

26.

Edition

December 2004
13th year

Kurtz

... NEWS



The customer and employee journal



Review 225th
anniversary of
Kurtz

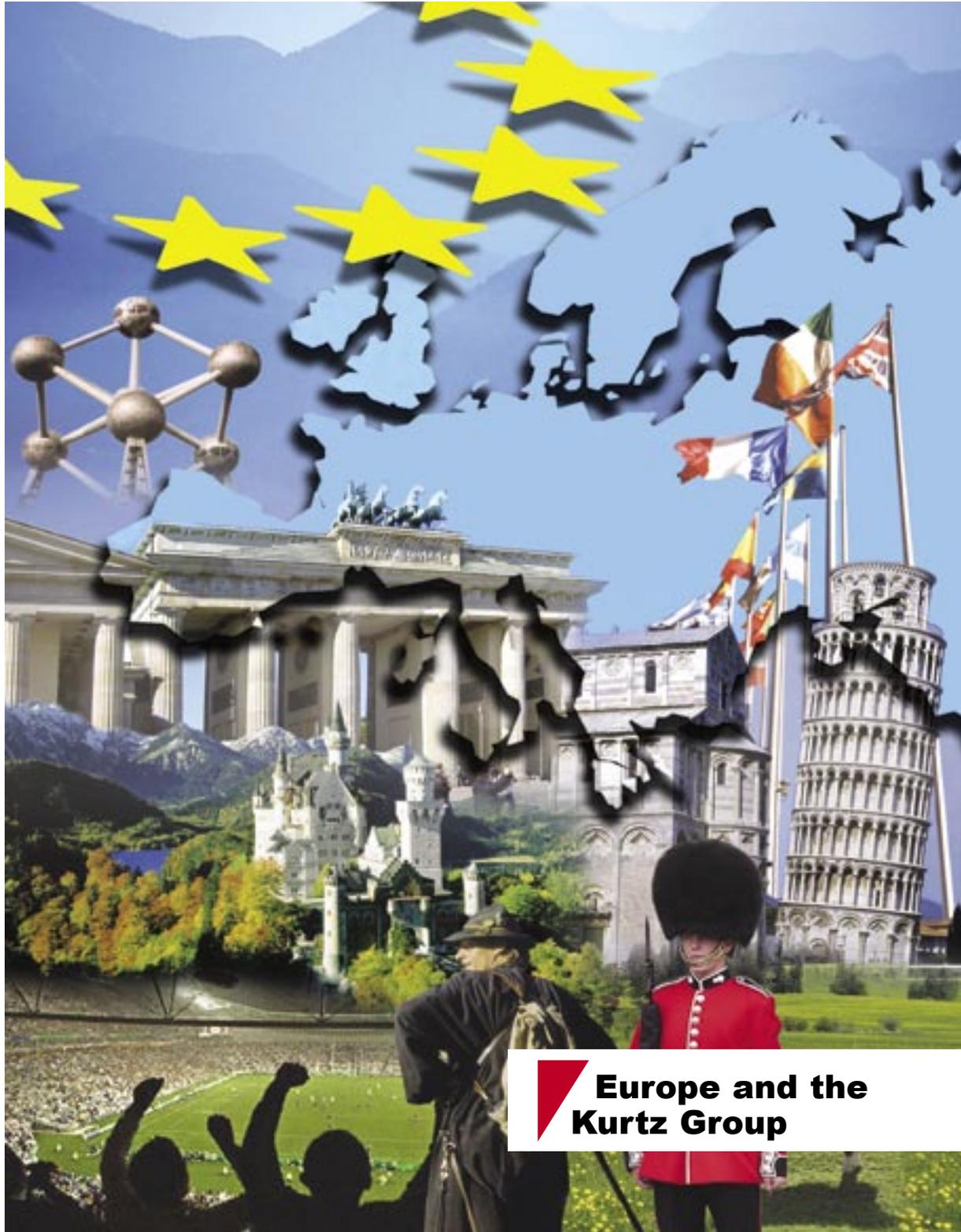
Aluminium
foundries in
France

Gorenje: a
little more

VERSAFLOW-
The ultimate
solution

KURTZ at
the K 2004

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**Europe and the
Kurtz Group**

Homeland is a feeling ...



Thematically speaking, this 26th issue of Kurtz News has brought us back home again, back to Europe. Or, should we say, to Germany? Or to be even more exact: back to our iron hammer works at Hasloch am Main? Yes, we should indeed, because that was where, in June this year, we all met up to celebrate the 225th anniversary of the Kurtz Group. It was a great event, and all the more of a special success for our being able to celebrate it together with many friends. We are eternally grateful to all those who contributed to making our company jubilee such an unforgettable experience – to all of you, many, many thanks! But it wasn't just our time-hallowed old friend the Eisenhammer forge but the whole Kurtz Group with its works in Hasloch, Kreuzwertheim and Wertheim as well as with all subsidiaries worldwide. For the first time ever, we presented ourselves to the general public as one group of enterprises, as the Kurtz Group. The feeling of belonging to one group was not just something laid on for outsiders but also something genuinely felt by the

insiders, and we are particularly proud that all those involved collaborated so wholeheartedly on making a success of the celebrations. Our Asian colleagues subsequently met up in Hong Kong in July to celebrate the jubilee, as did our American colleagues in Plymouth, Wisconsin, in September. And when the business sector particle foam machines set up shop at the K'2004 in Düsseldorf, its motto was the jubilee motto, „Fine Traditions and a Bright Future“, which was also the motto of the Grand Opening of our new factory in Zhuhai in China in November. As you can see, our group of enterprises has its roots in Hasloch, that is to say in Germany (or, rather, in Europe), but we are at home all over the world, everywhere where our customers need a reliable collaborator. Which is why it is appropriate that with this issue of Kurtz News we have come full circle in the magazine's thematic world-tour, and have landed back at our point of departure, at our homebase in our native country.

Particularly in times when Earth seems to be turning quicker and quicker on its axis, and our activities are determined by the globalization trend, the place we come from is an anchor which keeps us in place and gives us a sense of identity and belonging – similarly, the Eisenhammer is the root and stock of the Kurtz Group, proving the point that there can be no bright future without fine traditions. As the German singer Herbert Grönemeyer puts it, „Heimat ist kein Ort, Heimat ist ein Gefühl“ – „Homeland is not a place, homeland is a feeling“. It is our wish for all of us that wherever we are in the world, we will all celebrate the coming New Year with this feeling in our hearts, with peace around us and true peace of mind within.

Good luck in the coming year!

U. Kurtz
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225 years Kurtz Group – A great achievement!



This was the year when, under the motto „Fine Traditions and a Bright Future“, the Kurtz Group celebrated its 225th anniversary. It is hard to fit a description of such a highly important jubilee onto two pages – like the Kurtz range of products, the programme had very many different aspects: there was a vernissage and an art exhibition, there were welcome speeches and official speeches, there were official celebrations and works festivities, there were symposiums and technology days, open days and grand openings, mini in-house fairs and appearances at big trade fairs, shuttle buses, there was jubilee wine and there were gala dinners. By way of fulfilling the chronicler's duty, however, the following pages complement the written chronicle with a chronicle in pictures which need no lengthy explanations, and with a selection of excerpts from the press. The focus of this leading article, however, will be on those who worked away behind the scenes to ensure that great things were achieved. Way back in February 2003 the managing partners and advisory board decided that the jubilee should be celebrated in a way

befitting the importance of the occasion, but not simply in the form of a banquet. The date was fixed and a first budget set the organizational process in motion. Although this budget was later halved, and it was decided to do without the help of an event agency, everything went according to plan, and the celebrations were – as planned – fully in accordance with the importance of the occasion. A great achievement. In April 2003 the plan was still to rent a hotel ship to provide all our guests with central accommodation, to bring in a dance-band and hold one main jubilee evening event in a marquee rented for the occasion. This finally turned into two separate evenings in the beautiful Main-Tauber-Halle in Wertheim, with an in-house shuttle service serving 20 hotels within a radius of 50 km. And when it came to June 2004, everything went according to plan. A great achievement. In August 2003 plans were laid for a sprucing-up of all the various works and plants, so that come the great day, all would be shipshape and Bristol fashion. The cleaning-up was carried out without any help from outside, with a high level of creativity, and much saving of unnecessary expense. A great achievement. In December 2003 the jubilee logo was designed and the motto was decided upon. At the same stage, it was decided that the planning and celebration of the jubilee should be done not only centrally but also in all the various business sectors – a big „jubilee team“ was created, made up of a vast array of committed individuals. That

was a wise decision – and a great achievement. In January 2004, the central jubilee team retreated for a working session in the Zillertal and took advantage of their strictly undisturbed seclusion to work out a detailed project plan. After they had conferred

first day of our jubilee weekend. A great achievement. In March and April 2004, staff were informed of the finalized hotel arrangements and the timetables of the jubilee events. Everyone was satisfied, no-one complained. A great achievement.



for two long days (and nights), there was still time for a couple of hours on the ski slopes; in spite of the high fatigue levels, nobody broke a leg or froze. A great achievement. January 2004 also saw the plans being laid for the content and format of the Jubilee commemorative publication; in the event, this Festschrift was produced without any help from outside, and was ready a full week before the jubilee actually took place. A great achievement. The first invitations were despatched in February 2004; in the same month, our compère, artists and catering company for the two evenings were chosen, and we put in our orders. At the same time a concept was drawn up for an image-video which was ready and finished on the



225 years Kurtz Group - A great achievement!



The jubilee press conference took place in May 2004, and the procedures for the exhibition were coordinated with our jubilee artist Sabine Gerstacker. Well in advance, a large number of graphics jobs were done – and all in-house. A great achievement. Come the great month of June 2004, the transport logistics still

had to be worked out so that everyone would get where they wanted and had to be, on the right day and at the right time. It all worked like clockwork. A great achievement. All the printed matter was produced, including notices and signs; supplies of food and drink were laid in, the catering plans were finalized, the hall in

Wertheim was given a spring-cleaning, the technology days and the sales meetings took place, the jubilee gifts were packed up, and even the speech was modified – just an hour before the grand celebration. A great achievement. At last the great day arrived, and the celebration actually took place. The time sped by, everything went smoothly, and in the end we even found that we had stayed well within our budget. And it was not just that it all went smoothly – it also all went well: the vernissage and the art exhibition, the welcome speeches and official speeches, the official celebrations and works festivities, the symposiums and technology days, the open days and grand openings, the mini in-house



fairs and appearances at big trade fairs, the shuttle buses, the jubilee wine, and the gala dinners. A truly great achievement? Yes, it certainly was. This was in any case the opinion of our innumerable guests, customers and staff – and also of the managing partners and advisory board.

