

17.

Edition

July 2000  
9<sup>th</sup> year

# Kurtz

... NEWS



The customer and employee journal

**Rapid  
Prototyping**

**All-In Service:  
from Design to the  
Finished Product**

**Place & Solder  
Manz and ERSA  
Cooperation**

**Know-How**

**In Mould Skinning**

**EPS-Plant  
Planning**

**[http://  
www.kurtz.de](http://www.kurtz.de)  
[www.ersa.com](http://www.ersa.com)**

**Service in  
the Kurtz Group**



## Services and Service



### CONTENT

- ▶ Service: from maintenance to services
- ▶ Rapid Prototyping
- ▶ Service or services
- ▶ Offering something which not everyone does
- ▶ From the design to the finished product
- ▶ Service leads to success
- ▶ Place & Solder - Manz and ERSA
- ▶ Customer support
- ▶ Quality assurance software
- ▶ ERSA know-how seminars
- ▶ If your skin is feeling a little too tight ...
- ▶ Training at Tuscarora
- ▶ Rebuild programme
- ▶ EPS plant planning
- ▶ Grinding centre
- ▶ KURTZ InTeam
- ▶ The fascination of scuba diving
- ▶ KURTZ International

There is nowadays a high level of services on offer across the world. The USA, for instance, is considered to be a services paradise. It is only in Germany that this precious flower refuses to blossom. Are we degenerating into a "services desert"? Measured as part of GNP, the tertiary sector, that is to say the services sector, is growing steadily in relation to the national economy, and accounts for 68% of the Federal Republic of Germany's total GNP (3,839,530 million DM in 1999). As an industrial enterprise we at KURTZ are not included in this percentage; we fall into the category "producing industries" and thus belong to the secondary sector, which only contributes 30% to Germany's welfare. But where are the 68% actually to be found? And can it really be true that we as so-called "non-service-providers" bear co-responsibility for the degeneration of Germany's "services industry".

In dedicating Kurtz News, edition 17 to the theme "Services and Service in the Kurtz Group", we are intending to give a clear picture of the contribution that we do in fact make. We may be hopelessly

in love with the odour of molten metal, and we are certainly passionate builders of machines, too, but we nevertheless do see ourselves in all fields as real providers of services, as advisors and collaborators for our true kings, the customers. And so - admittedly not always of our own free will - we have integrated a services and service ethos into all fields and have made it into an integral part of our corporate philosophy. Customer benefit, and not the product itself, is now our central concern. This starts when parts are being chosen and permeates every stage aspect of our work, from projections, engineering and training through to the worldwide service network and the 24-hour hotlines. Our contribution to the services sector may not appear in the national statistics, but it is nevertheless one which benefits our customers daily - and that is what counts.

But let us return briefly once again to the statistics. The tertiary sector covers 'services provided by private enterprises and public institutions'. Now the latter have unbelievable difficulty in this respect; one

only has to think of the cuts in the cultural field to see that when it comes to longer-term ideals they are shackled by their ever-changing short-term political goals. Can it be that politicians still don't see citizens as customers but simply as stepping stones to help them into power, particularly in the run-up to elections? And might this perhaps not be the real reason for the non-appearance of the services industry's statistical 68% of GNP?

We wish you pleasant and stress-free holidays. Perhaps you will be lucky enough to get away from our service desert in Germany and experience real service elsewhere. Then you will be able to come back with some stimulating ideas from abroad, which we will be only too glad to hear about and put into practice.

Sincerely yours,

*Albert Kurtz*  
*W. Kurtz*  
 Besenhard Kurtz  
 W. Kurtz

## Service: from maintenance ...

Service and customer care are becoming ever more important strategic factors for competitors in the capital goods investment industry of machine construction. This is a fact which is documented by numerous research projects in the field of machine and plant construction.

Why is it that service is going to become more and more important in the relations between machine producers and machine users?

Not least as a result of the possibilities of modern information technology, the globalisation of quality production methods have caused and are causing technological differences to become ever slighter. The production know-how of the producer and the performance levels of the product itself are no longer the decisive factors that they once were for product differentiation.

Within any particular category of machine it is naturally the case that there will be certain differences between producers in respect of technical performance levels or indeed in the machine's basic conception. Whether a machine produces EPS mouldings, castings or soldered circuit boards, the actual constructional solution, based on the lowest possible energy consumption, greatest possible ease of operation and lowest possible breakdown rate, is always the result of a compromise between physical principles, technical factors and economic considerations. When a number of different producers are working on the design for a machine under the same or similar conditions they will very frequently come to the same or similar

conclusions - unless a producer makes a pioneering new invention. But from the customer's point of view at least, the characteristics of industrial products tend to converge.

An additional factor is that the combination of traditional but innovative machine construction and modern control and operational technology is going to bring into existence technical products which can be used more flexibly in the production chain, and which will probably be easier to operate. On the other hand, however, the increasing complexity of the integration of electronics and mechanics will mean that the users will be subjected to an increasing risk factor - should the machine actually come to a standstill - as far as the continuity of production is concerned, so long as satisfactory preventive and remedial measures are not taken. As our machines and products are more and more often deployed in extremely high-performance production lines, it is increasingly the case that machine-down times even of a few hours can mean turnover losses for our customers equal to

or in excess of the cost of a new machine. When this is taken into account it becomes clear how important it is these days not only to offer competent servicing, but also to make sure that it is available to the customer at the shortest possible notice. This makes the use of modern communication technology (internet, remote maintenance by modem, video conference systems) an absolute must.

This is also a central reason why the role played by customer service is going to undergo far-reaching changes in the future, with its technical aspects surely not losing any of their importance. But there will be a shift away from the goals of customer care



## ... via advice and all-in service to global se

as they have been conceived up until now, with priority being given to ensuring that the product quality and the production qualities of the machine are maintained over a long period of time. Assembly, servicing and maintenance, that is to say the purely technical services are in the future going to be among the principal tasks of the machine producer's service staff.

There are further areas of the service operation which have either already begun to open up or will be opening up in the future. These are at present only being tackled by very few firms in the field of machine construction, and even in these cases they are often only touched upon rather than

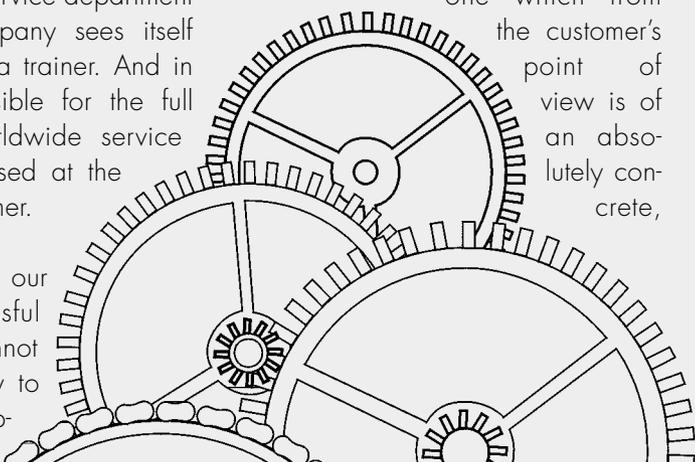
properly dealt with. The areas concerned, which are going to be central to the business of customer service in the future, are e-mail business, tele-service, special training offers and an individually customer-tailored advisory service dealing with maintenance, value protection and other matters right through to production plant value assessment.

