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Zollner and Ersa

Long-standing Partnership with Ersa Selective Soldering Systems

Zollner Elektronik AG was founded in the Bavarian town of Zandt in 1965. The family company has grown continually - today over 10,000 employees work for the mechatronic service supplier, which is numbered among the Top-15 EMS providers. Without products of its own, but with wide-ranging business activities, Zollner works for global players and SMEs worldwide under the motto "Solutions for your ideas". System supplier Ersa has been supporting Zollner in electronics manufacturing for over 30 years; to date, almost 60 Ersa soldering machines have been installed at Zollner.

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Ersa Area Sales Manager Radek Lauer (2nd from right) with the Zollner process engineers Andreas Hunger (left), Christian Früchtl (2nd from left) and Florian Gruber (right).

When, at the age of 26, Manfred Zollner opened his one-man operation in Zandt – did he have any idea that it would one day be a global player? At that time, in the mid-1960s, agriculture dominated in the Cham district, and industrial operations were almost non-existent. Manfred Zollner set himself the task of changing this. But the idea that the former store for electrical appliances with installation service would develop into a worldwide industrial enterprise with 10 locations, turning over EURO 1.18 billion in 2015 and greeting its 10,000th staff member this year? Something Manfred Zollner could hardly have envisaged.

In recognition of his unique achievement, the entrepreneur received this year's "Manager of the Year Award" in the Company Founders/Pioneers category from the trade journal Markt + Technik. The eight German sites, all within a radius of 30 km, employ over 5,000 staff – over half of the entire Zollner workforce is therefore still to be found in the Bavarian Forest. This makes Zollner Elektronik AG a major economic player in the Chem region and an attractive employer where, down the years, over 1,600 young people have completed their apprenticeships. This year alone, the company was able to greet 63 new apprentices, 15 dual-study programme students and six individuals undergoing re-training – here we see a company making a major contribution to the region which, consequently, stands out with one of the lowest unemployment rates in Bavaria.

ADDED VALUE FOR THE CUSTOMER – HIGH VERTICAL INTEGRATION

Even without products of its own on the market, the EMS provider Zollner offers its customers major added value: High vertical integration combined with an incredibly wide-ranging spectrum of sectors – the over 600 Zollner customers come from such branches as industrial electronics, railway engineering, automotive industry, medical technology, aviation and defence, metrology, office electronics and data technology, other consumables and telecommunication. Down the years, the company has developed continuously and expanded its portfolio with new technologies which were skilfully integrated and expanded: such as the divisions for inductive components in 1970, mechanics and galvanics in 1975 and electronics with automatic coiled goods production and printed circuit board production in 1980. Eight years later, the company took the

Infobox

Zollner

Founded
1965 as a store for electrical appliances with installation service, one-man company

Turnover 2015
EURO 1.18 billion

Customers
610

Branches
industrial electronics, railway engineering, automotive industry, medical technology, zinc technology, aviation and defence, metrology, office electronics and data technology, other consumables and telecommunications

Employees
over 10,000

Sites
Headquarters Zandt and 17 further sites in Germany, Hungary, China, Switzerland, Rumania, Tunisia, Costa Rica, the USA and Hong Kong

daring step and founded the first foreign subsidiary in the Hungarian town of Vác, not far from Budapest. 2001 saw the start up of production on inductive components in the Rumanian Satu Mare – two plants which are now producing very successfully. In 2004, Zollner put out its feelers towards Taicang in China, in order to be closer to customers there and better able to cater to the Chinese market. Further locations in Hungary, Rumania, Tunisia, Switzerland, the USA and Costa Rica complete the picture that Zollner presents today – not to forget the permanent expansion at the headquarters and at other Bavarian sites. Time and again, the market was evaluated when new machinery was required – and, time and again, Zollner chose Ersa.

A huge milestone for Zollner is undoubtedly the Development Department officially founded in 1998 – an area which existed already but which has only been an independent department since that time. "Nowadays, we no longer just get data with a request for production, rather we provide vigorous support as early as the development phase – from the initial idea to series production and repairs and refurbishment," says Andreas Hunger, process engineer at Zollner and with the company since 1993.

Zollner process engineer Andreas Hunger with Ersa Area Sales Manager Radek Lauer at the top model in selective soldering – a VERSAFLOW 4/55.

The 131-strong development team, now structured into Electronics, Mechanics, Software Development and Layout, is an important success factor for Zollner – it ensures long-term customer retention, offering access to the latest technology and at the same time increasing the added value for all sides. "Customers come to us with an idea and ask us to support their development.

Sometimes, it's "only" a benchmark and the question of whether a product is worth implementing – then we are completely involved with regard to electronics but also when it comes to the mechatronics and mechanical implementation. In the complete development of a product, an extremely high level of know-how is built up which can also be applied to other projects or branches," explains Andreas Hunger.

FRUITFUL BUSINESS RELATIONSHIP FOR OVER 30 YEARS

But back to the history, back to the early days of a fruitful business relationship: Zollner already had small repair soldering systems from Ersa, going back to the 1990s. "But we only really got into the soldering business with Ersa in 2004 with a selective soldering plant with axle system, an ECOSELECT 350. Shortly thereafter, the change-over to lead-free production ensued; for us as a service provider, the ECOSELECT 350 was the ideal machine," Andreas Hunger remembers.

