Globe

+GF+

The global magazine for GF employees 01/22

Smart
future on the horizon

How intelligent solutions are revolutionizing work and processes in all divisions

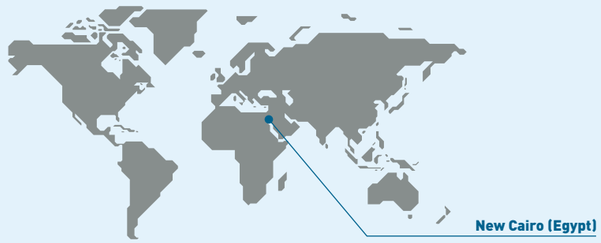
HELLO!

Nurturing values as a team

In their everyday lives, how do employees worldwide live the GF values in the areas of Caring, Learning, and Performance? Dina Kandil and her team dedicated a whole week to one value.

Dina Kandil

Position: HR Manager
Division: GF Piping Systems
Location: New Cairo (Egypt)



"Caring is about being part of a team" is one of our three values at GF. I like this value a lot. My colleagues and I celebrated the so-called World Kindness week in mid-November. We organized special activities for our team every day of the week to show our appreciation for each other. And it was great!

While having an oriental lunch, for example, we got to know each other even better. On the day of the picture you see here, we celebrated Black and White Day: all of us wore black or white clothes.

These activities strengthened our team spirit and brought a smile to all of our faces – just like in this picture of my colleague Rana (left) and me, which we took on our office terrace during a coffee break.

What about you?

How do you live the GF values in your everyday life? Share a photo with us. Send your photo (high resolution: approximately 2 MB) along with a short description of it to: **globe@georgfischer.com**

EDITORIAL

Open to new directions

Dear colleagues,

Have you noticed anything different about this issue? Globe is taking a new direction with a fresh layout, new sections, and more opportunities to get involved. Your feedback on the 2021 reader survey made it all possible.

Globe now features even more topics about the future, some of which are presented in our new Spotlight section. The strategic focus of this issue is "smart work, smart solutions." Which intelligent solutions are we already using at GF? What opportunities and risks are involved? And how "smart" will we be working in 2050? Read all about it **starting on page 8.**

Of course the GF employees who continue to play a key role in Globe are also quite smart. For example, there is Chonggang Nie, our Hidden Hero, whom we present on **page 20.** And Pramod and Suresh from India, who are helping a customer conquer the Indian toy market – **from page 32.** Christophe tells us **on page 30** how GF in Vällingby (Sweden) became our first climate-neutral site.

I am thrilled to share the new Globe with you.

I hope you enjoy reading and exploring this issue!

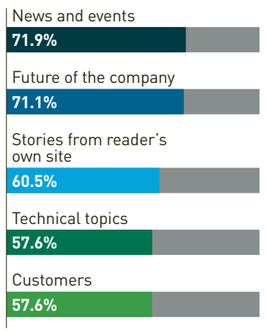
Lena Koehnen

Lena Koehnen
Globe Project Manager

Let us know what you think of the new Globe and what we can do to make it even better:
globe@georgfischer.com.

Here's what you want to read

We collected 2'500 completed questionnaires and more than 300 open responses to our 2021 reader survey. We asked: **What subjects would you like to see more of in the Globe?** Here are the most frequent answers (multiple answers were allowed).



Source: 2021 Globe reader survey

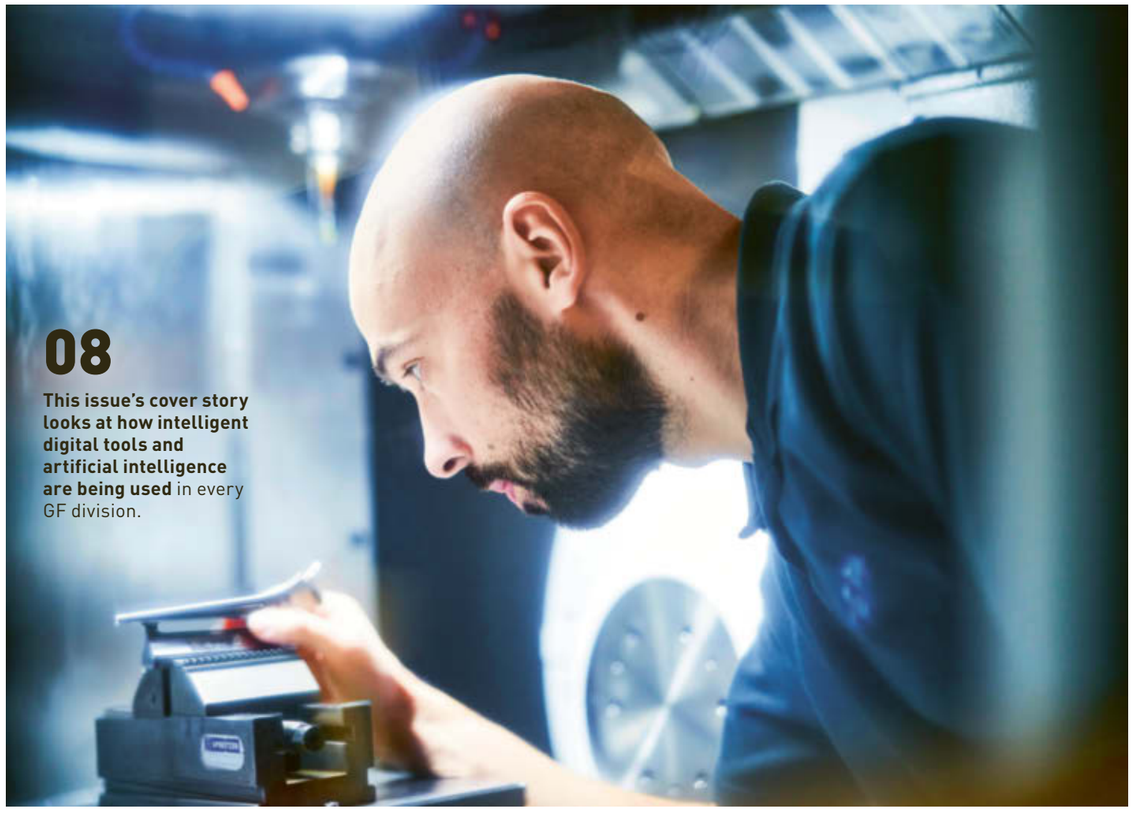
CONTRIBUTORS:

Uli Knörzer
The illustrator has drawn various people in this issue – here himself, as well as others on page: **23**

Virginia Kirst
Our On Site reporter is impressed by Sweden's policies on sustainability. **30**

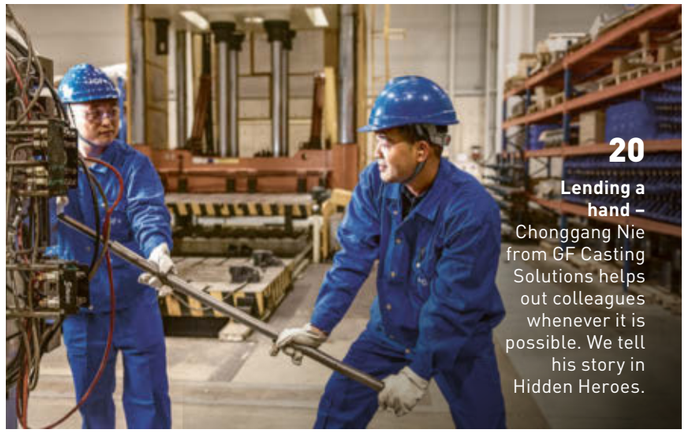
Abhijeet Gurjar
The photojournalist traveled 135 kilometers across India for Globe. The trip took four hours. **24**

SPOTLIGHT



08
This issue's cover story looks at how intelligent digital tools and artificial intelligence are being used in every GF division.

CARE



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Lending a hand – Chonggang Nie from GF Casting Solutions helps out colleagues whenever it is possible. We tell his story in Hidden Heroes.

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My Best Lesson: "What matters is how we practice our values."

Nathalie Isautier
Head of Human Resources at GF Machining Solutions

Globe is also available online!
You can read Globe from anywhere around the world:
globe.georgfischer.com

CREATE

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Parts from GF Casting Solutions are regularly launched into space. The Our Markets section lifts off with the details.

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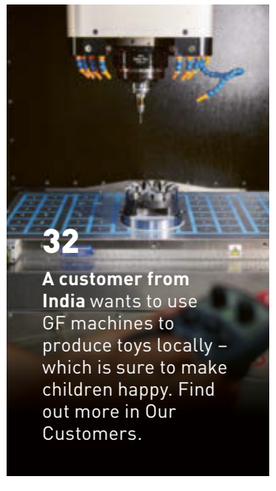

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A customer from India wants to use GF machines to produce toys locally – which is sure to make children happy. Find out more in Our Customers.

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What role does GF play in cleaning your teeth? "There's GF in It" reveals all.

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IN BRIEF

The GF image film was shot at various locations around the world.

#GoingForward

The new GF image movie premiered on 1 November 2021. It's an illustrative, tongue-in-cheek display of what GF stands for: #GoingForward. The three-minute film was shot at various locations around the world. It features GF employees almost exclusively, with the only exception of the lead actress. Scan the QR code to view the film. It is available for download in 18 languages on the GF Brand Portal.

Now it's your turn: Show how you are bringing GF forward, either on social media (LinkedIn, Facebook, Instagram, Twitter) using the hashtag #GoingForward and a link to the GF image movie, or just send your #GoingForward story to brandsupport@georgfischer.com. The three most creative entries will receive a prize. ■

GF is #GoingForward

Watch the new **GF image movie!**

Doing good things

The GF Piping Systems Americas team raised more than USD150'000 for a good cause during the 2021 Walk for Water at the end of November. All donations will go to the non-profit organization Water Mission, which will use the funds to provide over 6'000 people with access to clean drinking water. For more than ten years now, the organization has been counting on the support of GF. ■

Best employer

GF Casting Solutions in Suzhou (China) was one of 30 companies recognized as the best employer in the metropolitan region of Suzhou. A total of 400 Chinese companies were evaluated based on the criteria of organizational development, corporate culture, and values, as well as compensation and well-being. The award ceremony took place in October 2021.

A machine worth tasting

We discovered this tasty version of the Laser S 2500 U from GF Machining Solutions on LinkedIn. The laser machine was launched in October 2021. Its innovative and sustainable laser technology makes it ideal for producing large molds for the automotive industry. A big thumbs-up for Christina Sauvain's creative masterpiece! Christina works as an HR Business Partner at GF Machining Solutions in Geneva (Switzerland).

Top climate protection rating for GF

The rating agency CDP has confirmed an A- rating for GF in of 2021 for the second consecutive year for its efforts to tackle climate change and water security. GF scored higher than the European and the Powered Machinery sector averages.

New intranet for GF

Just around the corner: GF is getting a new intranet. The global rollout is slated to begin in the first half of 2022. The new platform will soon become the central information hub at GF, promoting exchange among employees and facilitating their everyday work.

The new intranet will also be accessible via a smartphone app, which will support several languages. However, the new intranet is still in need of a name. All GF employees were able to cast a vote at the beginning of the year to choose their favorite. GFNet, MyGF, or Georgina? You can now look forward eagerly not only to the unveiling of the name for the new intranet, but also to a whole new era of internal communication and collaboration at GF. ■

Culture Movement launched

The GF Executive Committee answered questions from employees about the Culture Movement at the kickoff event at the end of November.

