2/14

TRUMPF

Express

Magazine for Sheet Metal Processing

Travel companion

Marcopolo supplies comfortable buses that look good, too

A fan of pipes

Frank Steinhart puts the new TruLaser Tube 5000 to the test

Confidence

Tristan Opie makes investments in spite of difficult times

Art and job shops have a lot in common, finds Uwe Arnold, who fabricates attractive items for sculptors and industrial clients

Shining efforts

COVER STORY

INTERVIEW

24 "If it's easy, then others can do it"

Works of art and sheet metal parts have much in common. Uwe Arnold has come to this conclusion and uses his manufacturing expertise for both.

TOPICS

REGULAR FEATURES

BEING DIFFERENT IS WORTH THE EFFORT!

Courage pays off. Numerous companies in our industry have proven how — with a few great leaps — they can depart well-trodden paths and shift into the success lane. Instead of being one of many interchangeable vendors offering standard items, they distinguish and differentiate themselves from the competition. Jürgen Gerst of Glüpker Blechtechnik, for example, specializes in complex parts that are ordered again and again. Whenever a batch of such parts is called up he can — if requested — deliver those items in proper sequence, directly to the customer's assembly line. That sets him apart from the competition.

Australian entrepreneur Tristan Opie has also shown how being different can pay off. In 2010, instead of waiting until markets gradually recovered from the doldrums, he set an example and invested then and there. His TruLaser Tube 7000 and its output have convinced so many customers that he has now ordered a second laser tube cutting machine to satisfy demand. Frank Steinhart from Hettingen also knows that there is money to be earned in tube processing. That is why the Steinhart Metallwarenfabrik job shop now has three laser tube cutting machines at work.

These are three examples that show how a very individual business upswing can be created, based on one's own initiative. We are very confident about our customers' capability to shape their own destinies. That is why, in the future, we want to use our universal banking license to satisfy financial needs born of courageous decisions. We can do this because we do not stop at interpreting the naked figures, but instead understand our customers' business in detail and know when and where support is worthwhile. In this way, we can offer tailor-made loans and other financial instruments since we can better estimate the risks to which the industry is exposed — and identify opportunities, too.

Mathias Kammüller, Dr. Eng.
Head of the TRUMPF
Machine Tool Division

About 17 percent of global energy consumption is covered by renewable sources.

The twenty most important industrial and emerging economies (G-20) accounted for more than 80 percent of all investments in the renewable energy sector in 2012.

1 FIGURE

269,000,000,000

U.S. dollars were invested worldwide in renewable energies in 2012.

At 65.1 billion U.S. dollars, China made the greatest contribution to the renewable energy sector, followed by the USA with 35.6 billion and Germany with 22.8 billion.

Around the world, the renewable energy sector supports approximately 5.7 million jobs.

The Chinese customer, Xiamen Xuri Hui Electric, celebrated the addition of the hundredth TruPunch 1000 assembled in China to its fabrication facilities.

Popular first step

TRUMPF China has delivered the one hundredth TruPunch 1000

About two years ago, TRUMPF started assembling the TruPunch 1000 in China. Now the factory in Taicang has dispatched the hundredth machine of this type. The small, flexible punching machine is produced there exclusively for the Chinese market. The TruPunch 1000 simplifies the breakthrough into professional punching. The key components in the machine – including the punching head, transverse support, console and the controls – originate in Germany, France, Austria and Switzerland. The machine's body, sheet metal assemblies, switch cabinet and control console are made in China. This "anniversary" machine went to Xiamen Xuri Hui Electric Co., Ltd. The TruPunch 1000 expanded manufacturing capacities there, where sheet metal is worked primarily to make up components for electrical switchgear cabinets.

> **Additional information:** www.cn.trumpf.com

Sure growth

Thomas Claassen takes off with his job shop

Anyone visiting Maschinen- und Metallbau Claassen GmbH in the Lower Saxon town of Saterland-Scharrel will find it hard to believe that, in 2014, the company is just celebrating its 15th anniversary. Today a staff of 220 employees uses modern machinery to cut, bend and weld sheet metal components for a wide variety of industrial customers. More about that growth and the strategy responsible for the rise is told by the company's founder, Thomas Claassen, at

www.mastersofsheetmetal.com/claassen

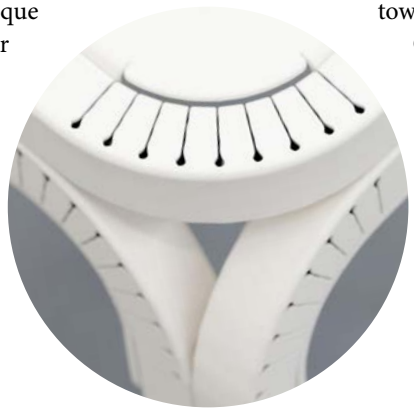
Masters of Sheet Metal

Do it yourself: Each customer shapes the seating and appointments made by OUR Industries.

"Bend-it-yourself" chairs

Three young designers manufacture custom furniture from tubes

"Free yourself from anything conventional!" That might summarize the rule of thumb followed by French designers Antonin Maeno, Romain Vaulont and Arthur Van Peteghem. Their company, OUR Industries, located in Paris, designs modules for unique furniture, fashioned from tubes. "We manufacture our products in a highly transparent process and modify them individually to match the customer's requirements," explains Arthur Van Peteghem. Three basic components form the basis for all the items they create. Combining them in many different ways, they have assembled hundreds of different pieces of furniture. These are packed in a space-saving, knocked-down kit and then dispatched to the customer. What's special here: The final client bends all the corners and angles. This is made possible by a clever, prepared bend, which a TruLaser Tube 5000 cuts in a tube made of mild steel, with a wall three millimeters thick.



Verot, a job shop, produces the parts for the furniture in the town of Asturias, in northern Spain. For Enrique García, General Manager at Verot, there is something quite special about this cooperation. "Manufacturing the parts is routine, but the process is very exciting. We have been involved from the very beginning and work closely with OUR Industries. This has given rise to an open-ended collaboration that is, quite simply, a great deal of fun."

> **Additional information:**
www.handbend.com, www.verot.com

2 QUESTIONS

Dieter Brandes
Author and consultant on strategies and organization

> Why is simplicity so important for firms?

To ensure that undertakings, systems and products are efficient and function perfectly. Internal complexities have become a greater hindrance to corporate development than any lack of market opportunities. The findings of a Bain & Company survey show that eighty percent of top managers, all around the world, believe this. What we need above all are concrete targets and a corporate culture of simplicity. This means doing away with everything that does not serve to achieve the goals. Too many "nice-to-have ideas", fostered by the advance of information technology, stand in opposition.

> How can complexity be reduced?

Reduction implies eliminating and doing without many interlinked elements, systems and rules. Fewer business areas, fewer products and variations, fewer indicators, and fewer bonus schemes. Organizational measures are decisive: independence, autonomy, delegation and decentralization — along with separating out intermingled assignments and authority. This implies a culture of responsibility and trust — and the courage to install intelligent oversight. Compared with large corporations, family-run companies are better at determining what is essential. They can do away with the superfluous more easily.

> **Additional information:** Brandes@konsequent-einfach.com

In New Delhi, fifty up-and-coming members of management exchange ideas on social problems and economic opportunities.

Dialog in New Delhi

TRUMPF supports a conference of young managers

The expansion of the dialog between Asia and Europe is of great economic and social interest for both sides. One contribution is being made by the Asian Forum on Global Governance. It brings together fifty young executives from all around the world. The ten-day conference in New Delhi first took place from November 10 to 20, 2013, and a second is planned for 2014. Participants from business, government, science and the media, chosen in a two-stage selection process, use the Forum to discuss social problems, economic potentials, the influence of religion, and security risks. The meeting is organized by the *Zeit Stiftung*, a foundation instituted by the founder of the *Zeit* newspaper. The intention is to promote dialog among countries, regions and value systems. TRUMPF supports this project as a partner and participant. An alumni network is intended to ensure that contacts established at the Forum persist after the conference.

> **Additional information:** www.asiangovernanceforum.com

3 VOICES

How do you attract skilled workers?

