GF Piping Systems

Energized partnerships

Corrosion-free and safe polymer piping systems for long-lasting hydrogen applications

We embark on the captivating journey of the universe's smallest molecule, accompanying it from production to distribution to usage.

The hydrogen value chain

A small molecule with a big impact

In the accelerating global energy transition for a more sustainable world, hydrogen has emerged as the potential missing piece to decarbonize even the most difficult-to-abate industries and as a key enabler to reach net zero by 2050[1]. Driven by its unique attributes, namely its lightweight composition, non-toxic properties and impressive energy density, hydrogen as an energy carrier has gained substantial momentum. When sourced from renewable energy, it has the potential to transform the world's energy system.

As renewable energy sources may not consistently generate power around the clock, green hydrogen production becomes pivotal in harnessing excess energy generated during peak cycles, thus serving as an exceptional energy vector. It promises to rewrite the rules on emissions, as its utilization in fuel cells releases merely water - earning its name "hydro-gen," the creator of water.

Hydrogen momentum and our contribution

In the transformative energy landscape, GF Piping Systems as a leading supplier of piping systems for the safe and reliable transport of liquids and gases offers a portfolio of over 60 000 products. It is not a question of why we commit to hydrogen. It is more the question of how we can contribute to the efficient use of this most abundant element in the universe. Our customers benefit from over 60 years of thermoplastic expertise, ensuring safe, sustainable solutions tailored to the needs across the hydrogen value chain. To continually increase our market knowledge, we collaborate closely with international hydrogen experts – as working members of organizations such as NWBA in the Netherlands or DVGW in Germany. We develop relationships with the expanding partner network to help boost the hydrogen economy to the next level.

Hydrogen production

Green hydrogen is produced by harnessing clean energy from renewable sources, such as solar, wind and hydropower, and then employing electrolysis to split water into two hydrogen atoms and one oxygen atom. Water intended for electrolysis typically undergoes purification using standard reverse osmosis processes, often necessitating additional deionization steps to eliminate any remaining ions. We contribute to these applications with our solutions in the transportation of deionized water to scale up production while simultaneously reducing the capital cost of green hydrogen overall.

[1] **IEA (International Energy Agency) (May, 2021), Net Zero by 2050, a roadmap for the global Energy Sector, www.iea.org.**

Hydrogen distribution

Hydrogen transportation is largely facilitated via pipelines in combination with other energy carriers such as ammonia and Liquid Organic Hydrogen Carriers (LOHC). The repurposing of natural gas pipelines for hydrogen transportation faces technical challenges, such as hydrogen embrittlement and permeation. Our ELGEF Plus product range in PE as well as our MULTI/JOINT® 3000 Plus couplers have been certified "hydrogen ready" for distribution applications (up to 10 bar),in accordance with the requirements and regulations provided by accredited testing bodies.

Hydrogen usage

Hydrogen boasts high versatility as one of its key strengths. It is regarded worldwide as the solution to decarbonizing some of the most hard-to-abate sectors, including steel production, the chemical industry and long-haul truck transportation, since hydrogen can serve as a feedstock for e-fuels for aviation and shipping. When paired with a hydrogen storage system,a fuel cell generates pollution-free electricity. Storing compressed hydrogen in lightweight composite cylinders allows for enhanced payload capacity and facilitates large-scale storage and transportation. We provide inner pipes for high-pressure tank liners, ensuring superior gas barrier and impact resistance properties. Our hydrogen tank liner components made from polyamide, accommodate various diameters and lengths for applications in hydrogen gas transportation, and long-term storage tanks.

We are going forward – as a trusted partner to realize your next hydrogen project.

Superior materials for durable performance

Energized synergies

60 % lighter than steel

Plastic piping systems are lighter than steel and reduce the environmental impact on transportation significantly.

Energized sustainability
Plastic piping systems have a lower overall carbon footprint compared to metal solutions, from raw material production to manufacturing, transport, and operation. Their longer lifespan and maintenance free quality drastically reduces the need for repair, hence the operating and overall costs. At GF Piping Systems, we assist new customers daily contemplating the transition from metal to plastic for their applications, supporting them throughout every project phase, from planning to commissioning and operating. Continuous life cycle assessments validate the environmental performance of our systems through third-party assessments, such as Environmental Product Declarations (EPDs). This makes them a compelling and transparent choice for sustainable construction projects.