Cultural Partner of the City of Wertheim



The first bonds of cultural cooperation were forged back last year, when the City of Wertheim celebrated its County Jubilee: Kurtz sponsored the big "Metalljubler" (jubilating metal figures) which were to be seen through the town.

The positive experience of this first sponsoring project provided the impetus for a continuing and permanent cooperation. In the year which marks the 225th anniversary of its existence, the Kurtz Group was eager to support, in particular, the still flourishing cultural roots of the City of Wertheim and express its close association with the Main-Tauber-Spessart region even beyond Bavaria's and Baden's borders. It was therefore decided to actively support cultural facilities like the municipal library, municipal archives, Grafenschaftsmuseum (county museum) and Youth Music School. In

addition, the Kurtz Group also presented and promoted such events as "Nightgroove", the Justus Frantz Concert, the Ludwigsburger Festspielkonzert (Ludwigsburg festival concert), children's and youth theatre projects and the "Long Cultural Night". Particular mention should be

made of the pleasant and fruitful cooperation with the City of Wertheim and the city's Director of Cultural Planning and Partnership, Matthias Wagner. This cooperation often went well beyond "straight sponsoring" and developed into a genuine friendship.



Kurtz Group setting standards as world market-leader

A new work is presented at the Frankfurt Book Fair **Deutsche Standards – Weltmarktführer: ,German**



Standards – World market-leaders', featuring the Kurtz Group business sectors particle foam machines, and soldering technology.

This year's Frankfurt Book Fair saw Dr Florian Langenscheidt presenting a new issue on industrial brands

in the Deutsche Standards EDITIONEN series. The 700-page work is a compendium of Germany's best industrial enterprises, or as Chancellor Gerhard Schröder puts it in the Foreword, „a panoramic presentation of innovative world market-leaders“. From the Kurtz Group, the publication highlights ERSA (Wertheim) and KURTZ GmbH (Kreuzwertheim) as world market leaders in their respective fields of selective soldering systems and particle foam processing machines, thus placing Kurtz Group up among the crème de la crème of German industrial enterprises, alongside such renowned firms as Siemens, Bosch, Würth, and ThyssenKrupp. Dr Florian Langenscheidt had invited around 100 top executive managers from



the companies featuring in the book to Frankfurt for a „world market-leaders' day“, the intention of which was to „bring together the faces that make up German industry“. At the official presentation on Thursday, October 7,

2004, two of the Kurtz Group's managing partners, Rainer Kurtz and Walter Kurtz were there to receive the book in person. This exceptional honour, accorded to the Kurtz Group in its 225th jubilee year, is a resounding confirmation of the Group's corporate philosophy. The Group's machine construction business sectors all have a common goal, namely to play a definitive role in a strategically defined region. The Kurtz Group cannot do this without committing itself to high investment in research and development, a commitment which underlines the long-term orientation of its business strategy and ensures that the Group will continue to be able to compete with the cheap-labour countries. After all – noblesse oblige – a world market-leader is only worthy of the name if it ensures that it can hold its own in the future.

Figure: André Rival



Can progress be a sin?

High procedural security with KOYEMANN SEQUENCE-CUT DRILLING®

Variety is the strength of the Kurtz Group – its huge stock of technological expertise is reflected in its wide variety of products, production technologies and business fields. The tools of the company KOYEMANN constitute an important contribution to KURTZ's ability to develop up-to-date, innovative and creative solutions for its business partners.

KURTZ can now look back on a good number of years of successful collaboration in the drill-machining field with the historic firm of tool-producers from Erkrath, KOYEMANN, founded in 1894. KOYEMANN's product innovations and optimization of machine-drilling form the basis of their expertise in boring and grinding. Close collaboration with customers leads to the constant optimization of their accumulated expertise and is also one of the reasons why more than 80% of the firm's range of products are under patent.

KURTZ uses the most modern CNC turning, boring and milling installations for metal-cutting machining for the production of high-precision construction parts in steel, non-ferrous heavy metal, grey cast iron and aluminium for the completion or self-assembly of such complex custom-made plants as the KURTZ shape-moulding machine K 1214 for EPS-processing.

KURTZ's requirements from the tool to be used were formulated clearly: procedural security, and lowering of the machining time, even in the case of deep borings and high cantilever lengths.

Once KURTZ had used the KOYEMANN-tool with great success for a number of years, the logical next step was a collaboration between the two firms on practical tests on a pioneering new tool: KOYEMANN SEQUENCE-CUT DRILLING®.

The result of these practical tests was that this tool fulfilled KURTZ's requirements in all areas:

Procedural security is an important matter, and especially so in the case of high cantilever lengths and deep boring. The collaboration between KURTZ and KOYEMANN resulted in a special solution



with a very high degree of stability: an oscillation-insulated basic holder which attains optimal results at a Ø of 60H7 and a cantilever length of 274 mm, and at a Ø of 75H7 and 360 mm. The machine is subject to less oscillation and can operate at a higher cutting speed. „Using the special receiver in conjunction with KOYEMANN SEQUENCE-CUT DRILLING we were able to achieve a four-times higher rate of feed in comparison with that attained by single-cut tools, which brought about a reduction of a quarter in working time, i.e., about 30 minutes. The surface quality was < az 10.

Another contributing factor to the reduction in processing time is the dropping out of one working procedure at the rough-machining and sorting stage, as with KOYEMANN SEQUENCE-CUT DRILLING® rough-machining and sorting are combined in one procedure and is carried out with one

fitted cut. From the point of view of productivity this is another important argument for using this tool, as it means fewer breakdowns and less wear and tear. Furthermore, the cylinder form was also improved. Another important argument in favour of the use of KOYEMANN SEQUENCE-CUT DRILLING® is the new play-free and infinitely variable adjustment system (µm-scale), which brings about a fitting tolerance of up to IT 4. This precise and easy-to-operate mechanism also serves to eliminate extra working times brought about by complicated tool adjustments.

The future will see KURTZ and KOYEMANN engaging in close cooperation, and particularly on the development of certain specific tools. We are looking forward to this continuation of our productive collaboration.

New machining centre increases productivity and capacity of the job order production

The company KURTZ is specialised in the precise processing of components and component assemblies. This is the prerequisite for high-quality machinery. The range in the area of metal-cutting extends from CNC turning, drilling and milling to planing and measuring and on to complex welding operations including surface finish.

The core metal cutting competence of KURTZ lies in CNC operated turning,

milling and drilling as well as planing. With the new UNION KC 130 Processing Centre, the machinery at KURTZ was further optimised in June 2004.

Thanks to the new centre with NC round table, items with a weight of up to 10,000 kg can be processed. The maximum traverse paths are X 4000 mm, Y 2500 mm, Z 1500 mm and W 750 mm. The machine has an automatic tool change device with magazine for 60 tools, a refrigerant device for



external and internal cooling and as a special accessory an angled head.

Programmes can be compiled both directly at the machine by the operator on the iTNC 530 controls from Heidenhain, or at a programmer's desk with the Sican programming system. For Sican, universal source programmes are compiled and generated in NC programmes via a postprocessor. As a consequence, processing

programmes for our other centres can be generated at any time with the same source programme. This permits maximum flexibility and observance of delivery dates through just-in-time supply – a matter of course at KURTZ – seeing ourselves, as we do, as the extension of the customer's workbench.



Expensive scrap metal... Foundries worry about price increase

Enormous rises in the prices of scrap, pig iron, and alloy materials cause concern among German foundries

This subject appears in the press daily and will certainly be a matter of concern for us in 2005.

As is well-known, persistent shortages on the market have caused raw materials prices to soar to previously unimaginable levels – back at the end of 2003 we were paying €210 per metric ton of pig iron, and now the prices range between €360 and €400.

Normal cast-iron scrap has gone up in price by almost 100%, and prices for alloy materials such as ferromolybdenum have risen as much as 600%.

Research conducted by any number of business experts has again and again led to the conclusion that the principal cause lies in the enormous economic growth in China.

China's own requirement for iron-ores and scrap has risen by 20% in comparison with 2003. As this rise cannot be covered by China's own stocks or steel-works, they are certainly not in a position to export to Europe any longer.

This begs the question as to how China is capable of buying in the scrap it needs, when Europe is not.

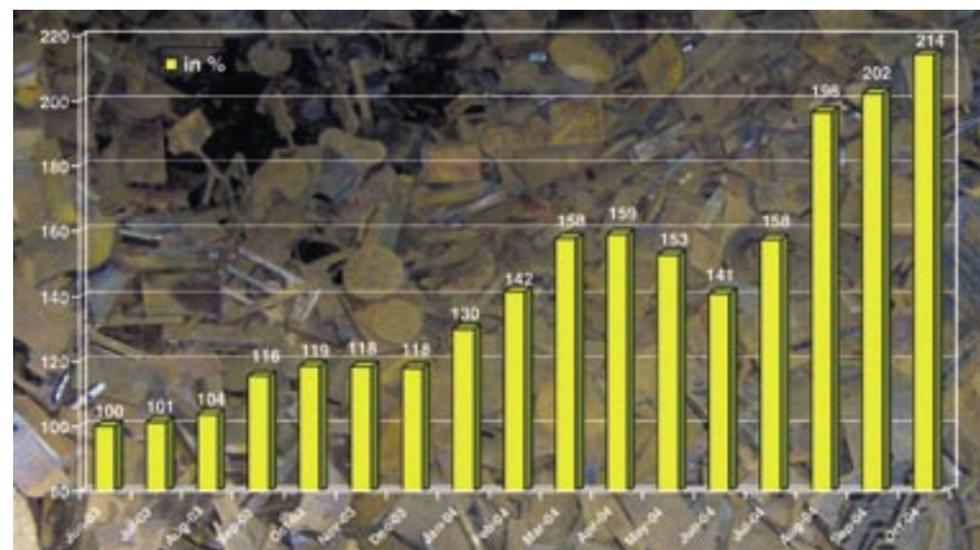
The answer is that at present it is more lucrative for the dealers to export scrap unbroken, unsorted and without any additional processing, but still at high prices, than to satisfy the German foundries high quality demands through a high-quality processing of the material at their disposal. What determines business

own. This is the reason behind the coming-into-operation of the so-called „raw materials price increase supplement“, for short „MTZ“ (Materialteuerungszuschlag). This supplement is agreed upon with the customer, and the monthly increases in the price of scrap in comparison with an agreed base-price

will be able to survive this difficult phase, by working together as good partners.