In addition to general customer care, typical elements in the services offered by ERSA and KURTZ have been our individual operational advice service, imaginative special designs and constructions and customer-oriented individual machine solutions, all of which are of high customer benefit. In the future these areas of activity are going to be developed and expanded by exploiting the possibilities of the Internet. These new technologies are making an ever greater contribution to supporting the worldwide ERSA and KURTZ service organisation, making its reaction times quicker and increasing its competence through the use of all the relevant data available. An element of central significance in our worldwide service network is the training of our service staff in our branches and agencies. For this reason the service department of the mother company sees itself more and more as a trainer. And in this way it is possible for the full potential of a worldwide service network to be realised at the service of the customer.

We are aware that our customers' successful business records cannot be put down simply to the fact that we supply them with high



quality machinery or 'hardware'. The 'software', that is to say the after-sales service provided by a machine manufacturer, will become more and more a product in its own right, and one which from the customer's point of view is of an absolutely concrete,



## Services according to tailor-made requirements!



commercial success. The basis of the outstanding services offered has always been and will remain the global and comprehensive quality of our products and of our service, the aim of which is to increase our customers' self-confidence and commercial success as they continue to use our products, and to safeguard this state of affairs for the future.



Fig:  
Global network of service offices



direct and measurable benefit. This benefit could for instance take the form of an individually tailored theoretical and practical operator training course in the framework of a plant's machine operators' training programme. This also brings sound and concrete benefits when a production plant is being built up or converted with an eye to optimal production conditions and minimal energy consumption.

For KURTZ in the fields of casting and shape moulding machine construction and for ERSA in the field of soldering plant construction, quality and service have for many years been central to the companies'



## Pressure control system optimization for use in rapid prototyping

 In the field of product research and development construction, parts are becoming more and more complex and make ever greater demands on the quality of the production procedure.

As just one of the comprehensive range of casting procedures used in our company, low-pressure die casting has proved to be particularly advantageous both in economic terms and in respect of the quality of the final product.

The increasing complexity of the workpieces and the time pressure factor at the product development stage have opened up a new market for rapid prototyping. This procedure involves the filling of lost foam patterns using, among others, the low-pressure die casting procedure.

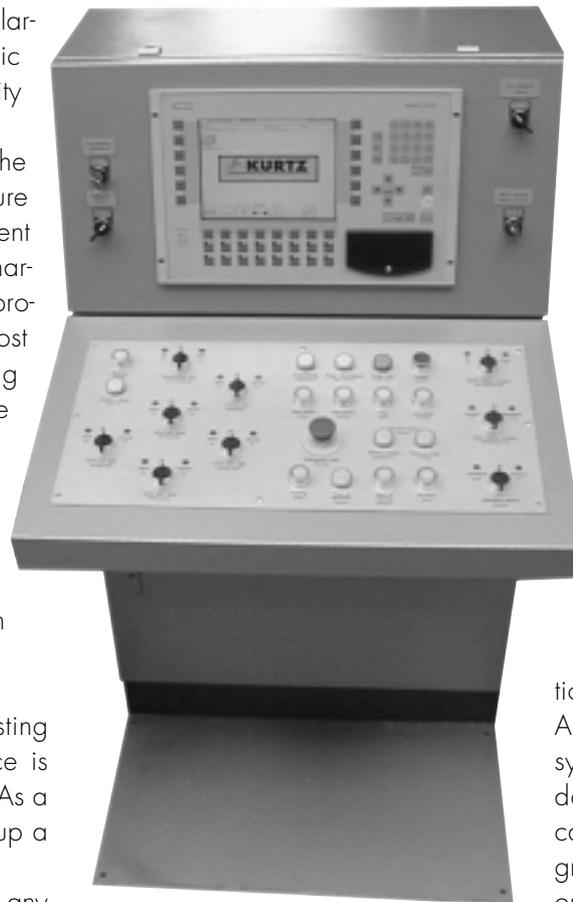
It was in order to achieve the very best results with this advanced technology that the controls on KURTZ low-pressure die casting machines have been developed and improved.

In the low-pressure die casting procedure a pressure-tight furnace is pressurised with compressed air. As a result the molten metal is forced up a riser into a die situated above.

Pressure control lies at the heart of any low-pressure die casting machine and has a significant effect on the grade and quality of the castings it produces. Fluctuations in pressure lead to the column swinging in the mould. In the case of metal pieces, oscillations of the column lead to shrinkages and to structural faults in the construct part. This is of particular importance in the filling of open dies such as those used in rapid prototyping. For the

optimal casting of parts with differing wall thicknesses it is necessary to ensure a variety of die-filling speeds.

Cracks caused by changes in the rate of pressure increase during the filling process are currently a subject of discussion in the market. In the case of closed dies cracks of this kind are not



usually visible and many users are not even aware of their existence. In the case of low-pressure die casting in open dies, however, the influence of various pressure levels during the pressure increase was quite clear. KURTZ's control system offers gentle transitions for all varieties of pressure increase speeds, thus improving the quality of the casting process significantly.

A major advantage is the high level of flexibility in the pressure regulation, which is suitable for a wide range of furnaces and materials. The pressure increase can be controlled precisely not only on large-sized furnaces but also on very small furnaces with a capacity of only 25 kg. And casting can be carried out in magnesium just as well as in aluminium.

Throughout the course of production, both the pressure increase and indeed the whole casting procedure are presented on an LCD colour display panel. In addition to the indications of various parameters such as pressure, temperature and the filling level in the die the pressure curve is presented on a graph and compared with the pre-programmed curve, providing a comparison between the actual and intended values. All the data gathered are transferred via an electronic bus system to a programme for the recording, memorizing and evaluation of operating data, thus facilitating the exact reproduction of the casting parameters.

A freely programmable PLC control system is another element in the standard model. And data such as casting "recipes" and process programmes can be stored in the machine on disc.

The new control system can be incorporated into all low-pressure die casting systems currently in existence. Users receive an extremely accurate and user-friendly system which is capable of paying for itself within a very short period of time.

## Service (servicing the customer's needs) or Services (work performance)

 Whatever name you like to give to the service provided for the customer, service or services, it or they have nowadays become a crucial matter. And the critical importance of service is something which is simply taken for granted at KURTZ. Customers wanting to create new cast parts not only count on, but are indeed dependent on the help and support of their suppliers. And particularly in the case of difficult castings, there is an increasing demand for the help and specialised expertise of the "aluteam".

The aluminium foundry is optimally equipped to tackle this complex task. The new parts to be cast, mostly only roughly designed in the form of a 3-D-model are transferred by e-mail to the KURTZ aluminium foundry computer, a high-performance model fitted out with the most modern software. The team of experts add the necessary casting technology data and introduce any geometrical changes that may be required. The optimized part to be cast is then sent back as a complete 3-D-model along the "data motorway" to be checked by the customer, whose main criteria will be the practical feasibility of production, and the quality of the final casting.

