

ONLINE
READER SURVEY 2016

THE GLOBAL MAGAZINE
FOR GF EMPLOYEES

ISSUE 4-2016



The lacquer artist

Tommy Liao, GF Machining Solutions
in Taipei, Taiwan

Our goals: GF showcases innovations for the future

Our abilities: Piping systems for aquaria worldwide

Where we are: The new production line at the Singen site

+GF+

HELLO!



Joachim Nübling

Osaka, Japan, September 12, 2016, 2:45 PM CET

At this time I was celebrating (behind table, fourth from right) the opening of our new office in Osaka with colleagues from GF Piping Systems and GF Machining Solutions. After ten years in Schaffhausen, Switzerland, I have been working at the Japanese headquarters of GF Piping Systems since September. The dinner was also my welcome party as Joachim-san.

Joachim Nübling is Manager Technical Services EPC & Water Cycle at GF Piping Systems in Osaka, Japan.



Francesca Friso

Schaffhausen, Switzerland, September 12, 2016, 2:45 PM CET

Everyone has their own creative space for big ideas:

While searching for an innovative testing process for car chassis, I tried out a bending test involving no less than eight colleagues.
Test result: passed.

Francesca Friso is Project Manager for Materials and Process Development at GF Automotive in Schaffhausen, Switzerland.

**JOIN IN
AND
WIN!**

What are you doing **on December 12, 2016 at 9:15 AM CET?**

Send your snapshot with "Hello!" as subject heading and a short description to: globe@georgfischer.com

All entries will be included in our competition on page 40.

04

CONTENT

About us

Scrap – a highly valuable resource

Trading in scrap metal, an essential raw material for GF Automotive, has its own set of rules. **10**

One of us

The art of harmony

Tommy Liao from GF Machining Solutions in Taiwan creates pieces of art with a brush, some lacquer and a whole lot of patience. **12**

Our abilities

An ocean in the city

The Australian company AAT builds vast aquaria around the globe. GF Piping Systems provides the corresponding piping solutions. **22**

Where we are

A traditional site ready for the future

The new, state-of-the-art production line PL2 equips the Singen site for tackling the challenges of tomorrow. **26**

Our goals

Focus on the future

The three divisions of GF provide an insight into their latest innovations showcased at the Technology Day. **30**

Our markets

Good health thanks to high-tech machining

GF Machining Solutions is taking advantage of the new opportunities in the growing medtech market. **34**

Sections

2	Hello!	36	Heart and soul
6	In retrospect	37	Online reader survey 2016
9	How did it go?	38	My home
17	3x3	39	Imprint
20	Who invented it?	40	Competition



9

How did it go?

Les Bevis managed endless volumes of data in his 41 years at GF Piping Systems in Great Britain. Now, shortly before his retirement, he takes stock of his career.



18

21 successful years at GF

The end of the year marks the start of a new chapter for CFO Roland Abt. He looks back on his time at GF together with six colleagues.



36

Start-up aid for young musicians

Mark Gruber from GF Piping Systems in California gives his guitars away to young people who share his love of music.



38

My home

For Sabine Neumann from GF Automotive, Leipzig is not just the place she calls home. She has lived there for her whole life and is still in love with the German city.

EDITORIAL**Tell us what you think!**

Beat Römer
Head of Corporate
Communications

Dear colleagues,

Tradition and history are important values for a company like GF that can look back on a history spanning over 200 years. For a successful future, however, we also need to look ahead. Therefore, innovations, new products and new services are key factors to our success.

This issue of Globe, the last of the year, also endeavors to build a bridge between tradition and innovation: With our cover story from Taiwan, which focuses on an ancient art form, with the Technology Day 2016 in Schaffhausen and with the modernization of GF Automotive's largest production site in Singen, Germany.

Innovation is also on the horizon for Globe in 2017 – we aim to bring our employee magazine to your smartphone or tablet in future, allowing convenient reading on the go. At the same time, we want to further develop the print edition for and with you. Therefore, your opinion is important to us. So please take a moment to participate in our online survey (page 37) and help us make Globe even better! We look forward to your feedback.

A handwritten signature in black ink, appearing to read 'B. Römer', written in a cursive style.

Join in and win! Use the following link to access the Globe readers' survey: gf-globe.com

IN RETROSPECT

Buckets for a good cause

GF Piping Systems in Irvine, USA, hosted a special charity event on October 22. More than 200 GF employees as well as their families and friends took part in the first GF "Walk for Water" to raise awareness of the shortage of drinking water worldwide. The participants symbolically carried buckets of water down a designated route of 3,5 miles – a daily routine to many people around the globe who live without the luxury of clean drinking water at home. Sponsorship and donations for the event, including USD 10 000 from the GF Corporation, summed up to more than USD 40 000 in support of Water Mission, a charity organisation and customer of GF which provides sustainable water and sanitation solutions for people and communities suffering under the global water crisis. ■



More than 200 dedicated GF employees carried water buckets for a good cause with their families and friends.



Expansion in the Middle Kingdom

GF is expanding in the key market of China with two new acquisitions. The Chinaust Group, a 50-50 joint venture between GF Piping Systems and Lingyun Industrial Co., took over two Chinese supplier companies this summer. Suchang Auto Parts Co. Ltd produces light plastic quick connectors for fuel lines in vehicles. The entry into this profitable segment is helping Chinaust to establish itself as a solutions provider on the world's largest automobile market – namely China. With the second company, the joint venture is extending its offerings in the growth market of gas distribution: Lingyun Jingran Gas Valve Co. Ltd makes polyethylene ball valves which are used worldwide. Together, the companies generated around CHF 20 million in 2015 and employ some 200 people. They are based in Langfang, in the north-eastern province of Hebei. ■

PRODUCT IN FIGURES



3.1

million

cores made of quartz sand were produced by the core making and iron casting department at GF Automotive in Herzogenburg last year. This involved 30 employees processing 3 800 tons of sand, equivalent to the weight of seven A380 jumbo jets. The sand cores are used to form cast parts such as exhaust manifolds or turbochargers. They reproduce the interior geometry of a cast part – the hollow spaces which exhaust gases later pass through. During production, quartz sand is mixed with resin and hardener before the mixture is pressed in a core shooting machine with a pressure of three to six bars. Up to twelve cores are produced every minute in the machine's core box. For special cast parts, the core shooting machines join several sand cores together into a so-called core package. In order to produce more than three million cores every year, production runs in three shifts on eight machines.

Production site: **Herzogenburg, Austria**

Average weight: **2.5 kilograms**

Weight of the lightest core: **0.05 kilograms**

Weight of the heaviest core package: **19.2 kilograms**

Production volume: **13 000 cores per day (average figure)**

Third Water Technology Summit

To limit global warming to two degrees up to the year 2045, carbon dioxide emissions have to be reduced worldwide and resources conserved. Experts from ten European nations discussed which new water treatment solutions can contribute to this effort at the third GF Water Technology Summit in Schaffhausen in mid-September. Selected experts spoke about various topics at the event, including the latest developments in membrane technology. The GF Piping Systems summit provides an international platform every year for customers and experts to discuss new approaches and solutions in the field of water treatment. ■



More than 40 participants from ten countries took up the invitation to attend the third Water Technology Summit.

IN RETROSPECT

Major order in the e-mobility growth market

An increasing number of automobile manufacturers are relying on the lightweight construction expertise of GF Automotive in the field of electromobility. The division recently received a large order for the battery housing of a new hybrid vehicle from a French carmaker. In electric cars, lightweight parts are decisive, as weight savings extend the range that vehicles are capable of achieving. The order volume amounts to EUR 77 million, and the parts will be produced at the German site in Werdohl from 2019. With this large order, GF Automotive is drawing closer to its growth target in the e-market: By 2020, the division is aiming to increase the share of sales from electromobility in the light metal segment from one percent to ten percent. ■



The new GF Social Media Guidelines

Since October, the new GF Social Media Guidelines provide employees with tips on using social networks. Social media is nowadays part of in many people's everyday lives, and GF has also been active on Facebook, Twitter and co. since 2013. In coordination with the GF Social Media Team and based on the updated guidelines, GF companies can also open their own channels. But no matter whether you use social media professionally or privately – responsible actions and respect towards others are just as important online. The poster in this issue of Globe reveals what is particularly crucial, as does the new GF social media video. ■



HOW DID IT GO?
41 YEARS AT GF

Les Bevis

Data Control Manager &
CRM Regional Super User
for Northern Europe
at GF Piping Systems
in Coventry, UK

41 years ago ... Les Bevis was still working as a Sales Assistant at GF Piping Systems in London where his job was to take care of customer orders. A lot has happened since then. The office moved to Coventry and Les Bevis himself progressed through various jobs in the sales office and in export management before finally arriving in data control. “I make sure that all of our customer data is correctly recorded in the SAP system,” he explains. Now 62 years old, Les Bevis looks back with particular fondness on the introduction of the SAP system in 2011, when he tested the programs to see whether they worked properly from a sales perspective. Besides his role as Data Control Manager, he also trains colleagues in how to use the Customer Relationship Management system. “I like my job. In all the years I’ve spent at GF I’ve always had the opportunity for further development, and I’ve learned a lot of new things. That’s great.”

