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Nothing is impossible: what happens when a perfectionist builds swimming pools

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If you repeatedly bare your teeth, you might survive the competition. But a genuine alpha animal must demonstrate much more if it hopes to be the leader of the pack. **Empathy, leadership and self-confidence** are the traits that make a difference. A wolf seems dangerous only at first glance. If you look more closely, the wolf unites all three competencies. And that makes wolves role models for today’s managers.
In biology, the term competence refers to the ability of certain bacteria to take up extracellular DNA. In order to survive, bacteria must constantly acquire new characteristics – by incorporating foreign DNA into their genome, for instance. Bacteria can thus gain new genetic information. Although this is a very practical characteristic, only a few types of bacteria manage this feat. It is fortunately different for people: all of us can acquire competencies.
You cannot really measure competency, but you can comprehend it. Bladesmiths require extraordinary skills that can be acquired only through hard work and learning by doing. Yet the paramount property of their craftsmanship, the quality of the blades, becomes apparent only when you use them. This should come as no surprise, as competency often goes overlooked at first glance.
Speaking of expertise – that reminds us all of sheet metal. And lasers. Perhaps design. Or process optimization. Expertise seems to be inextricably linked to experience, and that’s something one gains with time. But sometimes know-how must be acquired quickly. The current trend toward digital connectivity is one example of such an agile area of expertise. Here, speed is a vital skill, and strategic expertise that ensures the right decisions are made is a skill that will secure the future.

Our industry isn’t just fast-paced – it’s also becoming more and more multifaceted. Besides the digital transformation, other new topics such as 3D printing and EUV lithography are demanding our full attention. It would be foolhardy to bundle competencies too tightly. It seems to us that it would be more effective to split them up – or to spread them around. In expanding TRUMPF’s group management, we assigned a managing director to every area in which we lay claim to expertise. These positions come into being when the new fiscal year begins on July 1.

What at first glance could probably best be described as “paper chaos” reveals itself, upon closer inspection, to be structured project management. Walls like these are a common sight whenever teams use an agile approach. It has little to do with creative chaos; rather, the adhesive notes are intended to quickly provide an overview of the current status. This is important, as people working in agile teams contribute their professional expertise from different departments.

As Chief Digital Officer, I now oversee the opportunities in the production and process side of digitalization to ensure that TRUMPF makes you the best possible offers. The new head of the Machine Tools division, Heinz-Jürgen Prokop, brings a great deal of professional and personal competency to this position from his time as development manager. You will see him right here starting in the next issue.

Mathias Kammüller
DR.-ING. MATHIAS KAMMÜLLER
EDITORIAL
A lot of sheet metal processors have thought about automation. The Zollner company in Hungary took a close look at their situation and came to the logical conclusion. We show their path into the future.

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The Rodgers Group has evolved in sync with American football: how the quill of strategic competency writes success stories.

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Laser for joining processes: we explain how the tool can help you move up to a higher league of quality in sheet-metal processing.

Page 28
It’s time for the big photo shoot for TRUe and there’s not enough water in the new stainless steel pool. There’s no way to save the day now – unless you’re Wolfgang Gassner. He’s determined to solve the problem – even if that means getting the fire service out to fill the pool. The managing director of Gassner Edelstahlpools is testament to the maxim “nothing is impossible.”
A modern villa in a desirable area in the hills overlooking Linz in Austria. A coveted view that most of us can only dream of. And a pool that’s missing 15,000 liters of water. Disaster. Wolfgang Gassner circles the pool, checks the water connection and makes a string of phone calls. He sounds calm but determined, and makes it clear that the pool must be filled and as soon as possible.

The next morning, when Wolfgang called the TRUe team before breakfast, we could hear in his voice just how satisfied he was: “So the pool is full. If it’s convenient for you, we can meet there at 11 o’clock and take the pictures.” We simply could not imagine how he had managed to conjure up so much water overnight. We were shocked, but in no way surprised – if you meet Wolfgang Gassner, one thing you soon learn is that nothing can stop him. This applies both to his personality and his business philosophy. Wolfgang’s product portfolio is really a roll call of creations that everyone had deemed impossible to manufacture. Until, that is, he made them not only possible, but also perfect. It is this aspiration that has made him one of the most proficient entrepreneurs in his field.

Gassner Edelstahlpools is a medium-sized company based in the idyllic countryside surrounding Neuzeug in Austria. Founded by Wolfgang’s father 50 years ago as a specialist supplier of metal roofing, the company has been growing steadily ever since. Incorporating everything from stainless steel furniture, ovens and electric machines for gas stations and bakeries, and ultimately stainless steel pools, the company’s product portfolio has been not so much expanded as fundamentally realigned. “We started making pools really by accident. About 15 years ago, an acquaintance asked if we would be able to build him a stainless steel pool. So we just did it.”

A tendency to “just do it” is something outstanding entrepreneurs share. It’s been 35 years since Wolfgang joined the company he now runs. “Like so many others, I started as an apprentice and spent the years, or decades really, since then getting to know all aspects of this business. That’s basically the only way to develop entrepreneurial skills – you can’t do it without a lot of hard work and, more than anything, experience.”

What was once a one-man show now employs 43 people and delivers 50 to 60 pools to private and corporate customers every year. No matter whether it’s whirlpools for luxury hotels, outdoor pools complete with a cover or stainless steel swimming pools for the FC Bayern Munich soccer team, there’s nothing Gassner Edelstahl-pools can’t handle. As an ardent Bayern Munich fan, Wolfgang is particularly proud of the pools his company has made for the current champions of Germany’s soccer league. The smile on his face when he mentions the fact that his company has now made three pools for the club gives away just how proud he is. FC Bayern Munich certainly won’t have chosen this Austrian company at random; Wolfgang’s products are often just that little bit better than what the competition can deliver. This stems from Wolfgang himself being an absolute perfectionist and paying attention to even the tiniest details. “Sometimes this means I really make life difficult for myself, but I just can’t be any other way.”