Optimized from the word "go": This procedure does, however, take account of the requirements of the sub-

sequent machining and other mechanical work. Right from the beginning customer and supplier collaborate on finding and establishing safe base and impact surfaces, and the optimal machining parameters. Only in this way and with the application of the new technologies is it possible to create

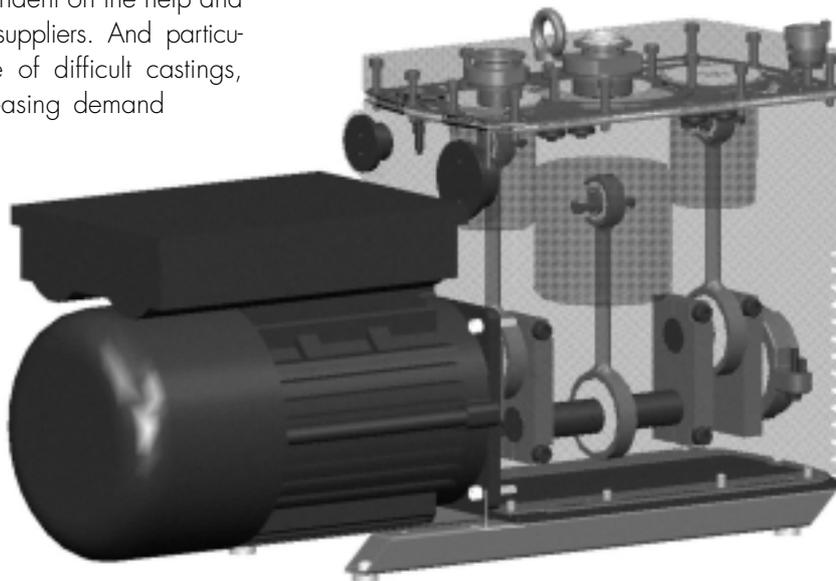
an optimized casting or product right at the beginning, within the space of a few days.

A prime example of this is given by the collaboration between KURTZ and Leybold, the well-known firm of vacuum pump producers, on the development and production of the three-cylinder housing for the new

"ECODRY M" pump.

The housing for this innovative vacuum pump is cast using the low-pressure die casting process in the aluminium alloy GK Al Si Mg T6. The total weight of the piece is 10 kg.

Highest demands are made on the internal construction and on the cylinder treads.



## Offering something which not everyone does!

 With this motto the Kurtz Group showed itself to be way in advance of developments on the market in the field of supply by high-performance middle-sized industrial enterprises. This fact is also proven by the almost certainly unique range of production procedures such as castings in ferrous, light and non-ferrous heavy metals with integrated mould and model construction, or metal-cutting machining with the most modern CNC technology.



As far as metal-cutting machining is concerned, KURTZ follows a policy of machining the whole piece in one setup and offers customers a "trouble-free package" with casting-friendly construction design, choice of raw materials and model planning in tune with casting requirements. KURTZ takes care of annealing, jet treatment, sanding, deep hole drilling and surface treatment, not forgetting the initial purchase of materials and the test certificates issued when the product is delivered ready for assembly.

High-end goods with high customer benefit can only be produced satisfactorily with high input of time and at great expense. Such difficult tasks can only be carried out with the help of a team of specialists working intensively and in collaboration with a systems supplier. And this was why Richardon, the dedicated firm of hobber restorers, chose to use the services of the Kurtz Group for the production of their new machines.

The moulds are the heart of a casting machine and they become well seasoned in the course of their life in the rough and tumble of the industrial setting. It has always been an attractive task to maintain or increase their value by giving them optimal thermal and mechanical qualities and turning them into high-tech models. But as a result of the constantly increasing demands made by the ever more modern drive and control technology on hobber design, the enterprise, with its 25 years' experience of overhauling such machines, was pushed to the limits of the possible. The construction of the originally mechanically driven machines is no longer compatible with state-of-the-art technology. The slide rail guides were too weak in their design, the machining paths were limited and the best speeds too low.



The time had come to head in a new direction, and this prompted Richardon's founder to consider a new hobber construction design. His aim was to take all the constructional weak points which he had come across in the decades he had worked with the old machines, to optimize these points and incorporate them into the new design. After the basic concept had been established he then cooperated with model construction, casting and processing technicians of the Kurtz Group in designing a now proven and successful new machine whose models and construction are in tune with casting norms, one which takes into account factors such as choice of raw materials and which is based on a cost analysis of various production systems.

The cast parts in the working area such as the router head, the overhanging arm carriage, the arm head and the table plate are made from high-quality GGG60. The processing in the Kurtz Group takes place in two separate working stages. In pre-machining with low tension annealing and sand-blasting and in the final machining with surface-coating and sharpening.

As a result of the accurate construction of all the mechanical elements it is possible for the hobber to work without electronic compensation. At present the firm Richardon has five models on the market: R125, R200, R300, R400 and R500 CNC.

## MBW offers an all-in service from design to the finished product



Nowadays more and more importance is being attached to the outward appearance of any given product, and this is increasingly true for the capital goods investment industry. Many businesses use standard company colours and shapes to give their products an unmistakable look and to increase the product recognition factor.

It is more and more often the case that the work involved is entrusted to design firms, whose designs, although they may be very beautiful, often do not take account of factors of production technology. After all, the product does not only have to look good and to be functionally and ergonomically efficient but must also be economical to construct and produce.

This all calls for a high level of specialist expertise in modern sheet metal processing to be applied at the customer-design office-construction



interface, a challenge which the experienced staff of the MBW Metallverarbeitung Wertheim GmbH are fully capable of rising to.

In many cases their advice creates the basis for an optimal construction for the component parts. As a result of rapid developments in the field of sheet metal machining and processing it has become possible to replace construction units which until recently were put together from a number of individual parts with complex bent

plate parts from a single sheet. The lower number of parts results in a significant reduction in the construction stages and finally in savings in time and money for the supplier and thus for the customer as well.

The customer is constantly involved in the development process in the course of actual construction because having to solve the occasional small problem often makes deviations from the first design inevitable. The sheet metal processing is carried out at MBW Metallbearbeitung Wertheim GmbH on the basis of the resulting construction drawings and of the programmes produced for the mainly CNC-laser or alternative punching machines.

As service is a major priority for MBW Metallbearbeitung Wertheim GmbH, it goes without saying that the final assembly of the complete sheet metal parts for the machine housing takes place on the customer's premises. Ideally the customer should at no point in the production and assembly process have to lay hands on "his" parts. All this means that the customer is getting an all-in service from the design stage through production to final assembly of the product he is purchasing.



## Service leads to success

  
In the past it was the case that customers ordered their raw castings from a foundry cleaned but unmachined. If further services were required of the foundry at all, then it was simply a matter of an annealing process carried out after casting or an undercoat of paint to protect against rust. But gradually the work required of the foundryman became more comprehensive. First of all there was a call for pre-machining and later processing and painting to make the casting ready for the final assembly stage. The factors which determined whether the foundry had done its job well were the ability to keep to delivery deadlines and a low rate of reject castings. The best the foundryman could expect was the chance to have a say in the setting-up of the pattern and the

freedom to introduce small hallmarks of his own into the design which would then work to his advantage.