And what about the coming years?

Once again, something new lies in store for Les Bevis, as he will be retiring in May 2017. He has mixed feelings about this. “I’m looking forward to what’s coming next but I’m going to miss my colleagues. Throughout all the years, they kept me motivated. That was important – especially when things got difficult at times.” After retiring, Les Bevis is keen to go traveling with his wife, and Australia and New Zealand are topping the list.

PROJECT
SCRAP TRADE

Scrap – a highly valuable resource

Every year, 400 000 tons of scrap are recycled into high-quality components for the automotive industry at the iron foundries of GF Automotive. This raw material is subject to strict standards and its procurement is governed by an own set of rules on the global market.

Hanspeter Füssinger is standing in the middle of the scrapyards at Scholz Recycling GmbH in the German town of Essingen. He is surrounded by huge mountains of scrap metal, meticulously sorted according to type and size. As a strategic purchasing manager, he is responsible for procuring the raw material for the four GF Automotive iron foundries in Germany and Austria. And this raw material is 100 percent scrap.

Does that mean that GF uses old scrapped cars and bikes to produce high-quality cast parts for automobile production? "No, never!" laughs Füssinger. "Those sorts of materials don't fit the criteria for our production processes." He points at a pile of shiny sheet metal: "This is the sort of scrap metal we need – so-called new scrap." These mint-condition metal sections are, for example, discarded as stamping waste in automobile production or as shavings in the metal processing industry. Free of impurities, new scrap usually consists of single-grade steel – the perfect raw material for GF Automotive.

Around 400 000 tons of this scrap are melted down every year by the German foundries in Singen, Mettmann and Leipzig as well as by the Austrian site in Herzogenburg. To safeguard a continuous supply for the furnaces, Hanspeter Füssinger purchases the

required metal on the scrap market. He is careful to ensure that the scrap fulfills very specific criteria: "Depending on the cast product, the scrap metal has to fit a very specific chemical profile, such as the correct proportion of manganese, chrome, titanium or sulfur," he explains. To cover these requirements, he buys from large scrap traders or directly from so-called collection points, such as automobile manufacturers.

Volatile market

The scrap price is based on its own index, and this is partly governed by the number of scrap sales executed on the world market. This price development directly impacts procurement and ultimately the operating result of GF Automotive. Further global factors also influence the price: sharp rises in the demand for steel send the scrap price shooting up, as experienced on the market last May. Sharp rises in the demand for steel also send the scrap price shooting up, as experienced on the market last May. In addition to the buying price, GF also has to factor in costs for logistics and, if required, any preprocessing of the material.

Other influencing factors include strikes and vacation close-downs within the automotive industry. These factors are critical as Hanspeter Füssinger procures the lion's share of his scrap directly from large automobile plants via framework agreements. "When the assembly lines are at a standstill, there's no scrap either," he explains. However, if additional scrap is required, the strategic sourcing manager reacts quickly – drawing on all his market knowledge, long-standing supplier relationships or on online auctions. "In principle, it works just like eBay," says Füssinger.

The auctions are organized by automobile corporations on their own platform, which bidders like GF can then access.

This process is, of course, somewhat more complex in practice. During auctions, Hanspeter Füssinger has to know precisely which materials he is bidding for. In addition, he also has to keep an eye on the foundries' order pipeline for the months ahead so as to safeguard the supply of high-quality raw materials at a good price. GF Automotive customers ultimately also benefit from this foresight as the company strives to pass on price advantages wherever possible. To this end, GF Automotive agrees specific pricing agreements with each customer.

Just like the foundries in Germany and Austria, the site in Kunshan, China, is also reliant on scrap as a raw material. However, it was not easy to find suitable sources of scrap metal before the site was commissioned in 2009. "The scrap market for foundries in China was substantially smaller than in Europe," explains Füssinger, who established the supply of raw materials in Kunshan. The reason: "In China, sheet sections are often directly reprocessed – for example by using cut-offs to stamp furniture fittings," explains the expert. Today, the Kunshan site is able to draw on enough sources for procuring new scrap, though trading here is subject to its own regional rules. ■



Hanspeter Füssinger, Manager Sourcing Group I, is constantly on the lookout for high-quality new scrap for the iron foundries of GF. One reliable source is Scholz Recycling GmbH in the southern German town of Essingen.



SCRAP TRADING – A GLOBAL MARKET

The trade in scrap metal has long since developed into a global market, and scrap prices are based on the international demand for this valuable raw material. Prices are calculated using various indices, such as the index published by the Federal Association of German Steel Recycling and Disposal Companies (BDSV) or by Europe's largest export port in Rotterdam. In spring 2016, scrap prices spiked sharply, increasing by EUR 80 per ton in April and May alone. This trend was fueled by the rise in demand from Turkey, one of the ten largest steel producers worldwide. Half of the roughly 17 million tons of steel scrap exported from Europe is destined for Turkey, as the country is unable to source enough scrap in sufficient quality domestically.



COVER
LACQUER ARTIST
TOMMY LIAO





The art of harmony

Tommy Liao, Service Technician at GF Machining Solutions in Taiwan, enjoys the art of lacquer work in his free time. For him, this traditional technique represents gentle beauty, carefully crafted by hand. Lacquer painting helps him to align his mind and body in perfect harmony.



FROM PROTECTION TO ART

Lacquer painting first emerged more than three thousand years ago in China. At the time, the sap of the Chinese lacquer tree (*Rhus verniciflua*) was used to protect tableware or furniture against environmental influences, as well as from general wear and tear. Over time, a decorative art form emerged from this habit with a high degree of regional diversity. One thing all regional variations have in common is the time-consuming process involved. Decoration techniques range from lacquer painting and dusting objects with materials such as gold and silver powder or mother of pearl, through to typical Chinese carved lacquer art. In the latter, layer upon layer of lacquer is applied before geometric patterns are carved into the lacquer to produce three-dimensional decorations. Over time, numerous countries adopted Chinese lacquer art and advanced its evolution, with Europe succumbing to the magic from the 16th century onwards. Some aristocrats even had their very own lacquer cabinets set up in their residences. The fascination surrounding lacquer has remained unbroken to this day: Pieces of art produced by hand are still very much in demand, and it is not unusual to see lacquer vessels sold for several thousand euros a piece.



With every brush stroke, Tommy Liao sinks deeper into his artwork. It allows him to switch off completely. From the production of a blank through to the final polish, the process of creating a piece of lacquer art can take up to four months.



Tommy Liao's atelier is home to everything from pendants to intricately decorated tableware. His favorite piece is a carmine plate featuring an owl with an intense stare. It was one of the first pieces he made with numerous delicate details.



The silence is overwhelming. No hectic street noises, no blaring radio, no bothersome voices. All you can hear is the occasional breath from Tommy Liao in his wood-clad atelier on the edge of Taichung. The 54-year-old, working as Service Technician at GF Machining Solutions in Taiwan, sits at a workbench – his torso upright, his head tilted over a wooden plate. Brush in hand, he carefully applies the lacquer paint, spreading the amber-colored fluid with flowing strokes across the contours of a peony. He sinks deeper into his work with every stroke of the brush. Everyday life and the outside world vanish and a state of timelessness descends – the task at hand becomes all-encompassing. "It's hard to put this state into words. The mind and body become one and I'm at peace. I feel free and utterly relaxed," explains Tommy Liao. And it is this exhilarating and only partially tangible process that fuels his fascination for lacquer work – a traditional handcraft that has fascinated him for almost five years.