At present there is no prospect of an end to the price increases, as we are still expecting a further significant increase in Chinese raw steel production. This will lead to a new

Price development in % from June 2003 until October 2004



on the world market is price and demand.

If they wish to ensure that they are supplied with raw materials, the German foundries have no option but to pay the high prices.

In the long run, however, the foundries are unable to bear the burden of the constant increase in prices on their

are transferred to the customer.

Without MTZ, it is impossible for foundries to cover their production costs; above all, it is impossible for them to supply their customers with the cast parts they require. Thanks to the fact that most customers understand the reason for this unusual but necessary measure, we

increase in demand for raw materials in China and will thus drive prices up even further.

The German foundries, however, are proving their right to a place on the market, and will continue to do so, by engaging in bilateral collaboration with their customer partners.

Synergies used cleverly - The aluminium cleaning plant moved to Hasloch

Back to its historical birthplace – this could be the motto of the move of the aluminium cleaning plant to Hasloch, but for the fact that aluminium parts are, historically speaking quite foreign to Hasloch. But the name of the game is synergy, and it was synergy that we were after when it was decided that the cleaning plant should move.

During the aluminium foundry's operational holiday, the entire Works III of KURTZ GmbH in Wiebelbach was emptied within one week and then rebuilt again in the following week in the „old“ but newly fitted-out machines factory hall in Hasloch.

Furthermore, all the model storage stacks had to be taken apart, together with all their contents, and given provisional storage space. At the same time, a moveable shelf store, built high to save space, had to be set up to accommodate the models which had been taken out.

The doing-up of the existing office space and sanitary facilities was also carried out in advance, as was the provision of the necessary



EDP and telecommunications. The production procedures are now organized in such a way that the flow of the raw parts begins at the front gate and, having gone through the cleaning process, ends up at the back gate where the parts are then sent off to their destination. Consideration was given to allowing for more room between the individual work places than in the old production hall at Works III.

The staff of the iron and aluminium casting plants have been combined at the despatch office. The papers necessary for the

despatch are now produced on location rather than in the administrative building, making the time-consuming procedures of old a thing of the past.

One further synergetic step was taken by moving the aluminium foundry's administration and sales departments to Hasloch as well. Now the ladies and gentlemen of the administrative department work shoulder-to-shoulder in one administrative building, which makes for closer and quicker information and data exchange and for the optimal use of the forces available through the sharing of strengths and duties.

The whole move was only possible because of the great commitment displayed by the staff involved, and the support of the holding departments. Production started again on time and without any

significant problems. This project will finally come to an end when the hardening department has also been moved to Hasloch from Works II in Wiebelbach.



MGM – a medium-sized company suddenly arrives in Europe



For over 100 years, MGM Metal-Giesserei-Mannheim GmbH, has been producing sophisticated cast items in aluminium and nonferrous metal alloys. The grown customer base of MGM is centred in Germany. The company's own suppliers and sub-contractors come from the local region or from other parts of Germany. Occasionally one or other machine part or operating material is sourced in neighbouring countries. For some time now, other nationalities have also been represented in the staff. Alloys were adapted by EN Norm to European standards. Otherwise, for MGM, the Europe which lay beyond the national boundaries was very far away. And this although doing business Europe-wide is now simpler than ever. Larger companies exploit the various possibilities for production and procurement. Important industrial customers work at least Europe-wide or are moving eastwards themselves. For MGM, the

political openings in recent years were associated with a constant toughening up of competition. Like the highly-subsidised foundries of East Germany in the early 90s, today low-wage countries from Eastern Europe are competing for the customer's favour. With current production costs, a company with simple components in large quantities is only competitive to a restricted degree. MGM as a well-established, medium-sized company was, however, firmly linked to its original location. Some classic "Europe strategies" could



not be considered or simply did not come about. The company-financed adventure of a low-wage branch for parts of this kind was not foreseen. Partnerships with foreign competitors failed to flourish due to the sustainability of the friendship or presumable inappropriate partners. And generally, it was to be feared that the customers for the commercial business without the core-competence components of MGM would have no understanding in the long-term and move directly to the manufacturer.

Sand casting in small and medium series from project planning, start-up and series lives from the friction-free cooperation of all those involved, from flexibility, personal performance, short ways and expert know-how right down to the last employee. In contrast to major projects, there are no general plans which are then handed over, complete with the necessary machinery, to the hoards of operatives. Even so, sand casting in small quantities is subject, in principle, to the

same yardsticks for process capability, quality and reliability of supply. Those like MGM who deliver sophisticated components reliably and quickly, will continue to have a future as an industrial company in Germany. Up to now, this concept was more a defensive one, which meant that the German customer was discouraged from buying technically demanding components on the cheaper foreign market.

About one year ago, an MGM customer transferred his production to the East. The Metall-Giesserei Mannheim had suddenly arrived in Europe – by means of fax notification of the new production location. Since then, MGM as a German foundry has been making various cast parts for a customer in Eastern Europe. Intended originally as a temporary measure, a considerable expansion of the business is currently being planned. Trials with sourcing these components from local manufacturers have failed because "too many errors were made too often": For smaller quantities, and the relevant technical and logistic requirements, even an Eastern European customer will pay German prices. And a language barrier is no more difficult to contend with than some of the problems in data exchange within Germany arising from customer-specific systems or Internet platforms. Europe is the same market, just bigger!

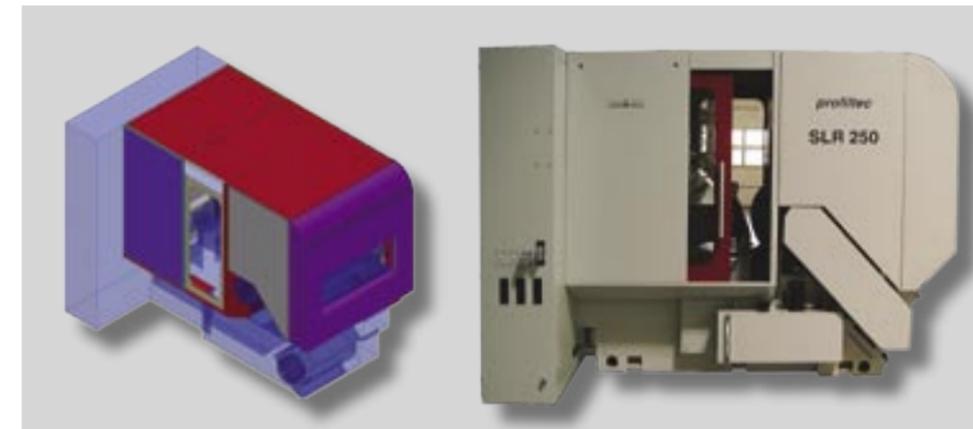
Review of the 1st „Technology Day“ and Open House at MBW

Within the framework of the 225th Jubilee of the Kurtz Group, MBW Metallbearbeitung Wertheim GmbH organised a "Technology Day" and Open House for customers for the very first time.

The aim of the event was to stress the capabilities and technical expertise of MBW to both buyers and design engineers at the customers. For this reason, the lectures concentrated on new possibilities in manufacturing (in particular punching and laser cutting), as well as the use of modern 3D CAD systems in sheet metal design engineering. The response to this very first Open House can most definitely be described as positive.

The lecture on the possibilities of sheet metal design had two main focal points. On the one hand the fact that even in the developmental stage, photorealistic representation provides an exact replica

Fig. 3: Bending on the punching machine saves the consecutive working step on a separate bending machine.



Comparison 1. Design phase and subsequent realisation at MBW

of the subsequent final product. Something which is particularly beneficial in sales discussions, i.e. even non-technical discussion partners can understand the topic with relative ease.

The second focal point related to the cost-saving potential which exists even as early as the design phase, giving consideration to the manufacturing possibilities of sheet metal. This begins with a reduction in the diversity of parts through the replacement

single bent component to the storage of tool data for stampings, beading and gills in the form of a tool catalogue and on to the development of tailored processes. In the following example, consistent consideration of all these points made it possible to forgo separate, and generally expensive, framework elements (e.g. Item profile sections). The material which is often thrown away as so-called waste, was welded in as reinforcement. At the same time, a range of design engineering proposals were also considered. The lecture on punch engineering was held immediately afterwards. In particular, the enhanced manufacturing possibilities resulting from the use of new punching tools were spoken about. Two of the tools are presented here.

Following the lectures, visitors had the opportunity to observe some of the dry theory in practice at MBW and clarify any questions in a

personal discussion. In summary, we can say that everyone, customer and MBW employee alike, found something of interest at the event.

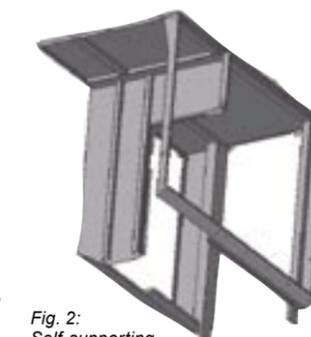


Fig. 2: Self-supporting casing element

Fig. 4: Beading, Material thickness up to 2.5 mm



Aluminium Foundries and KURTZ in France

In historical terms, foundries and metal casting have a long tradition in France. Right up to this year, iron ore was still being mined in the country. The local foundries are either specialised family businesses or major corporations operating



Engine mounting produced in the tiltable gravity casting process using a 3 cavity die

world-wide. Among these corporations are Fonderie du Poitou and Michelin, PSA-Citroën and Renault, to name but a few.

Some of these companies are able to offer all castable materials in all conceivable foundry processes. Others are specialised in aluminium and here too the most varied of

constellations and company structures exist depending on the requirements or specialisation between pressure casting, low-pressure casting and gravity casting.

Today, in addition to the casting processes for low-pressure, tilt casting or gravity die casting, cast parts for the automobile, foodstuff and machinery industry are also manufactured on casting systems supplied by KURTZ.

KURTZ low-pressure casting machines are used at Duranton Sicfond for casting gearbox casings or axle suspension for customers from the automobile and motorcycle industry in France and Germany. The products are built into cars, trucks and motorbikes by Renault, Peugeot-Citroën, ZF, BMW and KTM. In addition to these products, containers with a unit weight of up to 45

kg are cast for the foodstuff industry.

A customer uses low-pressure casting in the area of moulds for vulcanisation tools. Here the die is built with plaster cores in order to cast the negative contours of the tyre tread. With the aid of precise KURTZ control of the casting and the flexible adaptation possibilities, this unique casting of the mould permits a dense cast part to be reliably manufactured.

KURTZ tiltable casting machines are in use for casting door handles, bed frames and chairs weighing up to 20 kg, as well as for motor parts such as cylinder heads, pumps and other casing parts.