One thing which has always been important for the EMS provider Zollner is the consistent ability to react flexibly to customer requirements – something which was supported by the Ersa machine, as it allowed the Zollner production to run both with lead and lead-free. At Zollner, the ECOSELECT became a real success model, ordered dozens of time in all possible models! The ECOSELECT stand-alone machine is still completely involved in the series production – at the flexible islands, a number of products can still be manufactured with fast, short changeover times.

"Over the years, Zollner's experience, and that of many other customers, has

Aerial view of the headquarters of Zollner Elektronik AG in Zandt.

flowed into the Ersa selective soldering portfolios, such as a larger work surface in the soldering area and greater nozzle stability. An important milestone was undoubtedly the traceability link-up of the ECOSELECT as far back as 2004 – at a time when hardly any machines were correspondingly linked up. In this respect, Zollner and Ersa have done genuine pioneering work and we are proud to have been able to complete this project successfully," said Ersa Area Sales Manager Radek Lauer, who has looked after Zollner for many years.

Following on traceability, Radek Lauer now sees Industry 4.0 as the next major challenge on which the business partners Zollner and Ersa are working. With the collected traceability data, an outstanding basis exists for specifically advancing the further networking of the machinery.

GROUND-BREAKING TRENDS WITH SELECTIVE SOLDERING TECHNOLOGY

Time and again, the requirements changed in dynamic electronics manufacturing; time and again, new benchmarks were established in order to elicit the highest level of productivity with the highest quality from the soldering systems. A solution was required for every budget, for every requirement.
From 2011 on it was to be found in the third-generation VERSAFLOW, followed by the fourth generation from 2015 onwards. To date, Zollner has ordered nine machines of the type 3/45 in various versions – whether with one, two or three soldering modules. A VERSAFLOW 3/66 is already successfully in use in the USA. An equipment acquisition for the Costa Rica market which has been active since 2014 is also already in the system.

"With the modular construction, the VERSAFLOW 3 is a genuine top seller and is in use in every possible business area at Zollner: whether segmented processes, the use of two alloys on the same axis system, combined pre-heating radiation below, convection from above, use of convection during the soldering process – these are all ideally combinable features, to make manufacturing easier in every respect. Regardless of whether the batch size lies somewhere between one and 500 or is up in the hundreds of thousands in the

To date, Zollner has ordered nine VERSAFLOW 3/45 models in the various versions – whether with one, two or three soldering modules.

automotive area," says Ersa Area Sales Manager Radek Lauer.

The new flagship in production is the VERSAFLOW 4/55. As even greater flexibility was required, with fluxer and solder pot spacing having to adapt automatically to the product mix, as the programme dictates, six VERSAFLOW 4/55 machines are already in use. In addition, the training centre for Zollner staff has also been equipped with a VERSAFLOW 4/55 and a stencil printer of the VERSAPRINT S1 series – machine operators andmaintenance teams are schooled in the Zollner training rooms outside of the production, in order to achieve optimum performance in manufacturing. This method of familiarizing new staff means that throughput in the ongoing manufacturing process is not disrupted.

With just a look at Zollner's production, the expert eye can tell that the Ersa soldering equipment, whether selective systems or POWERFLOW, is ideally equipped to ensure that the EMS provider is ready to respond to all customer requirements. Given the different batch sizes at the Zollner sites, the machines need to be extremely flexible in order to be able to meet the diverse customer requirements.

The lofty circles in which the business relationship moves is demonstrated by the BMW electromobility project – the Bavarian premium automobile manufacturer was looking for an electric motor for its BMW i3, and found it at Zollner. Several million euro were invested, a complete hall with clean room production installed, containing perfectly-integrated soldering technology from Ersa in the form of POWERFLOW wave and selective soldering systems. Manufacturing for e-mobility makes enormous demands; highly dimensionally-stable boards have to be reliably soldered. This takes a high-performance system offering corresponding validation as well as tracking, traceability and 100%-reliable production.

"This was a major challenge, but it is all running smoothly – all the machinery in the BMW production line is connected through band systems and features AOIs. In this way, we ensure from the very beginning that the product is correctly assembled, receive feedback from the tracing system that the soldering itself was successful and, at the end, an automated test step ensues in which the THT soldering joints are once again checked via AOI before all the function tests are carried out – all highly-automatically connected via wave and selective soldering systems," says delighted process engineer Andreas Hunger.

A twelve-year old history is shared by Andreas Hunger and Ersa salesman Radek Lauer; together they have brought a number of challenging projects to a successful conclusion – and always teased greater flexibility from the soldering systems, greater process reliability and greater productivity. Whether with greater flexibility in the solder pots, completely newly-defined soldering area, re-worked transport system or pre-heating concept, new power convection for copper-bearing products or an axis system with infinitely adjustable Y and Z variability. They know and value one another and look forward to continued cooperation, further reinforcing the networking between the machinery and modules in the future.

The longstanding business relationship between Zollner and Ersa is the outstanding basis for tackling the next step towards Industry 4.0 and automation – starting out from Zandt with global engineering! ■

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