Energized safety
By prioritizing operational safety, we offer lifetime verification, on-site QA/QC, and installation client support. Leveraging the intrinsic chemical resistance of polymers, our performance materials offer a dependable solution for transporting diverse media like potassium hydroxide (KOH), glycol water, and liquid ammonia. Potential technical risks associated with hydrogen transportation, such as hydrogen embrittlement and leakage through hydrogen-induced cracks in steel can be avoided using high-quality polymer materials.

Energized performance
Efficient hydrogen production relies on durable components. Water entering the electrolyser system faces potential contamination, posing a risk to the electrolyser's lifespan. Our plastic solutions prevent ion leaching, maintaining low conductivity values, while offering corrosion-free advantages over metallic alternatives. Committed to excellence, we leverage accredited in-house testing facilities and expert knowledge to meticulously select polymer materials, maintaining project excellence without compromise.

Profound know-how for outstanding quality

Energized global network

50 % faster installation

Installation of piping systems can be done 50% faster thanks to electrofusion, innovative jointing and insulation technologies.

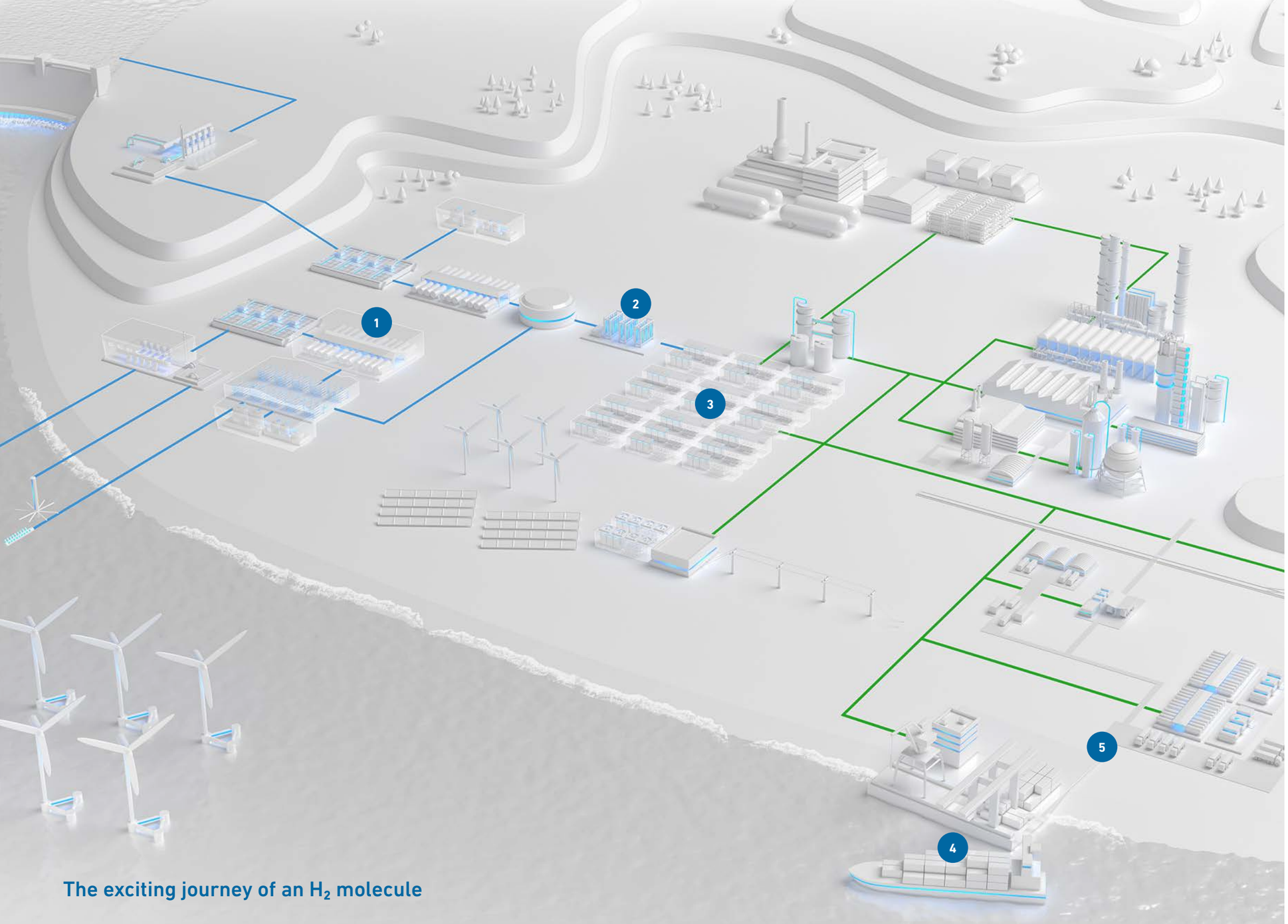
Energized expertise
Our strong global footprint enables us to serve customers wherever they are, effortlessly accessing our solutions via our global network. This global footprint ensures consistent quality and technological expertise, when and where you need it. Operating in over 31 countries and across 36 production facilities, GF Piping Systems is committed to providing comprehensive project support throughout every stage of the process. Our aim is to achieve construction excellence and minimize time to market.