Gentle beauty

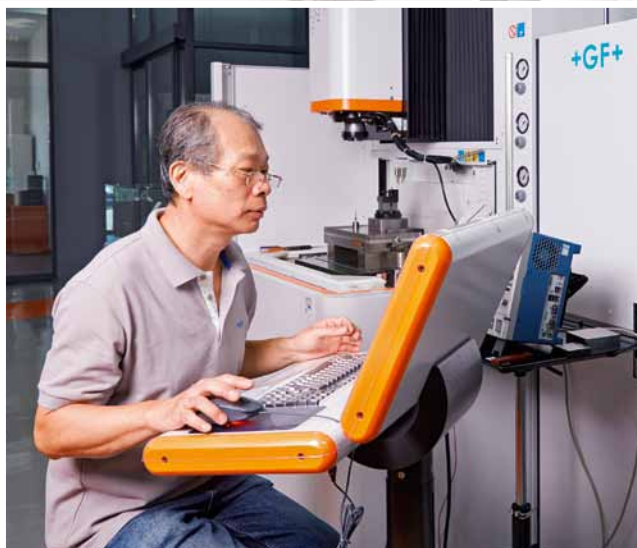
Tommy Liao first came into contact with this challenging art form through his wife, herself a lacquer artist. He was immediately taken by the beauty of the objects and their incredible finesse. Nevertheless, it took several more years for him to find the time to try it himself. "I got started in October 2011, and I've been hooked ever since," he admits,

laughing. He acquired the basic skills during a course at Fengyuan Museum of Lacquer Art. He has been experimenting with the almost limitless possibilities offered by this type of art since completing the course, and the objects dotted around his atelier pay testament to this: colorful, decoratively patterned bracelets stand alongside minimalistic tableware with strict, geometric shapes. He has given several plates a unique sense of depth by decorating their high-gloss black surfaces with shells or lacquer colors.

Tommy Liao's favorite piece is a red plate featuring an owl perching on a branch, staring intently back at anyone who observes it. He created the plate during his time at Fengyuan Museum of Lacquer Art, and it is the result of a great deal of time, discipline and patience. "It takes a good four months from carving contours into the blank through to the lacquer decoration and the final polish of the completed piece," explains Liao. That means months of numerous, sometimes long-winded and repetitive steps. First, a blank is usually made from a piece of wood by a carpenter and then prepared for the lacquer. To do this, Tommy Liao sands the surface, coats it several times with raw lacquer and then covers it with fabric to ensure that any possible deformation of the wood body would not damage the lacquer coating of the finished object. After that, he applies a smoothing agent layer by layer until the structure of the fabric is no longer visible. Between layers he repeatedly sands it down with fine sandpaper and water >



The precision and patience he learns from lacquer painting comes in handy for his work as a Service Technician at GF Machining Solutions in Taichung, Taiwan.



It trains the mind and body, and demands discipline and humility," he says, describing the development his own personality has undergone – a process closely linked to his art.

This experience also helps the Service Technician handle different situations at work. He has been working at GF Machining Solutions for 16 years – something that came about more by chance than design. The company was recommended to him by a friend, and he applied for a position without knowing much about GF. He got the job and the work immediately struck a chord with him. Field service has allowed him to flourish. "My work is highly varied. I'm always meeting new people and facing new challenges," says the EDM specialist. He visits the office two to three times a week to meet with colleagues, but spends most of his time out on repair jobs in the Taichung region. He enjoys the contact with customers and is committed to restoring their machinery to perfect working condition as quickly as possible. In Taiwan they take the "serve" part of customer service very seriously indeed. The aim is to complete any repairs during the initial customer visit, in other words within a single day. In really tricky cases, Tommy Liao sometimes needs to take a deep breath to stop himself giving up. He then methodically looks for whatever is triggering the disruption and resolves it. "Nothing can be forced," explains Liao. "I have to systematically check the machine parts in question step-by-step." The role requires stamina, patience and concentration – all qualities he also learns with lacquer painting. However, he believes that his hobby offers even more important benefits after he clocks out for the day. As soon as he walks into his atelier, he can leave his hectic working day behind him. "Lacquer painting has changed me. It gives me the calm and strength to deal with difficult situations more effectively and to switch off," says Tommy Liao, before reaching for his paintbrush once again. ■

› to flatten any unevenness. Although this is time-consuming and meticulous work, it is a vital step before applying the decorative lacquer – as the highly polished surfaces of the finished piece appear almost mirror-like, the smallest surface imperfections can stand out like a sore thumb.

Training for mind and body

As a passionate amateur artist, Tommy loves immersing himself in the various techniques and finesse involved in decorating the objects. The decorative lacquer has a mind of its own and is difficult to master – something which undoubtedly makes the challenge so appealing. "Although I give some thought to the general type of decoration in advance, I can't predict the final end product. The object, the colors and therefore also the pattern are constantly evolving. The final look almost emerges by itself," says Tommy Liao. Plenty of patience is also required after decoration. The surface has to be smoothed down several times and protective lacquer applied before polishing can begin. The latter involves the 54-year-old dusting the object with polishing powder which he then rubs into the surface with the palm of his hand and a few drops of oil. He repeats this process three times. "Lacquer art is character building.

3x3



Tina Salsone

Procurement Officer,
GF Piping Systems,
Riverwood, Australia



Rajesh Ghasi

Business Development Manager &
Product Manager Instaflex,
GF Piping Systems, Kuwait City, Kuwait



Virginie Frigo

SAP Configuration Product
Specialist, GF Machining Solutions,
Geneva, Switzerland

My favorite song right now is ...



"We Will Rock You" by Queen.

Tina Salsone

"WE SHALL
OVERCOME" BY
JOAN BAEZ.

Rajesh Ghasi

"Le lac" by Julien Doré.

Virginie Frigo

To-do-lists or creative chaos?

**DEFINITELY TO-DO LISTS!
IF IN DOUBT, I'D RATHER
HAVE A CHAOTIC LIST
THAN A CHAOTIC MIND!**

Tina Salsone

To-do lists – they help me
prioritize things ahead of time and
keep my customers happy.

Rajesh Ghasi



To-do lists.

Virginie Frigo

My best moment this week:

When I felt the warm wind
against my face and knew:
Spring is coming to Australia!

Tina Salsone



Cutting my daughter's birthday cake –
she has just turned six years old.

Rajesh Ghasi

**ATTENDING THE
WEDDING OF TWO GOOD
FRIENDS.**

Virginie Frigo

**JOIN IN
AND
WIN!**

And here are the new questions:

1. My favorite subject at school was ...
2. This put a smile on my face today:
3. I'd like to visit this GF site:

Take part and send your answers along with a portrait photo with "3 x 3"
in the subject line to: globe@georgfischer.com
All entries will be included in our competition on page 40.

PORTRAIT
ROLAND ABT

21 successful years at GF

Roland Abt can look back on an exceptional career at GF. As CFO for 13 years, he helped guide the company through some stormy waters at times, with the financial crisis in 2008/2009 proving particularly demanding. Roland Abt's extraordinary work during this period was also recognized far beyond the company: in 2011 he was awarded the distinction of "CFO of the Year" in Switzerland. Before joining GF, Roland Abt held a number of different positions as CFO and Managing Director. After working in Venezuela for several years, he became CFO of GF Piping Systems in 1996 before joining GF Machining Solutions (the AgieCharmilles Group at the time). As CFO he has been a member of the Executive Committee since 2004. After 21 years at GF, Roland Abt will retire at the end of 2016. He will focus on his Board of Directors assignments (Swisscom, Conzzeta) going forward. Six colleagues look back on the time they spent working with him.



Yves Serra
CEO

I have known Roland Abt for almost 20 years. I first met him at the end of 1997 when he joined the former AgieCharmilles Group as its new CFO. Thanks to his dual experiences as CFO and as Managing Director abroad, he understands very well the link between business decisions and the financial consequences. This helps him to put himself in the shoes of his colleagues, the CEO or division managers for example, and to support them in a very competent way. His mastery of accounting and finance also allowed him to find unconventional solutions to tough challenges, e.g. in the financial crisis of 2009, when we had to refinance the company or in 2013, when we had to change our financial accounting standards to continue consolidating our largest company, a joint venture in China. I will also remember Roland Abt for his always calm and professional behavior, for his reliability and his loyalty to the company which have been exemplary.



Monika Weiss
Assistant CFO 2006–2016

I look back fondly on the many years I spent working with Roland Abt. His affable, open and loyal manner was a pleasure. I particularly enjoyed organizing and carrying out the annual financial management training which gave me the opportunity to experience a more global environment at GF. Roland Abt always supported me, and enabled me to develop on both a professional and personal level. I'm very grateful for this!



Richard Trevaskis
Head of Region North Europe
GF Piping Systems

My business collaboration with Roland Abt started when I became Managing Director of GF Piping Systems UK which included the responsibilities of the pension fund – an important topic for both of us. It was during these discussions that I learned to appreciate Roland Abt's willingness to listen and when asked for his opinion, I always felt that he gave a very fair and professional opinion. He also gave me some very good advice regarding how to manage this demanding task. We exchanged many polite conversations – also about soccer. He always remembered that I supported Chelsea and always asked how they were getting on.