These machines have been in operation for years as casting cells with automated handling, and also as individual machines, as is the case with Ceva and Ardenn' Alu, in smaller operations for small and special series.

Technology Day at Kurtz Foundry Machines on 18th June, 2004

On the occasion of the 225th anniversary of the company, the Foundry Machines Division of KURTZ GmbH organised an Open House for 75 existing and potential customers.

The company succeeded in securing experts from the most varied positions in the foundry world as external speakers.

The series of lectures was opened by Mr. Rolf Bahn who works as an independent ceramics expert. He is involved in foundries as a consultant dealing with the possibilities offered by ceramic components. During his lecture, he showed participants the areas of use for different ceramic materials, the components made from these materials and the manufacturing process involved. Furthermore, he provided a look at developments in the areas of application feed tubes, protective tubes, rotors, etc.

The second speaker, Mr. Richard Kretz presented the activities of the Leichtmetallkompetenzzentrum (Competence Centre for Lightweight Aluminium) in Ranshofen, Austria. Mr. Kretz works there as Head of Technology and Projects in the department dealing with foam aluminium and aluminium and magnesium die casting. In the first part of his lecture he explained the manufacturing process and the application possibilities of aluminium foam. He then

went on to elaborate on the advantages of the metal matrix components and gave examples demonstrating the wide-ranging application possibilities.

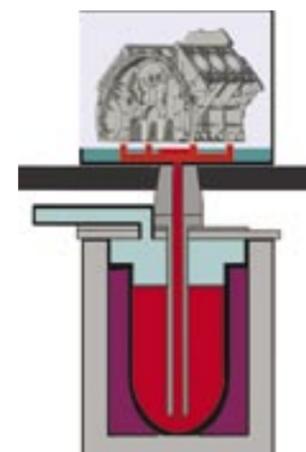
Dr. Georg Dickhues from Grunewald presented the Rapid Prototyping Department. At Grunewald, the term QMC process refers to the manufacturing of cast parts within three weeks of the arrival of the CAD data. During this short time, models are ready and cast parts can be made in the various processes. The spectrum of items already produced stretches from "simple" induction pipes to the most complex cylinder crankcases. The complete process was graphically demonstrated in the presentation.

The fact that KURTZ stands for innovations was demonstrated in the lecture by Christoph Hartmann. As Project Head on the new developments immersion heaters and insulation ovens, he was able to give his audience a look at how KURTZ envisages keeping molten aluminium warm in the foundries of the future, and the fact that, with the use of the immersion heater in the KURTZ aluminium foundry, the future has already begun.

Mr. Wolfgang Müller from Hydro Aluminium presented a further innovation: linear slide technology. As Project Head he is responsible for this new development

at the Bonn research site as well as for the area of low-pressure casting. This technology makes it possible to separate core stackings or casting dies directly after filling in low-pressure casting by removing the gate. The use of this valve brings with it completely new machinery and casting concepts with a high level of productivity coupled with a high quality of cast parts.

The possibilities of flexible tailored casting right up to the interlinking for the series in the area of gravity casting machines were presented by Mr. Lothar Hartmann, KURTZ GmbH. The audience was introduced to the various concepts using numerous pictures of machinery and plants right down to the layout of complete casting cells. In a further lecture, Mr. Lothar Hartmann explained developments in the area of low-pressure technology. In an exemplary cooperation



Controlled mould filling in the low-pressure die casting process (image: Messrs. Grunewald Guss & Co. KG)



Low-pressure casting machine for aluminium and magnesium

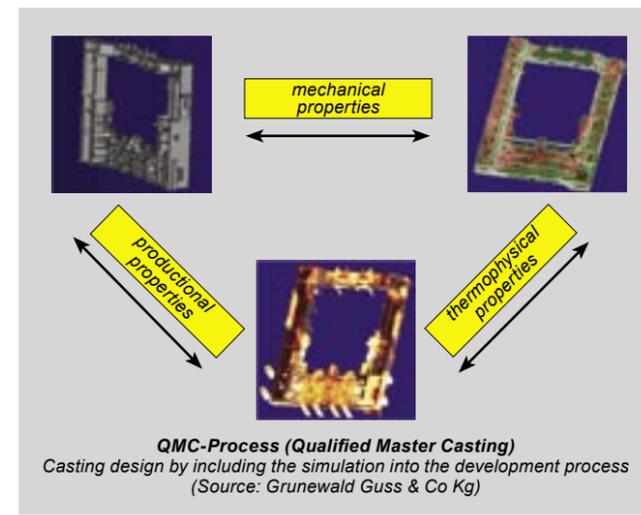
between the customers and KURTZ in the past years, a number of innovative machinery and plant concepts have been developed. These showed plans for Rapid Prototyping to machines for customer casting right down to interlinked casting cells. As the key to success, it was clearly shown that KURTZ is not only able to build machines but has also positioned itself as a partner

for the customers when it comes to tool engineering and on to the first casting. In this context, cast parts were presented which have been "born" in the recent past. Parts which have gained in significance are primarily chassis frame parts, engine parts such as bedplates and cylinder crankcases i.e. parts for the automotive industry.

The high degree of interest shown in the lectures was reflected in the fact that the question-and-answer time allotted at the end of each of the talks was simply not long enough. The conversations conducted after each of the lectures and later, during informal chats in the evening, clearly show that this Technology Day was a complete success for all involved. We would be pleased to take up the suggestion that events of this kind should be repeated regularly.



Fully equipped tiltable gravity die casting machine for universal use



The Kurtz Group's anniversary exhibition: „Beautiful Wild Pictures“

On Sunday, 6 June 2004 there was the first private picture view in the light-flooded stairway of the KURTZ administration building in Kreuzwertheim-Wiebelbach. Apart from the artwork for the KURTZ 225th anniversary also further objects of the Laufen artist Sabine Gerstacker were shown. Also the jubilee wine of Mr. Rober Haller, manager of the wine estate Fürst Löwenstein in Kreuzwertheim was

presented and tasted. Walter Kurtz, managing director of the Kurtz Group explained the company's step to initiate an art exhibition under the motto „Kunst und Kultur bei Kurtz“ (art and culture at Kurtz) in a small address as follows: „In a sense we engineers at Kurtz are also creative artists.“

And Kurtz's tradition for culture is proved by the group's obligation to preserve the historical Iron Hammer Building as an industrial monument for many decades.

In 2004 also the culture partnership with the town of Wertheim conveyed this commitment to the public. With in-house exhibitions at regular intervals this commitment is to be returned to the other side of the river Main.

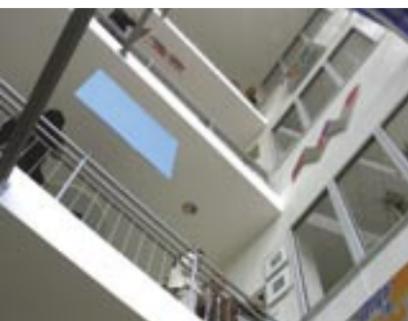
Mrs. Gerstacker's pictures convey a sense of joy. She paints „beautiful wild pictures“. This is why she was commissioned to carry out this unusual project and was familiarised with the company's corporate culture.

Mrs. Gerstacker wrote the following on this subject: „I was particularly impressed by the employees, their skills and the precision and care with which they carried out their work. The entire KURTZ Group seemed to me a large, vibrantly alive organism, with each individual a very

important part of the whole.“ „At the beginning of next year there will be another exhibition with a further European artist.

Just wait and see!

We are not disclosing any more information today!“ was Walter Kurtz's comment.



Press review: “225 Years of the Kurtz Group”

Wertheimer Zeitung

Closely associated with the region and the people living here

The Bavarian Minister of State, Dr. Eberhard Sinner, expressed his respect for the company which has always placed its faith in innovation yet has never lost sight of the true essentials. Kurtz is no dinosaur but rather a filigree, flexible butterfly. The function of politics, he said, is to “create biotopes in which the future can flourish”.

The pride and joy of the guests was given voice by Member of the Bundestag

Heidi Wright. She also honoured the responsibility which the company assumes for the staff and new blood. Cosmopolitan and yet closely linked to the local region was how Member of the Landtag Prof. Dr. Wolfgang Reinhard described the corporation, which he specifically thanked for its loyalty to the location. It is thanks to companies like Kurtz that, in a Germany-wide survey, the people in this region emerged as having the greatest feeling of wellbeing.

FRÄNKISCHE NACHRICHTEN

Impressive insights into the company

Thousands of people came to the Kurtz Group's Open House. Most obviously impressed were those guests who took the opportunity to look around a number of sites, at what had emerged from the original cell of the

Group in six generations: A company which operates world-wide with over 1000 employees, a turnover of around 145 million euro and over 80 trainees.

Even for outsiders, something of the very special spirit which is attributed to the company and which makes the jobs here so coveted was palpable in the production halls.

At Kurtz the bright future has fine traditions

A State Minister, Members of the German Parliament, the Bundestag, and two State Parliaments, a District Administrator and deputy District Administrator, Lord Mayors and Mayors, representatives of chambers and associations and many others: Just one

look at the guest list shows clearly that something really special was being celebrated on Friday in the festively-decorated Main-Tauber-Hall: In the year 1779, the Haslocher Eisenhammer foundry was established. From this emerged the Kurtz Group which is now able to celebrate 225 years in existence.

MAIN-POST

The future lies in the good health of medium-sized companies

In his words of greeting, Georg Denzer, District Administrator of the Main-Tauber Administrative District also represented the Main-Spessart Administrative District and spoke, not without a smile, of a reunification of the old county. Over centuries, the Kurtz Group has incorporated the spirit of this county. Operate globally, retain regional significance, the Kurtz Group has succeeded in this, which is no easy tightrope walk.” This from Wertheim's Lord Mayor

Stefan Mikulicz. Only one of 2500 companies possesses a 225 year-old family company chronicle.

Erwin Fertig, Chairman of the Main-Spessart Industry and Trade Committee of the IHK, praised the Kurtz Group as “an oldie with modern family management”, which is global and innovative. The company history is unique at a time in which many companies would not survive the first years.

Elgar Straub, as a representative of the many associations in which Kurtz is involved, expressed gratitude for the company's commitment. “We are proud to have a company of this calibre as a member.”

225 years of Kurtz: Evening of festivity in the Main-Tauber-Hall

Rainer Kurtz revealed the concept behind the globally successful family company to 800 invited guests. From generation to generation, six basic principles have been handed down:

- Business takes precedence

- over family
- Treat family members with respect and tolerance
- Money earned has to remain in the family
- Work has to be fun
- Appreciate the close association with the region
- Keep a close human solidarity with those who work for your company

IHK Magazin Wirtschaft

Moulded for the future

Despite operating internationally, the Kurtz Group,

as a family undertaking, has remained firmly anchored in the region. It offers employment to 800 people here, and apprenticeship to around 85 trainees annually.