The Culture Movement at GF aims to sustainably anchor the three new GF values and a winning culture in the company and among employees. The kickoff event took place at the end of November 2021, and the Culture Movement will be rolled out to all GF locations worldwide over the next few months with the help of Change Agents. You can find out more in the insert to this issue of Globe. ■

YOUR FEEDBACK

Why does Globe still exist in print?

QUESTION:

Dear Globe Team,

Globe magazine has developed nicely over the years and I always enjoy looking at it. However, since Globe is also available online, I think it is no longer appropriate in terms of sustainability to also offer a print version of the magazine. Is the paper edition still necessary? Regards,

Peter Barth
GF Piping Systems,
Schaffhausen (Switzerland)

ANSWER:

Dear Peter,

Thank you very much for sharing your view with us. We're glad that you enjoy reading Globe. Your question is one that we have also been mulling over. After publishing two online-only issues, we discovered that we cannot reach the majority of our employees worldwide with an online-only format. The Globe reader survey also showed that the majority of our readers prefer the magazine in print. We will therefore continue for the time being to offer a print version of Globe. However, based on feedback from our locations, we are continuously optimizing the circulation. By the way, Globe is printed on FSG-certified recycled paper. And starting with this issue, we are also supporting a tree project to offset some of the CO_2 produced during printing.

Regards, your Globe editorial team

What about you?

Do you have feedback for Globe or would you like to ask the Globe editorial team a question? Then send an e-mail to **globe@georgfischer.com**.

A smart start to the future

SPOTLIGHT: Examples from our divisions show how GF is intelligently implementing smart solutions to improve both in-house and customer processes.

Hands-on production
Employees in the Medical Solutions Center (Medical CoC), such as Benjamin Sendler (right), demonstrate some smart solutions from GF Machining Solutions.

Visitors to the new GF Machining Solutions Medical Solutions Center (Medical CoC – Center of Competence) in Schondorf (Germany), which opened in July 2021, may wonder at the first impression that they have entered a high-end automotive dealership. But instead of cars, the building houses different GF machines illuminated by spotlights and presented like luxury sports vehicles. These prize exhibits are used to manufacture medical technology products. "At this facility, we can explain the entire manufacturing process to customers and even produce prototypes right before their eyes," says Benjamin Sendler, who regularly hosts managing directors, production specialists, and machine operators right here in the 1'200-square-meter showroom of the Medical CoC.

With its innovative machines and software tools for the medical sector, the Medical CoC serves as an example of smart solutions at GF and an apt symbol for the GF Strategy 2025, which aims to achieve growth though intelligent, sustainable solutions. But in the case of the Medical CoC, the term "intelligent" has more than one meaning. Customers benefit from both intelligent machines and the smart software that controls production processes and captures traceable production data. These innovations help visitors to the Medical CoC find the perfect solutions for their individual applications.

Experiencing manufacturing up close

Benjamin Sendler uses an example to illustrate how the process works in practice: In order to implant an artificial knee joint, the surgeon requires a surgical cutting block. ⟶

1: The GF Machining Solutions Medical CoC in Schorndorf (Germany) is equipped with state-of-the-art machines.

“At this facility, we can explain the entire manufacturing process to customers and even produce prototypes right before their eyes.”

Benjamin Sendler
Head of Application Germany

This cutting block is placed on top of the shinbone (tibia) to mark the precise location where the surgeon must make the incision to remove the damaged knee joint. At the Medical CoC, customers can view the manufacturing process used to make these surgical aids up close and in person. The order is created in WorkShopManager, the GF software, after which the stainless steel blank proceeds through multiple high-precision manufacturing steps, including milling and laser texturing and finally, trimming the guide slot. “After these three processing steps, we lay the finished component on the table in front of our guests. The data pertaining to the manufacturing process can be accessed via QR code,” explains Sendler. “In addition to the processing technologies for the cutting block, the Medical CoC also hosts other solutions, such as the additive manufacturing equipment for shoulder joint implants with porous surfaces. Many medical technology products can be produced start to finish using only GF machines, thanks to our extensive portfolio.”

1’200

square meters: The size of the GF Machining Solutions Medical CoC.

A new dimension of traceability

The strict laws governing the medical technology sector require maximum transparency. For certain products, manufacturers must be able to pinpoint exactly when the product passed through each machine and whether the process met the required standards. The software records this information and supplies it to the customer’s process control system on demand. The GF tool Process Inspector introduces a new dimension in traceability. It produces a digital twin of each product that accompanies the real component through all the production steps. “During the manufacturing process, both the individual production steps and the sensor data from the machines is captured and visualized,” says Sendler. “You can then automatically see when certain parameters – for instance, the internal machine temperature or the pressure in the irrigation pump – exceed tolerances.” That way, GF customers can respond immediately and correct the parameters before the machine starts producing scrap. That is what a sustainable solution looks like.

Benjamin Sendler

Position: Head of Application Germany
Division: GF Machining Solutions
Location: Schorndorf (Germany)
Joined GF in: November 2008

Artificial intelligence (AI) will offer even more insight into the manufacturing process in the future. GF Machining Solutions is currently working on AI applications designed to autonomously improve processes and parameters. At present, people are still responsible for this step, but in five to ten years, AI may be monitoring production, predicting problems before they occur, and intervening to prevent them.

Producing perfect products faster

Intelligent solutions also play a role in the other two GF divisions. At GF Casting Solutions, for example, AI-based data evaluation is used to accelerate production processes. The division produces more than 600 different die-cast components for premium automotive manufacturers around the globe. Before a new component can enter serial production, the parameters of the manufacturing process must be fine-tuned to achieve a specific level of quality. And that is no easy task: “The machines turn out between 50% and 90% scrap on the first day, and the quality improves with each part over the next few days,” says Ilias Papadimitriou, Technical Expert Powertrain and Data Analytics in the development department of GF Casting Solutions in Schaffhausen (Switzerland). “Even on the third day, up to 40% of components may still have subtle errors.” It can take weeks – or even months – to achieve the target of less than 2% scrap through continuous process optimization. Papadimitriou firmly believes that intelligent solutions will help the division reach its quality target faster.

Back when he worked on Formula 1 vehicles, he learned how comprehensive data analyses can drive success. Papadimitriou, who trained as a mechanical engineer, served from 2000 to 2005 as a project manager at Ferrari, where he did his part to secure the world championship title three years running for Michael Schumacher. “Back in the day, engineers would sit at computers and analyze data during the race so they could provide the driver with live tips for their racing strategy based on current readings,” recalls Papadimitriou, who joined GF in 2010. “It’s similar in production. During the production process, we receive huge quantities of data from sensors. We then evaluate that data and it’s right there for us to use for process optimization when we start up the installations.”

He lists a battery housing produced by GF Casting Solutions for a Renault electric vehicle as an example of this new approach. To produce this component, molten aluminum at a temperature of 600 degrees Celsius is pressed into a tool and cooled within seconds to 200 degrees. “When we started out, many of the die-cast components were porous – meaning they had air pockets or hollow spaces – or they were warped,” says Papadimitriou. “There were around 60 independent process parameters, such as temperature or pressure in the machines, ⟶

2: The machines in the Medical CoC can produce prototypes for customers right before their eyes.

3: Visitors to the Medical CoC can receive advice and try out the machines.

4: Benjamin Sendler (left) talking to two colleagues who also work in the Medical CoC.

What does … mean, anyway?

New terms are emerging from the digital world, some of which are used in this story. Here is a brief glossary.

A

Artificial intelligence

Artificial intelligence (AI) is a branch of computer science. AI aims to provide computers with the capacity to solve tasks that previously required human intelligence.

D

Digital twin

A digital twin is a virtual representation of a real, existing process, service, or product. A realistic simulation allows processes to be analyzed, tested, and optimized more easily and with less effort.

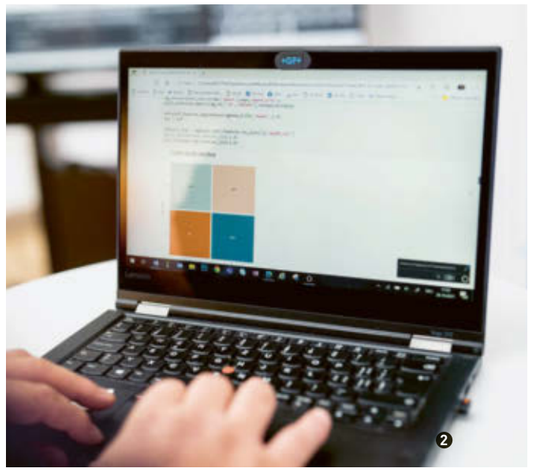
Data analysis

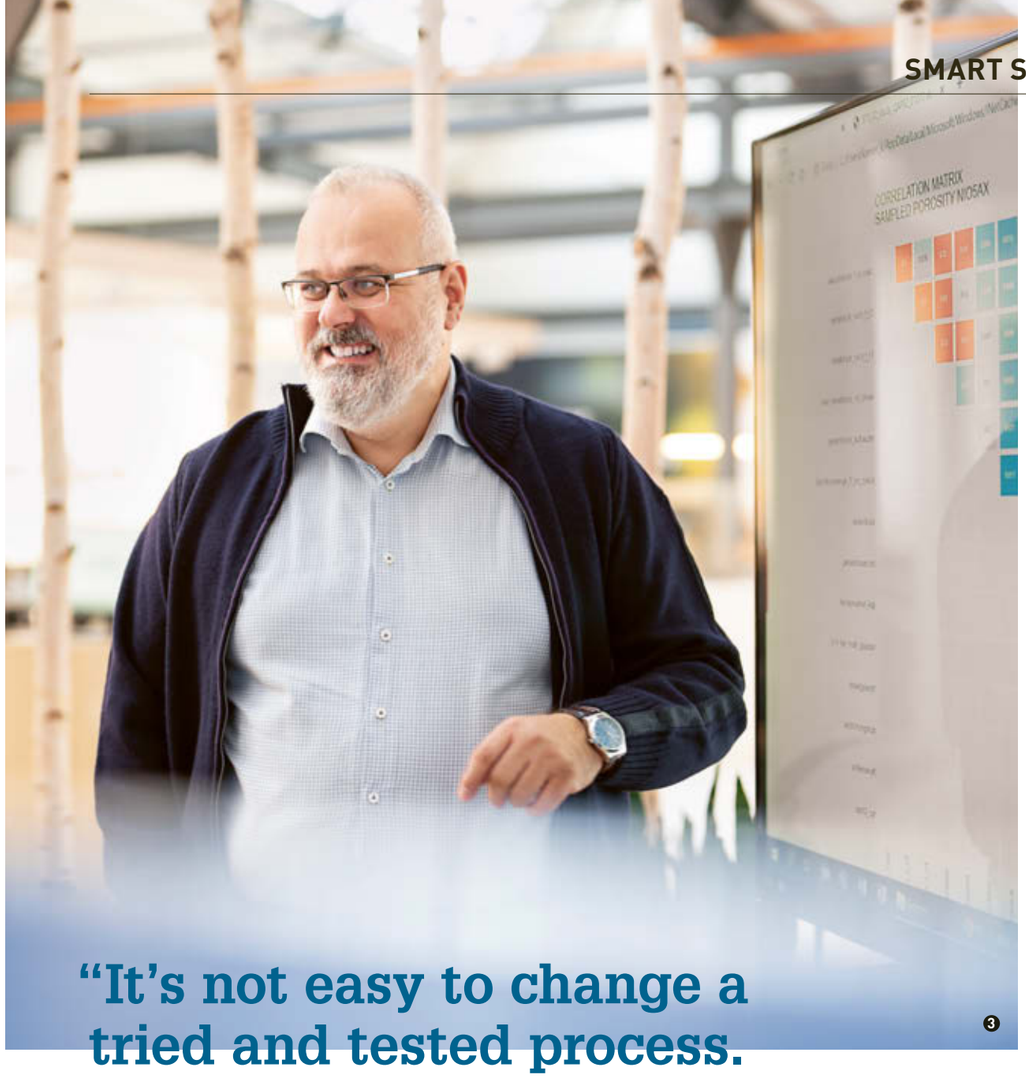
Data analysis is the evaluation of information using statistical methods. Modern software can analyze data in real time during the manufacturing process in order to improve machine settings.