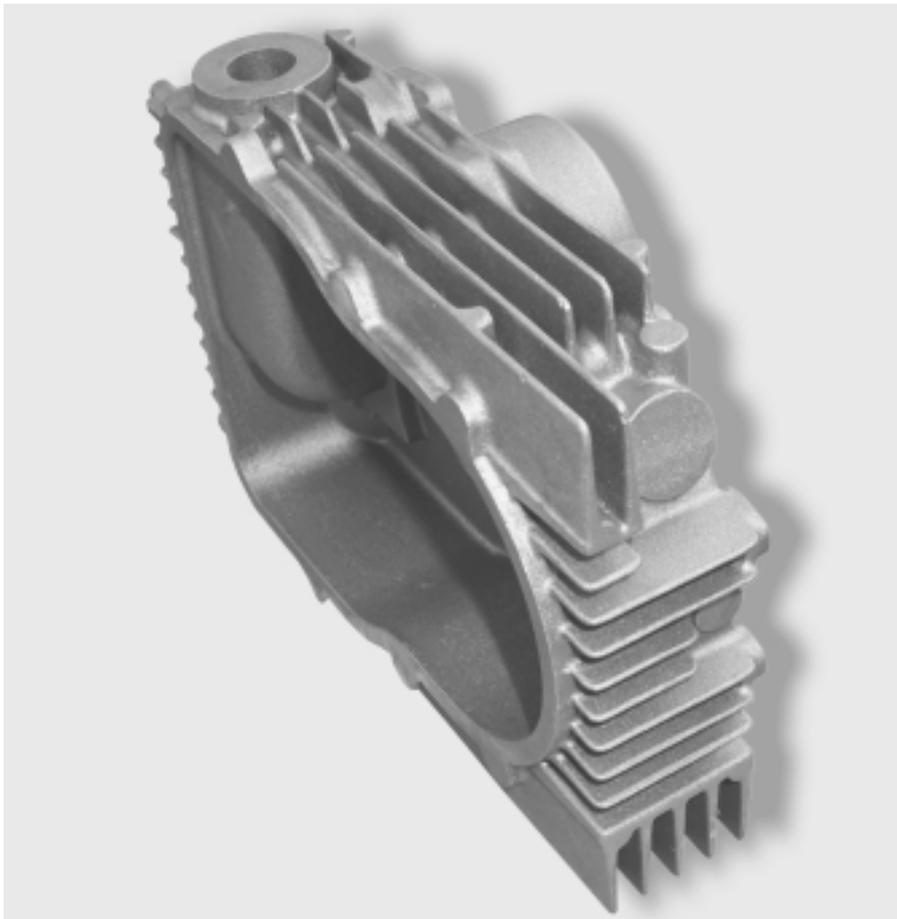
Nowadays both machine-builders and end customers have come to recognise that it can only be advantageous for them to have a discussion with the specialists from the foundry and those responsible for the pattern construction early on in the whole process.

In this way the foundryman can bring in his own experience of the various raw materials in question and the pattern-maker can present the advantages of a variety of possible designs. The customer benefits from a reduction in the time spent at the design stage and from not having to wait so long for production to start. The advantage for the foundryman is that he gets a casting tailored design and is

free to influence the design of the pattern in a way which suits the means of production at his disposal. The benefit which accrue to both sides are then reflected in the retail price of the casting. The experience of a pump manufacturer who has been a KURTZ customer for many years now provides a good example of a development of this sort. The first meeting with the customer's development and design department took place in December 1999, and work on tackling the problem, fine-tuning the solution and developing the actual design began immediately. As a result of the outstanding level of collaboration with those in charge at the customer firm the result was a great success. By co-operating closely with one another we were able to find a way of casting a difficult geometrical shape in a way that satisfied the high requirements in respect of dimensional accuracy, density, inner structure and surface character.

At the beginning of February 2000 the designers were ready to e-mail us three-dimensional data, and at this point work began in the pattern making department. A parallel development was that we received the order for the first gearbox housing which we were to deliver by the end of March 2000 together with a corresponding test report.

The gearbox housing was delivered on March 23rd, 2000 and weighed around 100 kg. Before the month of March was out our intensive endeavours and the services we had given in advance were rewarded with an order - just as we did on another occasion with a similar project, KURTZ received the commission to supply the parts attached to the housing, in cast aluminium. The foundation of sales successes such as these are our know-how and the convincing quality of our concept of service as suppliers.



## Place & Solder - MANZ and ERSA reach a cooperative agreement



MANZ Automatisierungstechnik GmbH and ERSA GmbH are both specialists in their own fields. For the Reutlingen firm MANZ, fitting machines out with special components has for many years been a growing business sector, and one in which MANZ have made a name for themselves with particularly space-saving and universally applicable ideas for solving problems. With the VERSAFLOW construction series, ERSA has a successful model for selective soldering on the market. The two enterprises have now signed a development and marketing contract in order to make their know-how available to their customers in an even more concentrated

form. From June 27th to 29th, a press conference and presentations at the ERSA stand at the SMT/ES & S/Hybrid 2000 in Nürnberg introduced the trade press and general public to the two firms' first joint project. The installation, which is marketed under the name "Place and Solder Compact" is based on concept without precedent the world over, and incorporates the core technologies of fitting and selective soldering one after the other on one machine. That only one person is required to carry out "odd-shape" processing, and the fact that twice as little production surface is required as previously are just two of the many advantages for the user.



## Customer support above and beyond hand soldering is in high demand



The service provided by the ERSA application advisors has recently experienced a strong demand, especially in the area of hand soldering and rework. Based on the numerous years of experience and constant exposure to state-of-the-art customer applications, the transfer of product and process-

oriented technical know-how generally leads to the perfect custom solution. Because ERSA employees have the ability to draw from the world's widest range of soldering products, they find themselves in the position to choose from a broad product pallet and don't have to sell "just anything" from a very limited program. Furthermore, service does not end with the sale of a product, but ERSA offers precise advice which leads to an extensive, partner-like cooperation.

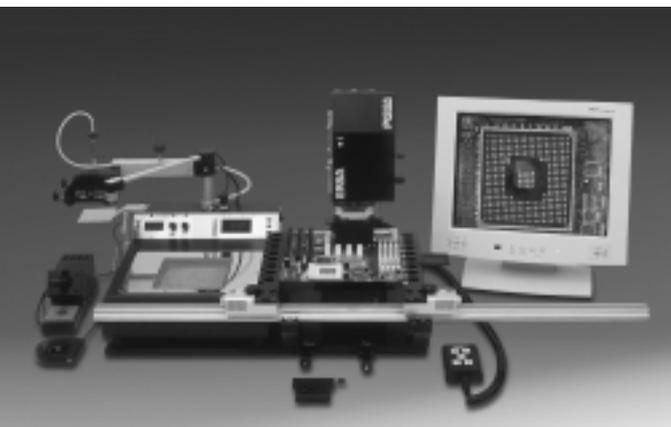
Naturally, both parties profit from this relationship. The end-user receives efficient solutions for his specific applications and ERSA receives first-hand

information. Both parties can easily adapt to the growing complexity of the soldering and desoldering processes caused by the increasingly complicated PCB structures.

Innovative equipment and their customer-oriented development are convincing results.

It is generally known that ERSA is THE specialist for soldering. Many are surprised to find that ERSA can also provide advice ranging anywhere from modified hand-soldering applications to handling thermo-plastics.

Unlimited solutions for special applications can be found among ERSA's special soldering equipment for these areas and many unrelated areas of use. An inquiry is always worthwhile!



# ERSA ImageDoc quality assurance software: Revolutionizing process control



The ultimate goal for every quality assurance program is not only to inspect quality, but to produce quality in order to achieve a stable production process.



Inspection is the fundamental basis to successful quality assurance. Process control and stabilization can only be achieved, when the inspection equipment has the capability to reveal even hidden defects, in order to recognize all possible production problems. Failure analysis, improvement procedures, and complete documentation close the quality

control loop (PDCA Cycle) and make up the modules of the ERSA ImageDoc software. Thanks to the revolutionary Problem/Solution Database, with on-line expert assistance, even the most complex process effects are made transparent. The Problem/Solution Database provides a comprehensive series of examples that are especially tailored to the printed circuit board manufacturing process. Typical problems such as poor wettability, "cold solder joints", and flux residue, as well as many others, such as solder bridging and poor grain structure are described. In addition to solder problems described in technical literature, recommended solutions have been integrated and can be referenced immediately on the workbench.