Günter Peters, Peters Maschinenbau

"I specifically ask potential new employees about their wishes. Obviously you can't fulfill all of them, but our flexible working hours are certainly a major plus. I also help my employees find openings in daycare centers for their children or jobs for their partners."

Roger Willems, Penn Elcom

"We do our best to support our people and to offer them secure jobs. I think we're pretty good at that, all in all. My recipe for satisfied employees contains three ingredients: A bit of respect, reasonable salaries, and great Christmas parties."

Sigrid Deeg, Roland Deeg GmbH

"Our automated machinery attracts skilled workers. Younger people, in particular, are not interested in tending a machine all day. But they just love programming robots. In addition, we combat the lack of skilled workers with training programs in our company".

On the trot

At its in-house exhibition, TRUMPF China displayed a steed made of stainless steel pipe

In China, the signs of the zodiac stand for a specific year in a twelve-year cycle. 2014 is the year of the horse. This was occasion enough for TRUMPF China to fabricate a stallion from sheet metal. The animal is made up completely of round and rectangular stainless steel tubes and was manufactured on a TruLaser Tube 7000. With the laser-cut joints, all the parts of the horse's body and legs could be connected without bending or welding. At the second in-house fair held at TRUMPF China—the TechDays, which took place from March 5 to 8—the sculpture was a real eye-catcher. It welcomed more than 1,200 visitors who collected information about trends in automation and, in addition, were able to take a close look at a wide range of TRUMPF machines.

> **Additional information:**
www.trumpf-machines.com/tube-potential

This horse combines a Chinese symbol of success with TRUMPF's manufacturing expertise.

TRUMPF customers can now get quick help per app using Visual Online Support.

I see what you see

Quick and competent online service via an app

Every minute counts when a malfunction occurs during production. Now, TRUMPF offers an even quicker solution, providing expert and quick online service with an app. This is governed in a TruServices Service Agreement. Visual Online Support offers customers the possibility of exchanging image, audio and video files with the Technical Service of TRUMPF—independent of their existing IT system. In this way, the service engineers can get a detailed picture of the situation and even complex cases can be solved on the telephone, without being present on site. This increases machine availability and reduces the number of on-site service missions by as much as 25 percent—at 100 percent data security.

Nelson Gehrke, Director of Acquisitions and Logistics at Marcopolo, is firmly convinced that Marcopolo will benefit from the investments in infrastructure being made by the Brazilian government.

Júlio Soares

Rapid transit in Brazil

How can you get thousands of people to their destinations, both safely and comfortably? With buses from Marcopolo. They offer great comfort and, at the same time, are quite trendy.

The starting whistle blows in the Arena de São Paolo. The 22 men on the field do their very best—as do the 65,000 in the bleachers. The opening match at the 2014 World Soccer Championship in Brazil is drawing enthusiasts into the arena—and that is literally just the beginning. 600,000 foreign fans will be cheering on their teams live, on the spot, in the tournament's 63 games. To make sure they can celebrate in the twelve stadiums, intelligent logistics are an absolute necessity. In preparation for the games, Brazil has adapted and expanded its infrastructure to accommodate the masses of people. "Bus Rapid Transit" is the key here. Dedicated bus lanes, priority at traffic lights, and low-floor buses speed up transit operations in the major cities.

Dashing through the city

Many visitors will travel to the stadium in a bus from Marcopolo S.A., located in the town of Caxias do Sul. The company manufactures the bodies for the vehicles, which will be in continuous service for the athletic events. Those who land a space in one of the high-speed buses will reach their destination not only reliably and safely, but with maximum comfort, too. "Marcopolo buses offer very high standards of comfort and convenience, complying with every requirement and demand for ideal passenger travel," explains Nelson Gehrke, Director of Acquisitions and Logistics at Marcopolo. "Even with some delays in the building schedule, Brazil will profit from the infrastructure investments in the long term, since the country will then have high-quality public transit vehicles that are more comfortable, safer and faster. Those are exactly the advantages with which Marcopolo vehicles ensure improved mobility in the cities," he emphasized.

The buses "Made in Brazil" are much in demand, and not only in their home country. In 2013 this manufacturer sold 31,000 vehicles. Of them, 18,000 stayed in Brazil. The remainder was manufactured in 10 other countries where Marcopolo has operations. In spite of a weak market, sales

Brazil is already making preparations for two major sporting events: the FIFA World Soccer Championship in 2014 and the Olympic Games two years later.

"Recycled materials are being used more and more frequently."

in Brazil have risen continuously since 2009. And in 2013 Marcopolo grew again by 8.6 percent. "Our customers want rugged buses, made to last, at competitive prices," Gehrke notes. The company does its part to turn these wishes into reality. To name one example: A total of 320 million euros is being invested in the firm's own factories during the period from 2007 to 2016. In 2014 alone, improvements will come to about 50 million euros.

Modern buses, modern machinery

A part of this investment package includes seven TruLaser 5030 fiber machines. In the past the bus maker used other processes to make up the parts. Marcopolo wanted to adopt a system that would better utilize input materials and would be more efficient and less expensive in use. Its choice was the solid-state laser. "The low operating costs and the high working speed convinced us," says Gehrke. "We invest in processes and machines that enable us to work a variety of materials and let us make changes in the process at short notice."

Those factors are especially important for this manufacturer, since sustainable mobility is a hot topic all around the world. Not only passenger cars, but buses, too, have to be made ever lighter, more efficient, and more eco-friendly. Marcopolo responds to more stringent legislation with thinner sheet metal, more stable alloys, and alternate materials. "Recyclable or recycled materials are being used more and more frequently," Gehrke points out. "The sheet metal alloys and the final designs are in a state of transition. That makes for a change in processing, too." In his eyes, the laser is the right tool, since it can be used for differing materials and at various gauges.

Rugged beauty

At present, Marcopolo is using the 2D laser machines to cut galvanized steel sheet between 0.95 and 3 millimeters thick, carbon steel from 3 to 4.75 millimeters, and aluminum sheet up to 2 millimeters thick. The batch sizes vary widely. It is no longer enough for those parts to be rugged and exhibit high quality. Nowadays they often have to be stylish, as well.

Brazil is one of the BRICS nations, the world's five most important emerging economies // Brazil's 27 federal states are home to about 203 million people // In 2012, with gross domestic product of 1,754 billion euros, Brazil was the world's seventh largest economy // The transportation and logistics sector accounts for a 5.3 percent share in GDP // About 55 percent of GDP is generated in southeastern Brazil — in the four states of São Paulo, Rio de Janeiro, Minas Gerais and Espírito Santo.

"The design of our bus bodies is quite essential," Gehrke emphasizes. The vehicles are to be attractive and modern in appearance. The manufacturer's own design center ensures that these goals are reached. That bears fruit. "The new Marcopolo models took the IF Product Design Award in 2014," he relates. The creative team developed the Viale BRT Bus especially for rapid bus travel in major cities and adhered to current trends. Larger windows make for better viewing while interiors are dimensioned for increased comfort — for both the passengers and the driver. These are rounded off by the roof-mounted air conditioner and LED lighting throughout.

Progress for the future

The market is changing rapidly and Marcopolo uses its new technologies to stay in step. "We concentrate on investments and innovations, no matter whether in worker training or in developing even more sustainable and advanced processes and products," says Gehrke. "Initial and ongoing training of our labor force is, of course, of critical importance." He looks into the future with great confidence. That is because for Marcopolo the World Cup will be followed by the Olympic Games, taking place in Brazil in 2016. □

> **Please direct your questions to:**
Patricia Ceciliato, Phone: +55 (11) 4133–3564
e-mail: patricia.ceciliato@br.trumpf.com

Marcopolo moves millions

Who: Marcopolo S.A., headquartered in Caxias do Sul, Brazil. Founded in 1949, 20,000 employees. www.marcopolo.com.br

What: The company manufactures bus bodies and makes use of modern development and production processes

How: TruLaser Tube 5000, 4 punching machines and 12 laser cutting machines from TRUMPF, including 7 x TruLaser 5030 fiber, 4 x TruStore 3030

Airplanes for hobbyists

Build it first, then take off—with a construction kit from Van's Aircraft.

