersa selective soldering systems in the SisTech plant. This leads to an increase in flexibility and efficiency. Brad Kennedy: "In addition, the ECOSELECT 2 offers an inline and offline cell concept, good value for money and flexible solutions for small and medium-sized batches." In the drive to achieve "best-in-class" results in the SMD sector, SisTech's purchase of a further HOTFLOW 3/20 reflow system was the logical step. Because the margins are generally very tight in the SMD contract manufacturing business, every cost factor counts in standing out from competitors. SisTech's strategy is paying off: "This year we are expecting turnover growth of 80 to 90 percent. We achieve this through our dedication to our customers: with unbeatable customer service, delivery reliability, premium quality and an attractive price," says Brad Kennedy. And in electronics manufacturing, you are on the ideal path with Ersa. "Thanks to the fast parameter set-up, we can produce a number of products in different quantities in a mix. Even with complex component assemblies, the Ersa machines achieve the highest quality."

SisTech also places its faith in "best-of-class" results in SMD as well – with a further HOTFLOW 3/20 reflow system.

"My relationship with Ersa began long before SisTech. As far back as 1997, I bought my first Ersa machine. This long relationship with excellent on-site service and unbeatable quality is why, to date, I have bought 13 soldering systems and printers from Ersa."

Brad Kennedy, Vice President SisTech

SisTech provides highest performance and repeatability with the Ersa ECOSELECT 2.

How to avoid voids!

Soldering specialist Ersa presents the next technological steps in reflow soldering

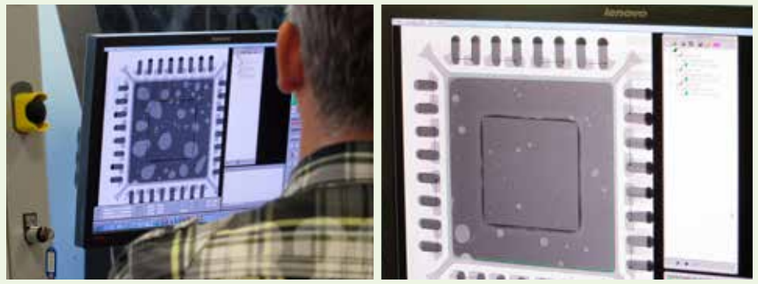
Hands-on practice test at Ersa: Void reduction with reflow soldering, excitement among the trade visitors.

The causes of voiding are numerous – they begin with the choice of soldering paste, but are also dependant on the surfaces of the printed circuit boards, the component parts and the process control in the reflow system. Leading soldering experts met up in early October at Ersa in Wertheim, to experience the next technological step in reflow soldering systems LIVE.

As Europe's largest manufacturer of soldering systems, Ersa has intensively engaged with the topic "void reduction in reflow soldering" – the result: a system with which the soldering experts in Wertheim are breaking new ground. Before the participants tackled the theory plus "hands-on" practice, they spent an evening in Hasloch learning about the 235-year history of Kurtz Ersa from small beginnings to today's high-tech and component supplying group, in the Hammermuseum, in the form of numerous documents, exhibits, historical pictures and replicas. And directly next door with the water-powered iron hammer, the last one still in operation in the Spessart region. During the forging demonstration in which the hammer reached a power of impact of over 1,000 kg, there was general agreement that all voids had been completely eliminated. This was undoubtedly one of the highlights of an evening which ended with dinner in the manor house.