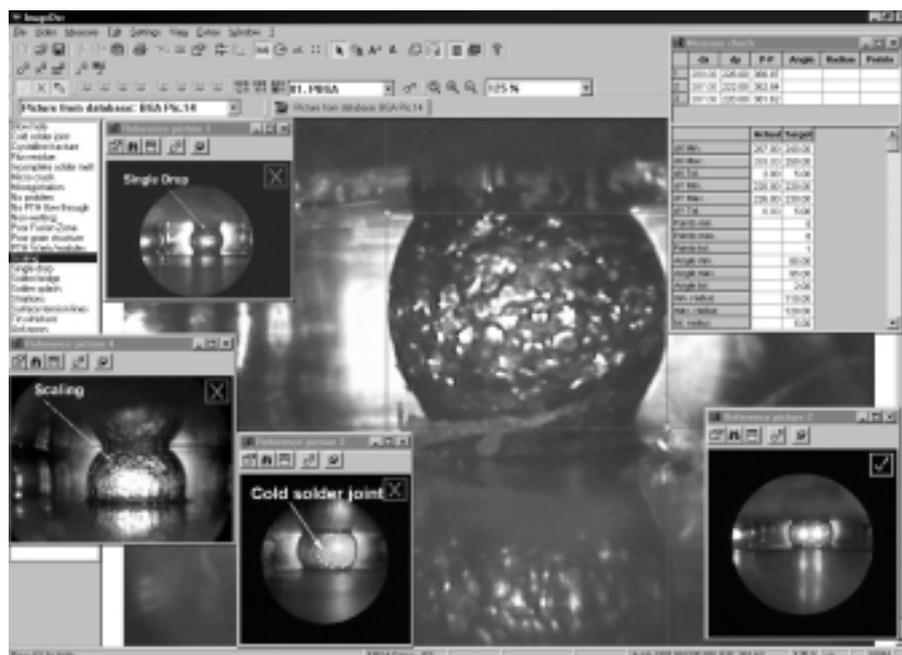
ERSA ImageDoc quality assurance software is a perfect complement to traditional microscope inspection systems used for process control. The operator-dependent decision making process which was subjective, based on the knowledge of the individual, now becomes objective through the various expert

- Video live picture
- Distance, radius and angle measurements
- Automatic measurement control function
- Failure classification with reference picture groups
- Failure analysis with problem/solution database
- Documentation through Multiple Folder Databank with search function
- Create, print, and e-mail reports

databases. Because of this unrivalled software concept, the operator has direct access to extensive expert knowledge in condensed form, in order to optimize and understand the relationships in a manufacturing process.

ERSA's vision for the future of quality assurance are total hardware/software inspection solutions with both knowledge-based and teach-in capabilities. Production process parameters are improved and perfected through failure analysis and corrective action recommendations. The ERSASCOPE Inspection System 3000 with the ImageDoc software is successfully in use worldwide in the areas of scientific and industrial visualization, measurement, classification and documentation.

The overwhelming success of this revolutionary quality assurance tool is underscored with international recognition. Honored with the most notable innovation prizes in the industry (SMT Vision Award, EP&P Grand Award, Most Innovative Product, Dr. Rudolf-Eberle-Preis...) the ERSASCOPE hardware/software inspection system represents an essential aid for process control in electronic manufacturing.



## ERSA's soldering "Know-How Seminars"



Qualified personnel and state-of-the-art technology are more than ever before the key to high quality, competitiveness and thus for commercial success.

ERSA has now been working exclusively in soldering technology for getting on for 80 years and has at its disposal the most comprehensive soft-soldering technology in the world. That ERSA is now well esta-



lished as a mine of knowledge and expertise in the company's chosen field is due to continuous research into basic

principles, a constant search for innovative problem solutions and, last but not least, the experience they have gained through constructive exchange of ideas with their customers.

ERSA does its colleagues in the field a particular service by passing on this specialised knowledge in the "Know-How-Seminars" put on in collaboration with well-known experts from the field. All ERSA soldering seminars are conducted on an entirely neutral basis and are not only offered to ERSA customers but can be attended by any interested parties. The knowledge presented in the seminars always corresponds to the most up-to-date technology, and the instructors again and again show themselves capable of combining theory and practice to the customer's greatest advantage.

The upcoming dates for this successful seminar series, which has up until now attracted well over 4,000 enthusiastic participants, have been planned for weeks 42/43 in the autumn of 2000.

Further information on the subject matter of the seminars, organisational details

### The individual seminar dates

#### 16.10. and 23.10.00

Basic principles of soldering technology

#### 17.10. and 24.10.00

Wave-soldering workshop

#### 18.10. and 25.10.00

Reflow-soldering - basic principles and technical procedures

#### 19.10. and 26.10.00

Reflow-soldering workshop

and the topics for Spring 2001 can be obtained by applying to ERSA and expressing interest in the "Know-How-Seminars". The address is as follows:

Nicole Hammerich  
ERSA GmbH, 97877 Wertheim,  
Phone: 09342/800-137, Fax: -132,  
e-mail:ha.mv1@ersa.de

Applications to participate in the seminars can also be sent to this address.

## All-in service - all about soldering !

With its international service and distribution network and a 24 hour service hotline, ERSA is singularly well equipped to meet the constantly rising demands of the rapidly changing electronics industry. Today, ERSA products are sold through local representatives in more than 60 countries around the world. Customer proximity and an extensive after-sales service are an integral part of ERSA's business philosophy, and they form the base for our trusted collaboration with our customers:

The users of ERSA services such as

- Consulting on soldering and processing technology by ERSA engineers at the customers' premises.
- Test soldering, solder defects analysis and generating their solutions at the ERSA R&D centre.
- ERSA "Know How Seminars" are held regularly - either in Wertheim or "on the spot".
- All-in solutions through strategic alliances.
- Rapid realization of customized applications through efficient manufacturing concepts.



benefit from the almost 80 years of experience and from the competence of the largest producer of soldering systems in Europe.

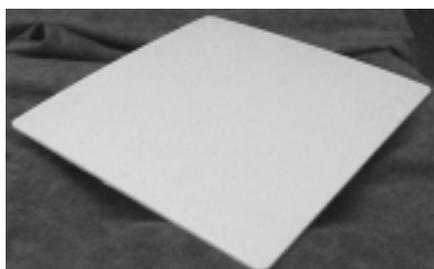
# If your skin is feeling a little too tight ...

... then you need a new one. And if you are not satisfied with the surface appearance (skin) of EPS mouldings, then you have to start looking for new alternatives. So what is to be done? How do you get mouldings with smooth, shining, crack-free surfaces?



How about bringing about the smooth, shining surface at the foaming stage? All that would be necessary would be for the foam beads to be heated to their melting point. A surface would then form which would be similar to the surfaces of injection moulded parts. That is something that should be tried out! But where?

That is exactly what the KURTZ testing area is for. KURTZ does the job of getting the moulds and produces systematic test plans, and these tests can be carried out far from the pressures of daily business in a shape moulding plant. At the testing area a whole series of machines and tools is available, and the findings made



can be ploughed directly into the design and construction of a new mould or machine.

But how do EPS mouldings get a new surface? It was decided in practice simply to carry out tests to establish whether the idea basically worked, and all that was necessary for that was a simple plank mould. The first results were surprisingly positive - it indeed proved possible to produce smooth, shining planks. But there were difficulties at the demoulding stage. The liquid polystyrene had blocked up the ejection air nozzles. It was only when a specially developed nozzle system had been introduced that problem-free production was possible.

The aim of the next phase was to ensure that mouldings with a skin were able to satisfy the requirements of the end customer, and for this purpose a special test mould was built. The mouldings producer was able to carry out all the tests necessary to get the go-ahead from his customer.