Engineering with a tradition and a Future The roots of the engi-

neering company go back to a forge hammer from the year 1779. The antique, water-powered unit is still in use today as a technical cultural monument.

225



The Main-Tauber-Hall got a new appearance



Really hot! The fire show during the anniversary celebration



A charming compère and big band sound



Along with the 225th anniversary of the Kurtz Group the company's choir „Hammerchor“ celebrated its 25th birthday: it performed for the first time on the occasion of the 200th anniversary.



Anniversary celebration in Asia

1779 - 2004

Kurtz
 Industrial Technology Companies

225 YEARS

The VIPs of the economy and politics



The big band Militärmusikkapelle Tirol provided for good spirits



International partners were also among our guests



Give aways distributed at the open house

225

„We need a little bit more than anyone else“ Together with KURTZ Gorenje realized the most modern EPS processing plant in the world



The company Gorenje, a well-known manufacturer of household appliances, based in Vilenje, Slovenia, produces ca. 10,000 fridges, washing machines and dishwashers per day. Up to now, their enormous demand for EPS packaging has been satisfied by a number of suppliers. In order to reduce production costs, Gorenje too was forced to find potential savings. In 2001,

the business idea of in-house manufacture of the packing materials for the products took root. This saving was to be achieved through the most modern production engineering and the elimination of transport costs for the delivery of the EPS packaging. Further advantages of in-house production were envisaged in the improvement of the quality as well as the simple logistics. Following an intensive study of all the suppliers in question, Gorenje decided in 2002 on the LTH technology of KURTZ. By means of the LTH technology, EPS

packaging is now being produced with a minimum of energy consumption and the fastest cycle times. Within the shortest time, the new EPS production plant was planned by KURTZ and built on a “green-field” site, at the Gorenje premises. The plant is set up for an annual capacity of ca. 2.2 million items of packaging, which corresponds to around 3,300 t of EPS. At the beginning of 2004, the last moulding machines were installed, completing the final expansion stage. Today the plant is considered one of the most modern EPS shape moulding facilities in the world. We can say with

pride that KURTZ has once again confirmed its position as a leading manufacturer of machines for EPS processing.

The essential components of the plant are:

• Pre-expansion plant

Two discontinuously operating pre-expanders of the type VSD 1000 with automatic density control and regulation to guarantee constant material density. In order to ensure consistent material quality, even at 50 kg/m³, the pre-expanders are equipped with electronic air admixing. Job management is centrally controlled and the requirements reported directly to the pre-expansion plant.

• Fully-automatic silo plant

Due to the different raw materials required, for example, for dual-density processing, a freely-selectable linking of each silo to the moulding machines is particularly important. In addition to the interim storage silos, additional distribution silos with the corresponding control system were also installed. The silo management is linked to the pre-expansion control system. The silos to be filled can be selected in the simplest way. With the aid of visual representation, the actual status of a storage silo is visible. The



following data are sent from the pre-foamer plant to the silo management: material number, description, quantity, recipe, storage and processing times.

• Recycling plant with dust removal system

Made up of a primary crusher, impacting grinding mill with interchangeable screens, dust removal unit with suction, filter station and silos. By means of the mixing and dosing stations installed on each shape moulding machine, up to 20% of the recycled EPS can be added. With this secondary use of the shape mouldings, a major contribution is made for the environment and, in addition, the production costs are reduced.

• LTH shape moulding machines

Twenty K813 LTH shape moulding machines were installed for the manufacture of the mouldings. The machines were equipped with three different handling systems, depending on the requirements:

- Universal removal from

the top with stacking table for depositing the finished shape mouldings.

- Telescopic removal from the top with a stacking system for placement in mesh boxes including locking device for boxes, coupling and distance measurement.
- Conveyor belt below the machine

The moulding machines are equipped with a dual density function. This makes the economical production of EPS foam base lining with different densities possible. Through the use of these dual density moulded parts as pallets, the otherwise necessary use of cardboard is eliminated completely.

Alternatively, the foam base can also be laminated with PS foil. For this, the “skin-moulding technique” is used, which involves a cut-to-size foil being automatically placed in the mould during manufacture, and bonded with the EPS moulded parts.

The programmable control of the moulding machines is linked to the central job management via an ethernet-interface. As a

result, the optimum use of production capacity is guaranteed and the quantities in storage reduced to a minimum.

A further highlight of this plant is the fully-automatic transport of the finished shape mouldings to their storage area. By means of a radio-controlled floor conveyor, the packaging stacked in mesh boxes by the removal system is automatically transported to their storage site. Empty boxes for refilling are also returned automatically to the moulding machine by the floor conveyors. No operating staff are required.

Through the use of LTH engineering, high energy savings have been realised at Gorenje for steam, air and water as well as through the shortest cycle times while observing high quality standards.

“We need a little more than anyone else.....” was the requirement stipulated by the management of Gorenje. KURTZ has risen to this challenge in an outstanding manner and realised the “little more” with the most modern EPS processing in the world.



International Sales Meeting to update KURTZ agents and representatives

In June, 2004 the time had come once again. Just a few days before the 225th anniversary of the Kurtz Group, the Particle Foam Machine Division issued invitations to its 2004 Sales Meeting.

As the name suggests, the participants in this event come mainly from the ranks of our sales staff and our representatives from all over the world. They came from more than 20 different countries.

The motto of this year's event was: "Products, Processes, Applications". Not for this reason alone, but also as a matter of tradition, a Sales Meeting at KURTZ is an event which is not restricted to distribution. Rather it is a platform for the direct exchange between internal and external sales people, project planning, construction and service.

For this function, a location was needed which would



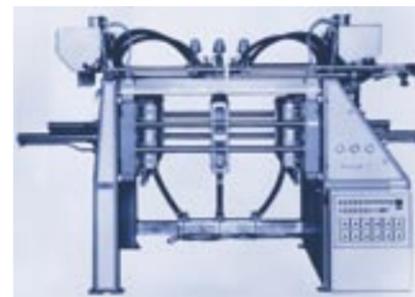
satisfy all the "business requirements" on the one hand, and provide a pleasant environment, on

the other. And it was found quickly, quite nearby, in the lovely Taubertal. On the first day, Profit Centre Manager

was 7:15 am, to allow the tight schedule to be adhered to. In the reconstructed Alten Füllerei of the Distelhäuser Brewery a total of 11 (eleven!) workshops had to be contended with. A big thank you to all participants at this Sales Meeting, who successfully completed this marathon with enormous concentration, a thirst for knowledge and discipline. Admittedly we were rewarded in the evening with a tour of a brewery at which beer-tasting played no small part.

In the morning of the following day, we changed location, going to Wiebelbach to find out the latest information from Service. Most of our guests for the Jubilee celebrations arrived at lunchtime and availed of the opportunity to take a detailed tour of the plant. Particular interest, of course, was taken in our "No. 1", the first shape moulding machine from KURTZ, which was not to be missed here – in keeping with our motto: "Fine Traditions and a Bright Future".

Shape moulding machine no. 1



Harald Sommer spoke a few words of welcome in the Edelfinger Hof. The individual divisions then reported on the current market situation as well as the latest developments. Departure time next morning



High technology for the doors industry Robots raise productivity in door manufacture

The production of doors to a hitherto-unknown degree of flexibility and dynamism. For one of Europe's biggest door producers, KURTZ installed handling plant which sets new standards both for throughput and for the variety of doors which can be dealt with at any one time.

With its headquarters at Spital in Austria, the company DANA produces doors at a rate of a matter of seconds, and is still able to produce each door to different specifications. The challenge was to pile these doors according to the respective orders.

KURTZ project director Dipl. Ing. Peter Rottenmanner put it as follows: „When we were first confronted with the task, we thought of using a driveable palletting robot, but we quickly realized that we would not be able to reach the required throughput. After several different combinations of plant had been simulated on computer, it was finally decided to use two KUKA heavy-load robots KR 360, optimized for this particular application.

High demands were also made upon the vacuum grab developed by KURTZ – not only did it have to suction-grab doors of very varying dimensions quickly and transport them quickly and safely to their destination, but panels also had to be separated from one another when the picking up was taking place.

Impressive data

The basic operational data for the plant described above constitute the absolute limit of present-day technology, not only in respect of the

Separating the panels before lifting



production rate, but also of the dimensions and weights involved.

- 5 production bases
- 7 sec production cycle per door - more than 500 doors per hour
- door weight: up to 150 kg
- door measurements: 0.3–1.0 x 1.3–2.8 m
- parts to be handled: doors, pallets, protective panels
- +/- 0,5 mm precision-placing

The robots were delivered and set up between Christmas and New Year, and production began as early as the second week in January. The throughput was then raised step-by-step and reached 100% by the end of the month.

The know-how is all in the grab

The decisive element in raising the productivity of a robot installation is the grab.



Commissioning of doors in quick succession

Great know-how and many years' R&D experience are required for the development of a grab which can power-lift and move heavy loads with large surface areas. The challenge is to develop a grab system which must be light, able to withstand very high forces, and capable of holding heavy loads. In addition to these requirements, the design of the grab system also has to take account of the fact that the procedure of picking the doors up and putting them down has to take place very quickly if short cycle times are to be achieved. Thanks to special vacuum technology, the grab in

question is capable of picking up and putting down doors up to 150 kg in weight within 0.3 of a second. But that is not all. One further requirement was that the panels should not be in danger of being distorted or even torn by the force applied to them by the suction. This problem was solved by having the front of the panels lifted with the back part being held down by the grab.



Kurtz offers its customers innovative and up-to-date solutions



KURTZ separating suction grab

KURTZ at the K'2004 in Düsseldorf

Amidst great public interest, the Kurtz Group presented three outstanding highlights in the area of particle foam processing in Düsseldorf at the leading fair in the plastics industry, the K'2004, from 20 to 27 October. While, according to the fair organisers, the attendance at K'2004 was at the same level as the previous fair in 2001, with 230,000 visitors, the number and quality of contacts at the KURTZ stand demonstrated a significant increase, which is accounted for in particular by visitors from the Asia area. Once again, with its innovative products, KURTZ is setting standards as the world market leader:

of maintenance, TOP-LINE makes its mark through higher speeds with constant accuracy of positioning. The volume of sound of the media supply has been reduced, steam distribution optimised and the condensate output optimised for a shorter overall cycle.