Angela Xu

Corporate Finance Manager,
Headoffice China

The most important thing I have learned from Roland Abt is to treat everything at work very seriously, regardless of whether it is an important report or a single figure, but always get along with people in a very polite, magnanimous and open-minded way. Although he always demands high standards, it is very pleasant to collaborate with Roland Abt. Whenever I encountered difficulties or even made a mistake, he always asked me how he could help me solve the problem. His attitude encouraged me a lot, especially when I began my job as Finance Manager at the GF headquarters in China and he helped me take on all the challenges during that special period.



Dr. Kurt E. Stirnemann

CEO and Delegate of the
Board of Directors 2003–2008

I worked with Roland Abt for nine years – initially at AgieCharmilles and then in the Executive Committee at GF. As CFO, he was one of my closest colleagues and we also grew close on a personal level. He's quite an analytical person; always calm, considered and precise in his thinking and remarks. We traveled around the globe together a lot and sealed important acquisitions. Throughout the years he was a valuable sparring partner as well as an independent thinker whose judgement was always reliable. Roland Abt also enjoys an outstanding reputation in the financial world among banks and analysts, not least due to his ability to dependably assess situations and offer realistic estimates for the future.



Dorothea Walder

Head of Klostersgut Paradies

Roland Abt recognized the importance of the Klostersgut as a historical building and a treasure of GF from day one. When we faced unexpected situations during renovations, he didn't simply say "no" but instead gave the go-ahead wherever it made sense. His pride at being responsible for such a unique institution was demonstrated during a video shoot at the Klostersgut on the occasion of his "CFO of the Year" award. He joked that as an "abt" (which means "abbot" in German) it was high time that he got to a monastery. I particularly appreciated the complete trust he placed in me and my team, allowing us to get on with our work unhindered. ■



"GF has a special spirit"

In this interview, Roland Abt describes what makes GF unique, and which advice he would like to give to all employees.

Mr. Abt, when you look back on your time at GF, which periods have particularly influenced you?

The difficult times, first and foremost. Such as my time at GF Machining Solutions with distinct cycles of business which put the division in a very difficult earnings position several times. Drastic measures had to be taken and we had to maintain the banks' confidence in us. The most defining experience was without doubt the financial crisis in 2008/2009. We ultimately came through the crisis quite well, but we had to operate skillfully on very thin ice for some time.

What do you believe sets GF apart from other companies? What makes GF unique?

GF has a much broader positioning than most other companies. Our three divisions operate in completely different markets – a fact which makes the work as a CFO exciting and varied. But there is also a special spirit at GF. My impression is that the employees enjoy working for the company and appreciate the open working atmosphere.

What did you particularly appreciate about your work at GF?

The fruitful collaboration with the divisions and the outstanding relationship with the employees at the Corporate Center as well as my colleagues in Corporate Management.

Can you give us an insight into your new daily routine?

I'm not yet sure what my new routine will look like. I've set up a large office so I can take care of my business mandates and other interests. Thanks to my mandates I'll also remain up to date with what's going on in the industry. On top of that, we have a large garden which always keeps me busy.

Which advice would you like to give to the employees of GF?

Remain optimistic without losing sight of reality, particularly in difficult situations, whether in your private life or your job. Although a solution is not always immediately apparent, never lose faith that one exists. As long as you keep trying, you have not lost. ■

WHO INVENTED IT?
TIME ESTIMATOR SOFTWARE

Precise predictions with a mouse click

Up to now, estimating how long electrical discharge machining would take, and therefore how much it would cost, has been the work of experts. With the Time Estimator Software developed by GF Machining Solutions, this calculation can be carried out with one click of the mouse. From our customers' point of view, this offers significant added value.

The demands made of high-precision machinery are constantly increasing; the process of electrical discharge machining (EDM) is no exception. It allows conductive surfaces to be machined with high precision but avoids mechanical stress. Today's machines not only need to create structures with micrometer precision, but also work efficiently in processes with ever shorter cycles. Developers at GF Machining Solutions are trying to use innovation to rise to this two-fold challenge and, as the Time Estimator Software demonstrates, they are having some success. Up to now it has been difficult to predict how long each stage in the electrical discharge machining process would take. "Only very experienced experts can reliably estimate the processing time in advance, because EDM is more complex than other methods," explains Christian Chapatte from GF Machining Solutions in Geneva. "Therefore, some companies have been reluctant to use our electrical discharge machines."

The developers at GF Machining Solutions wanted to change this situation and in 2013 they started to search for a solution. Christian Chapatte looked at all the EDM parameters which affect the machining time. These included the number and type of electrodes required, and the thickness to which the material was to be processed. This data was used as a basis for the development of the Time Estimator Software, which has been available for a few months now. This allows customers to benefit hugely in terms of time and cost calculations. Once all the

relevant values have been input, the predicted processing time can be calculated in just a few seconds with a click of the mouse. Companies that frequently manufacture small volumes or individually customized parts benefit in particular. "Different options can be run through our software solution, making a lot of testing unnecessary," says Chapatte. "Customers discover which specifications would make production as efficient as possible and thus have the ideal basis on which to make a decision. Even with little experience, it is possible to make reliable predictions." ■

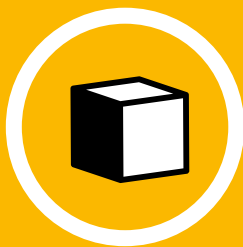
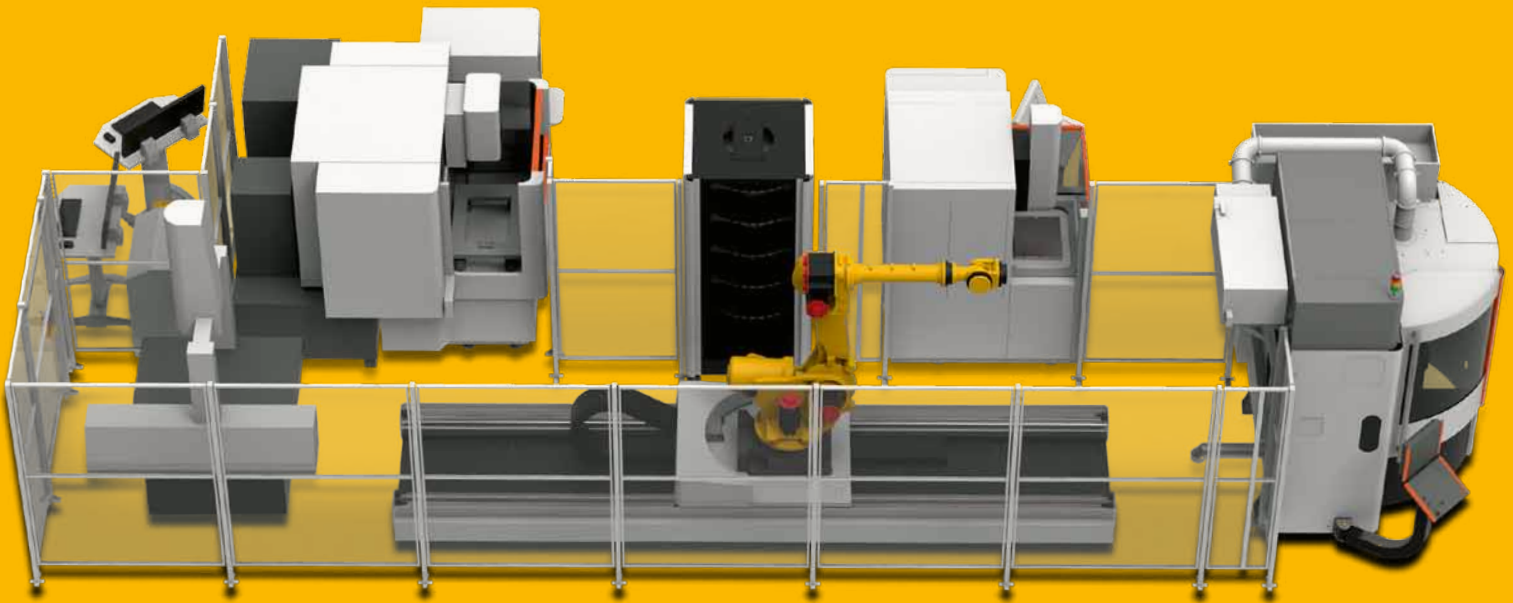


Christian Chapatte

is 54 years old and works as Head of Manufacturing Processes at GF Machining Solutions in Geneva. He originally hails from Sion, Switzerland, but has now been living in Geneva for 30 years. The software he has developed helps a number of companies in their day-to-day work and is being further enhanced by the Industry 4.0 team.