Buyers who order an airplane from Van's Aircraft will receive it by parcel service or truck—in several conveniently sized boxes or crates. That's because this U.S. company, located in Aurora, Oregon, delivers knocked-down airframes as individual components in a construction kit. And the planes, which can carry up to four persons, have become something of an icon. At least 8,600 have been put together so far, and they are in the air over 60 countries, all around the world. "For hobby airplane builders, manufacturing all the parts themselves is extremely complicated and time-consuming. Our construction kits are a good intermediate step," explains Ken Scott, long-time employee at Van's Aircraft. The TruPunch 2020 on his production floor simplifies assembly of the aircraft for his customers. "Thanks to the great precision of this punching machine, we can equip the aluminum components with holes for rivets and other fasteners, and we can be sure those holes will align exactly." In the past, hobby aircraft builders had to drill all those holes themselves. "The matched-hole components reduced the labor involved in building a kit airplane dramatically, and brought us many customers who would never have attempted the project," says Scott. And thus, on average, 1.5 owner-built airplanes take off on their maiden flights each day—all around the world. *www.vansaircraft.com*

Jim Koepnick

"When financing a project, we don't look just at the naked figures"

This year the TRUMPF Bank opened its doors for business. Managing Director Hans-Joachim Dörr explains why TRUMPF founded a universal bank and talks about its advantages for customers.

The customer's location is TRUMPF's location: "That's now true for financing as well," says Hans-Joachim Dörr, Managing Director at TRUMPF Financial Services GmbH.

TRUMPF certainly knows its way around production technology. But what is going to make the company a good bank?

One factor is the experience we have already accumulated as a financial services company. Ever since 2001, TRUMPF has offered financing for its sales, at first with its own leasing company. Since October 2012, this company has been known as TRUMPF Financial Services GmbH. In 2007 it was joined by a second leasing company, the TRUMPF Finance Schweiz, which is active all around the world. In many countries, our customers already profit from financing models offered by TRUMPF itself or by cooperating partners such as Société Générale in France or Deutsche Leasing in Germany. About 25 percent of machine sales were made with financing arranged by TRUMPF. At present, customers in 22 nations can make use of our financing models and in eleven countries there are cooperating partners to handle this.

Then why was a bank formed? Wasn't the range of services offered by the TRUMPF leasing companies sufficient?

That range is simply not comparable to that of a universal bank. Now that we are licensed as a full-service or universal bank, we can wrap up entirely new packages to support sales and new start-ups. And as a universal bank we have the "European Passport", letting us offer services beyond Germany's borders without any additional accreditation procedures. You see that in financial matters, too, our motto is: The customer's location is TRUMPF's location. As a bank, we can be more independent in our activities. We can acquire capital at better terms, we can issue loans, forward support monies to our customers, and better monitor and support customers when they start up new companies.

What is special about the TRUMPF Bank?

A financial institution owned by a mechanical engineering company is a global first. Similar arrangements are known only in the automotive industry. We can score points with our knowledge of the industries that our divisions serve. We have solutions to customer problems that go far beyond the machines themselves. Everyone profits from this. When assessing loan applications, we analyze not just the naked figures, balance sheets and business plans, but instead understand our customers' business from front to back.

What services do you offer TRUMPF customers?

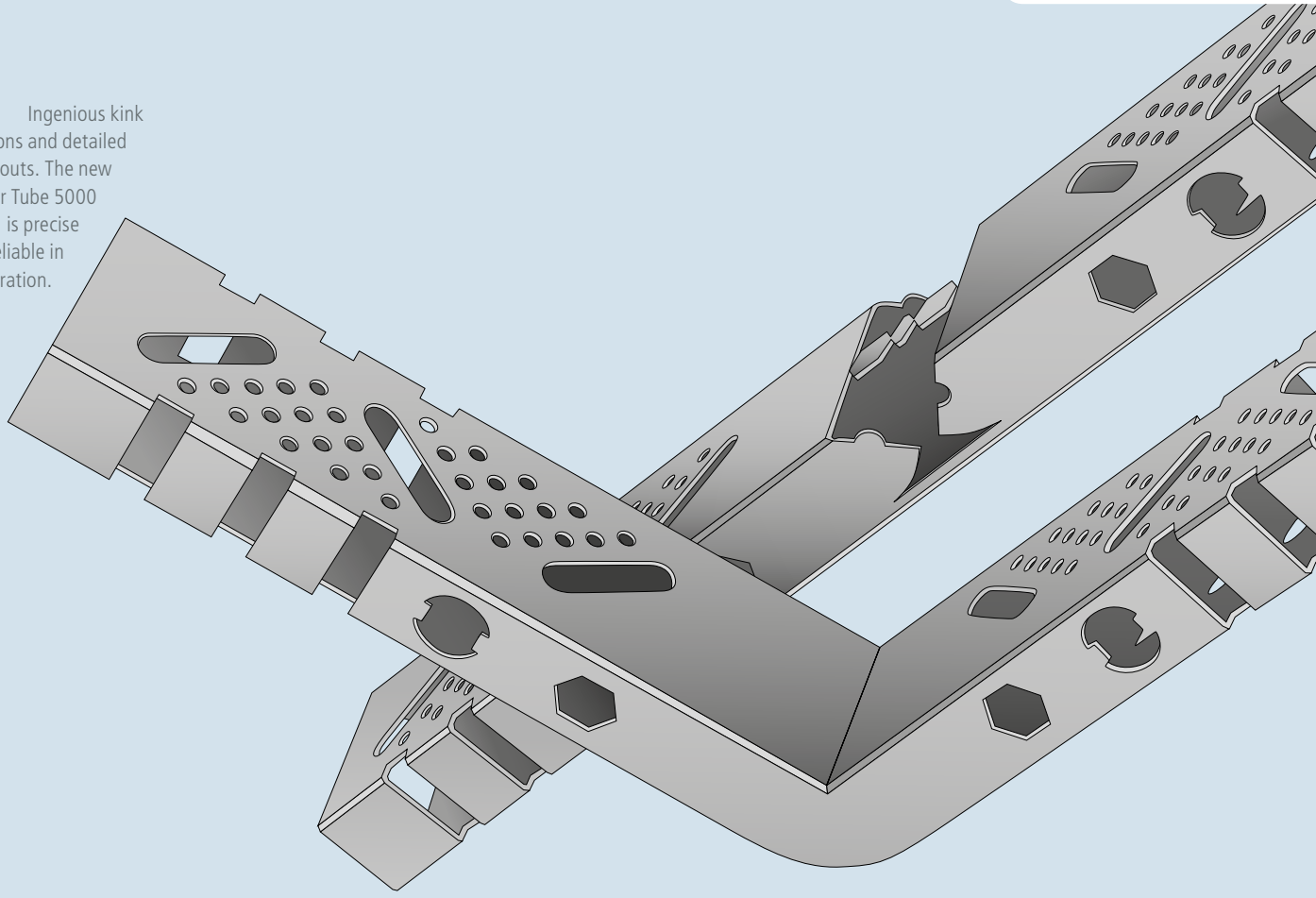
One example is operating leasing – short- and medium-term leases for machines. Our customers have the option to return the leased products. TRUMPF bears the risk of marketing when the machine is replaced and returned. Our customers improve their equity ratios, since the machinery need not be posted in the balance sheets. We offer loans, as well. This is helpful especially when starting up a new company, where a part of the investment is to be financed with subsidies.

Will customers also be able to deposit their own funds as private individuals at TRUMPF Bank?

This summer we will be opening savings accounts and fixed-term deposit accounts for TRUMPF employees. These accounts can be administered through online banking services. We are planning, at a later date, to offer these options to TRUMPF customers, as well. Maximum confidentiality goes without saying, as are good terms. In addition, accepting deposits makes us less dependent on the volatile financial markets.

> **Additional information:** www.trumpf.com/financial-services_en

Steffen Hartmann

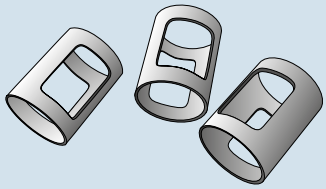


Ingenious kink connections and detailed cut-outs. The new TruLaser Tube 5000 is precise and reliable in operation.