In one piece. Photos: Niels Schubert
“We don’t do ‘standard’”

The company’s many unique solutions are also testament to its expertise. Take the studs that are a characteristic part of these swimming pools, each one drawn and stamped individually. “No one else does that. But it’s the only way to end up with a completely clean and even look.” This is something Wolfgang feels is crucial — and that goes for his products and company alike. So he’s now busy building a showroom to a design that is both functional and demanding. The sketches and previews once again show a love of design that characterizes this entrepreneur. He has an eye for the unconventional and the exclusive in everything, from his conference room decorated exclusively in black and white to his products.

“We don’t do ‘standard’.”

This is especially apparent in the many custom solutions and innovations the company has produced over the years. One USP is the large floor-edge to side-wall radius, which means cleaning can be performed by a robot with a curved brush. Since angled floor edges are much harder to keep clean than curved ones, this is a major advantage. A key competence that sets the company apart from the competition are its sunken inlet nozzles. “Instead of using standard nozzles, we build our own and recess them so they are flush with the surface. This is a prime example of our claim of functionality and design.” And the stainless steel pools certainly fit that description. They have that certain something, mainly because the company is always prepared to go the extra mile. Its wave reflecting edge is yet another detail that reinforces this impression. “That’s unique to us, you won’t find that anywhere else. Thanks to its special shape, this unconventional edge helps our customers save water and energy because it stops water slopping over in all directions. What’s more, there are no sharp edges that might hurt someone behind the knee or under the arm. We also call this one the wellness edge.”

Wolfgang and his team develop all the company’s innovations themselves. They then produce all the parts they need, too, to ensure the desired level of quality. Of course, this also continuously refines their expertise and keeps their skills up. “I love and live this product and I’m always looking to get better at what I do,” Wolfgang says. He demonstrated both this and his urge to always find the best possible solution in solving the problem with the pool in Linz. “I simply had a word with the fire service and asked if they were willing to pump the water we needed into the pool. And that was that.”
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The bending portfolio

Die bending
In die bending or edge bending processes, the sheet is bent through a controlled downward movement of the press beam. The flat sheet is pressed by an upper tool into a die and reshaped in a straight line. The backgages ensure that the workpiece is positioned accurately.

TRUMPF offers three series of die bending machines: the TruBend Series 3000, the TruBend Series 5000, and the TruBend Series 7000.

Panel (swivel) bending
Panel bending offers a whole new technique for metal bending. It is ideally suited to complex bending applications such as radius bends, short sides or narrow profiles. TRUMPF panel benders contain what is called a bending frame. This comprises a C profile, onto which the lower and upper bending tools are mounted. The term 'swivel' comes about because the C profile moves up or down when the sheet metal is bent. To be more exact, it performs a small elliptical movement.

TRUMPF has two panel bending machines in its portfolio: the TruBend Center 5030 and the TruBend Center 7030.

Oversized format processing
Oversized format processing is a specific type of bending expertise. The machines in the TruBend Series 8000 have a press force of up to 1,000 metric tons and are up to 8 meters long. This means they can be used to process extra-long parts or bend smaller workpieces at multiple stations.

TRUMPF offers three series of die bending machines: the TruBend Series 3000, the TruBend Series 5000, and the TruBend Series 7000.

Product range
- Stainless-steel outdoor pools
- Stainless-steel indoor pools
- Roof terrace pools
- Roof gardens
- Hot tubs
- Pool covers
- Canopies
- Pool gratings
- TrumaBend V85
- TrumaBend V170X
- TC 5000R
- TruPunch 5000

Far, far away
The pool that has travelled farthest from where it was produced is one that Gassner shipped from Austria to the Dominican Republic.

It's difficult to imagine how much water a swimming pool actually holds. The figures are really quite striking: a pool that is 9 meters long, 3 meters wide and 1.4 meters deep holds 37,800 liters of water. That's enough water to fill 270 bathtubs.

When people think of swimming pools, they think of summer. So it's no great surprise that 90 percent of the pools produced and sold by Gassner are outdoor swimming pools.

Lots of bending machines are manufactured in Pasching, Austria. The TRUMPF center for bending expertise is exactly 31.5 kilometers from the Gassner company.
The Germans have a saying: “If you want to leap ahead, you have to take a few steps back.” That is precisely what the Zollner Elektronik company in Hungary has done. As a result, it is already perfectly prepared for the future.
“We wanted to go in a new direction, and we were convinced that the only future-proof solution is an automated system.”

Mihály Ógl, head of mechanics for Zollner Hungary

What do you do when you have to replace a machine? Your first answer would probably be to buy the latest model. But when Zollner Elektronik Kft. in the Hungarian town of Szügy faced this choice two years ago, they opted not to take the easy way out. Their machinery, however, was gradually becoming incapable of meeting the requirements of their customers. Over the years, they had bought manually operated stand-alone machines again and again. In the end, they had an impressive 20 punching machines and 25 bending machines with an average age of 12 years. Throughput times were poor, punching operations were kept separate, and production was not flexible, suffering from long lag times between processes. It was high time for a new solution, and the team at Zollner Hungary, a subsidiary of the venerable Bavarian company Zollner, found a truly good one: instead of replacing individual sheet metal processing machines with newer models, they redesigned and optimized their entire process chain.

From the top

Mihály Ógl, head of mechanics for Zollner Hungary, wasn’t just involved with this project; he and his team were actually the driving force behind it: “We wanted to go in a new direction, and we were convinced that the only future-proof solution is an automated system.” Anyone making such a decision must truly understand exactly what it entails, because it changes everything. An intense examination of factory automation, coupled with a long-term, entrepreneurial perspective and broad experience in one’s own market: these core competencies are what allowed the company to take this big step. The plant in Szügy (pronounced “szooj”) has long been a model factory in Hungary. The complete overhaul of
“Although we need far less space, we can supply our customers faster and more flexibly. This is exactly how we envisioned it.”