Energized installation
Utilizing plug-and-play solutions, innovative jointing technologies and pre-fabrication methods all help to reduce on-site project and operation lead times. Global sourcing and accelerated installation processes further contribute to a substantial reduction in time to market.

Energized engineering
Elevate your hydrogen system with advanced services. We offer comprehensive planning for customized retrofitting and efficient design, incorporating advanced engineering solutions utilizing our 3D libraries. Our engineering services include stress analysis for effective thermal expansion management in hydrogen applications, ensuring a prolonged service life. Furthermore, our comprehensive services encompass robust simulations and calculations, such as flow evaluations, velocity determination, chemical resistance review, and a rigorous assessment of precise calibrations for sensors based on defined parameters. These examples represent a short glimpse of the diverse services we can provide.

The exciting journey of an H_2 molecule

Our solutions across the entire H_2 value chain



Blue line: water transportation lines
Green line: hydrogen transportation lines (up to 10 bar)

1. Desalination plant

Seawater holds immense promise as a water source for green hydrogen production. Our cutting-edge technologies enable the desalination of seawater to generate purified water through several treatment processes. We help our customers to achieve project milestones on-site by delivering state-of-the-art prefabrication solutions, such as fully pressure-tested skids according to their requirements. Thanks to strategically positioned prefabrication workshops worldwide, customers enjoy cost and time savings while ensuring system reliability with our proven and certified quality.

2. Ultrapure water preparation

The seamless and efficient production of green hydrogen hinges on water purity. This calls for customized water treatment solutions, tailored to both the chosen electrolyser technology and the quality of the water source. As an experienced partner in leak-free components, we assist water treatment OEMs in project integration from design to commissioning.

3. Green hydrogen production

Efficient media transport is pivotal for the optimal performance of an electrolysis system, encompassing the dependable delivery of purified water, electrolytes, and cooling water. To uphold system purity, the implementation of either a polishing circuit or a lye filter is essential. By integrating high-purity, non-corrosive polymer systems from GF contamination, effective prevention measures are in place, ensuring sustained high performance and longevity of the electrolysis system over the long term.

4. Fuel cell

Fuel cells are gaining prominence as a high-potential technology to provide substantial energy efficiency and decarbonization advantages across various industries including automotive, heavy transport, aviation and maritime. Supplying a diverse product range for both the anode and cathode loops, our highly resistant polymer piping systems play a crucial role in enhancing fuel cell performance.

5. Hydrogen high-pressure storage tanks

Hydrogen, with its low density at normal conditions (0.089 kg/m^3), can be effectively and safely stored in high-pressure type-IV vessels operating up to 700 bar. GF Piping Systems manufactures the key components of tank inner liners in different grades of PE and PA and in various dimensions. For optimal quality, our pipes are crafted using extrusion technologies, while injection molding is employed to produce the domes.

Water treatment

Polymer piping systems have proven their unmatched durability and reliability, seamlessly operating in microelectronics plants known for their stringent requirements for ultrapure water (UPW). This underscores the exceptional capability of the water treatment process to produce UPW that meets the demands of electrolysis. We offer products spanning the entire process from raw water pretreatment to purification to UPW.