Shaping up

The new TruLaser Tube 5000 was engineered as a productive, all-round machine. It racks up points with its owners thanks to its precision, ergonomics and user-friendliness.

It premiered at the Tube trade show in Düsseldorf and superseded its predecessor. Frank Steinhart of Steinhart Metallwarenfabrik in the town of Hettingen explains what the new TruLaser Tube 5000 can do. This expert in using lasers to cut tubes certainly knows where the improvements are. His team started working with the prior model in 2006 and in 2008 it was joined by one of the first TruLaser Tube 7000 units – the high-end model for cutting tubes with the laser. Now he and operator Andy Bulach are putting this new machine to the test in harsh everyday routines. Both issue an excellent report card for the TruLaser Tube 5000. "Numerous features enhance process reliability, simplify operation, and boost productivity."



Highlights in the new TruLaser Tube 5000

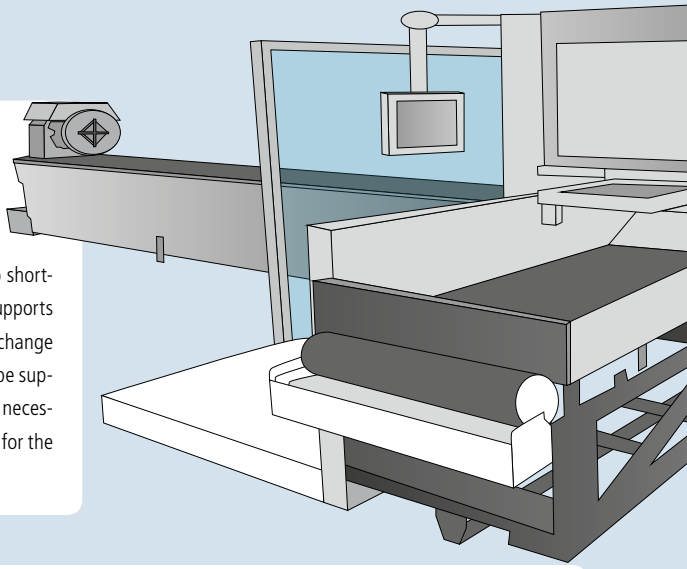
The new TruLaser Tube 5000 blends proven concepts—like unrestricted accessibility—with numerous new features, borrowed in some cases from its larger sister machine. One example here is the new cutting head with a focal length of 155 millimeters. It is fitted with a magnetic coupler; in case of a collision with jammed parts, this coupler will automatically release and minimize damage to the cutting head. With laser output options of from 2,000 to 3,200 watts, the TruLaser Tube 5000 can now handle materials up to eight millimeters thick. Steinhart: "We ran up against the older machine's limits at six millimeters." Standard equipment in the new machine is also the FocusLine regulating mechanism. It keeps the laser's focal position constant and automatically matches it to the material's type and thickness, making for perfect cutting results. The minimum remaining tube length of 120 millimeters helps save on materials; in the past this figure was 140 millimeters. Frank Steinhart adds: "Thanks to the adjustable feed-through chuck, we can cut even larger openings in a single operation, without having to resort to microjoints." Conical clamping rolls in the feed-through chuck center the tubes, making for great manufacturing accuracy.

DESIGNED TO BE CLEAN

Included even in the basic model are a scrap conveyor belt and receptacle along with a compact, high-performance dust extractor. Andy Bulach: "The dust generated during cutting is now removed far more effectively. We have less slag in the tube." That reduces rework effort and the time required for maintenance.

MEASURABLY MORE PRODUCTIVE

"We have made a comparison. Depending on the complexity of the processing work, the new machine is 10 to 15 percent faster than the previous model," states Frank Steinhart. Many details contribute to shortening non-productive periods. For example, the form supports can now be replaced without tools, thanks to a quick-change system with detents. The height adjustment for the pipe supports is now controlled by the program; no longer is it necessary to adjust with a handwheel. Automatic emptying for the cut-outs also contributes to greater productivity.



OPEN AS A MATTER OF PRINCIPLE — AND SAFE IN PROCESSING

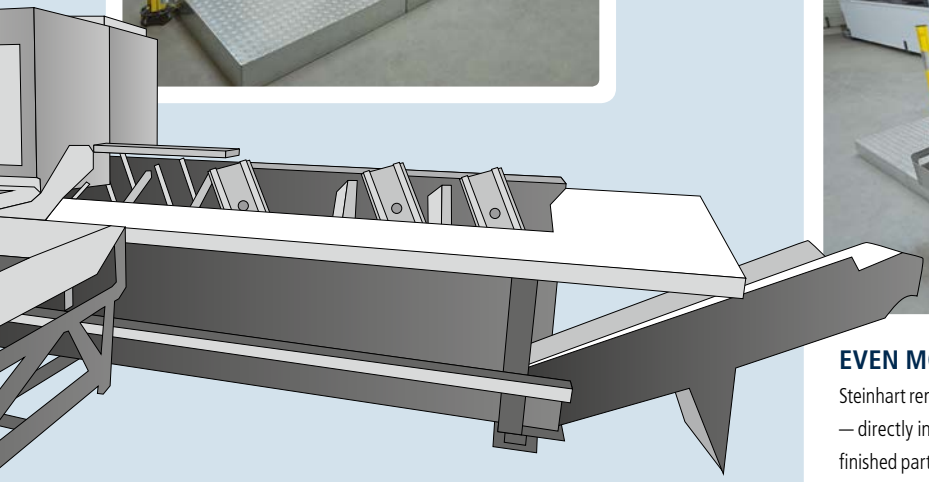
The pipe feed section, processing area and the entire part removal station are readily accessible. For Frank Steinhart, that is a clear benefit in everyday operations. "We can remove finished parts at an ergonomically correct height and can load a tube manually at any time, if we need to make up a single component." He continues: "The flexible positioning of the new conveyor table convinced us immediately. The new belt is easier to maintain than the previous brush table." Thanks to steeper discharge slopes and intelligent sensors to detect "part separated" and "part ejected", the cut parts now glide easily and securely from the work area.

IMPROVED INSIGHTS

The new platform offers the operator an improved view into the machine through its large window, which can easily be moved along the horizontal. The integral LED illumination makes for clear contrasts.

MORE CONVENIENCE FOR THE OPERATOR

The new 17-inch touchscreen on the versatile support arm can be positioned anywhere within an arc of 180 degrees. Operator Andy Bulach explains: "When setting up a new job, I place the screen right next to the viewing window for the machining head. Then I glance back and forth between the screen and the actual curve. I can, if necessary, intervene quickly."

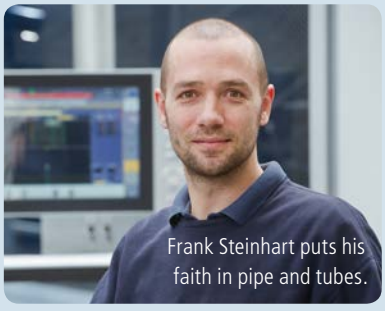


EVEN MORE FLEXIBILITY

Steinhart removes cut parts — using either the conveyor table or the part removal station — directly into a wire mesh box. Andy Bulach: "We can configure the storage area for finished parts to match the job." Where especially long parts are to be worked, TRUMPF also offers a 1.5-meter extension to the 3-meter part-removal station — including extra pipe supports.

> **Please direct your questions to:**
Dr. Dominic Gastes, Phone: +49 (0) 7156 303-30973
e-mail: dominic.gastes@de.TRUMPF.com

www.trumpf-machines.com/tube-potential



Frank Steinhart puts his faith in pipe and tubes.