Mihály Ógl, head of mechanics for Zollner Hungary

its machinery bears this out. It may sound like a hasty intuitive decision, but was actually a long process, and Mihály Ógl and his colleagues certainly did not make things easier for themselves. Quite the contrary: “We did lots of research and prepared thoroughly. For example, we attended several trade fairs, where naturally we visited various providers of automation approaches. TRUMPF won us over with its solutions.” Key points that convinced Zollner were close proximity to TRUMPF’s Hungarian subsidiary and its TruTop Fab software.

A second look pays off

“Today, every customer wants to be flexible and produce small batch sizes. We used to focus on punching, but now we work with flat-bed lasers as they give us the freedom we need,” Ógl explains. He had all 13,000 CNC items in the Zollner range analyzed, and the conclusion was clear: 75 percent of them could also be cut by laser. For the remaining products, which need to be punched, Ógl opted for two punch laser machines. “We had to obtain special permission from the TRUMPF Managing Board to buy the machines,” Ógl remembers, “as they weren’t even officially on the market yet.” This anecdote typifies his company’s long-term perspective.

At the core of Zollner Hungary’s automated operations lies a STOPA storage system, which is connected to four TruLaser 5030 fiber and two TruMate 6000 fiber machines. Automated manufacturing has allowed the company to not only increase its flexibility, but to save space as well: whereas they once required 10,000 square meters, that has shrunk to just 2,500. This cuts costs—and also means workers don’t have to walk as far. “Although we need far less space, we can supply our customers faster and more flexibly. This is exactly how we envisioned it.” Zollner Hungary’s activities go beyond the country’s borders to include customers in various sectors all across Europe. For all its customers, whether they are in rail, medical technology, IT, or shipping, the company’s 560 employees can respond to almost any request. They are not simply part manufacturers; they instead offer full horizontal integration with complete assemblies rather than just individual components, such as for parcel stations in the shipping business. Every year, the plant processes some 6,000 metric tons of sheet metal, and the new solution provides plenty of capacity for even more. It’s simple: planning ahead pays off.

In brief:

Large-scale storage systems

Any company that covers the entire process chain needs to have a lot of space. At least, that’s what people think. However, Zollner in Hungary proves that this doesn’t have to be so. By connecting several machines to TRUMPF’S STOPA storage system, the company has been able to greatly reduce the area needed for its production facility. We portray this flexible and efficient system.
Shown here is the STOPA storage system at Zollner Elektronik Kft. in Szügy, Hungary. The system was developed in collaboration with TRUMPF and custom-made to meet the company’s requirements. It allows Zollner to save 75 percent of the space it needed originally. Altogether, six machines are connected to the storage system: four TruLaser 5030 fiber machines and two TruMatic 6000 fiber machines. A variety of other bending machines and a laser welding cell round out the machinery in Szügy.

When people hear the phrase large-scale storage system, they initially envision a structure that requires a lot of space. While it’s true that the STOPA system does need some room, the flip side of the coin is that it provides space even in the most confined area for unprocessed sheets, finished parts, scrap skeletons and tube profiles. Thanks to its modular design, it is also fully flexible in terms of length, width, height and sheet format. A practical pallet picker crane lets operators maneuver storage pallets. Large storage systems are more than just material stores – they also handle the comprehensive tasks of a logistics center for production.

For more information about STOPA storage systems, visit: www.trumpf.com/s/kljr9w
Since day one safety has been core competency and strategy number one. And it’s no different today, 90 years later. Only now Rogers Athletic do it even better – by drawing from their three-generations long connection, commitment and thorough understanding of the game. Football is in the Rogers’ blood. A fact that has established them as elite designers and manufacturers of some of the industry’s newest and most advanced training equipment: from muscle-specific exercise machines to their breakthrough MVP DRIVE robotic tackling dummy.

Football is a game of collisions

Players hit, smash, collide and tackle, all in an attempt to stop their opponent from scoring. It’s that kind of intense physicality that makes football so exciting, but at the same time so dangerous.

All these repeated physical encounters can cause serious injuries – from bruises to broken bones to concussions. In fact, player-on-player collisions have become the main cause of concussive injuries at all levels of football – from youth level to professionals playing in the NFL. Reports show that the amount of reported concussions has more than doubled in the last 10 years. And the majority of the injuries occur during practice, not games.

In addition, given football’s short season – September through January – losing players to injury is not only a terrible hardship for the players and their families, but also has serious consequences to the teams, the schools, the league, the fans, and every other person or business associated with the game. Here was a problem in need of tackling. How to provide athletes the required amount and intensity of football practice, while at the same time keeping them from being injured? Turns out Rogers Athletic already had the right strategy and unique industry expertise to meet that challenge head on. Well, actually, it was their tackling dummy that took things head on.

Meet Mr. “MVP DRIVE”:
Rogers Athletic’ Remote Controlled tackling Dummy

Their MVP DRIVE tackling dummy stands nearly 6-feet tall, weighs in at 200 pounds, and moves with the speed, agility and power of a professional football player. In fact, he is an inanimate object that can intelligently imitate most pro football moves – weaving, cutting, stopping and starting. He’s a virtual player who can even run a pro-level 4.8-sec 40-yard dash. That’s the equivalent to running 20 miles per hour.

Paul Rogers, Facilities Manager for Rogers Athletic: “Before we introduced The MVP DRIVE, players were always getting seriously injured by tackling each other in practice. Now, by tackling a dummy, the players end up no worse for wear.”

Another unexpected benefit is that the players’ tackling ability greatly improved. By tackling the dummy instead of another player, they were able to practice tackling more and for longer.

The Rogers dummy has already proved its value on the field and off: In fact practice dummies have significantly reduced concussive injuries to college athletes. At Dartmouth College, it’s meant a 40 percent reduction in injuries and millions saved in medical costs. Dozens of colleges and universities require the use of dummies during practice. Until now, more than 15 pro teams use the Rogers Group MVP DRIVE and many more have committed to bringing them in. Rogers’ tackling dummies will soon become part of youth and high school football practice.

Paul Rogers explains how their TRUMPF bending machinery assists them in building leading-edge sports training equipment for the football industry.