OPTIMIZED PRODUCTION PROCESS

The Time Estimator Software employed in electrical discharge machines allows the processing time to be calculated accurately in advance. This helps plan and constantly optimize the manufacturing process.



3D model

The software illustrates the component to be processed as 3D model.



Time calculator

With a click of the mouse, the software calculates how much time the planned processing stage is likely to take. The operator can change the parameters to optimize the production time.



Virtual simulation

The software includes all parameters for the EDM process on die-sinking erosion machines. All specifications can be simulated by mouse click with no need for a test run.



CUSTOMER PORTRAIT
ADVANCED AQUARIUM TECHNOLOGIES



An ocean in the city

Over the past 20 years, the Australian company Advanced Aquarium Technologies has established itself as the world's leading specialist in the construction of large aquaria. This growth has been supported to a significant degree by GF Piping Systems, which delivers the best solutions for the huge filter systems and circulation pumps.



Building large aquaria requires close teamwork: For years, Bruce Dyne, Market Segment Manager Industrial at GF Piping Systems Australia, has been successfully working on building aquaria around the globe with the founder and Managing Director of AAT, John Langmead, and Zac Gill, Business Development Manager at AAT (from left to right).



Bruce Dyne, Market Segment Manager Industrial at GF Piping Systems Australia, is really enthusiastic about his customer. Part of his job is to deal with aquaria which involve tough demands on plastic pipes. "Our partnership with John Langmead, founder and Managing Director of Advanced Aquarium Technologies (AAT for short), started in 1999 with a big project in China – the Shanghai Ocean Aquarium," remembers Bruce Dyne. The gigantic aquarium has a huge filter system, which, as a so-called life support system, treats millions of liters of artificial salt water. Although the water is actually produced on land, it still provides the ideal conditions for the different types of fish. "That was a fantastic project," he emphasizes.

Another project underlines the vast dimensions of the work carried out by AAT and GF Piping Systems: In Hong Kong, the partners collaborated on the large aquarium in the territory's Ocean Park. In total, the aquarium holds some six million liters of water, making it one of the world's largest. The piping system from GF Piping Systems consists of four kilometers of plastic pipes and thousands of valves and fittings and moves 170 liters of water around the Ocean Park every second – 24/7. Even though the

visitors are only there during the day, the 5 000 fish need to be taken care of all the time. "They are living animals whose health depends on our technology," says Dyne. "In large aquaria such as this, it is crucial that the piping system for the water is of high quality – and that's what we can provide."

Flexibility around the globe

Global product availability is one important criterion for the successful partnership, because AAT is involved in projects in Denmark, Singapore, the United Arab Emirates, Lithuania and in Turkey. "An advantage of our systems is that they are easy to assemble on site," stresses Bruce Dyne. "We can also supply hybrid systems which comply with different PVC standards and can be adapted to local regulatory requirements."

GF products have become an essential part of AAT's filter systems. John Langmead emphasizes: "We exclusively use products from GF Piping Systems for our life support systems because GF is a renowned brand offering the full range of products that we need. And the quality is really exceptional." This means that AAT can obtain all the components they need from a single source. "Working >



Sharks as an everyday encounter

Zac Gill is Business Development Manager at AAT. Almost every month he visits customers across the world. The 35-year-old particularly appreciates the global availability of the products of GF Piping Systems.

How did you become the Business Development Manager of an aquarium manufacturer?

I used to work in the water treatment sector for mines and industrial applications. Having this background helps me to fulfill my role at AAT. In my free time, I enjoy diving and surfing. On top of that, I aim to share my passion for the ocean with others.

AAT collaborates exclusively with GF Piping Systems.

What are the advantages of this partnership?

GF supplies us with piping systems for the filter systems and also with parts for our own developments and instruments for monitoring the aquaria. As we do business all over the world, it is enormously important for us to be able to obtain the same products in the same high quality wherever we go. Our aquaria are in operation 24 hours a day. That means permanently moving a massive quantity of water, which is a real challenge for the pumps and the piping system. On top of this, GF Piping Systems can supply their products very quickly and reliably as they have production facilities all over the world.

Are there regional differences? Where are people most enthusiastic about marine life?

We have found that the greatest interest currently comes from China where we have the most projects. Having said that, aquaria are becoming increasingly popular attractions in many countries. We are also busy in Europe, Australia, the USA and even on the Arabian peninsula: We are currently building the first public aquarium in Oman. The country wants to become less dependent on oil and further expand tourism. Our aquarium is part of that strategy.

What is your favorite marine animal?

I do find the little seahorses fascinating. I also find sharks very exciting – but only when they are behind a thick pane of acrylic, of course. ■





In the Chinese province of Sichuan, AAT integrated a three-tiered aquarium and ocean tunnel into a shopping center. The corresponding piping solutions from GF Piping Systems provide the roughly 10 000 underwater inhabitants with fresh water around the clock.

› with GF has been highly instrumental in helping us grow to become the largest provider of turnkey solutions in the aquarium market. Over the years, we have built up a good personal relationship with the experts at GF,” as Langmead describes the partnership.

Booming market China

The biggest demand for aquaria now seems to come from the People’s Republic of China where their construction is growing in cost and complexity. The Cube Oceanarium was built just recently under the supervision of AAT in Chengdu, the capital city of the Chinese province of Sichuan. The special feature here is that the aquarium meanders through a shopping mall as a customer attraction. This marine marvel covers no less than 12 000 square meters and extends over three floors. This aquarium has even made it into the Guinness Book of Records in an entry for the largest sheet of transparent acrylic – 8×40 meters through which visitors can view 10 000 marine animals as they swim around. What they cannot see, however, are the eleven kilometers of pipework from GF Piping Systems without which this unique underwater world would not be possible. ■



ADVANCED AQUARIUM TECHNOLOGIES (AAT)

Headquartered in Mooloolaba on the Sunshine Coast near Brisbane in Australia, with additional offices in Hong Kong and China, AAT has achieved world leadership in the construction of aquaria. More than 100 people are permanently employed by the company, which was founded in 2003. The service portfolio includes the planning and construction of aquaria and the supply of marine creatures. AAT has its own manufacturing facilities in Australia and China and has founded its own subsidiary, AAT Acrylics, for the construction of Plexiglas.

SITE PORTRAIT
SINGEN, GERMANY

A traditional site ready for the future

The **GF Automotive foundry** in the southern German town of Singen is one of the oldest, largest and now one of the most state-of-the-art GF sites worldwide. Thanks to the new high-tech production line, the site is ideally equipped to meet the market requirements of tomorrow.

A view of the production line:
Thanks to its higher level of automation, 180 molds per hour will now be cast in Singen.





The GF Automotive site in Singen has a long history. The foundry was established in 1895 as the first site of GF in Germany, originally built in an effort to avoid the high import duties imposed by the German Reich. In the town of Singen, the plant found its ideal home – close to the Swiss border and only 15 kilometers from the headquarters in Schaffhausen. Even back then the plant was located directly next to another traditional Swiss company – the Maggi soup factory.

Nowadays, Singen ranks as the largest GF Automotive production location with around 1 000 employees and a capacity of 190 000 tons of cast iron every year. The plant manufactures around 350 different cast parts for numerous well-known automobile manufacturers and supplier companies. The components include steering boxes and gearboxes, wheel hubs, brake calipers and frame components. “We specialize in cast iron parts with nodular graphite, which boast high tensile strength thanks to the structure of the material,” explains Ulrich Stark, Managing Director of GF Automotive Singen.

Production begins with dialog

Customers have come to rely on the high quality of GF for years. To ensure that they always receive the ideal products for their vehicles, the technical sales team at GF Automotive in Singen works closely with customers as early as the product development phase. “This allows all the technological advantages we offer to flow directly into the products,” explains Stark. This includes the construction of extremely light and stable cast parts made of special alloys and in bionic design.