The producer was able to apply the findings from the tests directly to the construction of his new machines and moulds, and this was only possible because he had turned to KURTZ at a very early stage of his project. This was instrumental in helping our customer to succeed and he is now in a position to extend his market share with innovative products.

# Training at Tus



The fifth Basic Training Course in the Processing of Particle Foam Materials for machine operators and plant managers took place in the last week of January this year in Putnam, Connecticut, USA. Tuscarora and KURTZ are collaborating on running these courses as part of a comprehensive training concept which aims to refresh and extend basic knowledge of the processing of particle foam materials and of the optimal running of KURTZ particle foam processing plants.

The trainers and presenters Peter van Deursen, John Floryance, Björn Dewes and Martin Bauer were able to offer the 24 participants from Tuscarora a highly interesting and stimulating training programme.

In addition to basic sessions on the physics of the operational media of steam, water and air, the course dealt with energy-saving in the processing of particle foam materials, the basic principles for the organisation of production and servicing, gave tips for efficient maintenance and also covered the relevant safety regulations.

There was a vivid demonstration to show the participants that steam comes in a variety of different physical states

Carora



which are more or less suited to certain steps in the processing procedure. All the participants were thus able to see how the whole picture fits together. The physical state of the steam has a direct influence both on the final appearance of the moulding produced and on the energy consumption of a particle foam processing plant. Excessive compressed air consumption furthermore not only makes itself heard in the hissing of leaks in the quiet of operational breaks, but also makes itself felt on the annual balance sheet. The employees taking part showed their commitment by discussing and working out possible remedies and improvements for their own plants.

At the end of the course everyone agreed that this had been a successful event, which gave new members of staff and shift managers useful tips for their everyday work with KURTZ production plants and can make a significant contribution to the optimization both of the products and of company performance.

## From the simple conversion to the general overhaul

  
KURTZ In this article we would like to present the "Rebuild-Programme" for shape moulding machines. We are taking as an example the programme run by KURTZ North America, but the same applies for programmes offered by the headquarters in Wiebelbach, Germany and, in the case of block-moulds, by the KURTZ works in Altaussee, Austria.

It was in 1994 that KURTZ North America was first asked to undertake "simple" modification jobs on shape moulding machines. During the "Rebuild-Programme" which developed out of these modification jobs about 75 machines were given a general overhaul. 2-3 machines are always in the rebuild process, and the Manufacturing and Warehouse Team has now grown to ten employees.

When does a customer decide to have his machines rebuilt? The machines delivered to KURTZ North America had 30,000 to 40,000 working hours, which is roughly the equivalent of 7 to 10 years in two-shift operation. Sometimes a new machine is bought and at the same time one in need of modification is taken out of production and sent to us for a complete overhaul.

The programme is very effective for our customers. The performance of the machines is improved and we give them a complete new life for about half of the purchase price of a new machine.

As a part of our in-house quality control programme we have developed standard rebuild parameters including the following new parts or units:

control panels; pressure fill tanks; tie bars and bushings; media block valves; water valves and pneumatic valves; steam, drain and water hoses; pneumatic lines; vacuum pump systems with improved condensers; threaded inserts in the steam chambers; receiving frames; back plates and cooling leads; hydraulic and cooling systems. All machines are given a complete sand-blast and repaint. The parts at the machines being overhauled by KURTZ obtain an additional six months warranty.



Anyone who was present in 1998 at our first "Open House" in Plymouth will remember that we exhibited a new machine and a rebuilt machine side by side. And it was very difficult to determine which of the two had undergone the overhaul. We truly give these machines a new life.

The rebuild programme has developed a dynamic that is beneficial to our customers. It allows our customers to buy new and larger machines and to upgrade their older equipment.

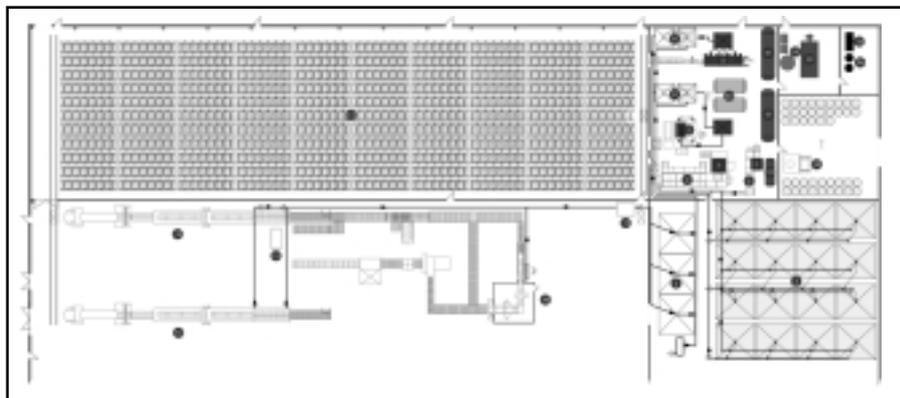
## EPS Plant Planning



A start is being made on the planning and realization of a new operational site for EPS production with a meeting of staff from the sales departments of the suppliers in question and the customer. At the meeting

The production plants are positioned in such a way as to ensure the shortest possible transportation distances for raw materials, pre-expanded EPS and the necessary elements such as cooling water, steam etc.

At the time the order is placed it should already be clear which products are to be manufactured and what the actual dimensions of the hall are to be. At this point more detailed discussions begin, as do the construction of the in-house manufactured machines, and talks with possible sub-suppliers.



a rough estimate will be made of the standard throughputs planned by the customer, and the products and quality levels for the new plant will be established, particular attention being paid to the desired degree of automation and to scope being allowed for future production expansion.

A plant layout of the machines will then be drawn up on the basis of this information, with a quotation for the customer. There will be further discussions with the customer with the aim of refining the layout plans and the corresponding quotation, so that when it does actually come to contract of sale the customer will be able to look forward to the highest possible benefit.

If the new machines are to be situated in an already existent hall, then an optimal material flow rate can only be achieved within the limits of the actual space available. In the case of a new building then these planning discussions take place with the co-operation of the architect and the customer before the building work starts - ideally this will lead to an optimal exploitation of the available resources.

The architect is also involved in discussions to determine where the hall requires gates and doors, and to establish the height of the hall itself as well as possible sunken areas in the floor.

At this early stage we also endeavour to establish the points where condensate drainage, compressed air and electric current will be required, so that the disposal and supply pipes and wiring can be installed in the floor.

In addition to establishing the correct dimensions of the production machines in an EPS plant, provision must also be made for sufficient storage space for pre-expanded polystyrene (silo plant). Care must also be taken to see that sufficient storage space is available for the polystyrene blocks to be cut and for the final products.

In addition to the details connected with the production process, attention must be paid to the observation of fire and safety regulations, for instance concerning escape routes.

Parallel to, or even before the construction of the EPS machines, the customer collaborates on drawing up and indeed realizing a design for the supply of steam, water, electric current, air and other media to the machines. This is a stage of particularly vital importance because inadequate energy supply can result in lower output levels and/or problems in achieving projected quality levels.

At this stage we also make recommendations to the customer as regards suppliers of steam, compressed air, and packaging installations. Once the customer has made his choice, detailed discussions with these suppliers follow in order to ensure a correct and optimal choice of peripheral machinery.

The information for the whole plant is then recorded in the general plant layout. In addition the customer receives detailed drawings of the installations, pipe installation drawings, drawings of the steam installations, the necessary papers for calculations for the cooling water system, steam plants and steam accumulators.