What began in the 1930s as a local business repairing football shoes, has evolved into Rogers Athletic, one of the most forward-thinking and highly regarded manufacturers of football training equipment in the U.S. And they don’t even make footballs.

Paul Rogers, Facilities Manager for Rogers Athletic: “Before we introduced The MVP DRIVE, players were always getting seriously injured by tackling each other in practice. Now, by tackling a dummy, the players end up no worse for wear.”

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Paul Rogers explains how their TRUMPF bending machinery assists them in building leading-edge sports training equipment for the football industry.
Turning knowledge into action

Ask Paul Rogers about the company’s future strategy, he’ll tell you without hesitation it remains the same as it always has been – turning their consummate sports knowledge into smart safety applications.

“Our goal has always been to improve the quality of the game by improving the safety of the players. But now we also see opportunities beyond football.”

Applying what they have learned from developing remote controlled tackling dummies for football practice, Rogers Athletic is perfectly positioned to apply their expertise in other sports and other industries.

Rogers explains that the company is exploring ways to design and manufacture a smaller version dummy for youth football and for lacrosse, as well as dummies specifically meant for non-sport applications, including tactical or first-responder training and the automobile industry. There’s no doubt Rogers Athletic has the kind of expertise and partners required to take on any challenge they set for themselves in the future. And tackle it.

From stadium construction to fitness equipment: Such a varied product portfolio requires Rogers Group to have an equally diverse production environment. With the flexible TruLaser Tube 7000, the company is opening up brand new areas of application for laser tube cutting.

In brief:

The TruLaser Tube 7000

On this particular day, two MVP dummies stand in line to be wrapped, loaded and shipped from the Rogers Athletic factory to their waiting football team.
The TruLaser Tube 7000

XXL laser tube cutting

This flexible high-end machine covers a broad range of parts, and opens up entirely new areas of application for laser tube cutting. That’s because the TruLaser Tube 7000 cuts tubes and profiles with a diameter of up to 254 mm and wall thicknesses of up to 10 mm for mild steel. It can also handle further process steps such as tapping threads. The machine sorts finished parts onto movable conveyor tables, into wire mesh boxes, or into containers. The bevel cutting option enables high-quality bevel cuts of up to 45°. And a state-of-the-art sensor system ensures that the entire machining process runs smoothly.

Advantages of laser tube cutting

Using a laser to cut tubes offers many advantages and makes it possible to create new tube structures that would be impossible using conventional methods. As a result, there are also fewer downstream manufacturing steps. The use of laser technology simplifies welding fixtures, while welding time and costs are reduced. Positioning aids with pins and slots facilitate component assembly, coding aids prevent assembly errors.

Components made from laser-cut tubes

In workshops on part design, customers have the opportunity to work with TRUMPF sheet experts on drawing up cost-effective solutions for their own components in accordance with principles of sheet-metal design. Optimization of the components as regards function and logistics is emphasized, as are reductions in weight and cost. Practical consulting reflects experience acquired at more than 500 workshops across all industries.

One such workshop is called “Components made from laser-cut tubes.” Participants in the course learn about rules for design and construction — and also develop new solutions for parts they produce themselves every day.

Additional information: www.trumpf.com/s/067b2s

About the customer

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Associated companies:
Rogers Athletic, FILCON, StageRight, Tranquil Systems International, Pioneer Works, World Sporting Goods

Machinery

- TruLaser 5030 Fiber
- TruStore 3030
- TruLaser Tube 7000
- TUBEMATIC
- TruBend 7036
- TruBend V230X

Reduction of production costs
Process simplification
Shorter reaction time
Optimization of components
“The laser is a versatile tool; it can divide or it can unite, it all depends on the angle you take,” said Berthold Leibinger when Erich Honecker asked him what a laser was at the Frühlingsmesse in Leipzig. That was back in 1989, but the statement holds true to this day. These days, the laser is an established cutting solution in sheet metal processing – and offers the opportunity to stand out when it comes to the joining of materials.
TRUMPF uses lasers for far more than cutting sheet metal. Lasers – a true all-rounder

Technologies and production techniques, such as laser welding, promise new technologies that eliminate whole steps in the process chain. Depending on the quality requirements, this process currently calls for several minutes of reworking to uncover cracks. The results obtained with FusionLine far exceed conventional welding both in terms of the weld seam quality and the speed of execution.

Another advantage of the technique is the durability of the welding seam. This is where deep welding comes into its own, creating highly durable slim but deep seams. The laser also offers advantages when it comes to flexibility and speed. For deep welding operations in particular, it can achieve very fast throughput rates, and process several meters of sheet metal every minute. Lasers also allow for a range of joint types and geometries – even when the area to be welded is accessible only from a single side. The laser can weld overlapping seams, a concealed T-joint or even materials of varying thicknesses – opening up a wealth of new design possibilities.

What is more, the FusionLine function allows operators to join components that are not optimized for laser welding and, for instance, to uncover cracks. The results obtained with FusionLine far exceed conventional welding both in terms of the weld seam quality and the speed of execution.

Laser welding pays for itself – many times over! For one thing, users save themselves substantial amounts of rework and can make significant savings thanks to the laser’s speed. When switching from arc to laser welding, cost savings of more than 50 percent are not uncommon. Often the savings potential can be much higher. On the other hand, lasers offer the opportunity to realize designs that would be unthinkable using conventional welding techniques. When you put it all together, what operators are gaining is the opportunity to stand out from the competition and appeal to whole new customer segments.

By now, it is clear that the laser offers untold possibilities in welding applications. But how to exploit it? How do you build up the expertise in laser-optimized design and setup?

Know-how from conventional welding techniques will stand you in good stead. But in order to achieve the best possible results with laser welding, it helps to know the capabilities of the tool, as this will impact on the design. For instance, laser welding is an extremely rapid process. Consequently, when it comes to costs the length of the weld seam is less relevant. What is more important are the savings resulting from high-quality seams that eliminate the need for rework. In order to achieve the best possible quality, the component should be subject to the tightest possible tolerance levels. Those new to the process can find out how this is done in TRUMPF’s laser welding workshops, led by TRUMPF’s welding experts. The experts will answer questions on the correct weld seam to use or component accessibility, for instance. And best of all: the workshop specifically covers components taken from participants’ everyday production operations.