S

Smart manufacturing

Smart manufacturing, often mentioned in connection with Industry 4.0, refers to the networking of industrial production with modern information and communication technology.





1: Ilias Papadimitriou (left), together with production specialists and Microsoft, has developed an AI model for the production of GF Casting Solutions.

2: The software analyzes sensor data and suggests improvements..

3: Ilias Papadimitriou is satisfied knowing that the quality targets for new components can be achieved more quickly with the AI model.

“It’s not easy to change a tried and tested process. So, ultimately it was a cultural pilot project, too.”

Ilias Papadimitriou
Technical Expert Powertrain and Data Analytics

Ilias Papadimitriou

Position: Technical Expert Powertrain and Data Analytics
Division: GF Casting Solutions
Location: Schaffhausen (Switzerland)
Joined GF in: January 2010

that we could tweak to improve the quality.” Up until now, this has been a laborious process, as production workers were forced to test new parameters over and over again, and inspect how each of those changes altered the quality of the product.

In 2019, together with the production experts from the Altenmarkt (Austria) plant and AI specialists from Microsoft, Papadimitriou developed an AI model tailored specifically for GF that would analyze sensor data during production run-up and suggest improvements to parameters such as piston force or melting point. “Using this new method, we were able to find the optimum values within just a few days and come very close to our quality target,” he says. Ultimately, the process saved the team weeks of work.

AI methods as the new standard

The pilot project is now ready for implementation in other GF Casting Solutions plants. These AI methods may soon be the new standard in the division. And that’s just the first step. In the future, Papadimitriou and his colleagues not only plan to use individual production values, they also want to analyze the way these readings change over time. “We’re interested in looking at the acceleration of the piston that presses the molten aluminum into the mold, for instance,” says Papadimitriou. “If we account for data like that, artificial intelligence can help us optimize our production process even faster and further reduce scrap.”

This represents a major advantage for GF customers. Competition is stiff, particularly in the e-mobility sector, and it is important to launch new models on the market quickly. The new AI method is sustainable, because it minimizes the demand for energy and raw materials. In addition, it optimizes production costs by reducing scrap.

“It’s not easy to change a tried and tested process, so this project was a major undertaking for the team. We were only able to succeed because we worked so closely with our colleagues from manufacturing and because they were very open to our ideas. So, ultimately it was a cultural pilot project, too,” says Papadimitriou. His advice for future innovation initiatives: “You always need to focus on the exact problem you want to solve if you plan to implement new methods like AI.”

Troubleshooting via video camera

Some intelligent solutions are the product of collaborations between GF and external partners. One such solution is the startup Visense based in Neuhausen near Schaffhausen (Switzerland), which began as an innovative project initiated by ⟶

About
60
parameters define the quality of a battery housing produced with aluminum-injection molding at GF Casting Solutions.

A decrease of
34.5
percent: The number of warped battery housings fell to 3.5% after two rounds of AI optimization – down from 38% – thanks to improved parameters. The amount of scrap produced due to air pockets was reduced to 5% from 11%.

graduates of the Hasso-Plattner Institute (Germany) and the University of St. Gallen (Switzerland) working in cooperation with the BMW Group. Visense developed software that uses video cameras to detect machine errors and enhance visual data using sensor information and AI-driven data analysis. This software is designed to help operators find errors in the production process more quickly and commission new machines faster.

The GF Piping Systems plant in Schaffhausen has been testing the Visense solution in a production cell for electric fusion sockets since September 2021. As part of this project, the start-up installed four cameras, numerous motion and vibration sensors, and laser light barriers in an automatic feeding system for winding heads.

At the beginning of the process, the winding heads are fed onto a conveyor belt by a vibratory bowl feeder. From here, they are individually fed into a robot that transfers them to yet another robot before inserting them into the injection molding machine or the tool. "The conveyor belt feed is constantly turning up errors. Some of the winding heads fall over or land at an angle, causing the system to jam or lock up," says Manuel Reichhart, Manager Manufacturing Engineering at GF Piping Systems in Schaffhausen. "Employees are often forced to remove the obstructions manually, potentially even having to shut down the entire installation until they've finished."

Manuel Reichhart

Position:
Manager Manufacturing Engineering
Division:
GF Piping Systems
Location:
Schaffhausen (Switzerland)
Joined GF in:
March 2015

Even before the collaboration with Visense, GF had installed cameras to find the source of these errors. But this was a laborious and costly process, as employees had to manually search through the footage to filter out the relevant clips. "The Visense solution eliminates this extra work. It detects the relevant scenes and automatically assigns each incident to one of four error classes," says Reichhart. This dramatically reduces the time it takes to pinpoint the causes of the errors. And the current Visense solution is just the beginning. The company plans to implement AI to optimize the classification of video clips and detect deviations early on in the process. This could help circumvent many errors, and preventative maintenance could completely eliminate idle times.

Learning from each other

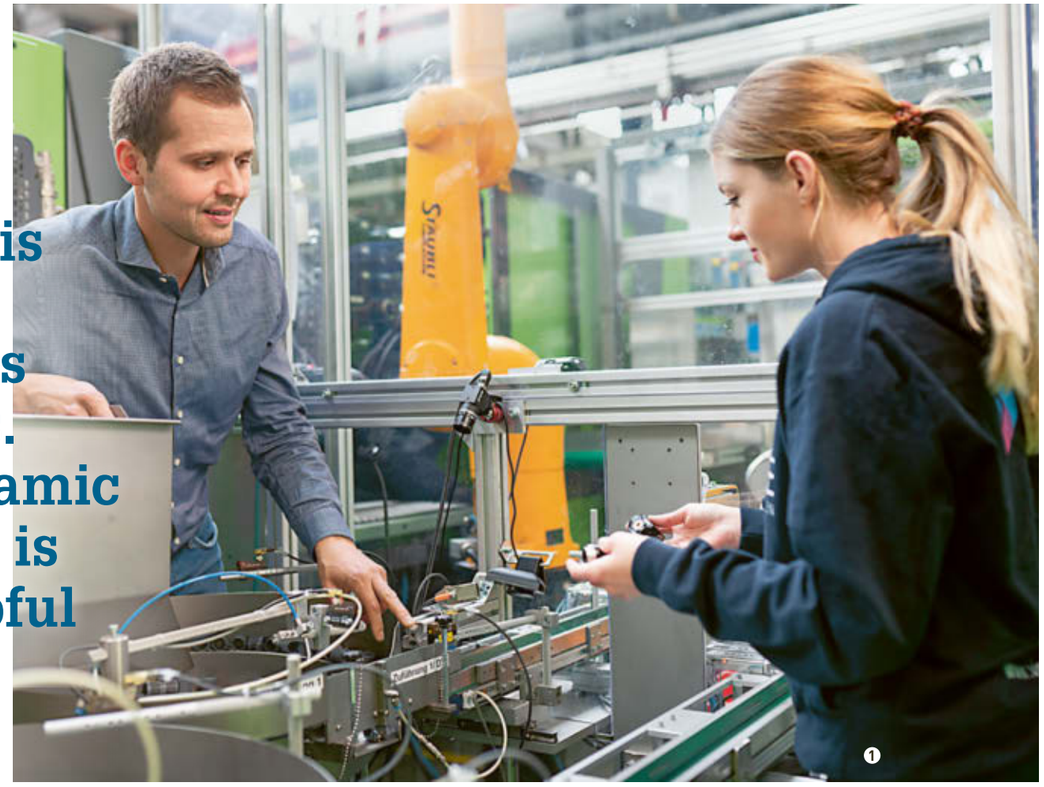
Even though the pilot project in Schaffhausen is still in its infancy, the Visense solution is already automatically providing Reichhart and his colleagues with information about the frequency of each error. "Visense is quick to update its solutions," says Reichhart. "For example, if we need any adjustments made to the software, we receive an update in a matter of days. We also check in with our Visense colleagues every two or three days."

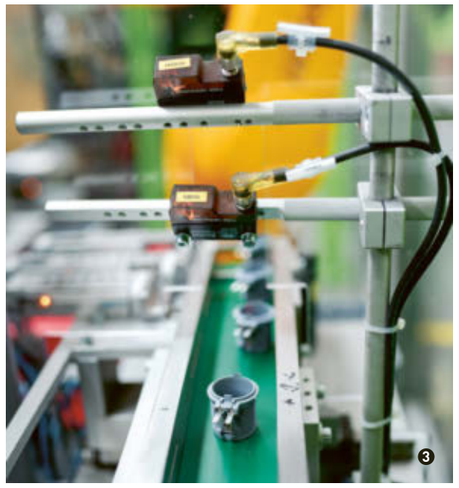
Visense also benefits from the cooperation with an established industry partner like GF: "Every production installation is unique. This joint project helps us test the hardware configuration and optimize it as we go along," says Visense co-founder Pia Spori. "Some questions – like the response of the sensors to certain environmental conditions – cannot be comprehensively tested in the laboratory. So projects like our cooperation with GF are vital to our evolution as a company."

Working together on intelligent solutions to increase customer satisfaction and improve internal processes: The cooperation with Visense, the Medical Solutions Center, and the collaboration between the development center and production team at GF Casting Solutions all illustrate how work and production can each become "smarter" in their own unique ways. Thanks to the use of intelligent solutions and artificial intelligence, GF is developing ideas for the future – and that is the best way to ensure profitable growth. ■

"Visense is quick to update its solutions. This dynamic response is very helpful for us."

Manuel Reichhart
Manager Manufacturing Engineering





Down by
50
percent: The Visense solution reduced the time needed to detect the error type and identify the cause of the error.

1: Manuel Reichhart (left) surveys the production process with Pia Spori, co-founder of Visense.

2: . Manuel Reichhart (left) and his team can find errors more quickly with the software.

3: The software uses cameras to detect errors in the process at GF Piping Systems.

CEO CORNER

Working smarter

At GF, we use advanced technologies and digitalization to meet the needs of our customers. But what about our in-house processes? How do we make our work more effective, and safer, for our people? Imagine a "smart factory" where physical production processes are combined with digital devices that continuously collect and share data. A place where artificial intelligence uses data to monitor production standards, predict problems and help prevent them – while also reducing exposure to dangerous materials or to very hard physical work.

Big data analytics, cloud computing and additive manufacturing are only a few examples of how we do "smart work" at GF, extending the capabilities of both our people and our factories. Smart work, and technological progress, are enablers that help us do better, faster and safer work. We can make better decisions and improve our footprint on the planet – saving energy, minimizing waste and lowering costs.