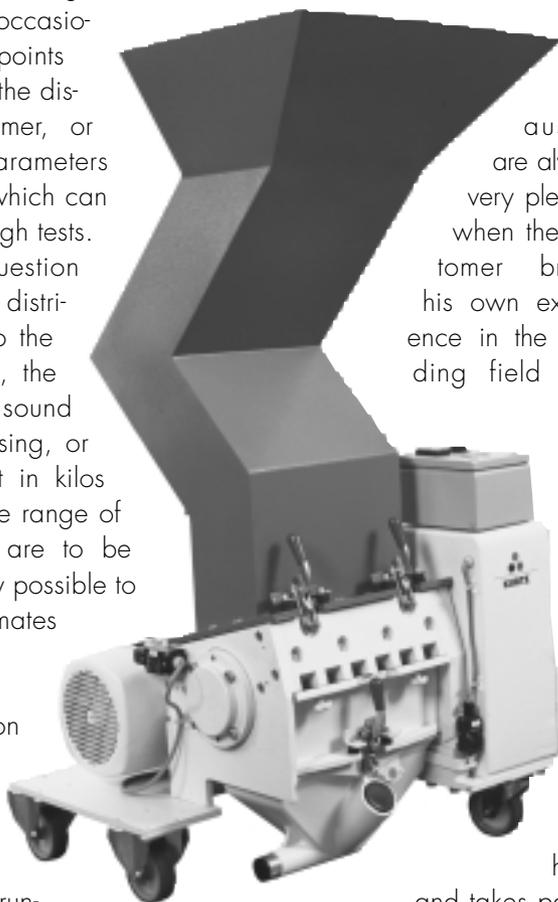
The construction of the halls and plants etc. is carried out in consultation with the customer, the site manager and the architect, with discussions taking place at the site itself. Similarly, the installation of the peripheral machinery and of the EPS production plants is monitored by the project engineer.

# Grinding centre - KURTZ grinding machines

 When we go to visit a customer, it is normally possible to establish clearly which machine from our range we should offer. But it does occasionally happen that new points of view come up during the discussion with the customer, or perhaps processing parameters have to be established which can only be determined through tests. The parameters in question could be the grain size distribution for the time up to the grinding of the material, the grain size itself, the sound levels during the processing, or the expected throughput in kilos per hour. Given the large range of synthetic materials that are to be processed, it is often only possible to offer approximate estimates of the figures involved.

It is for this very reason that KURTZ Altaussee has set up a grinding centre where the necessary tests can be carried out with slow runners and a middle- and large-size granulator available and ready for

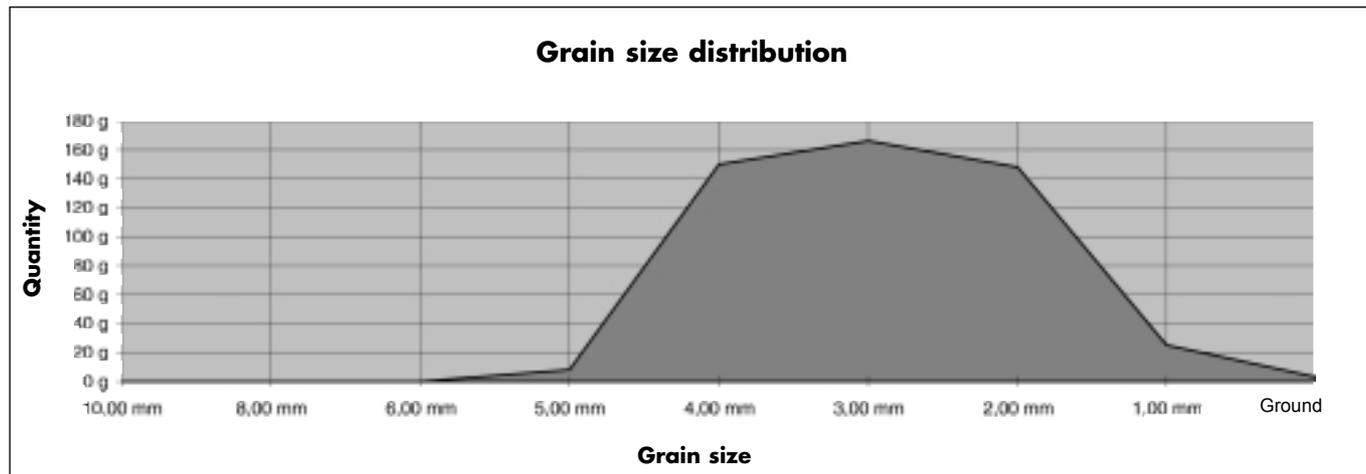
operation. The tests carried out are written up precisely and the grinding test is described in detail. Our staff at



Altaussee are always very pleased when the customer brings his own experience in the grinding field with

him and takes part in the tests. After a test grinding of this sort the parameters mentioned

above can be established exactly. Our sales service benefits by being able to give even more exact throughput estimates, and both customer and supplier thus get additional information on normal performance levels. And this is why we as producers of granulators and recycling plants are so successful in designing machines in such a way as to do justice to the basic principles of recycling, and in avoiding the pitfall of producing energy-wasting machinery.



## Restoration of the old hammer mill completed



On January 26th, 1995, the old forge suffered serious flooding which resulted in the destruction of the blower and of large parts of the interior fittings. The blower has been restored over the last five years and is now working again superbly. The outward signs of its having been restored are a new water supply channel and a

stainless steel water-wheel. Using a newly built gear system this water-wheel drives a blower consisting of three square cylinders, all of which are one metre square in size and have a stroke of one metre, too.

It was to great rejoicing that the blower was put back into operation at the end of June. Carpenters from the pattern shop and staff of the grey cast iron foundry of the Hasloch works were involved in the restoration work. Our colleagues from MBW in Wertheim produced sheet metal parts and the assembly department of the machine factory in Wiebelbach were responsible for the remaining overhaul and fitting work. We are all proud of this successful piece of team work and hope that the old forge can go on operating for another 220 years.

## In-house training at KURTZ

"Internal or external?" – this is one of the central questions when it comes to the matter of computer training. It was our opinion that a standard training course could not answer the various different needs of our staff members and so we developed our own training programme. Trainers were sought who were thoroughly familiar both with computers and also with the ins and outs of our own enterprise, and these were found among our own staff members.

The training programme began in the sales department of the machines for the processing of particle foam materials and has since spread through KURTZ GmbH and the KURTZ Holding. Two intensive weekend courses were held for KURTZ Altaussee. On the basis of participants' experiences and the feedback they have given us, it is clear to us that we can only give one answer to the question posed at the beginning of this article: "Internal!"

## Fabi-Prize for Marina Steiler

From September '97 to June 2000 Marina Steiler completed an apprenticeship in industrial business studies at ERSA and KURTZ Holding GmbH. Based on her excellent school results, she received an annual school award for outstanding performance and then took first place among all the candidates in her final exam at the Wertheim College of Business Studies. She, furthermore, received prizes from the association of

firms with in-house training schemes in the Main-Tauber area (FABI) and from the Chamber of Commerce in Heilbronn. Werner Grosch, responsible for business trainees, is especially proud of the fact that Marina Steiler is placed 3rd, after Tabitha Weber and Sabine Hörner, within the last five years, who could get all three awards. Today, Marina Steiler is working in ERSA's purchasing department of the Soldering Machines Division.

## Service provider Kurtz Holding

KURTZ Holding GmbH & Co. Beteiligungs KG was founded in 1998 and started active business at its headquarters in Kreuzwertheim-Wiebelbach on 1.1.1999. The company's activities include financial participation, the coordination of sales, products and production capacities, research and development goals and commercial departments, and the provision of services for all the enterprises of the Kurtz Group.

