

SABRINA SCHILLING

"The reliability of our products is key"

TRUMPF supplies two key components for chip production – high-power lasers for EUV lithography and plasma generators for the process energy required for coating the microchips. Martin Sauter is Head of Service at TRUMPF Lasersystems for Semiconductor Manufacturing (TLSM), and Christian Casar is Head of Service at TRUMPF Electronics. They explain the role that service plays in the semiconductor industry and how the company ensures maximum availability for its customers.

What are the challenges facing TRUMPF in the semiconductor industry?

Christian Casar: Manufacturing a chip takes several weeks, and even the slightest change in the production process can result in failure. This, along with any minute of downtime for service, is extremely costly. Chip factories cost billions and operate 24/7, 365 days a year. Ensuring an effective and efficient service, along with the reliability of our products, is essential. This is why the plasma generators from TRUMPF Electronics have a product failure rate of just 1%. We also guarantee that all generators manufactured in the last decade have been built, tested and maintained to the same high standards, in keeping with our philosophy of never changing a running system.

Martin Sauter: High productivity is essential for success in the semiconductor industry. The EUV laser has an availability of over 99%. We are working intensively with our partner ASML to further increase this figure. The stability of the high-power laser's performance also plays a key role. We are also focussing intently on technical solutions to reduce power losses to a minimum, both for new systems and for retrofits in the field. An excellent service network, rapid response times, and seamless spare parts availability form our patented remedy when operations come to a standstill.



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Christian Casar and Martin Sauter manage the service business for two key components for chip production – high-power lasers for EUV lithography and plasma generators for the process energy required for coating the microchips.

Given that the availability of your products is so high, what roles remain for your service engineers?

Martin Sauter: The high-power laser service business focuses more on preventative measures to ensure the laser doesn't fail, rather than traditional repair work. An important requirement for this is error-free installation, one of the main tasks of our service engineers. ASML has a large global service network for ongoing operations. TRUMPF trains ASML employees so that they can perform over 95% of service actions independently, enhanced with e-learning content. In addition, our experts offer telephone support within 30 minutes if ASML requires more in-depth assistance.

We work closely with ASML to ensure the best possible inventory management to guarantee an uninterrupted supply of spare parts. We store the relevant spare parts and tools for service missions on site. However, if parts are not in stock, our logistics chain comes into play. For instance, we operate a warehouse near ASML, which enables us to deliver parts to ASML in next to no time, 365 days a year.

"A long-term, close partnership with our customers is crucial in the semiconductor industry."

Christian Casar, Head of Services Electronics at TRUMPF

What service solutions does TRUMPF Electronics offer its customers?

Christian Casar: The service business in our electronics division focuses on repairs. Unlike the traditional 'engineer visits customer' approach, we reverse the concept – the equipment is brought to our service engineers, who perform repairs on generators at our global service centres. This enables the customer to remove defective devices directly from the system and install new ones – minimising downtime as far as possible. Within the controlled environment of our service centres, TRUMPF ensures that repairs meet the industry's stringent reliability standards.

TRUMPF firmly believes in getting things right first time. TRUMPF Electronics service engineers return repaired generators to customers in as-new condition on the first attempt. In terms of reliability, they are no different from new machines. TRUMPF also offers customers performance upgrades or conversions. This enables customers to maximise the potential of their installed base and enhance the value of their generators. Additionally, we collaborate with them to develop solutions for replacing discontinued third-party products with our own equipment.

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Martin Sauter, Head of Services TLSM

Ditzingen, Freiburg, the Netherlands, Taiwan – how is the service network organised across countries and organisations?

Martin Sauter: Our global service network with over 500 employees takes care of the installation of the high-performance lasers. Specialists on site and experts from the operational readiness team handle the remaining five percent of repairs that

ASML cannot carry out itself. Our training centres and spare parts centres are located in Ditzingen, Taiwan, Korea and the USA.

Christian Casar: Our extensive service network helps us to ensure customer proximity in all relevant regions. We only supply products for which we can provide efficient worldwide support throughout their entire service life. In the event of a service case, several teams from different countries may work together on a solution.



Martin Sauter and Christian Casar are both positive about the future.

Looking ahead, how will TRUMPF Technical Service continue to develop for the semiconductor industry?

Christian Casar: A long-term, close partnership with our customers is crucial in the semiconductor industry. We collaborate closely on product qualification until the results are achieved. Our goal is to integrate even more with our customers and their processes. We see that time to market – the product launch – is becoming shorter, and that service is getting involved at earlier stages. We are also currently investing in a Tech Center at the existing TRUMPF site in Taiwan to enable us to repair products locally in large volumes.

Martin Sauter: There is a great deal of movement in the chip industry: The Asian companies Samsung and TSMC are now also manufacturing in the USA, and TSMC is opening a new site in Japan, so we are also setting up in Japan. If we had done this interview six months ago, I would have told you that Intel was coming to Magdeburg. Although it hasn't happened yet, one thing remains certain: people will keep striving to improve their lives – making them better, easier, more convenient, faster – and all of this relies on chip technology.



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TRUMPF GROUP COMMUNICATIONS