Exciting technology presentation

The next day's programme began with a company presentation before the eagerly awaited technology presentation, "Reduce to the optimum – Voids in reflow soldering!" commenced. Two Ersa engineers presented the test series and test set-ups and showed before-and-after X-rays of void reduction. The construction: The entire system operates without expensive, technically-elaborate vacuum chambers or pressure tanks, requires neither air locks nor other appliances – and can therefore be ideally operated as an inline reflow system. Nor need higher operating costs be anticipated as no high-maintenance additional power units and no other mechanical appliances are required. Then came the hands-on demonstration: circuit boards were printed with the VERSAPRINT soldering paste printer. After that, the components were placed on the boards. In the next step, the boards were soldered and finally tested for voids in the Viscom X-ray apparatus – the result: approx. 34% void ratio. After that, the printed board assemblies were subjected to a reflow temperature profile and the void reduction turned on in the liquidus of the soldering paste. The next measurement was taken after cooling: The void ratio had been reduced to a sensational 5%, and even, in three cases, to almost zero. The whole procedure was repeatedly re-run – the result each time: reduction of the voids to between 5% and 0%! The specialist public was very enthusiastic and encouraged Ersa to manufacture industrial series machines on the basis of the familiar Ersa reflow soldering machines. The upshot? The question of "How to avoid Voids" is answered by Ersa with the Ersa HOTFLOW reflow soldering machine, Voidflow model! ■

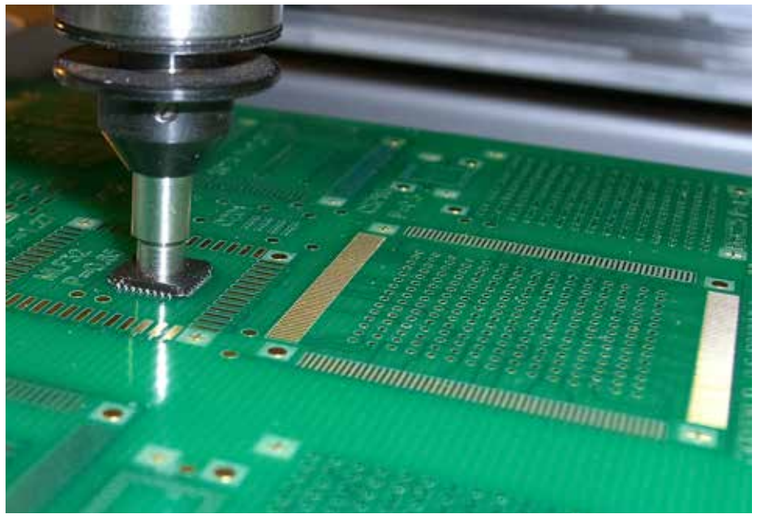


From 34% to almost zero: Void ratio before and after void reduction.

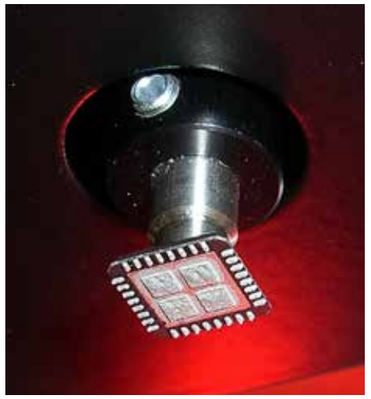
Challenge: the repair of BTC, BGA and QFP

Ersa Tools: Rework Practice Tour a complete success!

Last year the Roadshow, this year the Rework Practice Tour. For the second half of the year, 13 events were planned throughout Germany. And the final verdict? Can be summed up in one word: great!



Each individual event of the Rework Practice Tour had a maximum of nine participants, ensuring maximum efficiency. The unanimous feedback from the participants was: perfect transfer of know-how, a total success in every regard! For the coming year, Ersa is planning the next tour based on this proven concept. Even during the welcome address, the participants were highly interested in the three rework workplaces. Following presentation of the Kurtz Ersa Group and the theory section "Soldering and its variables," theory and practice interchanged in three thematic areas. The focus was on the SMT component types which are most difficult to process: QFP, BGA and QFN. These need to be reliably processed even in the construction of prototypes in electronics development. Here the challenge is often having to precisely place the complex, highly-polished and delicate components, and solder them securely and gently onto the printed circuit boards or exchange them in the case of a defect or a circuit modification.



Printed BTC component.