Foaming Assistant - FOAM WIZARD

With the FOAM WIZARD foaming assistant, KURTZ presented a software for process and moulded parts optimisation for the first time. The intuitive operation with a touch screen surface



New Shape Moulding Machine K 1014 TOP-LINE

The main focus of processors' interest was on the new shape moulding machine in the TOP-LINE series. This had been completely reengineered. In addition to the low space requirement, improved accessibility and consequently greater ease

makes it possible for the processor to compile and optimise so-called recipes (parameter settings). Through automated sequence, databank-supported default values and an image data bank, trouble shooting and error elimination are simplified and the foaming process optimised.



New Pre-expander Series X-LINE

A "particularly big impression" was left by the new X-LINE pre-expander. In detail, the discontinuous pre-expander X 21 demonstrated at the K'2004 made an impact, for example through flexible assembly variants for raw material feed, fluid bed assembly and material delivery with standardised component assembly. Further highlights were the slant lift for particularly gentle material transport. A large-surface and even steaming and ventilation of the expansion chamber is ensured by base and cover screens. The large discharge opening ensures speedy emptying. Pressure and temperature regulation is fast and highly precise with sliding contact valves. The weighing device located in the base, with its generous maintenance access doors is particularly ergonomic. A safety casing with simple integration possibilities for a pentane extraction system – practically as a flash chamber – completes the new X-LINE generation of pre-expanders.

ProRob: More than just innovative sheet handling

A major magnet for visitors was the handling and processing system ProRob. Whether it was moving panels with extreme speed and precision or cutting a contour from EPS after a fast tool change, a large crowd always gathered. The ProRob product series can be flexibly adapted to almost any handling application. It can also be used for other processes such as edge processing, contour processing element production and so on. Particularly when it comes to safely lifting and moving large-dimension elements for lamination, for example solid wood boards, OSB, gypsum sheets or door elements for the furniture industry, etc. the system solutions developed by KURTZ are outstandingly well suited.



SMT trade fair and company anniversary taking place in one week - 100 percent action at ERSA

There was lots of business on the ERSA trade fair stand in Nuremberg from June 15 to 17. In the course of the SMT/Hybrid/Packaging, Europe's leading manufacturer of soldering systems presented its innovative range of products in soldering machines, hand-held soldering tools, inspection and rework systems on 100 m². The predominant topic of this fair and the accompanying congress events this year was quite clearly the forthcoming implementation of these so-called „lead-free“ EU directives. The interest of the visitors in the ERSA „lead-free solutions“ in the form of selective soldering, reflow and wave-soldering machines and corresponding tools and inspection devices for electronics production was accordingly large. A lot of people also attended a „Lead-free technology seminar“, which ERSA held alongside the trade fair in Nuremberg. The interested visitors were able to participate in ERSA process know-how free of charge and take away interesting information and possibilities of solutions for their specific requirements.

Only one day later, there was a further technology seminar



in Wertheim in the course of the celebrations for the 225th anniversary of the Kurtz Group. Here, there was also interesting information all about the current trends and challenges of electronics production. Whereas the event in Nuremberg was held in German, the talks were held in English at Wertheim, doing justice to the international audience.

On June 19, only one day later again, ERSA then opened its doors and gates. On the occasion of the 225th anniversary, the population had the possibility of looking behind the scenes, as they did at all the other locations of the Kurtz Group around Wertheim. And although the weather was not that friendly, thousands



nevertheless came to have a look at how a soldering iron is built, a soldering machine works, or where Mum, Dad, brother, sister or grandchild works.



The ultimate solution! The VERSAFLOW Ultimate combines the advantages of high-speed selective soldering and classical wave-soldering in one machine!

It was the intensive use of the SMD-technique which led to the development of selective soldering technology, which has over recent years turned out to be a very innovation-rich field of industrial mass soldering technology. Whenever possible, selective soldering is used to post-solder wired components onto the reflow assemblies. The classical wave soldering technique is increasingly often of lesser importance, as the selective soldering technique offers significant advantages – the quality of the soldering joints rises, and the operational costs and the defect rates go down.

But even in modern electronics production, it remains a fact that classical wave soldering cannot be dispensed with entirely – there are still cases in which it makes sense, economically and otherwise, to carry out production with the classical solder wave. This insight was what led to ERSA to collaborate with

leading OEMs in the automobile and telecommunications industries to develop the new “flagship” model VERSAFLOW Ultimate.

Since the launching of the VERSAFLOW range in 1997, ERSA has been the leader in technology in the field of in-line selective soldering systems.

capable of fulfilling the market need in these respects. Changes in customers' demands subsequently led to the presentation in 2002 of the VERSAFLOW Highspeed, which combined the flexibility of VERSAFLOW with the high throughput of the Multiwave model. This selective soldering system was already opening up new prospects for optimizing the production of

cult to find the right balance between selective and wave soldering systems. On the one hand there is an increasing demand for selective soldering systems; on the other hand, although wave soldering's share of total operations is cannot be completely eliminated. It was in order to close up this technology gap that the VERSAFLOW Ultimate was designed in such a way as to

incorporate all the currently used wave soldering processes in one machine. This avoids the necessity of investing in two different machines, the floor space required is reduced, the whole thing is operated from one central control point, and maintenance is less than it would be in the case of two separate machines.

In addition to the classical wave soldering processes, the VERSAFLOW Ultimate offers the selective soldering processes with multi-waves for high throughput and single-wave for maximum flexibility.

The wave soldering module is fitted out with a double-wave, and also has a working width of 400 mm. The solder pump drives are rpm-regulated and monitored. The soldering waves can be fitted out with a nitrogen hood to minimize oxide formation and maintenance, and to raise soldering quality. The sectional in-line conveyor system is

designed as finger conveyor in the wave soldering module area. In the horizontal starting position the assembly is taken-over by the preheater conveyor. Once the unit is entirely on the finger conveyor, then the latter is stopped and the angle-setting moves the transport system automatically to the preset angle. Once this angle has been reached then the transport is reactivated and the item is soldered in accordance with the para-

chosen in accordance with the position of the selective soldering joints on the circuit board. A solder pump continuously conveys solder through various nozzles, thus guaranteeing a permanent transfer of energy to the soldering joint, while any dirt on the soldering waves can at the same time be washed away by a brief raising of the pump rpm. To be soldered, the unit is dipped for 2 to 3 seconds into the solder waves, and all joints are soldered simultaneously. As a rule, this soldering set works under nitrogen atmosphere.

If the demand for higher flexibility is to be met, then a single-wave soldering module also becomes a necessity. This module is fitted in after the multi-wave module, and the requisite flexibility is attained by the programmable movement sequence of the soldering nozzle on the 3-axis XYZ-table. One further advantage of the programmable movement sequence is that it is possible to programme individual parameters for each soldering joint. Mini-soldering nozzles are available in various standard sizes and can be changed easily and quickly during operation.

The electro-magnetic pump system operates entirely without any mechanically moved components; no bearings, drive belts, pump shafts, or

impellers are used at all. The only system maintenance required is the cleaning of the solder bath surface, a procedure which causes very little extra work because of the pot's nitrogen covering. As a result of the high dynamic of the soldering wave, the system is especially well suited to soldering joints which require a high soldering heat level.

One important point, unfortunately far too often not given the attention it deserves, is the economic aspect of the use of selective soldering technology. Simply in respect of the material costs involved, there is huge difference between classical wave soldering and selective soldering, just as there is between the use of leaded and lead-free solder. For the sake of completeness, in the case of wave soldering one also has to add to the material costs the costs of soldering masks, without which selective soldering on the wave is not possible, and the service life of the masks is limited. In a current real case, a lead-free wave soldering procedure under normal and under nitrogen atmosphere was compared to single-wave and multi-wave selective soldering procedures.

The data apply to a three-shift operation, around 300 days per year, and one selected product. The solder used is SnAgCu. As is clear from Diagram 1, the possible savings on material costs range from a best-scenario figure of US\$ 114,000 per year to the still considerable figure

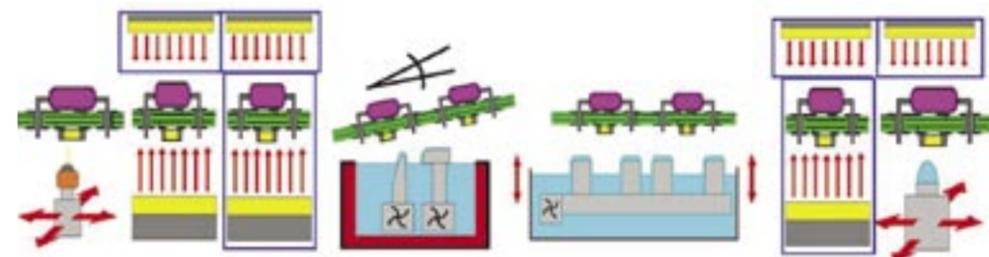
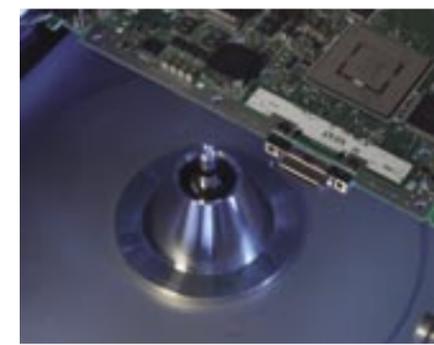
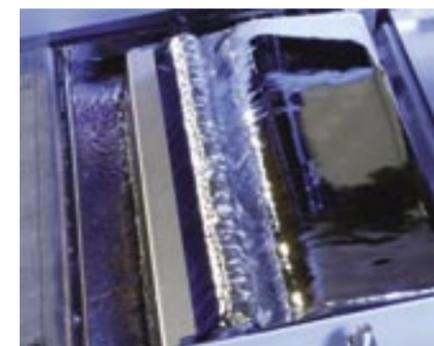


Fig.: Scheme of the VERSAFLOW Ultimate's machine aggregates



meters stored in the soldering programme.

The requirement for high throughput in minimum cycle times can also be satisfied with the multi-wave solder aggregate which is installed after the wave soldering aggregate. A soldering tool, specially produced for the product in question, is capable of several soldering waves the ordering and size of which are

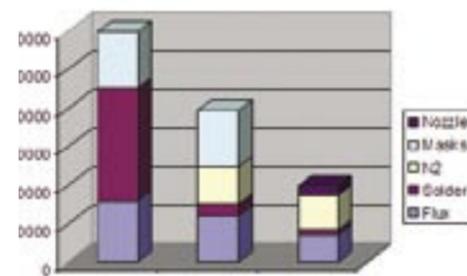


Fig.: Diagram 1

of US\$ 38,000 even in the worst scenario. Investment in expensive selective soldering systems is thus recouped in a very short time – it thus comes as no surprise to find that such leading production technology enterprises as BOSCH and SIEMENS have wasted no time in deciding in favour of the VERSAFLOW Ultimate.