These alloys are created in the heart of the Singen smelting plant, the cupola furnace, which smelts the raw iron for casting at around 1 500 degrees Celsius. The plant’s capacity of up to around 80 tons of pig iron per hour makes it one of the largest of its kind in Europe. The Maggi company also >

Thanks to the hard work and commitment of the project team, the PL2 could be put into operation as planned in September 2016. Representing the entire team, three team members are featured:



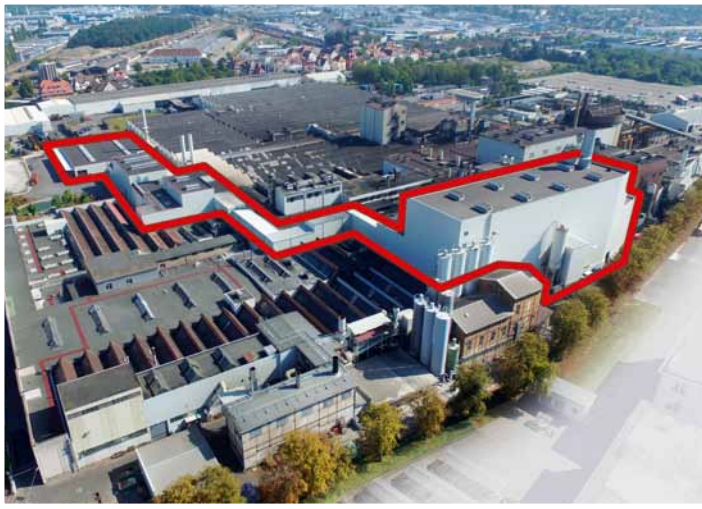
Birgit Bohnenstengel – Plant Scheduler

Birgit Bohnenstengel has been working in plant scheduling at GF in Singen since 1988. PL2 was by far the largest building project the construction technician has ever been involved in. Planning the project on the existing site was a tough task for both her and her department. Even after plans were finalized in the CAD program, Birgit Bohnenstengel attended the construction site on an almost daily basis over the past year to monitor the implementation of the plans and coordinate the delivery and set-up of the machines. Her work is not yet over, even after production has started. “As in every major project, we’ll have to iron out all the teething problems,” she explains.



Ulrich Stark, Managing Director of GF Automotive Singen, is delighted: the new PL2 equips the historic Singen site for the future.

A logistical masterstroke:
The marking in this aerial photo shows where the new PL2 has been integrated into the existing Singen site.



**Jens Müller –
Manager PL2**

Jens Müller is the Manager of the new production line and will be responsible for over 100 employees in the future. He previously oversaw the PL1 production line for five years. Jens Müller started supporting the PL2 project team as early as the construction phase and was intensively involved in preparations before production start. For example, he creates work instructions and personnel plans for operations. During the ramp-up phase, his aim is to continuously increase the production performance of PL2. “There is still plenty of work to be done before the system reaches full capacity,” says Müller.



**Frank Leideck –
Project Manager**

Frank Leideck took over the PL2 project in 2011 and supported construction from the planning and loan application phase right through to the start of production. The project and its incredible scale were a mammoth task for the mechanical engineer who has been at GF Automotive in Singen since 2003. After he had already written his diploma thesis on the AM 214 and managed the older production lines, the process of realizing PL2 still had various challenges in store: notably, the construction of the new production line was not to impact ongoing operations – no small feat given the limited space available. “I am nevertheless handing over the project with a heavy heart after five years,” says Leideck.

› benefits from this sizeable capacity – the neighbour has been harnessing the heat produced by the furnace for its own production since 2009. As a result, the two companies are able to save some 11 000 tons of carbon dioxide every year.

In the casting plant, the liquid iron is poured into casting molds made of special molding sand. In addition to the casting itself, GF Automotive also offers the mechanical processing of cast parts as well as cathodic dip-coating. The latter involves parts receiving a layer of lacquer which protects against corrosion. They are then subsequently delivered to customers and are ready to install. “Our aim is to offer our customers an ever-increasing degree of added value,” explains Ulrich Stark.

Towards an efficient future

In an effort to deliver on these high standards in the future, the Singen site recently put a completely new, state-of-the-art production line into operation. Production Line 2, PL2 for short, is replacing two older molding lines. When the line has reached its full capacity, it will be able to process 100 000 tons of iron a year – and therefore cover over half of the total capacity of the Singen site. PL2 can cast up to 180 molds per hour. The new installation represents the largest investment of GF in an individual site to date.

“PL2 is at the cutting edge of technology,” says the project coordinator Artur Bissert proudly. In contrast, the long-serving previous AM 214 line has been in operation since the 1960s. In summer 2015, construction work began on both new halls housing PL2 on an area totaling some 5 300 square meters. The real challenge was realizing construction while operation continued as normal in the direct vicinity. “Thanks to the outstanding commitment of the project team, we mastered this challenge very well – despite some delays caused by the loss of two important suppliers,” explained Bissert.

PL2 has been in operation since September 1 – initially only running daytime shifts. In parallel, numerous tests are being carried out on the machine. By mid-2017, the production line is due to reach full capacity and take over all tasks from the old AM 214 and IMD lines. Ulrich Stark therefore believes that the Singen site is ideally equipped for the challenges ahead: “Thanks to the great technical options PL2 offers, we can now address customer requirements with greater flexibility and guarantee them even more precision and process stability.” ■





Around 1 000 employees work at the Singen site. The site produces around 350 different cast parts for numerous automobile manufacturers and suppliers. In addition to the casting itself, GF Automotive in Singen also offers the mechanical processing and cathodic dip-coating of cast parts.

INVESTING IN THE FUTURE

GF Automotive is considerably strengthening the Singen site with the new PL2 production line. Instead of the five lines used to date, the plant will only have to run three in the future to maintain the same capacity. PL2 is able to cover the entire product range of the site and its high molding precision opens up completely new options for producing state-of-the-art lightweight parts. It is also energy-efficient, and the resource-conserving production and development of new fuel-saving lightweight parts should also help cut CO₂ emissions further. The German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety has recognized this contribution and supported the undertaking with a grant of around EUR 5 million. For GF Automotive, the new system at the Singen location is the starting point for further improvements in quality, productivity, internal logistics and future automation solutions.

STRATEGY
INNOVATIONS BY GF

Focus on the future

Innovations are a key factor for profitable growth at GF. They ensure competitiveness and therefore the future of the company. At the fifth Technology Day in Schaffhausen, the divisions showcased their latest developments and informed guests about the trends and technologies of tomorrow.

In all three divisions, we are aiming to grow in higher-margin businesses," explained CEO Yves Serra right at the beginning of the event. "Innovations," he added, "are key for achieving this – and that is what we want to show you today." This introduction not only aroused the curiosity of the attending analysts and journalists but also underlined how the topic of innovation is perceived within the company. At GF, innovations mean products, solutions or services, developed in partnership with customers, which address their genuine needs. According to the CEO, it is only possible to generate true added value and expand into new market segments if you fully understand the problems customers are facing. This is why the topic of innovation is a main pillar of Strategy 2020. Therefore, in the coming years GF aims to enhance its ability to innovate and to fasten its innovation pace with the support of the "design thinking" approach developed by the Californian company IDEO (see p. 31). At the fifth Technology Day, the divisions impressively illustrated that GF is already pursuing this path successfully.

Future-oriented laser technology

At GF Machining Solutions, one focus is on the development of femtosecond laser technology which leads into a new era of microprocessing. The technology enables to apply functional

surfaces such as hydrophobic or selfcleaning ones on any kind of mold or part, as well as to cut extremely small parts and cavities. This brings outstanding opportunities even at a microscopic nano level.

To some extent, the developers at GF Machining Solutions were inspired by surface structures in nature – whether self-cleaning surfaces that function like the skin of a fly's eye, or surfaces that completely repel water and ice like lotus leaves. "There are virtually no limits to the application; thanks to femtosecond laser technology, customers can create surfaces with completely new functionalities," explains Armando Pereira, Head of Marketing, Business Development & Segmentation.

The new technology is expected to be deployed in various segments. One is the information and communications technology (ICT) sector, in which the structuring of camera lenses will now enable even higher levels of image sharpness. Moreover, the aviation sector will benefit from new possibilities including anti-icing surfaces on outside airplane sensors. The automotive industry also stands to profit from the advantages of this future-oriented technology, for example, by optimizing the beam behavior of headlights by means of femtosecond lasers. The recent acquisition of Microlution Inc. also helps GF Machining Solutions to seize the many opportunities in the automotive and aerospace sector. >