Successfully tackling the challenges in the soldering process

Later, when assemblies are being repaired, know-how and the device design of the rework system decide on whether or not the work can be brought to a successful conclusion. Often, service operations which repair the widest range of electronic appliances cannot call back on the experience of series production. Every assembly represents a new challenge for the soldering process, and there is no room for error. Therefore, it is hardly surprising that the participants came from various areas, for example, component construction, electronics development, quality assurance and after-sales service.

In order to cater to all the participants, a number of Ersa specialists were in action. Always one of the party: Manfred Wolff, who guided participants through the day in theory and practice. As an IPC specialist and former quality inspector, Ersa employee Frank Kappel was in great demand. He demonstrated the numerous application options of the Ersa HR 600 high-end rework system and discussed the results on the ERSASCOPE 2 Plus inspection system. Following the official end of the event, the participants put more than one of their most difficult soldering assignments onto the table: built-in navigation systems, machine controls and smart phones were successfully tacked with the Ersa rework system and then discussed under the ERSASCOPE with the astonished participants – due to the process reliability and the simple operation even "batch sizes of 1" presented no problem. ■

Manual rework: Ersa i-CON-Vario 4.

Kurtz In-house Fair 2014

All the World in Wiebelbach

Kurtz GmbH presents state-of-the-art foundry and particle foam machinery

Over 250 guests from all corners of the globe travelled to the Kurtz In-house Fair 2014, to see all the latest from the areas of foundry machines and particle foam machines. In keeping with the motto "living technology", Kurtz GmbH presented an exciting mix of new products and production solutions, which was a big hit with the specialist public.

A densely packed programme of interesting lectures, machine demonstrations, technology advice, exchange of experience and shoptalk awaited the visitor at the Kurtz In-house Fair on 18 and 19 September in Wiebelbach. The first talks began at 10:30. The topic in foundry machines: "Possibilities in lightweight design", and in the area of particle foam machines: "Service today + tomorrow". The latter was not chosen by chance given that, in 2014, Kurtz GmbH bundled its service activities, focussed on a global orientation and increased staff numbers. In his talk, Kurtz Service Manager Elmar Gütling reported on the current range of services and provided an insight into what optimum customer support can be – right down to the individual maintenance agreement and including a spares inventory tailored to meet market needs, ruling out unplanned and expensive machine downtime even before it happens.

Running parallel to this were live machine demonstrations with the BOOST FOAMER and T-LINE M moulding machines; later the further PANEL FOAMER and BOX FOAMER moulding machines were added. System partner Kuka also showed how productivity can be significantly increased with automated solutions. All day long, interested visitors dropped in and asked specifically about adaptation to their own purposes. Their eyes were also drawn to the low pressure die casting machine AL18-12 FSC with a two-cavity mould for casting motors in multiple use, and travelled upwards – along the twelve meters to the top of the machine on which a high-end Bavarian automobile manufacturer casts its motors. Digesting such a wealth of input is hungry work. Refreshments were available in the adjacent catering marquee, allowing visitors to keep their strength up for the next lecture or the next demonstration. At four in the afternoon the first exhibition day came to an end; the legendary stairwell party followed in the evening, with live music which soon had everybody taking to the dance floor.

Hard work after the fair

The second day provided a chance to catch up on the lectures missed the day before: "Handling – redefined", "Generation FOAMER", "Quo vadis, Infinergy?" and "From unfinished casting to the finished part" were well attended – and the step from an exchange of views among experts to a potential project was often very short. Once again, Kurtz GmbH showed its customers and partners innovative products and solutions which further improve the customer's manufacturing process. Kurtz Managing Director Uwe Rothaug was more than satisfied with how the fair went: Lots of positive interaction with customers and potential customers – and direct inquiries which are currently being processed by the Kurtz Team in real projects. ■

Impressions from the Kurtz in-house fair, which was very well received by international visitors – and generated many specific inquiries for potential projects.