KD Busch, Illustration: Tine Bärthel

THERE'S ADDED VALUE IN TUBES

Steinhart Metallwarenfabrik in Hettingen processes between 80 and 120 tons of pipe every month. The warehouse always stocks 400 different types of pipe and tube for quick deliveries to customers. For Frank Steinhart, the tube is the key to greater value addition. "There is a pipe or tube in almost every finished product. We can use laser cutting to do all the work needed for such pipes — and in that way we open the door to complex and lucrative orders." This job shop prefers deliveries to destinations within about 150 kilometers. The clientele includes companies involved in mechanical engineering, agricultural machinery, cleaning technology, furniture, and construction of athletic and fitness equipment. Along with his three machines for laser tube processing, Steinhart has twelve other TRUMPF machines on the job, including press brakes, punch laser machines, and a TruLaser 5030 2D laser cutting machine. The folks in Hettingen also use the TruTool TSC 2 slat cleaner and have automated a press brake by adding the BendMaster.

A team for volume production

"We synchronize our processes with those of our customers," is what Jürgen Gerst says about Glüpker Blechtechnologie. Complex parts called for at regular intervals are the company's specialty and are delivered at premium quality — and right to the assembly line, if desired.

A clear-cut strategy has been adopted by Glüpker Blechtechnologie. This job shop prefers to manufacture products where repeat orders are likely, where those products will probably be kept in production for a long time, and where Glüpker can realize a high real net output ratio. "To be able to really capitalize on the company's strengths, we need the right piece counts in an order. Anyone wishing to purchase anything from individual sheet metal components to complete, ready-to-install systems is going to get the service they need here," says Jürgen Gerst, a member of management.

The town of Neuenhaus, near the border to the Netherlands, has been the home of Glüpker Blechtechnologie since 1981. The company is a part of the Neuenhauser Group of Companies. With a payroll of 330, Glüpker Blechtechnologie delivers its products primarily to major customers and OEMs in trailer and agricultural machinery, textiles, construction and paving machines, forklift trucks, and general mechanical engineering.

The firm processes 45,000 tons of material each year. Its "classic" order sizes are lots of from 100 to 20,000 pieces per year, called for two to three times a week. These repeat orders are an important criterion for this job shop.

Jürgen Gerst explains: "Our operation is focused on reproducible components of medium to great complexity. Once we have set up our processes to build the perfect product for the customer, we can call up the sequence again whenever required." Close cooperation with the customer is important to him. Every customer has his own account manager in the sales team. A well-trained and thoroughly professional team ensures that the parts always arrive punctually at the customer's site. This is all in line with the company's guideline: "Say what you intend to do and then do what you said."

Component assemblies right to the line

This expert concentrates on the more complex components in sheet metal. "We want the largest possible number of parts to pass through all of our company's fabrication departments," notes Jürgen Gerst. In concrete terms, the work starts with cutting to size using the laser cutting machine or punching machine, continuing on to bending and drawing, and finishing in the welding shop. The result is that complete products — surfaces finished and fully assembled — can be created along the Group's manufacturing chain. Jürgen Gerst: "Using the capacities within the Neuenhauser Group, we can ensure that our deliveries are right, each and every time."

The logistics department at Glüpker Blechtechnologie delivers not only directly to the assembly line, but also directly to the client's manufacturing process. In addition to kanban methods, this job shop also offers just-in-time and just-in-sequence shipments. This means that the products are delivered in the order that corresponds to the processing sequence at the customers' production line. Individual logistics concepts like these are both a challenge and an opportunity for the company. "Logistics are a major selling point for us, since just about anybody can cut with the laser, bend parts and weld," says Jürgen Gerst. "Mastering the complexity of internal and external logistics is the real challenge." Given the 300,000 orders that pass across the factory floor each year at Glüpker Blechtechnologie, this is no easy task.

Closely dovetailed with the client

One tried-and-true principle — maintaining close links between customers and the suppliers for the individual work processes — ensures that every part arrives exactly on time.

Dirk Egelkamp


Harm Moss, in his position as account manager, serves agricultural customers and brings more than 20 years of experience with him.
Klaus Haupt and his co-worker Jens Dimmers work as account managers for the commercial vehicles sector.
The account manager for road building machines and conveyor technology is Tobias Sandmann.
With more than 25 years of professional experience, Lutz Buntrock is deputy sales manager and the account manager for agricultural, construction, and road-building equipment.
Manufac-turers of construction machinery and forklift trucks are in the good hands of account manger Christian Brünink.
Jürgen Gerst is a member of management and serves as sales manager.
Agricultural equipment and mechanical engineering make up the assignments carried out by account manager Henning Paus.
Whenever it is a question of agricultural machinery or the textile indus-try, account manager Dieter Dümmer is on the spot.
For 25 years now, Henny Pierik has canvassed new customers in Germany and the Benelux countries.
Mariett Kerkdyk speaks three languages. She works in order processing and the sales office for Germany and the Benelux nations.
As the newest member of the sales team, Marc Egbers carries out assignments in the sales office.

Jürgen Gerst makes sure that operations are closely dovetailed with the customers. He uses their predictions to calculate the capacities required for an order.

"We verify the starting and delivery times for the individual manufacturing sections," Jürgen Gerst explains. Working in real-time, the company compares an order's current production status with the scheduled delivery date. "If the internal processes are in good order, then we have no problems with meeting customer deadlines," says the sales manager. In addition, the company works with a forward-looking capacity planning system. To make this work, the system is fed with forecasts from its major customers and, based on this data, the company calculates the capacity required. "In this way we can see future bottlenecks in advance and, if necessary, pre-produce a part of the batch." Materials scheduling can also be better controlled and warehouse inventories can be optimized.

"Our responses have to be ever faster and more flexible," says Jürgen Gerst. "We might be notified of changes in the product just before production begins. We have to take that into account." Speed is everything and the throughput times are continuously being tweaked. Here he concentrates on setup and part production times. Improved processes and new technologies result in continuous optimization of the company as a whole.

By procuring a new TruLaser 5030 fiber, Glüpker Blechtechnologie has already stepped up its pace. And with the BrightLine fiber function, the company can also cut thick stainless steel at good quality.

High-precision bent parts

A semi-automatic bending center built by Codatto, an Italian manufacturer, helps make bending faster, too. "We worked with bending robots in the past, but the minimal set up times make the new machine very efficient," reports Jürgen Gerst. Especially when dealing with large, thin sheets, panel bending technology offers real advantages. The shaped parts can be marketed at more favorable prices and that improves the competitive position. The fact that Codatto is now a part of the TRUMPF corporate group is a further advantage.

In bending, precision plays a major part. "Highly accurate bent components form the basis for satisfactory welding. That makes the Codatto semi-automatic bending center the right investment for us." This will be even more important in the future, since this sheet metal company has ordered a TruLaser Cell 7040. Precision is also important to processing with the laser welding cell. "We are looking forward to having the new system," says Jürgen Gerst. "Laser welding injects less energy into the workpiece and makes for even greater accuracy. Ultimately we have to master the rules of the game laid down by our industrial customers – especially in regard to deliveries and quality." □

> **Please direct your questions to:**
Philipp Zwirner, Phone: + 49 (0) 7156 303-30360
e-mail: philipp.zwirner@de.trumpf.com

Individualized solutions for major customers and OEMs

Who: Glüpker Blechtechnologie GmbH, Neuenhaus, Germany. Founded in 1981, 330 employees. www.gluepker-blechtechnologie.de, www.neuenhauser.de

What: This job shop supplies large customers and OEMs with complex sheet metal parts and assemblies that are regularly called for. The firm puts its faith in individual logistics concepts including kanban methods and just-in-sequence dispatching

How: TruLaser Cell 7040, 13 x 2D laser machines, including a TruLaser 5030 fiber with BrightLine fiber, 6 x punch laser machines, Codatto semi-automatic bending center

Tristan Opie lives and works at the foot of the Blue Mountains. His company supplies sheet metal and tube components to the entire continent.

No risk, no gain

Though the economy was in the doldrums, Australian entrepreneur Tristan Opie didn't wait for better times, but instead invested in new machinery. A courageous decision that paid off.