How do you position a component within a welding cell? Which clamping device is the best? Good questions, all answered in the workshop on setting up welding equipment. In this workshop, the focus is on designing cost-effective sheet metal welding setups. Participants learn design principles and a range of application examples. Together with the experts, they design their own welding setup.

For those new to the technology, TRUMPF has also put together a production startup package. Laser welding experts accompany users step by step from the start of production until the first large-scale production part is processed. As in the workshops, this package also includes tips and tricks both for the welding process itself and for the setup. You can find more information on page 40. Thanks to this package, operators can quickly harness the full potential of laser welding.

Information on our range of workshops can be found here: www.trumpf.com/3b3h2s

“...For those willing to invest and build up their expertise in laser welding technology, the quality of sheet metal processing enters a new dimension...”

constantly changing customer requirements. A pressurized competitive environment. These are challenges companies in the metal processing industry know all too well. The trend is towards more and more product variants, and this is forcing companies to rethink their approach. Production processes must be adapted and customized. After all, the only way to succeed in this business is to master costs and quality while negotiating the tendency towards smaller and smaller batch sizes. One important indicator of cost per part is the lead time – which helps forecast the eventual profit per job. Most crucially, it can be controlled, for instance by using new technologies that eliminate whole steps in the process chain.

Joining is one step in the process chain that harbours particular potential in this regard. Depending on the quality requirements, this process currently calls for several minutes of reworking to eliminate the disruptive deformations on weld seams produced by conventional welding processes. This can add up to hours of extra work, depending on the batch size. New, alternative technologies and production techniques, such as laser welding, promise a solution to the problem.

The laser – a true all-rounder

TRUMPF uses lasers for far more than cutting sheet metal. Lasers are also ideal for joining processes, and laser welding is long
TRUMPf continues to grow

The TRUMPf site in Neukirch, Germany, is set to expand further. A new factory spanning a total of 4,000 square meters was only the first step. Expanding the site will once again boost production of automation components for laser cutting machines. This hub of cutting-edge technology near the German-Polish border currently employs 437 people. A festive ceremony in March 2017 drew Stanisław Tillich, the Minister-President of Saxony, as well as many other public officials and businesspeople.

TRUe wins silver time 1000

The inaugural issue of our customer magazine “TRUe – the magazine for sheet metal experts” won the silver BCM Award in the category “Magazines B2B Industry.” This is a great honor, as the Best of Content Marketing Award is the largest European competition for corporate publishing. Focusing on the topic of openness, the issue impressed renowned experts in journalism, design and corporate communications. The jury members evaluated all contest submissions comprised 160 renowned experts in journalism, design and corporate communications.

A job well done!

Good things sometimes come in twos. TRUMPF has won its second Daimler Supplier Award in the Partnership category for the joint development of a new laser welding procedure and for the successful implementation of an Industry 4.0 solution. Sensor-based analyses of networked laser beam sources make it possible to conduct precise condition monitoring in production facilities as well as reduce failures and unscheduled downtimes. The laser welding procedure developed jointly with Daimler is one of the most energy- and resource-efficient joining processes in vehicle construction; that is because it relies on efficient joining processes in vehicle construction. In his role as Chief Technology Officer, Peter Leibinger has assumed oversight of the Machine Tool division and Schmitz will become the company’s Chief Digital Officer (CDO), thus taking charge of designing digital business models at TRUMPF. Lars Grüner will remain Chief Financial Officer. In addition to remaining President and Chairwoman of the Managing Board, Nicola Leibinger-Kammüller will become Personnel Director. She considers the reorganization of Group Management to be an important sign: “Our new organizational structure boosts digital endeavors and new fields of technology. Peter Leibinger has assumed oversight of the Machine Tool division and Schmitz is now head of the Laser Technology division. Peter Leibinger and Matthias Kammüller will focus on the company’s growth areas. In his role as Chief Technology Officer (CTO), Leibinger will push ahead with tapping the potential of networked laser beam sources, for instance, for years on end. Qualified being good. To become the company’s Chief Digital Officer (CDO), thus taking charge of designing digital business models at TRUMPF. Lars Grüner will remain Chief Financial Officer. In addition to remaining President and Chairwoman of the Managing Board, Nicola Leibinger-Kammüller will become Personnel Director. She considers the reorganization of Group Management to be an important sign: “Our new organizational structure boosts digital endeavors and new fields of technology. Peter Leibinger has assumed oversight of the Machine Tool division and Schmitz is now head of the Laser Technology division. Peter Leibinger and Matthias Kammüller will focus on the company’s growth areas. In his role as Chief Technology Officer (CTO), Leibinger will push ahead with tapping the potential of networked laser beam sources, for instance, for years on end. Qualified being good.

New Managing Board at TRUMPF

Today Karlsruhe, tomorrow the world

At this year’s Hannover Messe, TRUMPF subsidiary AXOOM showed what it can do. This start-up from Karlsruhe, Germany, is getting machines to talk – thanks to differentiated data evaluation. The company presented an active production environment in which AXOOM connects machines, measuring devices, smart glasses and more. In addition, the subsidiary formed a new partnership with a large energy service provider from the German state of Baden-Württemberg. Together, they want to help industrial customers save energy and cut costs. All told, the AXOOM ecosystem continues to evolve into a comprehensive provider of solutions for manufacturers.

Interesting. Worthwhile. Surprising.
LONG LIVE THE POWER TUBE

One of the most important parts of the TRUMPF CO₂ laser is the Power Tube. Thanks to its high-quality craftsmanship, it reliably delivers optimum performance for thousands of operating hours. Every Original Power Tube meets TRUMPF’s high quality standards and is tested in Germany before delivery, as evidenced by the quality certificate included with every product. Several simple tips and tricks further help to ensure a long service life.