Kurtz Foundry Machines – more energy, more power, less CO_2

New low-pressure casting engine technology

Ever-increasing performance with ever lower consumption and less CO_2 emissions – how does that work? Engine development has made rapid progress yet is still a long way from the finishing line. A snapshot of the current state of technology ...

The design and demands on crankcases have changed immeasurably: "open deck" has given way to "closed deck", as the latter offers a lot more stability, enabling the crankcase to operate with higher loads. While open-deck crankcases could still be envisaged using die casting, this is no longer possible with a closed deck design. In addition to the water jacket core, many more sand cores are currently used for the production of crankcases, to enable the inner contours (cooling channels) of the crankcase to be cast.

The best possible casting quality is essential

The cylinder liners used until now – mostly made of grey cast iron, which is either cast in or subsequently inserted – are employed less and less, as running surfaces are directly cast and then coated. A running surface that is subsequently coated requires the best possible casting quality, so that no pores appear during the coating process. Higher injection pressures require the casting to have increasingly higher mechanical properties – both in the area of the crosspieces and the crankcase. These are just a few details that the casting has to fulfil. Low-pressure casting offers the optimum process for satisfying all of these requirements. Turbulence-free or low-turbulence die filling is of key importance here. Turbulence and oxide formation are avoided.

Multiple cavity dies
i.e. two crankcases per casting, is now possible and more or less accepted as standard. Multiple cavities do not necessarily increase the cycle time – on the contrary, cycle times are reduced, irrespective of the die design and layout.

Production availability
There is also a focus on production availability. In order to achieve this Kurtz uses the proven furnace exchange system, type FSC, with furnace shuttle both for chassis components as well as crankcases.

Well cooled, perfect cycle times

Sufficient cooling is the most important prerequisite to achieve the mechanical properties and to reduce the cycle time. While sand packages can only be cooled by using chill castings, the versatile gravity die casting is recognised for its ability to be selectively used for targeted, separate and/or controlled cooling. Chill castings used in sand casting do "cool", but this type of cooling is incomparably difficult to the point of being unmanageable. With many castings we no longer use a sand package with a chill casting, but instead use a chill casting with sand. Chill castings must be prepared again after use, but with "cooling in the die", however, they are not cleaned, or only during tool maintenance.

Individually tailored customer solutions

Low-pressure casting machines for crankcases are provided with a lot of equipment so that casting can be carried out profitably. Despite the high demands on the crankcase, Kurtz low-pressure casting machines make production very profitable. The low-pressure furnaces used here differ from low-pressure furnaces for chassis only in their geometry, not in terms of their volume. Furnaces between 2,400 and 3,300 kg are used, with one or two riser tubes. Kurtz is not just a supplier of casting machines, but on request can also provide the associated peripheral equipment, such as smelting furnaces, impellers and tool change systems. Successful, commercial designs are rarely found off the shelf – we find that we far more frequently tailor these to customers' requirements. Including yours – take our word for it!

An example of the equipment for a typical crankcase casting line:

- Smelting furnace
- Impeller unit
- Holding and cleaning station for low-pressure furnaces
  ... between two to three stations
  ... plus pre-heating ovens for riser tubes
- Furnace shuttle, type FSC, for a faster furnace change
- Six casting machines per line
- Automation
- Tool change system
- Cooling system – die heating

Main components of a casting machine:

- Low-pressure furnace with approx. 2,800 kg capacity
- Fast change system for dies
- Automatic coupling for cooling circuit
- 60–80 cooling circuits
- Water
- Air
- Mixed cooling
- Design dependent on die design

Source: Fotolia – Marem

Just foaming, no cutting!

Kurtz ROOF FOAMER: inclined roof panels as mouldings

After intensive work on the manufacture of insulation boards we are now heading in a new direction with inclined roof panels for flat roofs. Up to now these have been cut from blocks in a costly process involving angled cutting wires to obtain the incline. This resulted in a lot of waste, as the panels do not fit perfectly to the block dimensions. And a lot of staff were needed to label, stack and bundle them.