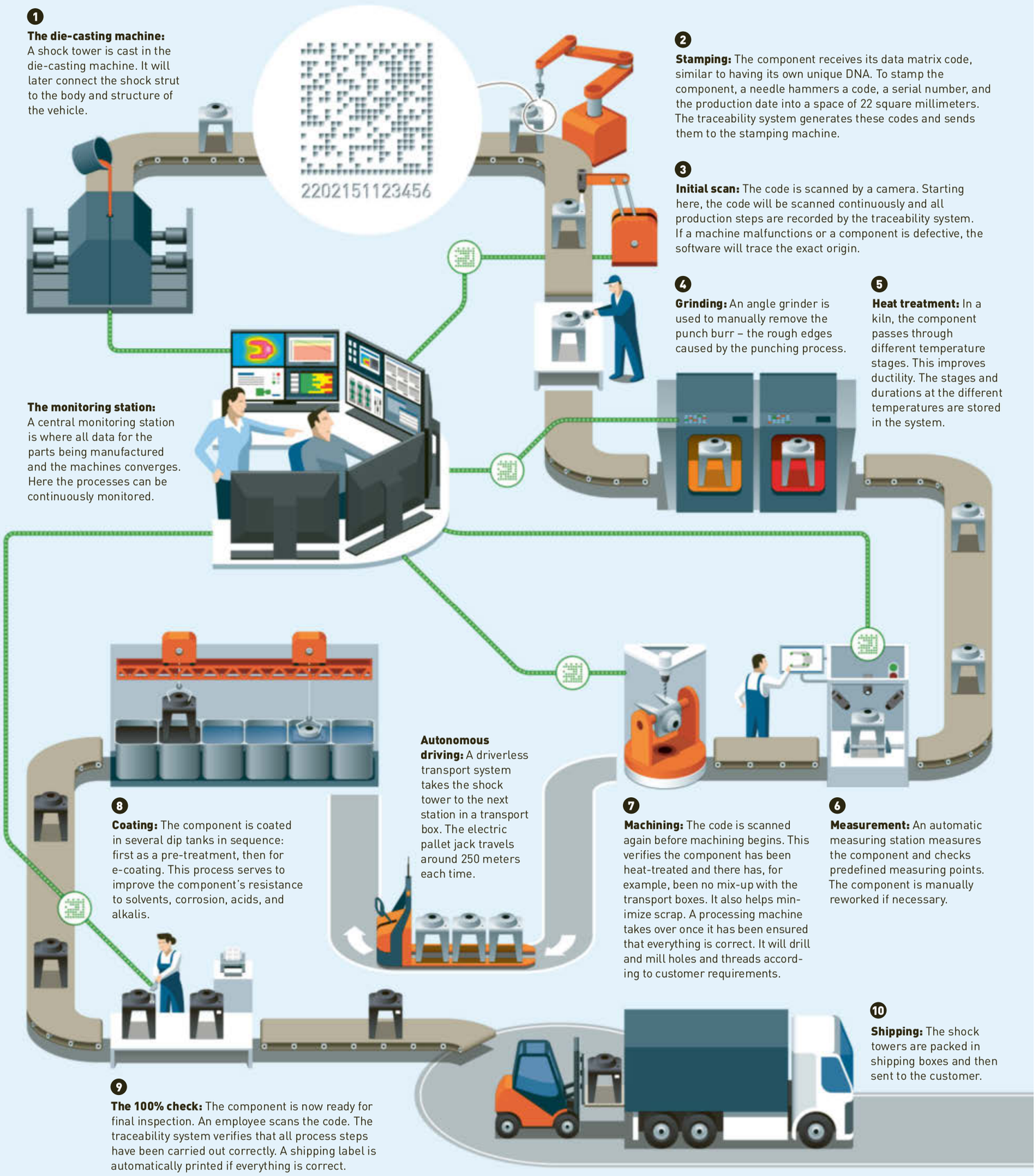
GF is driving profitable growth through intelligent and sustainable solutions. Through smart innovation, we aim to set new standards, for people and society, to respond to an ever-evolving landscape. We also want to embrace these new ways of doing work and stay in tune with a transformation that is happening as much inside of GF as outside. ■

Andreas Müller
CEO GF

INFOGRAPHIC

Each cast component gets a code

The data matrix code is truly versatile. It improves efficiency, ensures high quality, and enables sustainability when manufacturing lightweight components, such as shock towers, at GF Casting Solutions. The ten production stages and the amazing code.



1 The die-casting machine: A shock tower is cast in the die-casting machine. It will later connect the shock strut to the body and structure of the vehicle.

2 Stamping: The component receives its data matrix code, similar to having its own unique DNA. To stamp the component, a needle hammers a code, a serial number, and the production date into a space of 22 square millimeters. The traceability system generates these codes and sends them to the stamping machine.

3 Initial scan: The code is scanned by a camera. Starting here, the code will be scanned continuously and all production steps are recorded by the traceability system. If a machine malfunctions or a component is defective, the software will trace the exact origin.

4 Grinding: An angle grinder is used to manually remove the punch burr – the rough edges caused by the punching process.

5 Heat treatment: In a kiln, the component passes through different temperature stages. This improves ductility. The stages and durations at the different temperatures are stored in the system.

The monitoring station: A central monitoring station is where all data for the parts being manufactured and the machines converges. Here the processes can be continuously monitored.

Autonomous driving: A driverless transport system takes the shock tower to the next station in a transport box. The electric pallet jack travels around 250 meters each time.

6 Measurement: An automatic measuring station measures the component and checks predefined measuring points. The component is manually reworked if necessary.

7 Machining: The code is scanned again before machining begins. This verifies the component has been heat-treated and there has, for example, been no mix-up with the transport boxes. It also helps minimize scrap. A processing machine takes over once it has been ensured that everything is correct. It will drill and mill holes and threads according to customer requirements.

8 Coating: The component is coated in several dip tanks in sequence: first as a pre-treatment, then for e-coating. This process serves to improve the component's resistance to solvents, corrosion, acids, and alkalis.

9 The 100% check: The component is now ready for final inspection. An employee scans the code. The traceability system verifies that all process steps have been carried out correctly. A shipping label is automatically printed if everything is correct.

10 Shipping: The shock towers are packed in shipping boxes and then sent to the customer.

A short code, but a huge success

The data matrix code has been in use since 2005. It is currently used in a total of five GF locations in Austria, China, and the US.

34

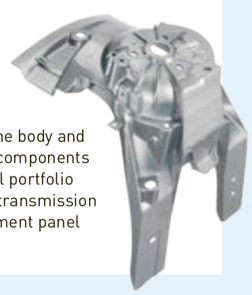
digits The length of the code on each component. It contains the date, time, location, item number, machine, and mold number, among other information.

12

seconds The time it takes to stamp the data matrix code on each cast component. The surface on which the code is to be stamped must be clean and smooth.

For universal use

The data matrix code is used with many different cast components, not only with shock towers (right), which connect the shock strut to the body and structure of a vehicle. Most of the components in GF Casting Solutions' light metal portfolio are stamped with the code – from transmission and battery housings to the instrument panel supports in the dashboard.



INSIDER'S VIEW

"We have to recognize the potential of AI"

Ole Wintermann has been researching how we will work in 2050. In this interview, he discusses why we must be open to artificial intelligence.

Dr. Ole Wintermann

Position: Senior Project Manager at Bertelsmann Stiftung in Gütersloh (Germany)
Background: Political scientist and economist
Expert in: Future of work, globalization and sustainability, digitalization and society, author of the study "Work 2050: Three Scenarios."

Dr. Wintermann, your study "Work 2050" summarizes the findings of 300 experts researching changes in the working world around the globe. You outline three possible scenarios: an optimistic future in which humanity redefines itself through the use of machines, a pessimistic vision involving job scarcity, and a more moderate middle ground. What do these scenarios have in common?
Ole Wintermann: What connects all three is the increasing prominence of artificial intelligence (AI) in the world of work. Someone working in a warehouse, for example, can use augmented reality to perform tasks for which they have received no formal training. In an office job with a high routine content, AI can provide support, for example in the form of chatbots. Jobs that deal primarily with numbers, such as in finance, could also be supported or done by AI.

What does that mean for our work in the coming decades?
We will all adapt to the changes. The important thing is to be open to new technologies. If employees are to be expected to hone and augment their digital skills, employers should support them on the path to digital working. This will have to be underpinned by a collaborative culture that rewards openness to change and professional development.

And what can employees themselves do?
Practice self-management and ask themselves: What can I do on my own? In which areas might AI be able to benefit me and help me to achieve better results in my work? Employees should then use these digital tools or actively ask their employer about them. Their own inner attitude is crucial.

Will employees in production be especially impacted by the use of new technology in the future?
The introduction of robots has been going on since the 1970s. I have the impression that it will no longer be a question of robots replacing human employees. In that area we have already fully tapped the potential for increased efficiency.

Do our colleagues in production have an advantage because they are further along in that journey while office employees are only just starting out?
That is exactly the point. Routine work in particular can increasingly be replaced by technological innovations. Every employee should be considering their tasks and honestly evaluating those areas of their jobs that could be replaced by artificial intelligence. That way, they can determine where I want to seek further training to change my tasks accordingly and enhance my qualifications. As for the question of which scenario will ultimately come true, that depends on the extent to which employees are empowered or take the initiative to adapt to AI. We have to recognize and capitalize on the potential of artificial intelligence. ■

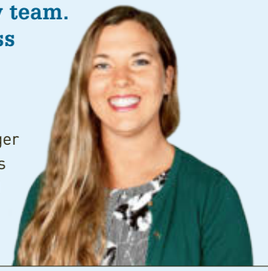
YOUR VIEW

AI in the workplace: blessing or curse?

Artificial intelligence (AI), automation, and digital tools in the workplace – are they good or bad developments for the future? Four GF employees from different regions share their views.

Janel Rowbotham:

"Uncertainties in the supply chain can impact both companies and individuals – for example, if there are shortages in microchips, steel, or even toilet paper. That makes real-time analysis critically important, and AI can help us there. But the necessary background knowledge and innovative ideas still come from the people in my team. Ultimately, our success hinges on them."



Position: Supply Chain Manager
Division: GF Casting Solutions
Location: Mills River, NC (US)
Joined GF in: 2018

Henry bin Rapat:

"Digital tools help us optimize work processes by automating individual steps and allowing us to track processes more effectively. This way, we can reduce the risk of errors in production and, most importantly, save valuable time."

Position: Shift Supervisor
Division: GF Piping Systems
Location: Shah Alam (Malaysia)
Joined GF in: 2016

Friederike Eberhardt:

"Many of us are familiar with smart assistants like Alexa or Siri, which answer questions for us on demand, as we use them at home. In the future, bots or virtual agents powered by AI could analyze enormous amounts of data at GF in the blink of an eye and solve our employees' IT problems. I see major potential for AI in IT service management!"

Position: Corporate IT Service & Support Manager
Division: Georg Fischer AG
Location: Schaffhausen (Switzerland)
Joined GF in: 2020

Chalee Amponin:

"AI and automation can help us work far more precisely and efficiently. At our logistics center, we can do the same amount of work with fewer people thanks to automation. But this technology can also be very expensive. The downside is that if it breaks down, it might halt the entire production process. So, we should never rely exclusively on this technology."

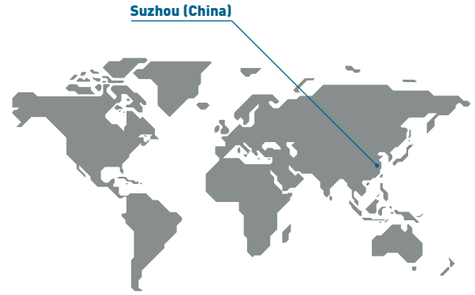
Position: Repair Lab Technician
Division: GF Machining Solutions
Location: Woodridge, IL (US)
Joined GF in: 1984

My best lesson
What a colleague learned from facing a challenge
Page 23

Teamwork without borders
Innovation by an international team
Page 24

A real team player

HIDDEN HEROES: 34-year-old Chonggang Nie is an ordinary man who does extraordinary things. He works as a molding technician at GF Casting Solutions in Suzhou (China), where he helps with the onboarding of new employees at GF so that they quickly feel they are part of the team.