Seventy kilometers to the west of downtown Sydney rise the Blue Mountains—a major attraction in eastern Australia. The mountains owe their name to the many eucalyptus trees on their slopes. They emit a volatile oil that, in the sunlight, bathes the scene in a bluish haze. "It's a great area to live and work in," says Tristan Opie. You will find his company at the foot of the Blue Mountains, in the town of Emu Plains. Opie Manufacturing produces complex parts for the construction and automotive industries. Tristan Opie is the third-generation CEO of this family-owned company. After completing training in the firm, he worked for several years at construction sites to gain hands-on experience. This was an unusual turn in his career but was intended to broaden his own horizons. Even today, it helps him to understand his customers better.

Courageous investment

Tristan Opie gladly departs from well-worn paths and this is demonstrated by a story from the year 2010. At that time the Australian economy was literally down and out and,

like many other sheet metal processors, Opie was suffering a drought of orders. But instead of slashing costs and waiting for the upturn, Opie invested in a TruLaser Tube 7000. "A very risky step at that time, because just a very few customers realized the possibilities opened up by using the laser to work tubes. But I was sure there was a market for this service." And so he gathered all his fortitude and ordered the machine.

> "I was fully aware that getting started in tube processing was a very risky step. But I also knew that there was a market for this service."

Landing the first orders was hardly easy, since most of the potential customers worked tubes themselves, traditionally by sawing, drilling and milling. "The laser has major advantages when compared with these techniques, since it replaces several steps in the work. In addition, our TruLaser Tube 7000 is so fast that we can achieve considerably lower costs per item." Opie worked hard to make his clientele aware of these benefits. "A lot of persuasion was required and we undertook an active advertising campaign." It was a while before the machine turned a profit, but Opie's perseverance was ultimately rewarded. Today no other machine on the shop floor shows utilization rates as good as the TruLaser Tube 7000. That is why Opie has already ordered the next machine. It is to be delivered in the summer of 2014.

High-tech machinery for complex parts

A second TruLaser Tube 7000 and a new TruMatic 6000 will be augmenting the equipment at the factory, where automation is playing an increasingly important role. A LiftMaster delivers sheet metal continuously to a TruLaser 5040 while a BendMaster takes care of materials handling at a TruBend 5170. With this equipment, the job shop in Emu Plains can make up a wide variety of aluminum, stainless steel and mild steel parts, in two ten-hour shifts. "In Australia there are many small sheet metal processors with one or two machines. They can produce simple parts at very favorable prices. To set ourselves apart, we have adopted a different path, using high-tech machinery and combining various processes. In this way we can offer even very complex parts from a single source," Opie explains. "I always tell our customers: 'If others cannot deliver a part, we certainly can'."

A well-rehearsed team

To fulfill this promise, Opie draws on a dedicated team. About half of his 52 employees are on the shop floor, operating the machines. The other half works in the office and makes sure that there is no needless friction in production. A team of engineers simulates, for instance, almost every part in advance, using 3D software. "This makes us very fast. We can deliver the right part to the customer without having to build a physical prototype beforehand."

Opie knows only too well that even the best production operations will not automatically be used to the fullest. That is why a sales staff of nine rounds out his team. "That is a relatively large sales department for a company of our size. But in a country as large as Australia, the customers aren't all in one spot. That is why we have to travel to them and convince them in a personal conference," Opie explains. This commitment pays off. This job shop even supplies customers at the other end of the continent. □

> **Please direct your questions to:**
Warrick Theron, Phone: +61 2 9638 4463
e-mail: WarrickT@Headland.com.au

Complex sheet metal parts down under

Who: Opie Manufacturing Group, Emu Plains, Australia. Founded in 1962, 52 employees. www.opiegroup.com.au

What: Job shop for the construction and automotive industries, specializing in complex parts

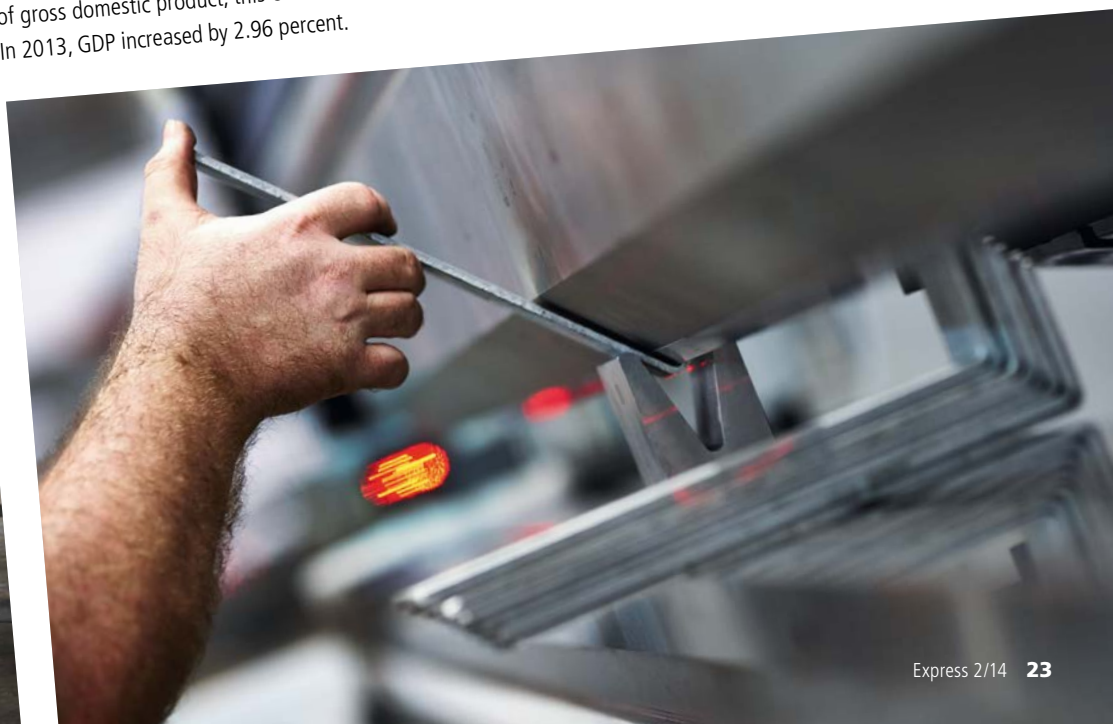
How: TruLaser Tube 7000, TruLaser 5040 with LiftMaster, TruBend 7036, TruBend 5170 with BendMaster, TruMark Station 5000, TruMatic 6000

Emu Plains is the home of Opie Manufacturing, which turns out many diverse parts made of aluminum, stainless steel or mild steel.

Tristan Opie is more than willing to venture into something new. Purchasing his TruLaser Tube 7000 has more than paid off. Today it is the most fully utilized machine on the shop floor.

Australia in figures

With a population density of 3.01 residents per square kilometer, Australia is a thinly settled country. Almost 90 percent of the 22.5 million residents live in urban areas. The largest conurbations are Sydney, with 4.4 million residents, followed by Melbourne with a population of 3.9 million and Brisbane with its two million inhabitants. The nation's capital, Canberra, counts just 400,000 residents. Thanks to its rich natural resources, Australia is an important exporter of raw materials, energy and foodstuffs. Even though the agricultural sector accounts for just about four percent of gross domestic product, this continent, as large as Europe, is home to 130 million sheep and 25 million head of cattle. In 2013, GDP increased by 2.96 percent.




ABUS
Format

The Arnold team devoted 5,500 hours of labor to producing this artwork for U.S. artist Jeff Koons.

"If it's easy, then others can do it"

In his shop, Uwe Arnold fabricates complex metal sculptures drafted by internationally famed artists, applying the same passion and creativity as he does with housings for industrial customers. These are two areas of expertise that—as he notes—complement each other perfectly.

Mr. Arnold, your company made a name for itself by crafting objects designed by renowned artists. How did that come about?

Ever since the company was founded, exactly 90 years ago, it has specialized in solving tasks that require high-quality metalwork. At the beginning of the 1960s, we started turning artists' designs into reality. One strength of Germany's mid-market sector is its ability to concentrate on market niches and to achieve successful development there. In our case, it was the world of art. Word of our expertise got around quickly. Today we work with internationally famed artists including Jeff Koons, Kazuo Katase and Claus Bury. Artworks account for a 30 percent share of our overall revenue.