1. The Power Tube has delicate internal components and operates with high voltage, so professional installation is essential. There are two possibilities for this: customers can either attend a TRUMPF maintenance course, where all key replacement steps are explained, or they can contact a TRUMPF service technician. The next tip is simple but effective: following professional installation, the equipment must be allowed an extended pre-heating time of at least 30 minutes. This will ensure that the high vacuum inside the Power Tube is stable and that the product won’t be damaged at start-up.

2. There is a trick for daily use, as well: don’t switch the laser on and off too frequently. As a simple analogy, we can compare the Power Tube’s behavior to that of a light bulb filament. For short breaks in production, it’s better to switch the laser to stand-by mode, as this results in fewer temperature fluctuations in the Power Tube’s heating unit.

3. To further extend the life of the Power Tube, it’s important to maintain the correct heating voltage and to check it regularly. If it’s too high, you risk faster wear of the Power Tube. If the heating voltage is too low, it will impact the output power and the service life.

4. And the final tip: proper cooling. The base fan of the Power Tube generator should be checked regularly to ensure that it is functioning correctly. In addition, regular maintenance of the cooling-water circulation system is required to ensure proper water quality. This is easily achieved with an Original Easy Kit and a suitable Easy Filter.

A new order. A potential new customer. But the required machine function and suitable tools are lacking. It sounds like a dead end, but for TRUMPF punch and punch laser machines, there is a quick remedy for such situations: TruServices offers production on trial.

Peter Korn, from Dieter Roos GmbH in Ingelheim am Rhein, tested production on trial in March of this year: “We wanted to optimize a product for an aviation customer. TRUMPF recommended a variety of tools and provided them at a fair trial price.” The process is very simple: once you decide on an application, the desired machine function is activated. The offer includes applications such as cutting, bending, deburring and marking. Customers can try out the new application and the appropriate tools for two weeks.

Support is available from TRUMPF experts, who offer telephone consultations during the trial phase. “The availability of an experienced TruServices employee to answer our questions was a compelling argument. Following the Trial Production, we also decided to order the tools we had tried out and to use them in series production,” said Korn.

Zero risk: Production on trial lets you try out a new machine function and the corresponding tools. This makes it easy to expand your portfolio and meet higher quality demands.
What could be more futuristic than wearing a motorized robot jacket? Although the Exo Jacket might sound like a distant dream, it is in fact an actual project of the Stuttgart-based Fraunhofer Institute for Manufacturing Engineering and Automation IPA. Dr. Urs Schneider, department head, paints a picture of the working world of the future.
In the past, people paid little attention to injuries caused by incorrect or extreme loads in the workplace. This has changed. Employers are focusing more and more on developments such as aging workforces or the increasing shortage of skilled employees. Companies are therefore keen to retain qualified employees; using state-of-the-art equipment, where necessary.

Dr. Urs Schneider and his colleagues are tasked with building such equipment as well as regularly generating new ideas.

How did the Exo Jacket come about, Dr. Schneider?

At our Institute, we have over 15 years of experience in the fields of orthotics, physiotherapy, prevention and human-computer interaction. Eventually, we decided to transfer this research expertise to the working world. The Fraunhofer Institute has been developing the Exo Jacket for five years now. Only about 150 people worldwide are working on exo-skeletons; with the Exo Jacket, we have made great progress compared to others. My colleagues come from the most diverse fields: electronics, mechatronics, design, medicine and more – allowing us to proceed very much on our own. During the test phase, we rely on the feedback of our scientists and test people who report on how the jacket feels, what’s working well and where improvements are needed. Their responses have been very positive – the only drawbacks are perhaps their bruises and sore spots from testing (laughs).

And what is your goal?

The primary purpose of the Exo jacket is to aid workers during heavy lifting and overhead tasks. This can be advantageous in several areas: from assembly and intralogistics to delivery services and mechanical engineering. We have been receiving two requests a day on average from prospective buyers around the world. Even private individuals want to know if the Exo Jacket can help them with everyday tasks such as shopping or gardening.

You call the Exo Jacket “a wearable e-bike.” What makes you compare the two?

It’s really quite simple: the Exo Jacket lightens your load, making you quicker, but still leaving you with work to do. It provides up to 50 percent of auxiliary strength for employees, supplying additional energy through drive modules at the elbows and shoulders whenever necessary by circumstances. People can also use the Exo Jacket energy through drive modules at the elbows and shoulders when 50 percent of auxiliary strength for employees, supplying additional energy it provides can reduce peak loads. A lighter workload helps muscles and joints, which in turn reduces aches and pains – leading to a better quality of life.

Can people use the Exo Jacket today?

The second-generation prototype is undergoing CE certification by the German Technical Inspection Association, also known by its German acronym TÜV. The jacket is made of plastic parts, special non-flammable batteries, electric motors and a measurement computer on the back for ideal monitoring of results. It currently weighs 14 kilos, which is naturally far too heavy. Our goal is 8 kilos, with the bulk of the weight on the pelvis and torso. This will help alleviate the load on shoulders. We are still in the prototype phase, however, but hope to begin selling a commercial version about a year and a half to two years from now.

Are such load-reducing aids for employees necessary in times of automation and Industry 4.0?

Absolutely! Even if the degree of automation in production and assembly is on the rise, the employee continues to play a pivotal role. In customized products, for instance, where it is not worth the effort to program machines and robots. Or maintenance and repair work that only specially trained technicians can do. The list goes on. One thing is certain: reducing an employee’s bodily burden is key, which is precisely why we decided to develop the Exo Jacket.

6.9 million people worldwide suffer serious occupational injuries every year. The resultant production losses in Germany alone cost employers 13 billion euros every year. To what extent can the Exo Jacket help reduce these figures?

Motorized support can definitely help with these problems. An exhausted employee is automatically less cautious; the Exo Jacket makes work less tiring and reduces the risk of injury. The additional energy it provides can reduce peak loads. A lighter workload helps muscles and joints, which in turn reduces aches and pains – leading to a better quality of life.