Chonggang Nie

Position:
Die-cast technician
Division:
GF Casting Solutions
Location:
Suzhou (China)
Joined GF in:
April 2017

In the eyes of his colleagues, Chonggang Nie is a reliable and selfless colleague who always lends a hand when needed. The quiet man comes across as down to earth, motivated, and committed, although he admits to also having felt frustrated and at a loss for direction at times during his career. It was only when he joined GF Casting Solutions that the situation changed.

Like millions of migrant workers in China, Chonggang left his hometown in Hubei province in search of better job opportunities in the south of the country when he was just 20 years old. He trained as a foundryman at a technical school in Guangdong; however, he was unable to find a suitable position. So Chonggang initially followed in the footsteps of his father and uncle and from 2011 took a job for two years in the construction industry, where he was constantly surrounded by noise and dust. "I realized I wouldn't be able to keep this up forever," he recalls. "It was damaging my health, and my career opportunities were very limited."

Aspiring to develop his talent

Chonggang decided that he wanted to try something different. In 2014, he moved to Suzhou, an industrial center in Jiangsu province, and found a job as a technician in a foundry. He did not stay long in this position, switching between different jobs in the years that followed. None of them seemed to offer him sufficient opportunity for the further development he wanted – that is, until he joined GF Casting Solutions in April 2017.

Above: Chonggang, molding technician (right), helps out whenever he can.

A friend suggested to Chonggang that he apply for the position, and he got it. "I immediately noticed that things are different here," Chonggang recalls. "At GF, you are part of a team, and the employees are dedicated and motivated. There is no need for extensive micromanagement, and I have the feeling that everyone's ideas are taken into consideration." After Chonggang joined GF, he received training ⟶

in technology and safety and, even more importantly, a warm welcome. "Colleagues are happy to share their expertise and know-how, because as a team our goal is the same. And there is always something new to learn," he says.

An extraordinary business trip

In September 2021, there was a call for volunteers to help out at GF Casting Solutions' new plant in Shenyang, so Chonggang volunteered. He joined a small team that traveled to Shenyang in the northeast of the country, about 1'200 kilometers away from Suzhou, to set up the new installations – everything from preparations to making fine adjustments. The team also helped the new employees understand and operate the equipment, as well as introducing the collaborative culture at GF. "I help out wherever I can, even though some tasks are not in my job description. I'm glad to be part of the team, and I appreciate the collaborative culture and the fact that the colleagues help one another," says Chonggang. It is difficult being away from home for weeks at a time, but Chonggang sees it as an opportunity to learn new skills and pursue a promising path with an employer that shows responsibility and values the commitment of its employees. "GF opens up opportunities for me to live the life I desire" – whether it means owning his own home, a good school for his son, or being able to care for his parents. "I am grateful that I can achieve these goals at GF – with a job where I feel valued, as well as a team that appreciates me." ■

Left: Chonggang (right) is happy to share his know-how with other colleagues, as here in Suzhou.

Right: Chonggang (second from right) and his colleague Lai Lei (fifth from right) with the team from Shenyang.

Below: Chonggang spends his free time fishing and cooking.

WHY HE IS MY HERO:

"With Chonggang around, I am certain that we'll overcome any and all challenges together."

Lai Lei
Head die-casting machine operator

What about you?

Which colleague is your hidden hero? Send us an e-mail with your explanation to **globe@georgfischer.com**

MY BEST LESSON

"Honest communication builds trust"

In retrospect, the most difficult part of Nathalie Isautier's career turned out to be the most enlightening. It ultimately played a decisive role in her path to a career in HR.

Nathalie Isautier

Position: Head of Human Resources
Division: GF Machining Solutions
Location: Biel/Bienne (Switzerland)
Joined GF in: 2012

Had it not been for a period of personal strife, Nathalie Isautier, now 51, would never have found her way to a career at GF. Nathalie holds a master's in international business and tourism and spent years working in tourism and retail. When her employer ran into financial difficulties in 2010, she changed course, starting a position as Office Manager of a small company. That was her first foray into human resources. "It was just a week during which I started feeling like something was off," she recalls. The company culture was anything but positive. "I would often hear someone speak kindly to a colleague and then proceed to disparage that same person the moment they left the room," Nathalie remembers. There was also no transparency to speak of. "People never knew why they were doing any particular task – they were simply issued commands. Questions were not welcome."

"What matters is how we practice our values in our daily lives."

Back then, she thought it was her fault. "I kept asking myself what I was doing wrong." It gnawed at her self-confidence. She tried to talk to her colleagues, but they were too afraid for their jobs to speak out. One day, however, Nathalie realized she was not the one getting things wrong. So she quit. "You should never deny your own values," she says now. This period shaped the course of her personal life. "It taught me how terribly people can be treated. And I was determined to do better."

Nathalie remained in HR. She has supervised staff development at GF Machining Solutions since 2012, working her way up from Assistant to the Head of HR in the division to Head of HR in Switzerland and finally to Head of HR for the entire division. In her current position, she is also responsible for driving the Culture Movement at GF. "Today, I see myself as a role model. If I want to encourage my colleagues to be part of the change, then it's my job to exemplify our new values. Values aren't just nice words printed on posters, after all. What matters is how we practice them in our daily lives."

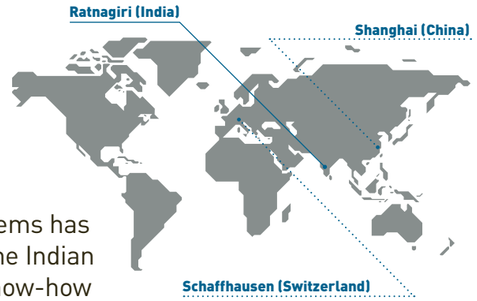
The difficult period before she joined GF was particularly instrumental in showing her the importance of caring for one another. "'Caring is about being part of a team.' For me, that means giving the right feedback at the right time and in the right words, so that the person receiving it has the chance to improve," says Nathalie. "Caring also means cultivating an environment in which people feel safe sharing their feelings, whether those are positive or negative. Honest communication builds trust."

She advises colleagues who are dissatisfied with the way they are treated in their team to speak openly, but always respectfully, with other colleagues and supervisors. This prevents misunderstandings. She hopes no employee will ever have to leave the company for the reasons she left back then. ■

What about you?

What life experiences would you like to share with your colleagues? Write to us at: **globe@georgfischer.com**

Team success across borders



A STRONG TEAM: An international team at GF Piping Systems has succeeded in producing large electrofusion couplers for the Indian market more efficiently and cost-effectively – thanks to know-how from India, China, and Switzerland.

GF Piping Systems has had its own production plant in Ratnagiri (India) since 2008, but even at maximum capacity, the team has had to import some products to be able to serve the Indian market. Among these are electrofusion couplers with diameters between 180 and 315 millimeters – for the transport of drinking water, for instance – from Switzerland. "When products are ordered from Switzerland, you have to add another 50% to the production price due to freight costs and import taxes," says Plant Manager Rahul Gavali. "This clearly pushed us out of the local market as our competitors offer couplers measuring even up to 500 millimeters significantly cheaper." To get around this competitive disadvantage, the management team at GF Piping Systems India decided to find a way to produce the special couplers onsite in Ratnagiri.

This was easier said than done, because it quickly became clear that adapting the same technology used in Switzerland was not an option. Dirk Petry, former Head of Development for the Utility area at GF Piping Systems in Schaffhausen (Switzerland), explains: "We've been manufacturing the large couplers using a fully automated production process at our sites in Schaffhausen and Subingen for 25 years. The production lines, which have several interlinked industrial robots, are very complex. The costs of applying the same process in India would have been way too high. We have therefore opted for a less automated but equally sustainable process for the plant in India, which delivers the same high quality offered by the products in Switzerland," says Petry, who retired in 2021 after working for 33 years at GF.

Part of the team in Ratnagiri (left to right): Ganesh Kotavadekar, Rahul Gavali, and Suresh Rane next to one of the wire-plowing machines.

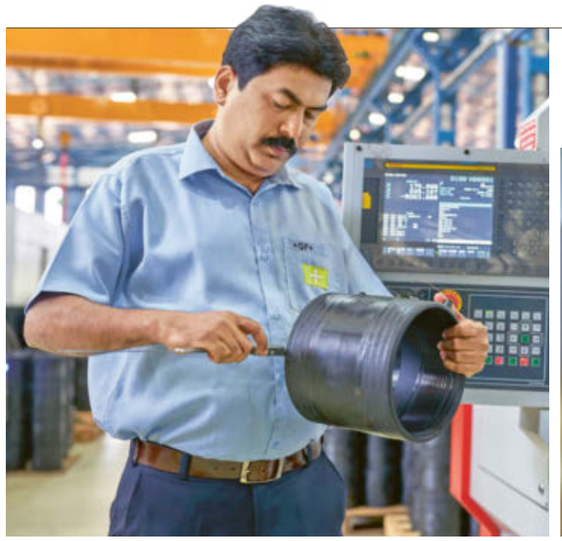
New process in record time

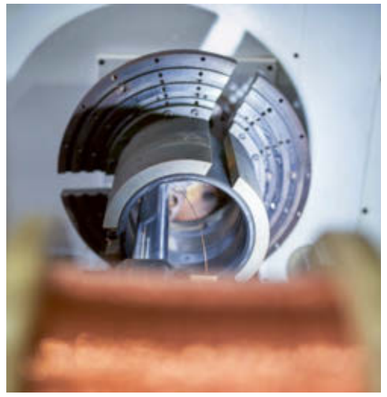
In only twelve months, a new project team developed a highly efficient manufacturing process that was an ideal fit. GF Piping Systems pursued this by pooling expertise from three locations and two continents. The project team, led by Rahul Gavali, collaborated closely with the Research & Development departments in Shanghai (China) and Schaffhausen responsible for the design and testing of the electrofusion couplers. The new process required a new concept for the molds used to produce the couplers. Two wire-plowing machines were specially developed. Furthermore, the team came up with a new tool to cut the channels for the wire in the inner coupler part – without producing any waste. "Thanks to the commitment of colleagues on different continents, coupler production is now possible in India even without automated robots," says Petry. "Thanks to innovative ideas from the project team, we could make the process very cost-effective, low-maintenance and sustainable." Rahul Gavali is also pleased at how effective the collaboration has been: "With joint efforts, we completed the project in a record time, from the tool concept through ordering the machines to the initial tests. We were really proud when we received the technical approval for the new process and the product approval of the German gas and water association DVGW for our couplers made in India."

Knowledge transfer from India to Europe

"Now, with local production in India, we are able to deliver the electrofusion couplers to customers in just 25 days, and at a competitive price," says Ganesh Kotavadekar, Production Manager on Rahul's team. "Our customers in India are happy with the quality of the couplers, and our production capacities are booked up for several months to come."

Thanks to this great team achievement, GF Piping Systems in India has enhanced its edge over local competitors in the large electrofusion coupler segment. Given that gas and water supply has always been a specialty of GF Piping Systems, this achievement is helping the company to remain the market leader in this area in India. The entire division benefits from this team achievement: "Based on the expertise we have developed, we will soon be introducing a product in Switzerland that is produced using a similar manufacturing technology," says Dirk Petry. "We have gained a lot of valuable know-how from this joint project. Now we are transferring the lessons learnt from India back to Europe – this is unique in the company's history to date." ■





Left: Suresh Rane inspects the quality of the electrofusion couplers.