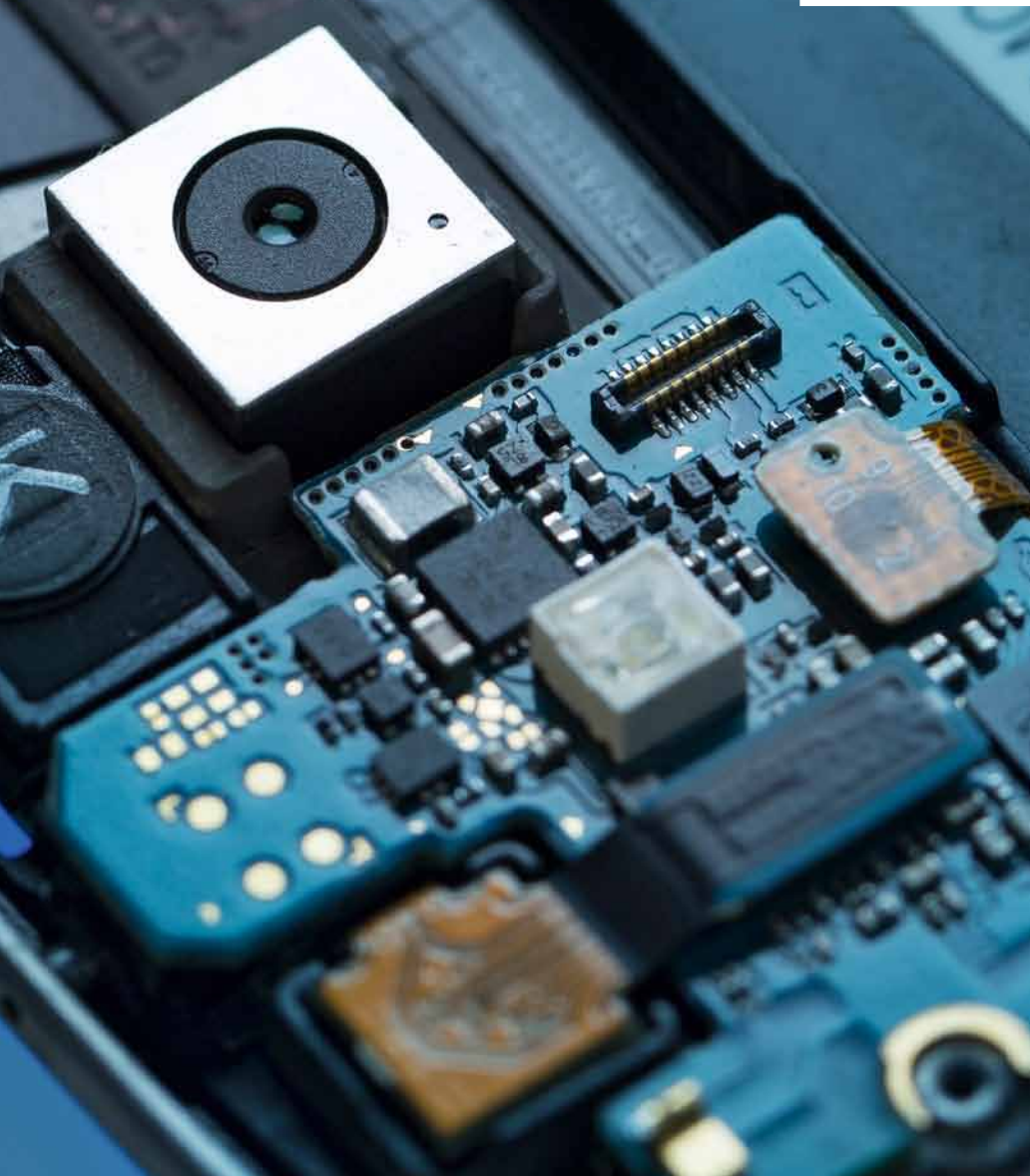
«Thanks to femtosecond laser technology, customers can create surfaces with completely new functionalities.»

Armando Pereira
Head of Marketing, Business
Development & Segmentation
at GF Machining Solutions





Smartphone cameras with incredible sharpness or extremely fine engraving. State-of-the-art lasers from GF Machining Solutions can process surfaces in the nano range and give them completely new characteristics.



DESIGN THINKING FOR INNOVATION EXCELLENCE

The “design thinking” approach devised by the Californian firm IDEO is used by many successful companies today. The aim is to more quickly develop solutions which address a genuine customer need. Success depends on a few factors: multi-disciplinary teams, a “try early and often” culture, a structured process including rapid prototyping as well as constant exchange between developers and customers. This method is nothing new to GF: several projects have been successfully implemented in this manner within the past 10 years. To accelerate innovation speed at all three divisions in line with Strategy 2020, the approach is being rolled out globally. In order to deeply embed this mindset in GF’s innovation culture, about 1 000 employees will participate in cross-divisional and cross-functional trainings in the next two years. The first training sessions will take place in Schaffhausen, China and the USA. Further trainings, concrete projects as well as corresponding organizational measures are in the planning stage.



«Structural parts, which were previously assembled from ten steel parts, we can now manufacture as one single unit.»

Achim Schneider
Head of Business Development & Sales
at GF Automotive

Whether for gearboxes, door frames or wheel carriers, lightweight construction is more in demand than ever. Thanks to its innovative production methods, GF Automotive is increasingly offering components cast as one single piece.

› Lightweight expertise for e-mobility

Casting, machining, coating – GF Automotive is constantly improving its processes and tools in an effort to provide customers with more stable components at a lower weight. Several million lightweight components sold already underline the success of this approach. And this development is set to continue: Up to 2025, GF Automotive is expecting the e-mobility market to grow by 25 percent, while production of vehicles with conventional engines will remain more or less constant. Consequently, more and more manufacturers are working together with GF Automotive to reduce the weight of their vehicles – an aspect which offers numerous benefits regardless of the engine type used.

Developers from GF Automotive are also increasingly working on ready-to-mount components in order to provide finished parts to the customers. “This is an essential need of our customers, and aligning production to this need is one of our strengths,” explains Achim Schneider, Head of Business Development & Sales. More and more customers are demanding one-piece components that integrate various functions. This makes processes more streamlined and vehicles lighter. Especially with regard to the discussions revolving around the ranges of electric cars, weight reduction is a pivotal factor. Structural parts that used to be made of steel, for example, can be made significantly lighter by using aluminum or magnesium. Bionic design and the functional integration offered by casting technology offer additional potential: “Door frames were previously assembled from ten steel parts. Now we can manufacture them as one single unit – and this even much lighter,” explains Achim Schneider, underlining this development. With this know-how spanning all engine types, GF Automotive is endeavoring to play a role in shaping the future of the automotive industry.

A revolutionary cooling system

The developers at GF Piping Systems are aiming at nothing short of a revolution in the cooling of buildings. With COOL-FIT 2.0, the division has developed a pre-insulated, cor-



COOL-FIT 2.0 is a combination of pre-insulated COOL-FIT pipes and fittings with state-of-the-art connection technology which is unique worldwide.

rosion-free plastic piping system for transporting cooling media in air conditioning systems for larger buildings. In addition to the primary air conditioning market, another important market is cooling in data centers. This system not only drastically reduces the energy consumption of water-cooled buildings but also makes installation incredibly simple.

“Up to now, the air conditioning market was dominated by heavy steel pipes,” explains Jens Frisenborg, Head of BU Industry & Utility at GF Piping Systems. But steel pipes have to be welded, installed and finally covered in insulation material – a long process which COOL-FIT 2.0 significantly shortens. Jens Frisenborg explains: “Installers tested our state-of-the-art system, and they were 50 percent faster with COOL-FIT 2.0.”

The secret of COOL-FIT 2.0 is that it is a complete system which combines pre-insulated COOL-FIT pipes and fittings with the electrofusion jointing technology from GF Piping Systems – a mix that is unique worldwide. The pipes, together with their insulation, can be cut to the right length on site with a special tool, stripped and prepared for welding. Subsequently, the easy-to-handle components only have to be joined together and welded.

In addition to the simple installation, COOL-FIT 2.0 offers a number of additional benefits. The plastic pipe system is, for instance, ideally suited for the energy-efficient cooling of large data centers, where water leaks caused by corroded steel pipes could cause serious damage. Office complexes and hotels are also important target markets for GF Piping Systems. ■



«Installers were 50 percent faster with COOL-FIT 2.0.»

Jens Frisenborg
Head of BU Industry & Utility
at GF Piping Systems



OUR MARKETS
MEDICAL TECHNOLOGY

Good health thanks to high-tech machining

Whether dental implants, prosthetic devices made of high-tech materials or surgical precision tools: medical technology is rapidly advancing worldwide – an important growth market for GF Machining Solutions.

Great demand often only emerges with technical advancement. One prime example of this is the market for medical and dental technology. “20 years ago, only 10 000 tooth implants were sold worldwide. Nowadays this figure is around 16 million,” explains Francis Vonrospace, Medical Segment Manager at GF Machining Solutions, underlining the rapid development. For almost half a year he has dedicated himself to intensifying the activities of the division in this growth market. GF Machining Solutions has long supplied the medical and dental industry with high-precision machines, such as Mikron five-axis machining centers used to make bone implants or dentures from titanium.

“Nevertheless the market segment still makes up less than ten percent of the sales revenue of GF Machining Solutions,” explains Vonrospace. This figure is set to rise substantially in the coming years, as medical technology offers enormous growth potential. This is why the segment is firmly anchored within Strategy 2020 for GF Machining Solutions. In concrete terms, the division is aiming for annual growth of twelve percent.