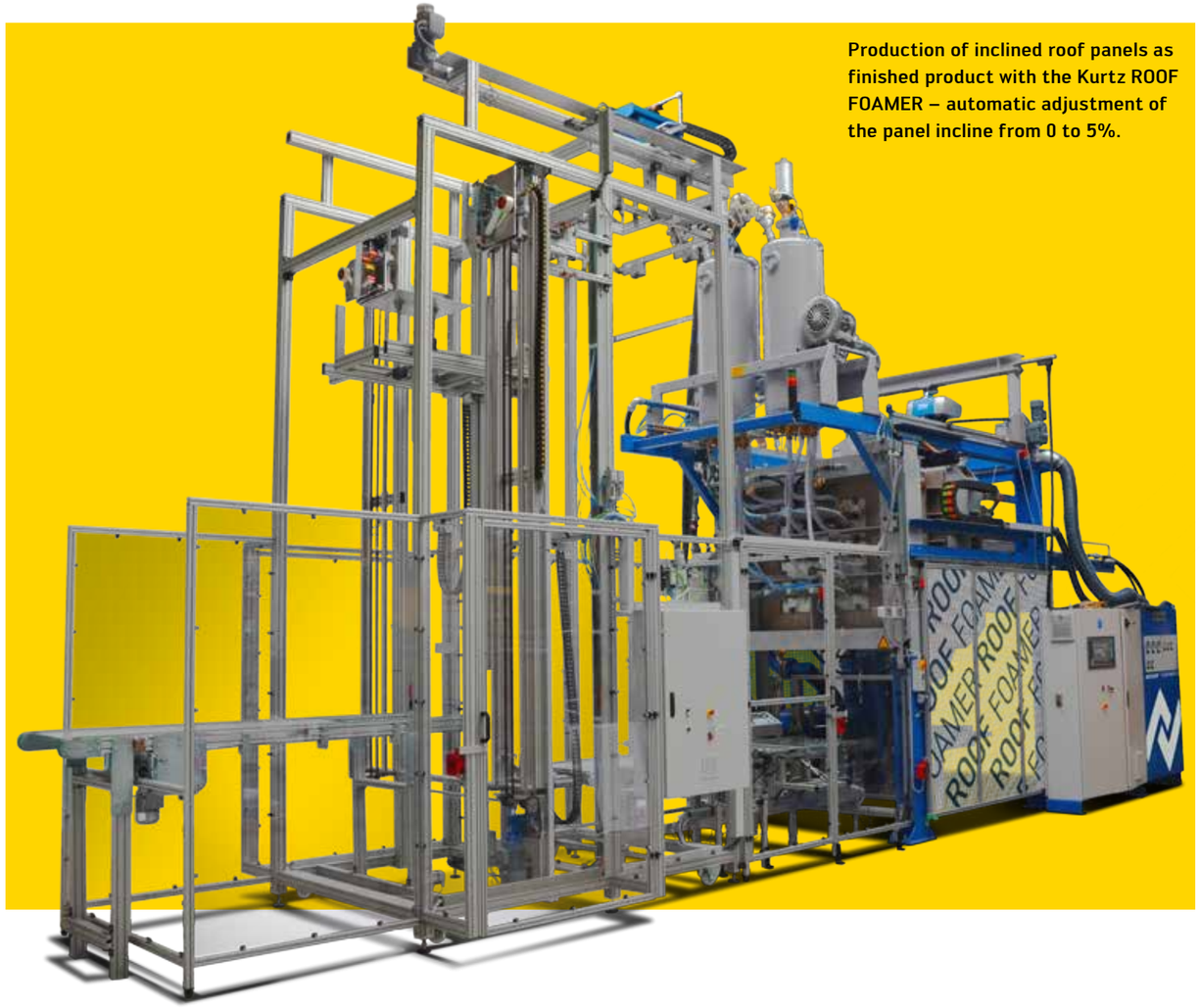
The panels are laid on the roof in accordance with the architects' plans. Drainage specifications are established and the angle of the panels is adjusted, resulting in two and three dimensional panels, each with its assigned number on the positioning plan. The gradient should also be identifiable to facilitate the roofer's work.