Right: A newly developed tool cuts channels for the electric wires in the couplers.

Rahul Gavali

Position:
Site Manager
Division:
GF Piping Systems
Location:
Ratnagiri (India)
Joined GF in:
2009

The production capacities for the electrofusion couplers at GF Piping Systems in Ratnagiri are booked up for months.

From wood waste to bioplastic
Innovator's Insight shows the way from idea to product
Page 29

The first to achieve climate neutrality
On Site visits the GF pioneer in climate protection
Page 30

Powerful thrust for the Ariane 5

An Ariane 5 was launched into space for the 110th time from the Guiana Space Center on 30 July 2021. The rocket was equipped with parts produced by GF Casting Solutions.

Heading out to space with precision casting parts from GF

OUR MARKETS: GF Casting Solutions produces complex precision casting parts for one of the most powerful rockets in the world. This makes GF an important player in the small, yet exclusive space market.

Satellites orbit the earth once every 24 hours at an altitude of 36 kilometers. They perform a wide range of tasks, such as transmitting data for vehicles, weather information, and TV signals. "More and more communications and networks are being mapped via satellites," says Patrick Costantini, Key Account Manager for the northern European market at GF Casting Solutions in Novazzano (Switzerland). Since this requires an increasing number of satellites, the space industry is also growing. New and smaller companies are gaining a foothold in the market, in addition to major players such as the United Launch Alliance from the US or the European company Arianespace SA. An average of around five new space start-ups have been created each year over the past 20 years. Tesla founder Elon Musk's SpaceX and Amazon boss Jeff Bezos' Blue Origin are two examples. In the coming years, the companies are planning to send 10'000 satellites into space. More than 4'000 satellites are already circling the Earth today. Launch vehicles such as Ariane 5 take them to their destination within the Earth's orbit. Solid components are needed for the powerful thrust at lift-off – and these are supplied by GF Casting Solutions.

The aerospace industry is very important for the precision casting business within the division, representing nearly 50% of its sales in this market. Aviation accounts for a large part of this. Costantini believes it is important to work with customers as early as possible in the development process: "If you are involved right from the beginning and have good expertise in production technology with the materials, you will be able to manufacture these kinds of sophisticated components."

The Ariane 5 rocket is made up of several parts. This photo shows its nose.

Highly complex precision casting solutions

GF Casting Solutions has been supplying precision casting solutions to the ArianeGroup sites in Vernon (France) and Ottobrunn (Germany) since 2007. These include the inlet and outlet rings attached to the top and bottom of an Ariane 5 engine. Ariane 5 is one of the most powerful European launch vehicles, carrying heavy payloads like satellites and space vehicles into space. "Aerospace components are very large, massive, and extremely complex," says Costantini. Due to the many work and test phases that are required, it takes an average of 50 weeks from the customer's order to delivery.

GF in Novazzano uses precision casting technology to meet the strict specifications for geometry, material, and weight: "We use the lost-wax process. It allows us to cast alloys that cannot be achieved in this ⟶

Patrick Costantini

Position:
Key Account Manager for Northern Europe
Division:
GF Casting Solutions
Location:
Novazzano (Switzerland)
Joined GF in:
November 2018

"I believe GF Casting Solutions will remain one of the leading precision casting companies in the space industry for years to come."

Patrick Costantini
Key Account Manager for Northern Europe

quality and precision using normal sand casting or steel casting," says Costantini. All GF components for Ariane 5's rocket propulsion system contain special chromium-nickel-based alloys that can be used in an environment with temperatures of up to 1'800 degrees Celsius and pressures of more than 100 bar. They are also corrosion-free and easy to weld.

Since 2007, GF has supplied more than 520 precision casting solutions to the ArianeGroup. These include components such as Lox Dom, an application for liquid oxygen, which is used in addition to hydrogen to fuel the rocket engines. However, no more than ten of any single component are ever needed each year. Ariane launches six times a year on average. "That is the challenge with aerospace parts – there is no serial production," says Costantini.

Sales in the satellite industry have almost doubled in the last ten years. Even so, Costantini observes that "there is no strong growth trend on the market among our customers at the moment." This is because an increasing number of private space companies are working with small rockets. Their launches cost a fraction of what it costs to launch the Ariane. But they can only carry up to 50 kilograms into orbit, unlike the Ariane 5 with its 6.8-metric-ton payload.

A boost into the future

GF parts will also be heading regularly into space in the future, as all GF components from the Ariane 5 will also be built into its successor, Ariane 6. The new launcher will be able to carry as much as 11.5 metric tons into space. GF Casting Solutions in Novazzano has received an order for nine additional parts for a turbopump that will be used in the Ariane 5 rocket, as well as Ariane 6 in the future. The first launch is scheduled for December 2022 from the Guiana Space Centre (French Guiana). Costantini believes that GF Casting Solutions will remain one of the leading precision casting companies in the space industry for years to come. "These are small quantities for bigger casting companies, but the tailored expertise of GF Casting Solutions is what matters most." ■

French Guiana is an ideal site for rocket launches because the Earth's rotational speed is highest at the equator.

30 million hp performance

Ariane 5 blasts into space at a speed of 8 kilometers per second. It reaches several times the speed of sound.

A true heavyweight

Ariane 5 weighs 780 metric tons, with each component from GF Casting Solutions weighing between 10 and 60 kilograms. Find more fascinating figures here.

24

components from GF Casting Solutions can be found in the engines of both Ariane rockets, Vulcain 2 and Vinci, which were successfully tested in 2018 and 2019.

The Vulcain 2.1 engine is 3.7 meters high and weighs over 2 metric tons.

130

seconds after launch, the GF components are jettisoned with the engines and then burn up.

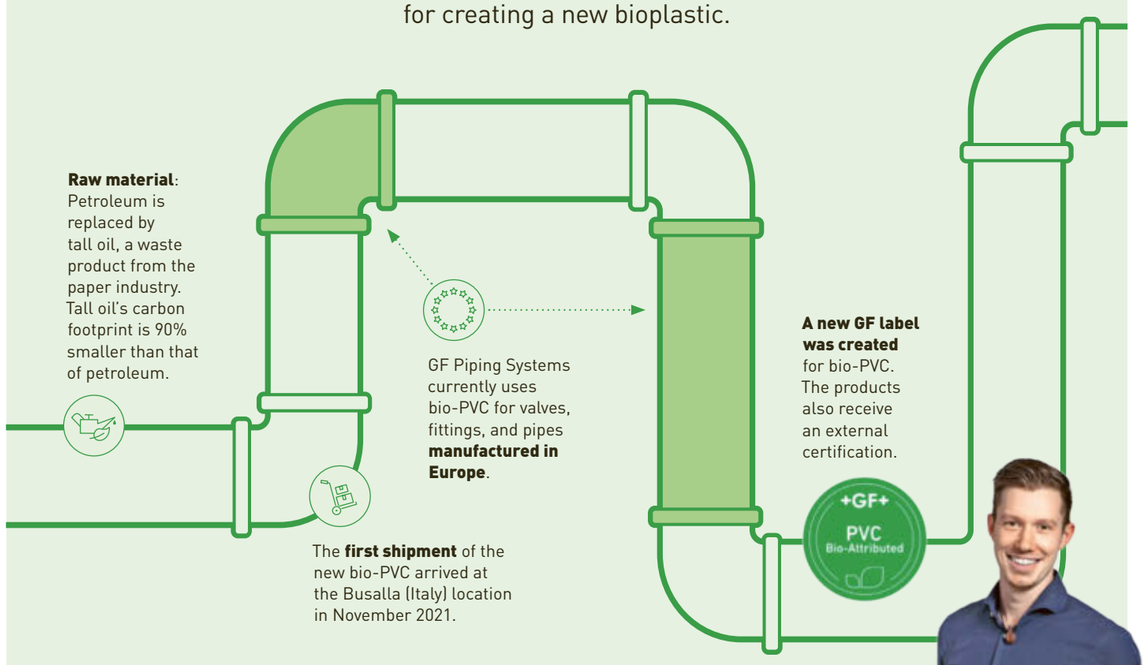
11.5

metric tons – weight of the payload that the new launcher Ariane 6 can carry into space. The Ariane 5 launch vehicle could transport up to 6.8 metric tons.

INNOVATOR'S INSIGHT

Bioplastic made from wood waste

A more sustainable solution for hard plastics? Maurice Veldenzer and a team from GF Piping Systems are prepared to face this challenge. In this interview, the product manager explains the origins of the idea for creating a new bioplastic.



The **first shipment** of the new bio-PVC arrived at the Busalla (Italy) location in November 2021.

The challenge

Most of the carbon dioxide that is produced by our plastic products is generated during raw materials manufacturing. PVC-U is normally produced using petroleum, which is heated up to 600° C. Manufacturing a single kilogram of PVC-U produces up to 2.5 kilograms of CO_2 – equal to 510 balloons full of carbon dioxide. So, we decided to search for a more sustainable alternative that would not require us to compromise the mechanical and chemical properties of the products. That way, all the certifications and approvals could be retained.

The process

We worked with several suppliers, and after about a year, we found our solution: tall oil. Tall oil is a waste product produced by the paper industry. It is composed of around 50 percent fatty acids, which, with the aid of a chemical procedure, produce the resin that forms the basis for the new plastic. Tall oil can serve as a substitute for petroleum, and this allows us to produce a bio-based PVC-U with a 90 percent smaller carbon footprint.