ERGONOMICS PLAYS AN IMPORTANT ROLE AT TRUMPF AS WELL.

Harald Böck, head of product management for bending machines at TRUMPF Maschinen Austria, explains the methods already in use. “The TruBend bending machines are a prime example of implementing ergonomics and easing the burden on machine operators. Bending aids support the machine when it swivels up and down, completely relieving the operator of the load. Qualified employees are hard to find, which is why physical strain must be kept to a minimum. Machine supports and partial automation of workflows are therefore indispensable prerequisites for modern production machines. The MagicShoe by TRUMPF deserves mention here, as it helps machine operators initate the stroke simply by moving their foot. It’s an absolute innovation in bending machines.
New software for the automatic small stores

A production launch package helps users get started with laser welding. The package contains various working steps that the customer completes in a joint process with TRUMPF. After selecting a typical component, he practices laser welding at a workshop. TRUMPF designs a suitable fixture, which the customer then builds. Once the application advisor has compiled an appropriate program and optimized the processes, the component is ready for production. As a result, the customer can initiate mass production right after start-up.

Laser welding made easy

When requirements for surface quality are especially exacting, film-coated sheets are used in punch laser processing. During laser cutting, however, slag collects on the bottom side of such sheets and results in burns. A new powdering tool for displacing films delivers a suitable solution: spots where badly burns used to form can now be laser-cut with hardly any burns to worry about. This new tool displaces the film prior to laser cutting to ensure the cutting process is not affected. The result: Optimised edge quality.

Bye-bye burr

Those with a fear of heights should avoid visiting the peak of Mount Karren near Dornbirn, Austria, where the floor of the viewing platform is made of glass. Perched twelve meters above the ground, the platform affords visitors marvelous views of Lake Constance and the Voralberg Alps. Markus Kalb, Kalb Austria’s managing director, admires the scenery; he is owner and managing director of Kalb GmbH, which constructed the viewing platform.

Dizzying heights

For this elaborate steel structure to become a reality, Kalb’s welding pros had to create ultra-sturdy welding seams that span meters. It was essential that the seam edges be absolutely flawless. That is why for years, Kalb’s Austrian company has been using a TRUMPF power tool: the TruTec TK 1500. It ensures pure metal seam edges that are uniform and oxide-free. At a working speed of up to two meters per minute, the welder is also impressively fast. Operators appreciate that no sparks fly when using this approach: moreover, the root face and the helix angle are uniform without exception.

The next generation

TRUMPF unveiled the most advanced high-power solid-state laser on the market at the Laser World of Photonics trade fair in Shanghai. One highlight of the TruDisk disk laser is its new built-in control system, which is the laser’s brain – where all the condition data and process parameters are collected. This data can be used going forward for condition monitoring and predictive maintenance. Such analyses are a basic prerequisite for successfully implementing laser in connected and digitized manufacturing environments. Starting in late 2017, the TruDisk will gradually be late 2017, the TruDisk will gradually be introduced as a systematic approach to identify opportunities for efﬁcient production processes and to implement them in practice.

One unit, many talents: the TruStore Series 3000 compact stores grow along with your needs, reduce ﬂoor-space requirements and can be converted into fully automatic systems. The versatile TruStore 3040 is now available for the XL format of 2x4 meters. With regard to software for the automatic small stores of the TruStore family, there is a new data can be used going forward for condition monitoring and predictive maintenance. Such analyses are a basic prerequisite for successfully implementing laser in connected and digitized manufacturing environments. Starting in late 2017, the TruDisk will gradually be introduced as a systematic approach to identify opportunities for efficient production processes and to implement them in practice.

Perfectly in sync

The TruBend Center 7030 grants users the option of fully automatic panel bending of parts. Operators have less work and productivity increases. This is made possible by two components in perfect synchronicity. The first is a rotary part manipulator: it fastens the blank in place and rotates it into the proper position – all at a speed of 3000 millimeters per second. As a result, bending is executed much faster. The second component is a 2-axis part manipulator with an additional vertical axis. This manipulator secures parts in different positions, ensuring that even parts with negative bends can be processed and removed. The synchronization of these two components allows for a staggering variety of parts and enhanced design latitude.

A non-contact optical measurement system employs a laser and a camera to make sure angles are correct. Last but not least, the offline programming solution TecZone Fold automatically generates bending programs and 3D simulations, including collision monitoring, for efﬁcient panel bending.

Bye-bye burr

Laser welding

Dizzying heights

The next generation

Perfectly in sync

New software for the compact store

Short cuts

Innovations, technologies and future trends
Regardless of whether you are in Europe, the Americas or Asia: qualified TRUMPF service engineers are on hand wherever you are. These experienced specialists help to ensure that machines run at optimal performance, receive regular servicing, and thus have no downtime. If there ever is a malfunction or an emergency, though, our Technical Service team are the experts to contact. Members of the team service machines quickly and reliably every day, ensuring that production continues to run smoothly.

What sets our customer service apart

More than

1,600
Employees
in internal and external service.

> 65% ✔
of incidents
can be resolved without an on-site visit.

24/7

service
APP

You can even use an app to contact customer service.

Engineers and technology The support and field specialists on the Technical Services team are extremely well-versed in machine tools and laser systems. No wonder, considering that new employees receive thorough training starting their first day at work. They start out by accompanying an experienced engineer, which allows them to gather a wealth of experience. All employees also undergo regular training, which means their expertise is always up to date.

Always ready for action You can contact the Technical Service team using any channel of communication – telephone, app or email.

Twice the expertise In complex cases, our field engineers receive telephone support from other technology experts.

Our engineers maintain more than 400 types of machine.

23.5 million kilometers are travelled by TRUMPF service engineers every year.

> 1,600

service locations

15 minutes

Our engineers solve more common problems within...

100,000 nights

* spend away in the field service every year.
Perfect! Please check the motor circuit breaker of the laser evacuation unit in the machine switch cabinet. Please take a photo and I’ll mark the motor circuit breaker on it for you.