Shape moulding machines for greater efficiency

Our solution is different: with our system, these panels are no longer cut from blocks, but foamed as a finished product – with the ROOF FOAMER shape moulding machine, which can be used to automatically adjust the panel incline from 0 to 5%. Even more efficiency can be achieved by an interface with a widely-used planning software package, which reads the order data for the whole roof and creates a processing list. The shape is automatically adjusted in line with the selected incline and the complete order is processed. The starting point is the thickness of the first panel; the shape is then altered to produce the thickness of the next panel, and the sequence continues automatically. In order to reduce staff costs, the panels are individually labelled with ink jet printers with the incline clearly indicated. They are then collected into stacks, which may optionally have adhesive strips, be film-wrapped and/or be fixed with EPS bands. The trade mark rights for this innovative process have already been granted, and a pilot plant has been successfully started. ■

More added value

We work closely together with our long-standing partners from the mould making, automation and packaging industries to develop ingenious solutions, making us your ideal specialist partner – call us at +49 9342 807-226 – we would be happy to advise you!



Production of inclined roof panels as finished product with the Kurtz ROOF FOAMER – automatic adjustment of the panel incline from 0 to 5%.

Automatic data feed and processing for a complete roof.

Sorted panel stacks according to construction plans: inclined roof panel with number and gradient.

Metal Components

SMART FOUNDRY – Production commenced

The project team for our new iron foundry had set itself the ambitious target of 1 September, 2014 as Start of Production (SoP). Today, we can proudly announce: This deadline was met!

The project is now at the optimisation stage. Following the first cast (on 28 August), production is now being fired up.

The tonnage is being increased in stages with higher productivity than before. At the same time, the automated guided transport systems are in preparation for fully-automatic operation. The real dimensions of the project with regard to the link-up with the SAP system, transport system, meltshop and production processes are now becoming evident.

As Smart Foundry is foreseen as an exemplary project for the Industry 4.0 motto in the foundry industry, particular emphasis is placed on matching master data with the requirements of fully-automatic operation. A control centre showing the complete production process, including all process components, is in preparation and will soon be fully operational.

Grand Opening in 2015

All we want to give away at this stage is: There will be a Grand Opening of the Smart Foundry in spring 2015. All the planned functions will be available by then but we can be sure of one thing even now: The health and safety and environmental targets will be overshot. The sales department at Kurtz Eisenguss GmbH & Co. KG has begun to actively ensure the exploitation of the additional capacity now available. First successes are already becoming evident. We are confident that the Smart Foundry project also meets the most important target: sustainable doubling of turnover with significantly increased productivity!

More to follow in the next edition. ■

Spin-off Kurtz iron foundry

As of 1 January 2015, the iron foundry of Kurtz GmbH becomes a separate company: Kurtz Eisenguss GmbH & Co. KG. In this way, the iron casting in the Kurtz Ersa group obtains a clearer profile and more flexibility for you as our customers. Please use the following address as of 1 January 2015 for any correspondence:

Kurtz Eisenguss GmbH & Co. KG
Eisenhammer
97907 Hasloch am Main
GERMANY

Your contact persons will remain the same, however.