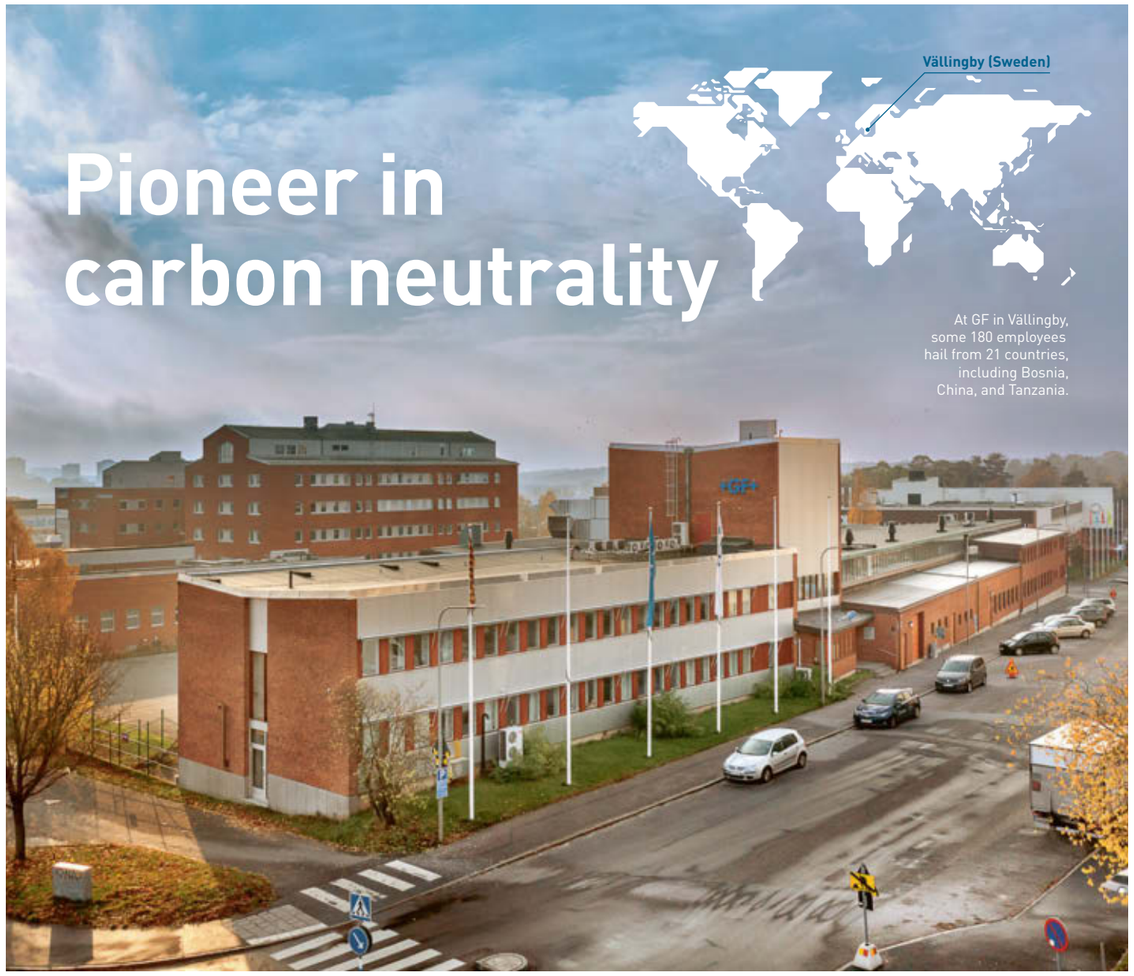
The result

GF Piping Systems currently uses bio-PVC for valves, fittings, and pipes that are manufactured in Europe. This makes us the first company to utilize a bioplastic as a standard material in pressure pipe systems. ■

Maurice Veldenzer

Position:
Product Manager
PVC-U/-C/ABS Fittings
Division:
GF Piping Systems
Location:
Schaffhausen (Switzerland)
Joined GF in:
2020

Pioneer in carbon neutrality



ON SITE: Back in 2014, System 3R in Vällingby (Sweden) was the first GF site to become carbon-neutral. This can inspire other locations to follow the same path.

Sweden is a world leader in combating climate change. For four years in a row, the country has been ranking first in the Climate Change Performance Index, which assesses the climate performances of 57 countries and the EU – accounting for over 90% of global greenhouse gas emissions.

National policies supporting the country's climate ambitions have already been reflected by Swedish companies for a long time and are resulting in substantial successes. System 3R, a subsidiary of GF Machining Solutions, for example, became carbon-neutral seven years ago. The company, which produces high-precision tooling and automation systems, is located in Vällingby, a borough of Stockholm, and was the first GF site to take this important sustainability step.

Climate protection as a part of the culture

"Being environmentally conscious is an important element of Swedish culture," says Christophe Massart, Head of TU Tooling & Automation and Managing Director of System 3R. A native of France, Christophe has been in Sweden for less than a year but is already appreciating the eco-conscious approach to business: "The Swedes are very straightforward when it comes to enforcing environmental targets. This also applies to our GF team here in Vällingby."

Unsurprisingly, System 3R also chose a rather straightforward path to achieving carbon-neutrality: The company opted for green electricity early on – even if this resulted in higher energy bills. Today, the company runs solely with certified energy from water power. Subsequently, it vowed to become more energy-efficient, updating all lightbulbs to LEDs and replacing all the cooling aggregates that are used to create a controlled production environment in the CMM (Coordinate Measuring Machine) rooms and grinding departments.

This attention to the environment is also reflected in the general attitude of the employees, many of whom cycle to work – weather permitting – or use public transport or hybrid cars. Christophe himself chose the last option, opting for a Volvo, of course.

Christophe Massart

Position: Head of TU Tooling & Automation
Division: GF Machining Solutions
Location: Vällingby (Sweden)
Joined GF in: 1998


Marketing Director Dick Ottosson (left) and Christophe Massart in the robot assembly hall.

> **"Being environmentally conscious is an important element of Swedish culture."**
>
> **Christophe Massart**
> Head of TU Tooling & Automation and Managing Director of System 3R

An international team

The atmosphere at System 3R is characterized by a familiar, yet international flair: 180 employees from 21 countries as far as China, Malaysia, and Tanzania work here – and many have been doing so for decades. In fact, more than one quarter of them have been with the company for more than ten years.

"We want to participate proactively in achieving GF's sustainability targets," explains Christophe. This is done through the sale of System 3R's high-precision tooling to the rest of GF Machining Solutions and its customers. The better and more precise the tooling, the longer it lives and the less waste it produces, creating a range of benefits: The tools have to be replaced less frequently and use less energy while in operation. "Our target is to provide customers with products that increase productivity, while being sustainable in terms of energy," Christoph says.

Meanwhile, at System 3R the effort continues. Having reached carbon-neutrality, the company now wants to become even more energy-efficient and consume less water. One idea is to do this by prolonging the lifetime of the coolant water needed in the milling and lathe CNC machines by cleaning it from bacteria using ultraviolet light.

Given that approximately 50 tons of water are used annually at System 3R for cooling, being able to use the same water twice would lead to substantial savings. Currently, the industrial solutions for this are too expensive, but System 3R hopes cheaper ones will eventually become available – and maybe even be produced within GF. ■

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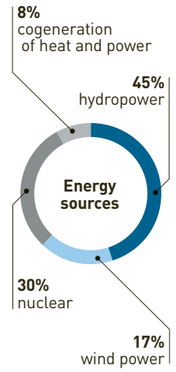
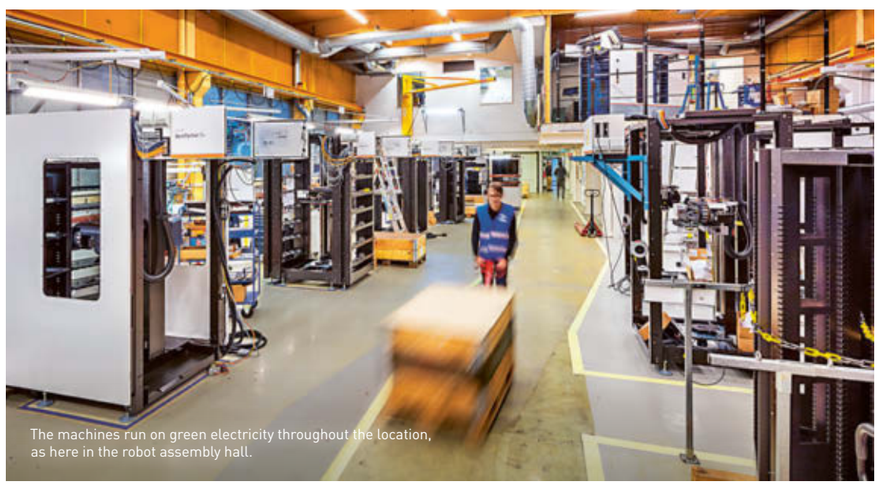
percent of the electricity generated in Sweden in 2020 came from renewable sources. Wind energy generation grew by more than one-third from 2019 to 2020.



Source: Central Office of Statistics, Sweden (SCB)/ekonomifakta.se


The machines run on green electricity throughout the location, as here in the robot assembly hall.

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LEDs with a lifespan five times longer than incandescent bulbs are now in use in Vällingby.

A part for screen heroes
What does GF have to do with James Bond?
Page 36

There's GF in it
Everyday products that feature GF
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New player on the toy market in India

Sanco Dies and Moulds, based in Pune (India), is introducing a toy range on the market with the help of seven new machines from GF Machining Solutions.

Nandkumar Salunkhe (left), Managing Director of Sanco, talking with Pramod Saste from GF.

20

years in the tool and mold-making segment have contributed to Sanco's expertise.

25

employees work at Sanco in Pune.

OUR CUSTOMERS: These days, almost every child has a remote-controlled car or robot at home. Sanco, based in Pune (India), is looking to produce high-quality toys while keeping pollution levels low. Solutions from GF are helping the company get started in this new market.

Suresh Peter, Deputy Managing Director and Head of Sales – Machines at GF Machining Solutions, is not used to seeing new machines from GF inspire quite so much enthusiasm. His new customer, Sanco Dies and Moulds in Pune (India), opened a new production facility in August 2021 and invited technology partners and local politicians to join in celebrating the occasion. The core of the facility consists of seven GF machines, all of which were decorated with flowers for the special day.

Smart toys for India

Sanco was the first company anywhere in India to order a Mikron MILL P 500 Milling machine, which is designed for round-the-clock operation. Other high performance machines ordered by Sanco include the MILL P 900, the CUT P 550 wire cut machine, and the FORM P 350 spark erosion machine. "With our machines, Sanco can boost precision and efficiency in its production process. Many of the work steps are now automated," says Suresh Peter, Head of Sales India at GF Machining Solutions. "Plus, the employees at Sanco have to put less effort into training than before because the machines are easy to operate. Our System 3R tools also reduce the setup time for the machines."

Sanco's core business is developing and producing solutions for high-precision tools and molds for customers worldwide, primarily in the aerospace, automotive, and medical technology sectors. Among other things, Sanco manufactures components for auto transmissions, seal slots, and metal implants. ⟶

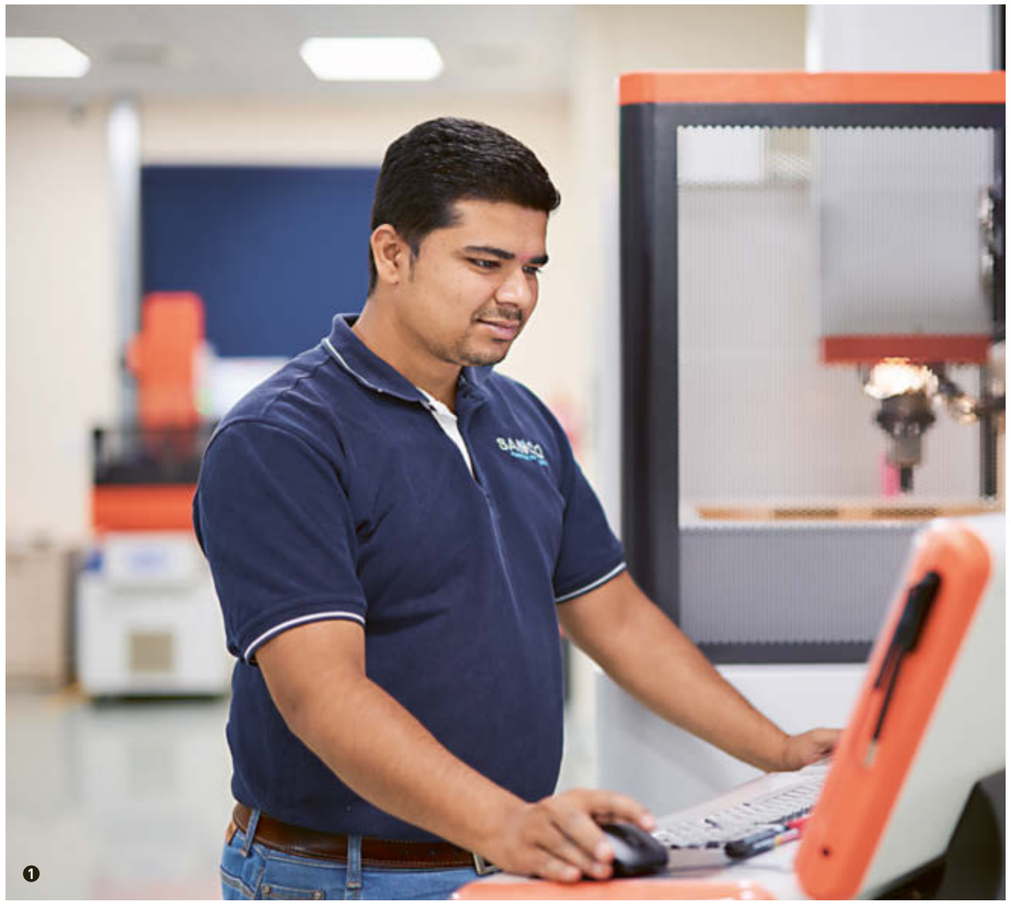
7

the number of machines from GF Machining Solutions Sanco has been using since the summer of 2021 to produce molds for customers in various industries. In the future, the company also wants to use them for its own toy line, Sanco Toys.