Extremely reliable solder joints for a €7 million lens



Carl Zeiss SMT AG has delivered Starlith® 1400 lenses to partner ASML. With a numeric aperture of 0.93 and resolutions of 65nm and lower, this line establishes new standards in 193 nm lithography. The trend towards increasing miniaturization of microchips is continuing. Carl Zeiss SMT AG (Oberkochen) have already delivered lithography lenses from the newly developed Starlith® 1400 line to partner ASML (Veldhoven, Netherlands). These lenses enable the fabrication of microchips with structure widths of 65 nm and below (approximately 1/1000 the diameter of a human hair) – which means a size reduction of almost 10 percent over leading systems. The

lenses will be utilized in the Twinscan XT: 1400 systems produced by ASML. The increased resolution permits more cost effective volume production of microchips as they require less space and hence significantly increase productivity. Furthermore, miniaturization of chip

features delivers improved chip performance, i.e. higher clock frequency and more functionality. Volume production at a resolution of 65nm is made possible by the unique lens numerical aperture (NA) of 0.93 (variable from 0.65 – 0.93) and the perfect image

quality of the lens. ASML and customer companies have been impressed by initial tests that demonstrated 55 nm resolution capability during integration of the lens in the scanner system.

Dr. Hermann Gerlinger, President and CEO of Carl Zeiss SMT AG stated: "This ensures a further increase in the technological advantage enjoyed by ASML and Carl Zeiss SMT in the 193 nm exposure wavelength." Carl Zeiss SMT now sets its sights on developing the Starlith® 1400i lens for immersion lithography. Delivery to ASML is expected at the beginning of 2005. The lens will deliver significantly higher depth of focus at the same aperture and resolution, relaxing many process parameters in lithography. This will help chipmakers to increase yields.

ERSA soldering stations are also involved in the production process in order to create high quality solder joints. Highly qualified personnel manually



solders 3 joints at 16 sensors each per lens under clean-room conditions. The failure of only a single joint would lead to the breakdown of the €7 million lenses resulting in high losses in a running chip production. Precise temperature measurement

and quickest compensation of heat loss were the crucial factors when the decision for ERSA soldering stations was made. The demand for constant process parameters was very high, and it was fully met by ERSA soldering stations.

With a wide-ranging product portfolio, Carl Zeiss SMT meets the requirements of the key processes involved in microchip production, making it one of the leading direct and indirect suppliers to the semiconductor industry. As an innovation leader in the field of Lithography Optics and optical and electron beam-based inspection and measuring systems, Carl Zeiss SMT generates important momentum for further development in the chip industry.

Together with its subsidiaries at locations in Germany, UK, USA and France, the international group of companies employs a total workforce of some 1,800 people. For the latest fiscal year ending September 30,

2003, the company recorded net sales of €450 million. The stock corporation emerged from the Semiconductor Technology business group of Carl Zeiss as a 100 % subsidiary on October 1, 2001. Visit <http://www.smt.zeiss.com> for additional information.

Multum in parvo: true greatness in the smallest components!

The ERSA Chip tool – high-precision desoldering tweezers

ERSA is proud to present the Chip tool – the newest member of its family of temperature-regulated soldering irons!

The ERSA Chip tool is representative of the latest generation of desoldering tweezers. As was the case

operating comfort. Even when the Chip tool is being used for long periods for repairing chip-resistors and chip-capacitors the grip remains



pleasantly cool; nor is there any danger of operator-fatigue, as it is lightweight (70 grams)



Abb. ERSA Digital 2000 A – In addition to the new Chip tool, four more soldering and desoldering tools can be connected to the microprocessor-regulated soldering station.

with its predecessor, the time-tested ERSA SMD Pincette 40, the design of this new tool takes into account the experiences of many thousand ERSA customers from all over the world.

Features of the ergonomic design, which is in full accordance with electrostatically sensitive components, include a small gap between grip and solder joint, new thermic protection technology, and soft grip cushions for maximum

experience of carrying out repairs to the smallest chip-resistors and chip-capacitors know that they are extremely

and desolder even the most difficult of 0201 parts. Furthermore, low tip temperatures of as little as 240°C eliminate the risk of parts being

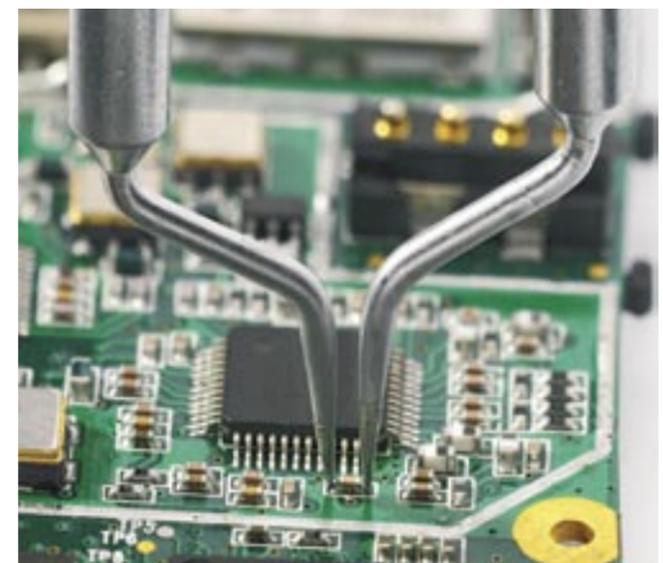
overheated. To complete the repair kit, we recommend the following: appropriate tips from ERSA's comprehensive assortment for SMD components, ERSA's special No-Clean flux cream, and the optical enlarging of the workspot with such aids as the ERSACAM.

An innovative and thoroughly up-to-date soldering tool, the ERSA Chip tool can be fitted to all ERSA soldering stations suitable for the operation of the ERSA SMD Pincette 40 (SMT Unit 60, DIGITAL 2000 A, Mico-Con 60 iA).

and fitted out with a very light 24V electric cable.

The two internal 20-watt ceramic PTC heating elements offer more than sufficient heating both for the finest 0201 chip-tips (0.2mm in diameter) and for the large PLCC-tips. A new operational design makes it possible to make quick and high-precision tip changes; after the change, the tip is automatically set in the correct orientation.

The exceptional mechanical precision of the tool's construction also makes it capable of what was previously considered a practical impossibility – the repair of 0201 chips. Operators with



electronica 2004 – Extremely pleasing trade fair for ERSA

„That was an electronica, the likes of which I have never experienced“ was the summary of a member of the ERSA trade fair team straight after the fair – somewhat tired, but highly



satisfied. On four fatiguing days, the expectations with which the ERSA trade fair crew had travelled to Munich had been exceeded by a long way. On a small but fine trade fair stand, the company presented itself with its „Visual inspection systems & rework

systems“ product programme at the electronica, the world’s leading fair in the branch, from November 9 to 12.

ERSA, as the inventors of the ERSASCOPE and market

leader for visual inspection systems for non-destructive inspection in electronics production, presented the ERSASCOPE 2 to the interested visitors to the electronica for the first time. The further development of the patented original now

provides possibilities of inspections which seemed unreachable at the time of the invention of the first ERSASCOPE.

The visitors’ interest was accordingly large, as, in particular with a view to the obliging introduction of lead-free production technology, this system is an indispensable aid, which provides impressive inspection results with components and modules which are becoming increasingly smaller. Numerous qualified interested parties

with responsibility for production or from quality assurance were equally enthusiastic about the inspection and rework solutions presented. The pleasing consequence for ERSA was not only direct sales at the trade fair, but also many very concrete projects which are to be put into practice this year. The fact that only about 60% of them are in this country underlines the international character of the electronica and the significance of ERSA on the world market.

International interest in EPS

On September 30 and October 1, 2004, an international seminar on the subject of „EPS packagings“ was held in Russia. The organisers were KURTZ as the world market leader in machine building for EPS machines on the one hand and the Russian firm of Format, a manufacturer of EPS packagings on KURTZ machines, on the other.

At the picturesque resort of Snegiri near Moscow, around 150 interested seminar visitors met up. They came from all over Russia, but also from Austria, Denmark, Germany, Belarus, Poland, Latvia, Lithuania and Estonia.

The talks on the subject dealt

with a number of important issues: the state and the development of the Russian and world-wide packaging markets via the properties of EPS and the functions of the packaging right down to the production technologies, the equipment and the possibilities of use of EPS packagings for food, household and electronic equipment and examples of application for instruments, sport and leisure-time.

On the second day of the seminar, there was a visit to the firm of Format and the theory of the first seminar day was made clear by a practical demonstration of the entire sequence of production.



Further trade fairs

Date	Fair	Location
28.-30.01.	INTERNEPCON JAPAN	Tokio, Japan
12.-15.02.	componex/electronicIndia 2004	New Delhi, India
24.-26.02.	APEX 2004	Anaheim, USA
22.-24.03.	EPS Expo	San Francisco, USA
19.-24.04.	Hannover Messe Industrie	Hannover, Germany
26.-28.04.	ICFA Spring Expo	Toronto, Canada
28.-29.04.	SKZ-Seminar	Würzburg, Germany
04.-06.05.	CeBIT Australia	Sydney, Australia
08.-11.06.	International EPS Packaging Conference	Rome, Italy
15.-18.06.	Automatica	München, Germany
15.-17.06.	SMT	Nürnberg, Germany
26.-29.08.	Holzmesse	Klagenfurt, Austria
13.-15.09.	ICFA Fall Expo	San Diego, USA
07.-10.09.	GlobalTRONICS	Singapur
19.-21.10.	Lost Foam Conference	Toledo, USA
20.-27.10.	K' 2004	Düsseldorf, Germany
09.-12.11.	Electronica	Munich, Germany
19.-20.11.	SPI Back to Basics	Las Vegas, USA
24.11.	Kurtz EPS/EPP Seminar	Zhuhai, China
08.12.	AUTOMOBILE Seminar	Shanghai, China
15.12.	International RECYCLING CONFERENCE	Sapporo, Japan

Fine traditions and a bright future - apprenticeships play an important role in the Kurtz Group



26 new trainees started their training programme at the Kurtz Group in 2004

Successful Job Start in the Kurtz Group

A short ceremony marked the qualification of fifteen trainees in the Kurtz Group. A particular point of pride is the fact that all the newly-qualified trainees could be taken on permanently.