Source: Fotolia – XtravaganT

System supplier MBW, for sophisticated sheet metal products

Constructive added value analysis

Value analysis helps to develop products and clearly improve them. It is an ingenious process, enabling the potential for improving products to be identified – and acted on. The benefits are twofold: identifying where savings can be made and how services can be improved for customers. This approach has been adopted by MBW Metallbearbeitung Wertheim GmbH, manufacturer of sophisticated sheet metal products and perfect system solutions, and is becoming increasingly important to their processes. On the basis of their in-depth construction expertise, sheet metal specialists MBW are receiving an ever-increasing volume of inquiries. In most cases these requests have been successfully dealt with, resulting in specific customer benefits that can be quantified in Euros. We offer to get directly involved in your construction processes – where it is all about putting ideas into practice! ■

MBW Services

- Design service
- Laser cutting
- Punching/nibbling
- Bending
- Weldments
- Assembly service
- Machining
- Powder coating
- All-inclusive-system supplier for sheet metals

Contact

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100 highly qualified employees work at MBW. MBW has a production area of approx. 7,500 m² with latest production machinery at their locations in Wertheim and Baiersdorf. How can we increase your competitiveness?

This page shows you six examples of how you can improve productivity with MBW's construction services and lower your costs ...

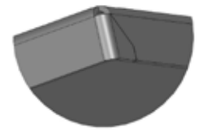
Bending instead of welding

A manufacturer of renewable energy systems found that changing the design from a welded component to a bent component has saved on complex welding documentation and production costs. There is no need for the reworking of a welded seam.

Savings: **13%**

Bending around corners

Crimping is sufficient, resulting in lower welding times and cost savings. Corners do not need to be welded through and then polished.



Savings: **9%**

Relocating microbridges

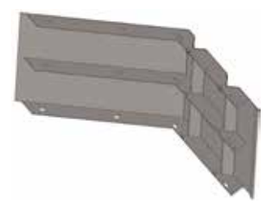
External microbridges that result from lasering have to be removed by hand – with internal microbridges there is no need for reworking.

Savings: **7%**

Simplifying bends

Length tolerances are maintained and the bending time is shortened by 50%. The actual function of the bends – stabilisation of the component – is not affected.

Use of lasered profiles instead of milled strips; weld nuts will be attached for the necessary thread.



Savings: **26%**

Value analysis assessment

After consultation with the customer threaded holes were introduced to the bent component; the 50 weld nuts envisaged were no longer required. Forming the thread using a TC5000 FMC-1600 CNC-metal processing centre led to shorter processing times and lower component costs.

Savings: **25%**

Laser-bent components instead of pipe profiles

Advantage: Milling and drilling work is no longer necessary, as these contours are introduced directly when lasering.

With laser-bent components it is also possible to laser in small recesses on one part and small shafts on another (to be welded onto the first) – resulting in simple, safe positioning.

Savings: **35%**

Diving into another world

People can only guess what goes on under water. It has always fascinated them. With technical assistance, they dive off into this other world, where they are always only guests. Kurtz Ersa employee Jan Müssig down in "his" element.

Water has always been my element, I was able to dive at the age of three – ever before I could swim. As a small child, I often spent my holidays in Egypt and Turkey with my parents, where I spent almost all the holiday in the water with a snorkel and flippers. A long way below me, I saw the divers with their diving bottles and thought: I'd like to go down there too!

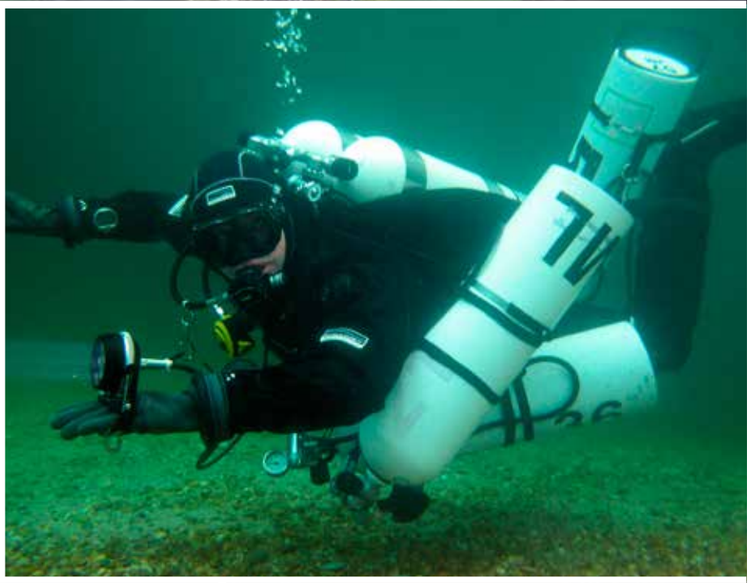
Active with the German Lifeguards' Association