1: A Sanco employee uses one of the new GF machines.

2: The machines produce molds for gear wheels used to make toy cars.

3: Sanco's headquarters in Pune (India).



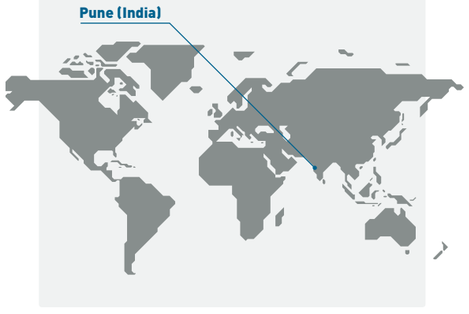
"With our machines, Sanco can boost precision and efficiency in its production process. Many of the work steps are now automated."

Suresh Peter
Head of Sales India
GF Machining Solutions

Pune – India's industrial hub

Sanco is right at home in Pune, one of India's industrial hubs.

Sanco's headquarters are located in Pune, a metropolis of 6.6 million people in the state of Maharashtra in western India. The city, approximately 150 kilometers southeast of Mumbai, is a key hub for the automotive industry, as well as the mechanical engineering and IT sectors.



Sanco is also moving into yet another segment with the new GF machines, and is looking to produce toys under the Sanco Toys brand. The Indian market is primarily dominated by foreign products at present. According to Nandkumar Salunkhe, Managing Director of Sanco, these products are often laden with toxic substances and have a short lifetime. Sanco wants to focus on reducing toxic substances and manufacture high-quality products that are more durable – thanks in part to the machines from GF. "Sanco Toys is an important part of our vision," says Salunkhe. "Toys aren't just for entertaining children; they also promote their physical and mental development. We are focusing on electronic toys, toy robots, remote-controlled toys, and learning toys – and we're confident that we can significantly increase India's market share in this segment."

Customers around the world

Suresh Peter, who coordinates sales across the country from GF Machining Solutions in Bangalore, is happy to have Sanco on board as a new customer: "We were able to offer an end-to-end solution that will move Sanco forward." The new machines will enable Sanco to implement its expansion strategy and tap into new markets. "Just as GF is passionate about manufacturing precision machinery, our passion at Sanco is offering our customers high-precision solutions," says Salunkhe. "There is no question that GF is the world leader with its first-class machines." According to Salunkhe, the machines from GF are a great fit for achieving Sanco's goal of offering its customers even better solutions, as well as now producing its own range of toys. "While the costs are somewhat higher for GF machines, we also know that quality comes at a price." Salunkhe notes that this aspect is not a given in India, as the South Asian country is what he describes as a "price-sensitive market."

Toy market in India

India's toy market has huge potential. One-quarter of the country's nearly 1.4 billion inhabitants are under 15 years old. But the India Brand Equity Foundation, which promotes the export of Indian products for the government, estimates that domestic toy production currently accounts for only 2% of the global market.

How it all started

Sanco's first contact with GF dates back to in 2019 at EMO Hannover (Germany), the world's leading trade fair for production technology: "We spent many hours at the GF Machining Solutions booth and had really in-depth conversations with the experts from GF," Salunkhe recalls. He says that, after the trade fair, his company knew it definitely wanted to consider working together with GF. "We then invited the Indian team at GF Machining Solutions to come to visit us."

It took another year and a half before Sanco had its new expansion strategy in place and was able to select the new machines. However, the COVID-19 pandemic at this point had severely affected the whole world, and India along with it. "We received the enquiry from Sanco in the middle of the lockdown," Pramod Saste now recalls. Saste is Senior Sales Engineer at GF Machining Solutions in Pune. "Sanco wasn't able to visit us in Bangalore due to the travel restrictions." There isn't a GF showroom in Pune, where Sanco is headquartered, so a visit would have been necessary to demo and test the machines," says Saste.

"Luckily, we have a longstanding customer in Pune who made their machines available." The demo was successful, and the tests ultimately convinced Sanco to purchase an end-to-end solution consisting of seven machines rather than the three machines that were originally planned. "Listening carefully to the customer is what made it possible for us to offer them the best solution," says Saste.

Pramod Saste

Position: Senior Sales Engineer
Division: GF Machining Solutions
Location: Pune (India)
Joined GF in: 2017

Global focus

The start of serial production for Sanco Toys is planned for the end of March 2022, and this is only the beginning of the Indian industrial company's expansion plans: "In addition to establishing our own line of toys, we also want to acquire new customers who need precision tools," says Salunkhe. "We want to convince global suppliers, and especially European ones, that our service is the right one. When this happens, we will definitely invest in more GF machines." In other words, it might not be long before there is another big celebration in Sanco's production facility. ■

DID YOU KNOW?

Cast, not stirred

The magnesium beam produced by GF Casting Solutions and built into the dashboard of the JLR Defender may seem inconspicuous, but it is one tough cookie. What makes this component so special? And what does James Bond have to do with it? Four facts about the magnesium beam that are not widely known.

The stunt team in the new James Bond film "No Time to Die" tested the limits of the Jaguar Land Rover (JLR) Defender. Riding shotgun was the magnesium beam produced by GF Casting Solutions. The die-casting tools for this part are subjected to more frequent maintenance than those for concealed components, ensuring that the beam has a smooth surface finish free from any thermal fatigue cracking or impurities.

GF Casting Solutions selected **the light metal magnesium for several parts of the Defender – the supporting beam as well as three other components.** This material is more than one-third (37 percent) lighter than aluminum. The beam weighs only 1.1 kilograms, meaning the vehicle consumes less fuel overall (although it may not have been the deciding factor in choosing the Defender for the Bond movie).

The structural magnesium beam bearing the Defender name is produced in less than five minutes. Casting takes only 1.25 minutes while grinding takes 1.6 minutes, and 1.6 minutes are allotted for final inspection. The GF facility in Altenmarkt (Austria) manufactures more than 1'000 such components in just one week. The plan is to produce 400'000 beams by 2026.

Connection points to other parts of the cab, such as airbags, navigation system display, and glove compartment, are integrated in the cast components. That way, JLR does not have to include additional connection parts in the final assembly. This technique ultimately saves on time, materials, labor, and energy for the installation.

The magnesium beam

In production:
since January 2020
Division:
GF Casting Solutions
Produced in:
Altenmarkt (Austria)

JLR Defender

The car with the magnesium beam is featured in the new James Bond movie. But the bad guys in the JLR don't defeat 007.

THERE'S GF IN IT

Give it a squeeze

Often it's white or blue, sometimes it has stripes and occasionally it even sparkles. GF technology makes sure that every squeeze of toothpaste on your toothbrush is shaped to perfection.

Interesting facts:

- **Toothpaste** has been industrially manufactured **since 1873.** Back then, it was sold in glass containers.
- American dentist Washington Sheffield **introduced the first toothpaste tube in 1892,** inspired by the paint tubes used by French artists.
- **On May 22,** the US celebrates National Toothpaste Day in honor of the market launch of the toothpaste tube.

In nearly every corner of the world, the morning and evening ritual of brushing one's teeth is virtually identical: Twist off the cap, squeeze the tube, insert brush in mouth, and taste that minty freshness.

A tube of toothpaste consists of three different parts, all of which are manufactured separately: the long body of the tube that contains the toothpaste; the thicker shoulder of the tube, which includes the opening; and the cap.

GF customers use milling, die-sinking EDM, wire-cutting EDM, and laser machines from GF Machining Solutions to produce injection molds and tools for manufacturing these three components. The mold for the cap is the most difficult part to produce. Depending on the shape and complexity, this process can take up to 15 days.

And by the way, did you know that up to 14 percent of the toothpaste will remain stuck inside the tube no matter how hard you squeeze? The only way to get it out is to cut the container open. Squeeze first, cut later.

TIME MACHINE

1952

Location: GF foundry, Schaffhausen (Switzerland)
Main product: Fittings
Temperature of cast iron: 1'150°C (melting point)
Molds per stack: max. 8

Cast from the same die

GF introduced stack casting in 1912. This was an important step in the serial production of fittings and other malleable cast iron components, as it saved time and space. Prior to casting, an employee would stack identical sand molds on top of one another. These were then pressed together mechanically. The molten metal was poured evenly into all the molds through a sprue, allowing multiple cast components to be produced in a single pour. The introduction of crane-operated ladles also reduced the risk of injury. The stack casting method was used until the 1950s.

AFTER WORK

Up to new heights

Jenelle Bongga, Project Manager at GF Piping Systems, loves to climb to new heights in a bouldering hall with her colleagues after work.

After a long day at work, my colleagues Myrtle (left), Aubrey (right), and I enjoy going climbing. In the photo we are at a gym with over 12'000 square meters of climbing terrain and more than 100 different bouldering challenges. We all joined GF Signet last year. Since September, we have come to love wall climbing and then grabbing dinner afterwards. This is truly a great team-building activity! We are continuously encouraging more colleagues to join us on our next climbing sessions.

Jenelle Bongga
Position: Project Manager
Division: GF Piping Systems
Location: Irwindale, CA (US)
Joined GF in: 2021

What about you?

What do you do after work? Send your photo (good resolution: about 2 MB) together with a short description of it to: **globe@georg-fischer.com**.

IMPRINT

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Thank you!

... to all our colleagues at GF who shared their stories with us in this issue and supported us in publishing it.

Your topics

Do you have an exciting story that you would like to share with other GF employees? Write to us!

Your feedback

In your opinion, what was the best thing about this issue? Where could we improve? We are looking forward to your feedback!

The Globe editorial team is eagerly anticipating your message! Send us an email at:

globe@georgfischer.com

The Globe team (from left to right):
Lena Koehnen, Klara Kaever, Susanne Düggelin, Carsten Glose, Marta Falconi, Johanna Lüder

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Competition

All employees who send us an email at **globe@georgfischer.com** by **March 31, 2022** with input for sections **Hello!, Hidden Heroes, My Best Lesson,** or **After Work** will be included in a prize draw to win a **Samsung Galaxy Watch Active 2.**

Take part and, with a bit of luck, be in the next Globe!

This issue's winner is:

Ebb Galindo, GF Piping Systems, Irwindale, CA (US)

Conditions of entry

Georg Fischer AG (GF) is the organizer of the competition. All GF employees are eligible to participate. Participants consent to publication of their name if they win. The winner will be chosen via a random draw from all the eligible entries received before the deadline. The prize cannot be paid out in cash. There shall be no legal recourse. Participating in the competition implies your agreement to these conditions of entry. Your data will be processed for the purposes of the competition. For more information, please see the privacy statement on the GF website (https://www.georgfischer.com/privacy-statement).

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