What do you see as the differences between cooperation with artists and the work you do for industrial customers?

As far as the practical execution of the order, there's actually no difference. Face-to-face dialog with all our clients is important, letting us achieve the best possible solution to a task. A part of our philosophy is that we never submit offers anonymously. We want to interact with our clients and to understand exactly what they want. Here it is important to be a better listener than our competitors. And it makes no difference whether we are working with a sculptor, an architect or an industrial customer. We take an unbiased approach to every task and work to achieve tailor-made solutions. The more

Uwe Arnold finds great satisfaction in devising solutions to apparently impossible assignments.

"I get goosebumps every time an artist sees his idea brought to fruition and—with a quiet 'Wow!'—expresses his excitement."

This dolphin will not be found in the water, but rather in a museum.

difficult the assignment is, the more exciting we find it. Even my grandfather said, "Impossible isn't a part of our vocabulary!" Our motto today is simply: "If it's easy, then others can do it." Finding solutions where others have declared the task to be insurmountable—that is our special strength.

What is the special attraction of working with artists?

An artist usually aspires to create something for eternity. This aligns with our efforts to achieve excellent quality and durability. Neither of us can think and create in terms of "cheap". That unifies us in spirit. An exciting factor is that—as an artworks contractor—we cooperate with people from various heritages and histories. As German engineers, we first had to learn not to rely solely on our technical knowledge. We also have to grasp the many different character traits and the artists' aspirations. That is sometimes more difficult than finding the right technical solution for a task.

What is the normal course of an art project?

Usually the artists arrive with an idea, with drawings, sketches or a model. They are seldom proficient in metalworking and, therefore, have not yet decided on a particular material. Our first function is thus as an advisor or consultant. We attempt to comprehend what the artist wants to achieve—the surface texture, the color and certain details. Based on that, we prepare a feasibility study where we point out difficulties that might appear. Then we submit suggestions for implementation and can put forward firm prices and schedules.

That sounds very much like normal interaction with an industrial customer.

That's true. We attempt to apply our expertise in project management in the world of the arts. There, the focus is on the idea; practical considerations like deadlines and prices are secondary. The objective of preliminary discussions is to determine where we might encounter difficulties in execution and to attach a price tag to them. If we misjudge a particular situation, then that's our problem.

When you spend so much time and energy on exciting fields such as the arts and architecture, isn't it difficult to get excited about manufacturing casings and processing sheet metal?

Not in the least! That is and remains our core business and we devote the same energy and creativity to it as to our projects in the arts and architecture. Essentially, all these types of business profit from each other. We use project management to impose order on artistic endeavors. On the other hand, that indispensable willingness to experiment—needed for complex sculptures—and our readiness to follow the "trial-and-error" principle both help us when implementing requests by our industrial customers. When we have perfected distortion-free, high-gloss polishing of stainless steel for an artwork, this expertise can also be transferred to other commissions. Our experience with industry—using the TRUMPF TruLaser 3030

Arnold takes the expertise gained in job shop operations and applies it to the art world.

for cutting, to name one example—is essential to executing the precision work needed by art and architecture.

When a sculpture leaves your shop, it must give you a very special feeling—the thought that you have created something beautiful.

But of course! When the artist approves the objects we have created in our shop, he also offers a word of thanks to the staff involved. This personal recognition for their work is something they otherwise experience only very rarely. And I get goosebumps every time an artist sees his idea brought to fruition and—with a quiet "Wow!"—expresses his excitement. But actually, every customer who is satisfied with our work is a source of pride. □

> **Please direct your questions to:**
Jannis Dallas, Phone: +49 (0) 7156 303-30245
e-mail: jannis.dallas@de.trumpf.com

Bernd Liebl

Art and more

Who: Arnold AG in Friedrichsdorf, Hesse, and Steinbach-Hallenberg, Thuringia. Founded in 1924, 350 employees. www.arnold.de

What: Complex component assemblies with special needs in terms of workmanship, engineering and logistics. Demanding elements for design and architecture projects, and implementing drafts by international artists

How: TruLaser 3030, 2 x TruMatic 6000, TruTool TKF 1500, Stopa storage system

When producing sculptures, this job shop approaches the boundaries of the technically feasible.

"It is a heartwarming moment when the customer ultimately holds the item, exactly as he had envisioned."

When making a simple knife, Jürgen Schanz devotes some seven to eight hours to the work. The exceptional sabers crafted for international customers take between forty and fifty hours. There, even selecting the material for the grip can take a considerable amount of time.

Sharp-edged beauties

Jürgen Schanz manufactures knives, sabers and swords by hand. His cutting-edge collector's items have won the hearts of enthusiasts all around the world.

It sometimes happens that Jürgen Schanz departs the town of Stutensee in Germany's Baden region and flies halfway around the world to discuss an order with a king or a prince. Personal contact with the sovereigns among his clientele is one of the highly satisfying aspects found in working on what he calls the *crème de la crème* of his craft. This artisan, now 43 years old, manufactures swords by hand and these are highly esteemed in international collectors' circles. But he also has an eye for less exotic implements, making those knives to customer specifications and contributing his own passion for the work.

Talent

Beginning right with his "journeyman's piece", submitted in 1991 at the age of 21, it was clear that his talents were exceptional. It was on the basis of a Malaysian *kris*, a dagger with the characteristic wavy blade, that he was honored as the "National Winner in the Crafts" in 1992. This award made it possible for him to skip the usual journeyman's years and, just a year and a half later, completed his master craftsman's examination with the submission of a Japanese sword.

In his workshop near Karlsruhe, this father of three not only crafts unusual sabers and swords for crowned heads or enthusiastic collectors. He also demonstrates his skills when making up hunting, survival and culinary knives – and other special-purpose blades. The primary challenge here is sensing what the customer really wants. "The ultimate purpose is important. Survival knives, for example, often have to be used like an axe. Choosing the right material is also critical. Diving knives must never rust, of course. And kitchen knives have to be made of a steel that can be honed to a very thin edge. It has to be hard, but it must never break," Schanz explains.

Diligence

Seven to eight hours of work are involved in making a simple knife. The master craftsman takes between forty and fifty hours to finish one of his exceptional swords. "It can happen that I rummage through the Internet for three weeks or so, looking for materials for the handles," he reports. Regardless of whether we're talking about special stones or prized woods – everything has to be perfect in the five or six spectacular beauties he makes every year. Neither does he leave anything to chance when crafting the blade. He purchases his steels only from select suppliers. Good-quality Damascus steel, with its distinctive pattern, is not always available. This perfectionist knew how to overcome that difficulty. "At the end of last year I bought a second company so that I can do my own forging."

Admiration

His customers are willing to pay top prices for this amount of quality and creativity. The prices for the finely decorated showcase pieces lie between 2,000 and more than 10,000 euros. His clientele is found all around the world and many of them became aware of Jürgen Schanz through his website. At least as important to him are small and exclusive trade shows and exhibitions where discerning collectors meet. "Personal contact is a must. Especially among Arabian customers, e-mails or phone calls simply don't work." He travels to the Côte d'Azur or to the Emirates – but to Russia, as well – to talk with interested parties about their ideas. This calls for a great deal of interpersonal empathy. "No single concept of beauty is absolute. The Arabs prefer gold and diamonds. We Europeans envision a sword in silver, trimmed with sapphires. Russian customers go for reserved elegance. This is a question of cultural traditions and we have to accept that," Schanz notes pragmatically. It is often difficult to turn over one of his masterpieces after having invested so many hours of careful work. "But it is easier," Jürgen Schanz notes, "when I know that the customer is pleased and can ultimately hold what he had envisioned." □

www.schanz-messer.de

"No single concept of beauty is absolute," says Jürgen Schanz. His sabers are magnificent pieces in any case.

Angelika Grossmann

Tell us, Mr. Schanz …

… what do you see as your greatest strength? And your greatest weakness?
My greatest strength is certainly the will to see a plan through to fruition, in spite of any hindrances, once it has been formulated. My weakness is that I am often impatient.

… how would you characterize yourself in a few words?
In love with life, always keeping my eyes and ears open, especially when watching and listening to others. I always attempt to make the best of everything and to see the best in everything.