First taster course in diving at 11, I have been active with the German Lifeguards' Association since primary school. I knew that they have divers working for them. When I was 17, I asked if I could do that. They let me! To start with, I did preliminary courses such as basic water rescue service, sanitary and radio certificates – and attended training for diving rescue. After three years of preparation, I took the exam and have now been active as a rescue diver for two years. I go out about 15 times a year now. It is possible that it is a winter night, with a water temperature of four degrees, sometimes you can hardly see your finger in front of your mask. Then you have to stay calm and rely on your sense of touch – and on the team from the local lifeguards' group in Freudenberg. I think that it is great that I can help other people with my hobby.

Weightless hovering

In the meantime, I have done 160 dives – Lake Constance was the deepest: 44 metres, 75 minutes under water. At less depths, I have also been down with my diving partner for two and a half hours, the Main River is mainly only four to five metres in depth. No matter where, every time is like diving into another world. All you hear are the bubbles you exhale … for me weightless hovering and total relaxation. My next objective: cave diving, the preliminary course is taking place, perhaps a diving instructor later. But at the moment, I am completely concentrating on my Bachelor of Engineering in Technical Logistic Management. I've already passed the exams and am writing my thesis at Ersa until the end of February – a permanent job there would be great! ■

KURTZ ERSA *inside*



Jan Müssig

Born on 22 January 1990, zodiac sign Aquarius; 2006 to 2009 apprenticeship as an industrial buyer with Kurtz Ersa, then alternative national service, qualification to attend a University of Applied Science, doing his Bachelor of Engineering until the end of February 2015.

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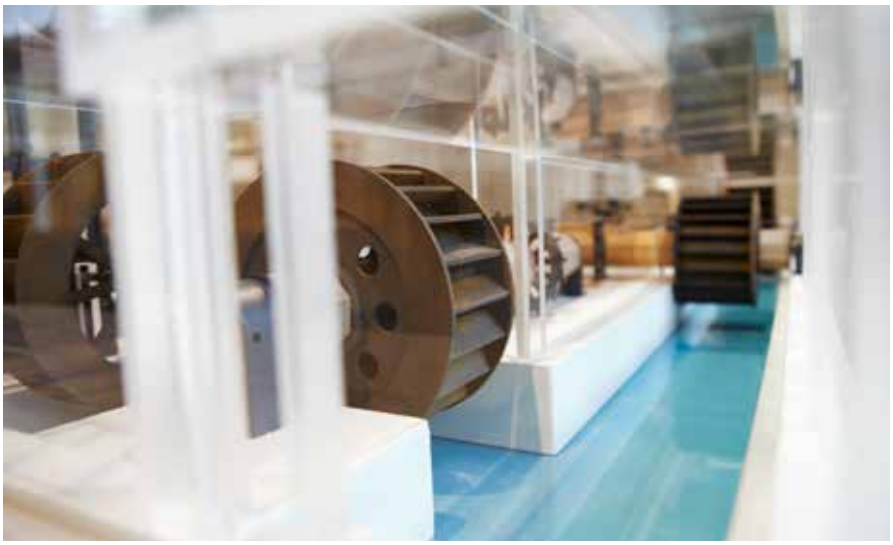

Technology fan? Passionate interest in industrial history?
The story of Kurtz Ersa comes to life in the new HAMMERMUSEUM – let yourself be infected with the enthusiasm for technology that still marks us out in the 21st century. We're looking forward to your visit!

Kurtz Ersa HAMMERMUSEUM
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www.hammer-museum.de

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