Qualification celebration in the Kurtz Group – our picture from left to right:

Personnel Manager Günther Bartschat, Trainer Frank Adam, Kurtz-Work’s Council Chairman Jochen Kraft, ERSA-Work’s Council Chairman Rolf Prasse, Industrial Mechanic Daniel Moritz, Kurtz Youth Representative Hans-Peter Blum, Foundry Mechanic Maximilian Truskolaski, Trainer Michael Burger; Metal Cutting Mechanic Peter Roth, Industrial Mechanic Andreas Stahl, Industrial Mechanic Michael Samer, Trainer Siegfried Wolf, Metal Cutting Mechanic Jochen Rainer; Industrial Mechanic Daniel Frenzel, Foundry Mechanic Coskun Iildiz, Industrial Mechanic Christoph Weber; Construction Mechanic Andreas Oetzel, Foundry Mechanic Andreas Widemaier, Energy Electronic Technician Andreas Steiler, Energy Electronic Technician Matthias Friedrich, Energy Electronic Technician Stefan Pfisterer, Training Coordinator Jürgen Schmidt.

Missing from the picture are Youth Representative ERSA Daniel Reinhard, Trainer Günther Krebs and Foundry Mechanic Harald Thies.

Graduates of the Mosbach University of Cooperative Education: In the technical sector as Diplom Ingenieur (BA): Kevin Friedrich and Anina Sommer specializing in mechanical engineering, Marco Pacius specializing in electrical engineering and Ralf Porschitz specializing in mechatronics; in the managerial economy sector as Dipl. Betriebswirtin (BA): Sabine Hörner.

On September 1, training began in the Kurtz Group for 26 apprentices in a range of professions. Most of the trainees had availed of the opportunity to view the Kurtz Group back on June 19, Open Day, within the framework of the 225-year jubilee.

At Kurtz we are particularly proud of the high proportion of trainees in the company, currently running at 11%, and which has constantly remained

at over 10% for years. With around 800 employees in the area around Wertheim/Kreuzwertheim/Hasloch, a total of 87 young people are currently undergoing training.

As loyalty to the location is anchored in the company philosophy – also reflected in the motto for the 225-year jubilee “Fine Traditions and a Bright Future –, we are particularly anxious to involve young people from the area in the company.

Impressed by Training at Kurtz

During Bavarian Training Day on July 12, Simone Tolle, Parliamentary Representative for Lower Franconia and Member of the Main-Spessart County Council, visited the Kurtz Group in order to see the training concept for herself and to call for apprenticeships on behalf of the state government.

In conversation with Dipl.-Ing. Rainer Kurtz, Chairman of the Management of the Kurtz Group, Simone Tolle expressed her feelings on finding a company that is bucking the general trend: “They are not joining in the prevailing collective moan, they are simply getting on with it! – I like that!”. At Kurtz, the proportion of trainees to staff has constantly remained at over 10% in recent years, giving



the company a role model function well beyond regional boundaries.

“Particularly in times marked by complaints, and by suffering, the Kurtz Group is a positive exception. The work being carried out here in the area of apprenticeships is very professional. – I am impressed!”, is how the political summarised her visit, expressing thanks for the informative discussion and promising to present the ideas to the advisory committees and maintain the dialogue which was so positive for both sides.

Double Training System

Excellent job opportunities are presented by the double training which Bernd Koch, Stefan Brauner and Matthias Friedrich completed this year. Following his training as an Industrial Mechanic they completed training as an Energy Electronic Technician this year.



Graduates, trainers and Director Corporate Division Human Resources and Legal Affairs

Former staff members and honoured employees celebrating together

On Thursday, 11 November, 2004 around 60 retired employees of KURTZ and ERSA met up for their twice-yearly get-together. The afternoon began for the company pensioners with a tour of the historical old town of Bad Mergentheim

and ended in the Edelfinger Hof restaurant with dinner together.

Greeting his guests, the managing director Dipl. Ing. Walter Kurtz looked back on an emotional year 2004, at the centre of which

was undoubtedly the 225th anniversary. "And the fact that a bright future has fine traditions, as we say in our jubilee motto, is once again impressively proven when I look around me here today," said Kurtz. At the end of his welcoming speech, Kurtz thanked the company's spry pensioners, who acted as "bodyguards" for the jubilee gallery.

Before things moved on to the less formal part of the outing, Anton Zöller who organises the meeting of former employees, thanked the company management for the very pleasant outing. This was followed by a



minute's silence in memory of the head of the company Dipl. Kfm. Otto Kurtz who passed away last year.

In the ensuing leisurely social gathering, the pensioners had the opportunity to refresh their memories and catch up on the latest happenings in the Kurtz Group.



The picture shows the honoured employees 2003 of KURTZ together with the managing directors and chairman of the works committee: The most senior member of staff is Franz Löber who has been working for the company for 40 years. Jürgen Rüppel, Udo Stöhr, Erhard Väh and Erich Kern as well as Manfred Schwob and Reinhard Zwiesler who are unfortunately not on the picture where honoured for 25 years on the company staff



Honoured employees 2003 of ERSA working in the company for 25 or 35 years together with the managing directors and chairman of the works committee

The picture shows Ortrud Baumann, Heike Weitz, Heidi Hofmann who have been working for ERSA for 35 years and Georg Meisenzahl who has been on the company staff for 35 years already. Margot Schuck and Waltraud Häfner have also been members of the ERSA staff for 25 years. For 10 years on the company staff: Frank Haas and Angelika Uehlein. For 15 years on the company staff: Ekkehardt Ebert, Hildegard Belowitzer, Frank Tretter, Stefan Kuon, Wolfgang Flegler and Hermine Stade. Katharina Schwab, Ulrike Duddek, Anni Happ as well as Maria Losada who unfortunately died in February were honoured for 20 years on the company staff

Fit & Fun - Kurtz Employees very sporty again ...

The year is coming to an end and we can look back on successful business activities. But there was also the recreational side of things and these activities were tackled with gusto.

For example, in July we had the dragon boat race Red Dragon Cup of the Marktheidenfeld Rowing Club held on the Main near Marktheidenfeld. Once again, Kurtz also fielded a team, finishing up in the top third, a feat not to be sneezed at. Of course we had been aiming higher – after all, you don't want to "punish" yourself for nothing, but at the end of the day everyone was pleased and satisfied.

In what is by now the legendary "Lauf um den Kaffelstein" race organised by TSV Kreuzwertheim, which was also held in July, a Kurtz team from around Kreuzwertheim / Wertheim was also in the starting line-up. Even if top results were not



Norbert Schmitt can look back on 35 years of employment at MGM Metallgießerei Mannheim GmbH



necessarily the aim, personal bests from the previous years were repeated or improved upon and some Kurtz participants were even able to take their places on the winners' rostrum. In glorious sunshine at the end of August, the fifth Mountain Bike Tour held by the Velofreunde 90 in Wertheim

took place. The stretches, which varied in length, were tackled with a great sense of fun and good humour. For the Kurtz team, the event marked a minor jubilee: With over 40 participants, Kurtz had the largest group of cyclists and for the fifth time in succession took the prize for the group with the largest number of participants.



Brass music, as the name suggests, is actually a term used for musical works which limit themselves to the use of brass instruments, and its origins can be traced back to the 16th or 17th century. In common usage, most people understand the term "brass music" to refer to bands which have an almost exclusively folksy repertoire. But from this point, it is necessary to begin making distinctions, as the genre now encompasses a number of different styles of music. On the one hand, concert music for brass instruments, which extends upwards as far as the major symphonic wind orchestras, and on the other

many small and medium-sized brass ensembles with a variety of different compositions. Between 1900 and 1920 a new sound came into being in the USA. The rhythmic and expressive nature recalled the strains of Africa. The expression was fresh and urgently dynamic. The world took notice of "jazz". At the beginning of the 1930's, a form of music developed which was even faster and more powerful than New Orleans Jazz and the Blues. This music beguiled the young, dance-enthusiastic masses. Big Band Swing was born! In translation, „Big Bands“ are

not simply large orchestras, but jazz ensembles, in which the instruments which carry the melody are multiply represented, producing a full, harmonious sound. From 1935 onwards, these large orchestras dominated popular music. Major names

such as Duke Ellington, Benny Goodman and Count Basie set the tone in the heyday of this musical era. And this is the music to which Gunther Dinziol, Jürgen Pfister and Martin Zöllner confess a passion. All three are employees of the Kurtz Group in Wiebelbach and in their leisure time have been indulging in this hobby with considerable dedication and just as much fun.

About 10 years ago, Gunther Dinziol, who has been making music for 30 years now, had the idea that more than anticipated could be made of a small brass orchestra, i.e. the marching band of the Hasloch Volunteer Fire Brigade. This led to the formation of the orchestra „TroPoSax“. A Big Band which covers all the areas of modern, standardized and entertainment music with its instrumentation of piano, guitar, bass, three bassoons, five saxophones and three trumpets, as well as an acclaimed female singer. The quote from Friedrich Nietzsche „Without music, life would be a mistake“ is highly appropriate as a motto for this relaxing leisure activity.



Grand Opening of Kurtz Zhuhai Manufacturing Ltd. in China



In a Grand Opening Ceremony on 24 November in Zhuhai, the first manufacturing plant of the Kurtz Group in China was officially opened. Zhuhai lies in the Pearl River Delta, around 20 kilometres north of Macau and has a population of around two million.

In this new plant, the Kurtz Group produces a K 1214 A moulding machine specially conceived for the Chinese market. Due to pricing levels, the mass of the Chinese market could not be served with the existing product line, which is manufactured in Kreuzwertheim-Wiebelbach. The Chinese machine is specially designed for series production and the monoblock tools common in this market and, in contrast to the plant produced in Germany, offers only limited options.

The greater part of the machine is "Made in China", although some components are still



supplied from Germany. The engineering of the machine, too, is "Made in Germany". The adaptation of the tool systems of the existing customer segment for Kurtz moulding machines is not a straightforward matter. Therefore Kurtz is not breeding competition within the company itself, but rather is generating new turnover in a market which it had previously not been possible to access. At the same time, the quality standards on which the KURTZ brand is based are guaranteed. With this strategy, we anticipate a stronger penetration of the Chinese market and consequently positive impulses for the core business in Germany.

Particularly good news was the great interest shown in the new product line at the opening ceremony and the subsequent Open House. Among the approximately 400 guests were around 300 potential new customers. First specific inquiries, including inquiries relating to a major project with 60 machines, indicate an extraordinarily positive outlook for Kurtz Zhuhai Manufacturing Ltd.

145 Mio € turnover • 1050 employees

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