Highest standards

In order to achieve this aim, GF Machining Solutions has to be familiar with the unique characteristics of the sector. “The product requirements are particularly high, as people’s health and sometimes even their lives depend on them,” as Vonrospace emphasizes. As a result, the market is strictly regulated in almost all countries. Medical devices have to

fulfill the highest hygiene standards and go through a demanding validation process before being authorized for use.

This process not only encompasses the final products but also the entire production process, including the machines deployed by GF Machining Solutions. “We know what’s

«20 years ago, only 10 000 tooth implants were sold worldwide. Nowadays this figure is around 16 million.»

decisive in this validation process and can therefore provide ideal support for our customers in navigating this process,” explains Vonrospace. One important aspect is the traceability of individual components. To ensure easy identification of when and where a specific part was produced, each part produced on a GF electrical discharge or milling machine is directly assigned a code, such as a batch number.

Future-oriented technologies

High-precision lasers are among the latest processing technologies that GF Machining Solutions is offering its medical technology customers. Last May, the division acquired Microlution, an American company specialized in the micro-processing of minute parts using milling and laser technology. “Medical devices are becoming ever more compact,” explains Onik Bhattacharyya, co-founder and Head of Sales at Microlution Inc. The new technological solutions allow the smallest details to be easily worked into parts in the

micrometer range. “Our technology executes this extremely cleanly and also substantially faster than the traditional EDM process,” as Onik Bhattacharyya states.

Francis Vonrospace believes that innovative technologies like these are essential for the continued success of GF Machining Solutions in the medical market. Entirely new options will also become available in the future using additive manufacturing – a process that enables components to be made layer by layer from powdered material using laser melting, similar to a 3D printer. Since last year, GF Machining Solutions has been cooperating in this field with EOS, a manufacturer of additive manufacturing systems based in Germany.

Aside from technology, Vonrospace also believes that GF Machining Solutions boasts another decisive asset: “We know exactly what our customers in the medical technology sector need. That’s why we are not only able to offer them high-precision machines, but also exactly the solutions they require.” ■



Francis Vonrospace
Medical Segment Manager
at GF Machining Solutions,
Geneva, Switzerland



Dental implants which bind more rapidly with the bone or the finest stents for holding vessels open – the precision of GF Machining Solutions is required in the field of medical technology.



GROWTH MARKET MEDICAL TECHNOLOGY

Medical technology encompasses a very broad range of medical products from walking aids, implants, diagnostics devices such as MRI scanners and apparatus for surgery and intensive care, through to laboratory medicine.

Demand for these products is growing rapidly. At present, analysts estimate the market volume worldwide at around USD 364 billion. Given growth rates between four and six percent per year, a market potential of up to USD 478 billion is anticipated by 2020. The most important market is the USA, followed by the EU and Japan. The emerging nations are also becoming increasingly important, with China leading the way. Here, growth of up to 16 percent per year is expected.

The global boom in medical technology is primarily caused by the rise in life expectancy around the globe and the increased affluence in the emerging nations, particularly in Asia.



HEART AND SOUL MARK GRUBER

Kick-start for young musicians

Mark Gruber believes in the power of playing the guitar. "It stimulates your thoughts, you simply feel free." A passion for collecting has grown from this enthusiasm: so far 23 guitars and a dozen amplifiers have come into his hands. The guitars, however, do not just hang uselessly on the wall: Mark is happy to pass them on to young people who want to make music, but who cannot afford their own instrument. He started supporting young musicians in this way around 11 years ago.

Friends, family and work colleagues regularly tell him about young people who dream of making music. Mark talks to them to find out whether their interest is genuine: "Do they just listen to a lot of

music, or are they really eager to play themselves? An instrument can make a big difference to the latter group." In this case, Mark Gruber is happy to give a guitar or an amplifier away. For him it is important to stay in contact with the young people so that he can advise them, on setting up a band for example. He has two favorite memories: "Once, I donated a guitar to help a colleague in Africa with an aid project. And I'm particularly proud of one boy: Five years after I had given him a guitar, I saw him on a concert stage. This touched me deeply." ■



Mark Gruber

works at GF Piping Systems in Irvine in California, USA, since 2014. As Head of IT for the Americas region he is responsible for the technical infrastructure, manages service providers and advises on sales software. He has a particular love for blues and folk music.

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A word about data protection:

To take part in the competition, we need personal information such as your name and e-mail address. This information will be handled confidentially and will not be passed on to third parties or used for marketing purposes. All answers are processed anonymously. The e-mail address and name entered are exclusively used for contacting you after the draw is made.

MY HOME LEIPZIG, GERMANY

We locals appreciate the fact that Leipzig has so many different facets in such a compact space. I've lived here my whole life and have been working for GF Automotive on the leafy outskirts of Leipzig since 1999. I like sitting in the restaurant in the Panorama Tower. Up there on the 27th floor, the view over the city center is pretty hard to top. It's here that it often dawns on me just how much my hometown has changed. In 1989, tens of thousands of people took to the streets in support of a united Germany – a truly historic time. Nowadays, people just enjoy the jovial Saxon lifestyle, something best reflected in the cult pub-lined streets of Drallewatsch and Karli.

A walk through the 1 000-year-old city is always worthwhile. The best route to take starts at the St. Thomas Church, workplace of Johann Sebastian Bach and home to the world-famous Thomanerchor choir. Next stop is the Auerbachs Keller, where Goethe's Faust looked for the meaning of life all those years ago. Then it's time to climb on your bike and cycle out of town to one of the many relaxing lakes on the edge of the city. That's just for starters, as Leipzig has so much to offer. Personally, I love the rhythmic dance classes here like samba, salsa or jive. Leipzig is a city that has it all and that you just can't help but love. ■



Sabine Neumann

has been an Assistant to the Management at GF Automotive in Leipzig since 1999. Her work includes organizing meetings and events, preparing presentations, taking on responsibility for all the travel management and corporate design at the site, and working on various group projects. A native of Leipzig by birth, she still lives in the Saxon city with her husband and son.

What not to miss in Leipzig

A short vacation on the outskirts of the city

Neuseenland, a leisure landscape consisting of several man-made lakes, is the perfect place for watersports enthusiasts, families or people looking for a place to relax. www.leipzigerneuseenland.de

Resident wildlife

The city is home to some very special inhabitants at Leipzig Zoo, one of the largest and most state-of-the-art zoos in Europe. www.zoo-leipzig.de

Pub pleasures

"Drallewatsch" is a word used in the region for "experiencing something." The bar-lined district of the same name is a firm favorite among night owls. Guests are always warmly welcomed.

On the trail of Napoleon

The 91-meter Monument to the Battle of the Nations commemorates one of the largest battles ever to take place, when Napoleon was forced to retreat from Germany in 1813.

JOIN IN
AND
WIN!

Would you like to present your home to your GF colleagues? If so, please send an e-mail with "My Home" in the subject line to globe@georgfischer.com. All entries will be included in our competition on page 40.



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«A city that has
it all and that you
just can't help
but love.»

Sabine Neumann
Assistant to the Management
at GF Automotive in Leipzig, Germany

JOHANN
SEBASTIAN
BACH

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The next issue will be published in February;
the editorial deadline is November 25, 2016.

COMPETITION

JOIN IN
AND
WIN!

Take your chance! +

Win a Victorinox wristwatch, backpack trolley or shoulder bag. A prize draw will be held among all members of staff who send in entries under the sections **Hello!**, **3×3** and **My home**. Send a mail to globe@georgfischer.com with the appropriate subject line. We look forward to hearing from you. The winners will be announced in the next Globe.

Here are the winners of this issue of Globe:

1st prize: Tina Salsone (GF Piping Systems in Australia)

2nd prize: Natalia Yusyumbeli (GF Automotive in Switzerland)

3rd prize: Stefania Scirica (GF Piping Systems in Italy)

All entries that we were not able to print in the magazine can now be viewed in the Globe e-journal on the intranet at <https://portal.georgfischer.com/>

The closing date for entries is December 12, 2016.

Conditions of entry

The competition is organized by GF. All employees of GF are entitled to take part. The winner will be established by means of a draw among all submissions entered within the deadline. Cash payment, payment in kind or an exchange of prizes are excluded. Participants agree to their name being published if they win. Any recourse to legal action is excluded.

VICTORINOX MEN'S
WRISTWATCH
I.N.O.X. OR WOMEN'S
WRISTWATCH
ALLIANCE



VICTORINOX
BACKPACK TROLLEY
51 CM



VICTORINOX
FLAPOVER
DIGITAL PACK
SHOULDER BAG



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