… where do you get your energy?
From the joy I get from my work.

… what would you take with you to the proverbial desert island?
Knives, matches and a tarp.

… what dream would you like to make come true in your life?
Being an exhibitor at the Hunting Exhibition in Abu Dhabi.

Dining alfresco Diverse, economical and tasty. Those are the major attractions at the popular hawker centers. In the cookshops there, former street hawkers offer an amazing variety of dishes. What makes this so very special is that all the world's cuisines are on hand here. There is a hawker center for almost every residential block and that makes cooking for oneself almost superfluous in Singapore.

Asian diversity

The TRUMPF branch in Singapore was set up in 1991. Its staff of about fifty serves the southern Asian market through its own offices in Indonesia, Malaysia and Vietnam — and through agencies in Australia, New Zealand, Thailand and the Philippines. In addition to a demonstration area and seminar rooms, this office also includes a spare parts warehouse to ensure quick deliveries to the region's customers.

Erik Stolte, fotolia/Perednianikina, Sanko

A quiet oasis A tribute to its more than 300 parks, Singapore is sometimes referred to as "Garden City". The largest verdant oasis is the Botanical Garden, initially laid out in 1822. Thousands of visitors relish nature's bounties each day in the park, which covers 74 hectares. In the early morning hours, the park is populated by joggers and neighbors doing their t'ai chi exercises.

Malayan Cantonese
Tamil Singlish Teochew
English Hokkien

Novel language Singapore has four official languages: English, Chinese, Malayan and Tamil. In addition to these languages, the Singlish dialect will often be heard — a mixture of the English, Malayan, Hokkien, Teochew, Cantonese and Indian languages. For outsiders, this blend can quickly become a source of misunderstanding. In spite of official efforts — like the government's "Speak Good English" campaign — Singlish is often found in everyday use and even in some media.

Tall towers The Marina Bay Sands Hotel, opened in 2010, offers an impressive vista of Singapore's skyline. Three towers with 55 floors each, stretching 191 meters into the air, make this complex a new landmark in Singapore. In particular, the hotel's guests are enthusiastic about the SkyPark and the 146-meter infinity pool on the rooftop terrace.

> **Additional information:** www.sg.trumpf.com

CREDITS

TRUMPF Express 2/14
Magazine for Sheet Metal Processing

Published by
TRUMPF Werkzeugmaschinen GmbH + Co. KG
Johann-Maus-Straße 2, 71254 Ditzingen,
Germany, www.trumpf.com

Responsible for content
Mathias Kammüller, Dr. Eng.

Editor-in-chief
Evelyn Konrad
+49 (0) 7156 303 – 30 428
evelyn.konrad@de.trumpf.com

Edited by
pr+co GmbH, Stuttgart, Germany
Norbert Hiller, Julia Schmidt

Layout and production
pr+co GmbH, Stuttgart, Germany
Gernot Walter
Tanja Haller

Reproduction
Reprotechnik Herzog GmbH,
Stuttgart, Germany

Printed by
frechdruck GmbH,
Stuttgart, Germany

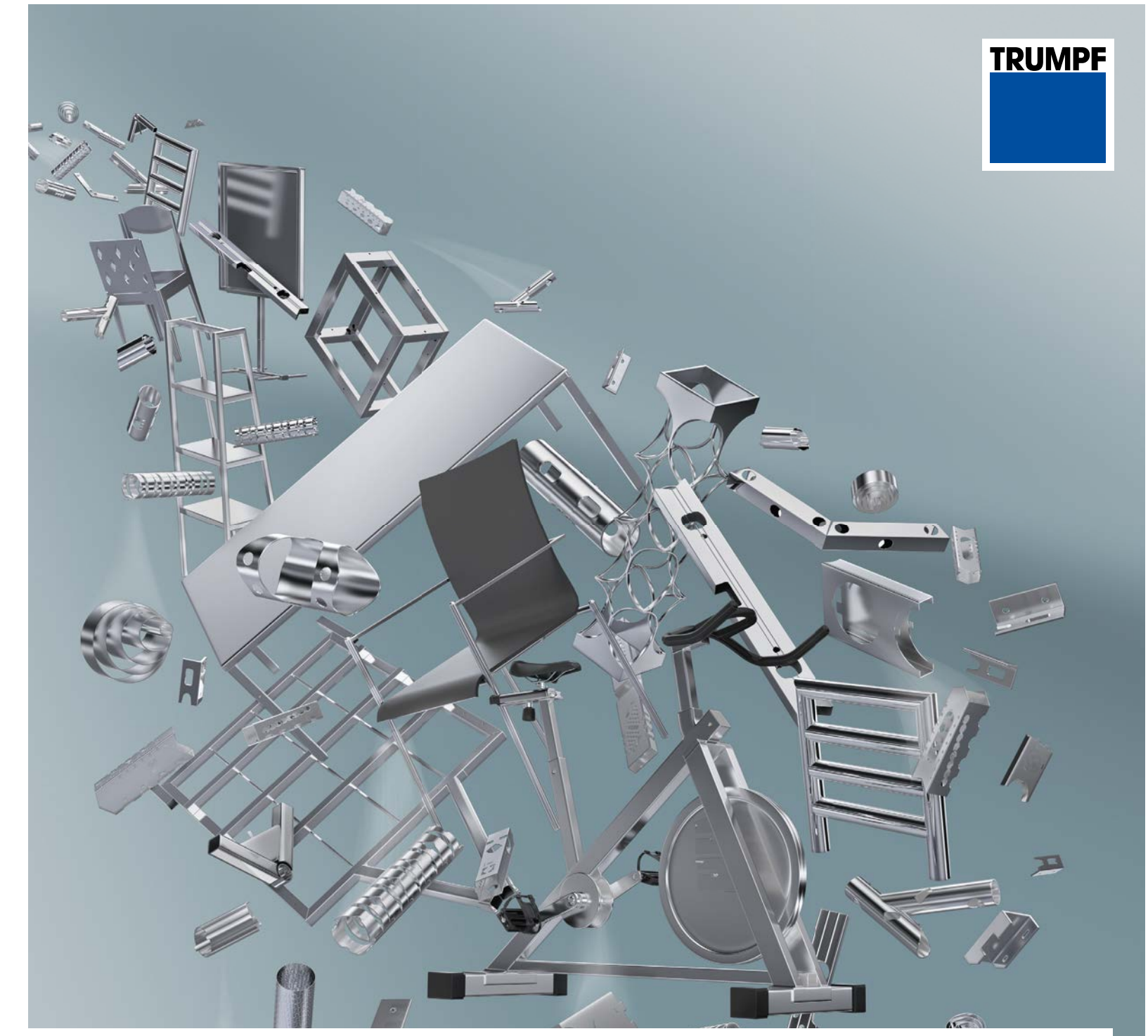
Contributors
Julian Stutz
Monika Unkelbach

Translation
Stewart Lindemann,
Wuppertal, Germany

Photography
Michael Baker
KD Busch
Dirk Egelkamp
Angelika Grossmann
Jim Koepnick
Bernd Liebl
Júlio Soares

Illustration
Tine Bärthel

Printed on paper from sustainable sources.



Tubes prefer TRUMPF.
The new TruLaser Tube 5000.

Get off to a flying start – the TruLaser Tube 5000 is your perfect entry into the world of laser tube processing. This unbeatably productive all-rounder is extremely dynamic, superbly ergonomic and exceptionally easy to use.

www.trumpf-machines.com/tube-potential

TRUMPF

Coveted grain

Sometimes dry as sand, sometimes wet as mud. That's everyday reality for Thai rice farmers. Their crops are much in demand, because rice is a staple food for more than half the world's population. In addition to rugged and durable machines, the farmers in Thailand attach great importance to one thing: the design. Brightly colored implements are extremely popular. And that is what Thai Agricultural Machinery (TAMCO) delivers, manufacturing its colorful combines in Phitsanulok. The firm places its bets on lean processes and high-quality machines. A TruLaser 3030 turns out parts that stand up to the company's promises and, in addition, look amazingly fine, too. *www.thaicombine.com*