The firm provides accounting, computer, wages and salaries services for KURTZ GmbH, for ERSA GmbH, and for MBW Metallbearbeitung Wertheim GmbH. They additionally provide a variety of services in the fields of finance, auditing, law, supplies, personnel, publicity, corporate identity and organisation for all the enterprises of the Kurtz Group.

Putting all these activities under one roof leads to synergy, and furthermore the know-how that is pooled under that roof is there for all the companies of the Kurtz Group to take advantage of.

KURTZ Holding GmbH & Co. currently employs 22 members of staff who form a team which is at the ready to assist the whole Kurtz Group with advice and practical help - flexible providers of services working for the good of the whole group.



## The fascination of diving

We live in the Salzkammergut, an area blessed with numerous crystal clear lakes, and have always been attracted by the idea of getting to know these lakes not only on the surface but also in their depths. Fortunately for us, there is a sport which exists precisely to fulfil this dream – scuba diving.

or dangerous sport, this can almost entirely be put down to the foolishness of those who have accidents, or to their having overestimated their capacities, or to their having had insufficient training. Every experienced diver is well advised to be cautious and not to let him or herself be hurried.

Scuba diving is a sport which promotes camaraderie, as divers always go out in groups of two or more. Our favourite diving area is the Grundlsee, a lake of drinking water quality teeming with an abundance of fish or various kinds. Every year shortly before Christmas we celebrate and give thanks for an accident-free year full of new experiences by taking a Christmas tree with us on a dive down into the depths of the lake.

Scuba divers form a big family, linked with one another as they are by common experiences which the non-diver can hardly imagine. Once under the

water the diver slips freely and weightlessly into a world where he or she is closer to nature than anywhere else.

The diver becomes a fish among fishes, and gazes at them close to with just the same degree of interest that the fish display when they look at the unfamiliar figure of a human being. The silence and weightlessness bring about a change in the consciousness of the diver which has a fascination all of its own.

Once back on terra firma after a successful outing, and once all the apparatus has been carefully cleaned, checked and stored away, the diver is free to think about all the impressions brought back from down below, and to enjoy the feeling of contentment of body and soul. The past hour has become something special.

Weightlessly slipping through the element from which life emerged in the first place has turned many a diver into quite an addict!

Yours, Werner Gaisberger



What exactly is scuba diving?

To scuba dive is to slip through the water in a state of suspension, and to share a very special world with fish and other inhabitants of the waters. Scuba diving means plunging to depths of up to 40 m in a lake or in the sea, kitted out with a compressed air canister filled with air at 200 bar, a diving suit, flippers, a buoyancy compensation device, a lead belt, breathing apparatus and divers' goggles. Scuba diving is one of the last sporting adventures in our highly mechanized world.

Scuba diving is a sport which can be learnt quickly and easily with the help of thorough training. But anyone who wants to follow a diving course should first consider whether he or she possesses the requisite personal qualities. If diving is often described as a risky

270 Mio DM turnover • 1000 employees

## The Kurtz Group doubles US manufacturing site



Good news for the electronics and high tech industry in North America NAFTA region. ERSA Inc. is in the process of moving its US headquarters to Plymouth, WI, just two hours north of Chicago. The US

headquarters is doubling its manufacturing capacities in order to accommodate this growth. The new offices will be the home for the sales and service team and the demo center for the ERSA soldering machine division. A large area of the demo center will be dedicated to soldering tools and inspection devices, which will be set up for testing and viewing equipment. However, the ERSA Inc. soldering tool division will still be located in Old Lyme, CT. This expansion shows the long-term commitment of ERSA Inc. and the KURTZ Group to excellence and flexibility to the North American market and its partners – our customers.

## Japanese foundry experts visit KURTZ



As a supporting programme to the foundry fair GIFA Japanese foundry experts, the Kao-Quakers, visited the KURTZ foundries and the historical forging hammer.

They were especially interested in the mechanised furan resin moulding plant.

### KURTZ GmbH

Sales, Engineering, Service, Industriegebiet Wiebelbach  
D-97892 Kreuzwertheim  
Tel. 09342/807-0 • Fax 807-404  
e-mail: kw@kurtz.de • <http://www.kurtz.de/>

Plant Hasloch • Iron foundry  
D-97907 Hasloch/Main  
Tel. 09342/805-0

Fax Gießerei (09342) 805-179  
e-mail: kurtz.hasloch@kurtz.de

### KURTZ Altaussee GmbH

EPS-Technology, Grinding systems  
Puchen 214 • A-8992 Altaussee  
Tel. 03622/71171 • Fax 71190  
e-mail: office@kurtz.at

### MBW

Metallbearbeitung Wertheim GmbH  
Otto-Schott-Str. 19 • D-97877 Wertheim  
Tel. 09342/9636-0 • Fax 9636-55  
e-mail: kurtz.mbw@kurtz.de

### MGM

Metallgießerei Mannheim GmbH  
Ohmweg 21-29 • D-68199 Mannheim  
Tel. 0621/84491-0 • Fax 84491-55  
e-mail: kurtz.mgm@t-online.de

### ERSA GmbH

Leonhard-Karl-Str. 24 • D-97877 Wertheim  
Tel. 09342/800-0 • Fax 800-100  
e-mail: kurtz.ersa@ersa.de • <http://www.ersa.de>

### ERSA Inc.

N19 W6721 Commerce Court  
Cedarburg, WI 53012, USA  
Phone +1 (0) 414-375-6844 • Fax 375-6849  
e-mail: b.klenke@ersa.com

6 Vista Drive  
Old Lyme, CT 06371-1539, USA  
Phone +1 (0) 860-434-6224 • Fax 434-5448  
e-mail: heinz.bockard@ersasoldertools.com

### KURTZ Far East Ltd.

Suite 1202 • Tower 6 • China Hong Kong City  
33 Canton Road • Tsim Sha Tsui • Kowloon, Hong Kong  
Tel. 852/2331 2232 • Fax 2758 7749  
e-mail: kurtz@kfe.com.hk

### KURTZ South East Asia Private Ltd.

25 International Business Park • 02-106 German Centre,  
Singapore 609916  
Tel. 65/562 92 05 • Fax 562 92 06  
e-mail: kurtzsea@singnet.com.sg

### KURTZ France S.A.R.L.

Vente, Assistance Technique, S.A.V.  
8, rue des Moulissards • F-21240 Talant  
Tel. 380.56.66.10 • Fax 56.66.16  
e-mail: kurtz.france@wanadoo.fr

### KURTZ Italia S.R.L.

Vendita, Assistenza, Consulenza Tecnica  
Impianti Completi E.P.S., Nuove Tecnologie  
Via Matteotti, 95/E • I - 21028 Travedona Monate (VA)  
Tel. 0332/978035 • Fax 978135  
e-mail: kurtzita@tin.it

### KURTZ South America Ltda.

c/o Tecnom Ltda.  
Rua Alexandre Schlemm, 19/902  
89.202-180 Joinville, Brasil  
Tel. 047 422.2819 • Fax 422.8054

### KURTZ Systems Africa (Pty) Ltd.

Sales, Service, Consulting  
P.O. Box 548 • Umhali 4390  
KwaZulu Natal • Republic of South Africa  
Tel. 032/525 89 04 • Fax 525 89 34  
e-mail: kurtz@mweb.co.za

### KURTZ North America Inc.

Sales, Service, Consulting  
1779 Pilgrim Road • Plymouth, WI 53073  
Tel. 920 893 1779 • Fax 893 1562  
e-mail: KNA@excel.net