Hello, Mr. Miller, I’m connected now. Where exactly can I find that?

Okay, I did that.

Great! Thanks so much for resolving that quickly.

Please acknowledge the error at the control unit; the machine should then work again.

VISUAL ONLINE SUPPORT

These days, there is an app for nearly everything – games, social networks, navigation systems and much more. TRUMPF, too, offers a variety of apps to make day-to-day operations easier, and we occasionally showcase one of them in TRUe. In this issue, it’s Visual Online Support.

When a machine is down, time is of the essence. This is precisely why we developed Visual Online Support, or VDS for short. This convenient app lets tablet users easily share image, audio and video files with Technical Service, as well as mark up image files. In this way, service technicians can quickly see where the problem is and offer precise assistance to resolve it – all in real time. Even complex issues can be resolved using VDS without having a technician on site. This not only saves on-site service work, but also increases machine availability. The app can be downloaded free of charge from Google Play and the App Store and is available for most machine types. To use the app, the machine in question must be covered by a corresponding service agreement and have a wireless operation point.

24/7

TRUMPF has a helpful tip for machine-tool customers: the MyTRUMPF customer portal. This section of the new website offers e-shops, self-service options, special offers and useful expertise.

MyTRUMPF is a one-stop portal for ordering spare parts online, finding the right training courses or downloading helpful information. Open 24 hours a day, seven days a week, the e-shop sells OEM parts as well as bending and punching tools. MyTRUMPF allows users to view their own machines and information on service agreements as well as download instruction manuals. Exploded views make it easy to find the parts you need for your machine.

What’s more, the download portal provides programming data for punching and bending tools, and TruTops software updates. MyTRUMPF also lists all key TRUMPF contact information and contact people. If you are looking for new products or current offers and deals, then look no further than the know-how pages.

www.trumpf.com/mytrumpf
CHICAGO CALLING

Chicago, Chicago! The new TRUMPF smart factory is set to open in the Windy City this fall. Everything is still under wraps, of course, but we managed to get a few exclusive details from Tobias Reuther, the manager of this demonstration center.

From the photos published to date, the new demonstration center seems to be an ultramodern facility – but what exactly will you be doing in Chicago?

We want our smart factory to showcase what is possible in sheet metal manufacturing when you use state-of-the-art equipment. Chicago is a major step forward for TRUMPF. Rather than focusing on individual products, we focus on the full spectrum of interactions in manufacturing – the process view. We model our customers’ entire value chain. In short: we are building a connected production showroom that takes the crucial step from theory to practice.

The new demo center is more than 7,000 kilometers from Ditzingen. What made you choose Chicago, of all places?

There were several reasons, the most important of which is certainly the proximity to customers. About half of all sheet metal manufacturers in the U.S. are located in the Midwest, which of course makes a very good case for Chicago. In addition, the city has an excellent infrastructure. And last but not least, American culture is very open to new things; the American market is driven by transformation. It’s the ideal environment for us to continue to initiate and create innovations – particularly when it comes to Industry 4.0.

Customers can dispatch orders with you. Does that mean TRUMPF is now a contract manufacturer?

Well, it’s not quite that simple but that’s basically the right idea. Things aren’t actually produced in showrooms outside of the demo operation – but we’ll be doing just that at the smart factory in Chicago. We simply want to have something running all the time – also to ensure a realistic process view and keep the machines running at capacity. A small group of TRUMPF customers will thus have the option to dispatch some orders through us at fair market prices and to use a share of the capacity there. By no means will we compete with the sheet metal market. This model benefits both TRUMPF and our customers, as it allows us to better understand their situation, and when dispatching orders, our customers automatically see how the process looks to their own customers. This naturally fosters greater understanding – and customer insights.

3

When technology is transformed into art. Every issue of TRUe showcases selected components in a whole new light. This time: the cutting nozzle as you have never seen it before. We have taken this TRUMPF consumable out of its familiar environment and placed it in an entirely different setting.

#03

pARTgallery
Clear-cut competency

My physical education teacher used to sarcastically remark that “Kunst kommt von Kön nen” – art comes from ability – whenever I slammed the volleyball into the net instead of onto the opponent’s side of the court. It didn’t take many PE classes for me to realize that I simply lacked the ability needed to artfully handle a ball. Today, people would say that I lacked ball competency.

But what is competency, anyway? Who or what is competent, and how does one acquire competency?

The term competency stems from the Latin competere or competentia, which means “to be capable of doing something,” “to be sufficient” or “suitability.” To be capable, one must first have a certain talent, but that is only one part of the explanation. If you dig further in search of the deep roots of competency, you will eventually encounter a magic number: 10,000.

Some scientists believe that it takes around 10,000 hours of practice to turn an amateur into an expert or even a pro. Whether it’s outstanding violinists, basketball players, chess players, mechanical engineers, programmers or criminal masterminds: most of them have surpassed the magic mark of at least 10,000 hours of practice.

The Beatles are a prominent testament to the 10,000-hour rule: a club owner in the 1960s invited the as-yet-unknown Fab Four from Liverpool to travel to Hamburg. There they performed in backroom clubs night after night, playing eight-hour gigs that left them no choice but to become better and better. When they celebrated their very first successes in 1964, the Beatles had already performed an incredible 1,200 shows.

But diligence without creativity doesn’t make you an expert in your field – it makes you a nerd. Rote learning leads to the Dunning-Kruger effect. This phenomenon is named after American psychologists David Dunning and Justin Kruger, who observed the pronounced tendency of incompetent people to overestimate their own abilities and to underestimate those of others. “If you’re incompetent, you can’t know you’re incompetent,” they reasoned – because, unfortunately, the “skills you need to produce a right answer are exactly the skills you need to recognize what a right answer is.”

So competency also derives in part from the willingness to repeatedly question things, including your own knowledge and skills. But this requires you to take a closer look. To get closer to your subject. And that brings us very close to the next issue of TRUe.

Oskar Simon