Pretreatment of raw water

Groundwater → Media filtration

Tap water → Activated carbon

Treated wastewater or surface water → Ultrafiltration

Seawater → Desalination

Make Up and Polishing

Ion exchange

Reverse osmosis

Degassing

EDI

Ultrapure water

Ready for electrolysis

9 kg of ultrapure water results in 1 kg hydrogen

The electrolysis of 9kg ultrapure water results in 1kg hydrogen, a calculation based on the atomic composition of water. Typically, electrolysers consume 45 – 55 kWh per kg of hydrogen, equating to 0.16 – 0.2 l of ultrapure water per kWh resulting into 163 – 200 l/h of ultrapure water per MW of electrolyser capacity. Therefore, a 10 MW plant would require 2 m^3/h of ultrapure water.[1]

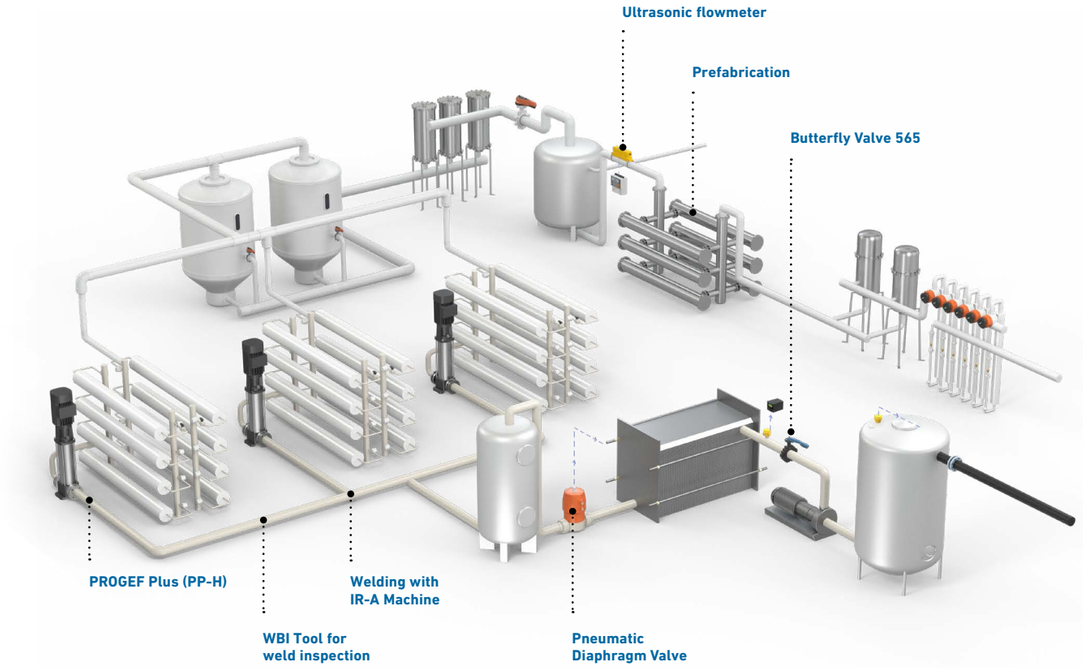
Generating green hydrogen through electrolysis requires water of a specific quality and the criteria for these requirements depend significantly on the type of electrolyser. Moreover, different levels and types of impurity in water can impact the electrolyser, leading to various effects on operational costs, efficiency and the overall lifetime of the electrolyser stack - the core of the entire system. The complexity of the variables makes it challenging to establish an universal standard for the water quality across all electrolysers.

Polypropylene piping systems, such as our PROGEF welded family portfolio, exhibit exceptional leach-out behavior, thereby mitigating the risk of ion content and facilitating low conductivity rates. These qualities create a beneficial environment for optimal performance in electrolyser systems.

[1] **Henrik Tækker MadsenWater (Oct 2022), water treatment for green hydrogen: what you need to know, accessed website: https://hydrogentechworld.com/water-treatment-for-green-hydrogen-what-you-need-to-know, white paper: Water treatment for hydrogen by EUROWATER, a Grundfos company; October 27, 2022.**

Water treatment

The primary resource in the production of green hydrogen is water, which undergoes several pretreatment phases and demineralization before it enters the electrolyser. Green hydrogen facilities commonly utilize a combination of treatment technologies, including filtration, ion exchange or reverse osmosis.



Ultrapure water

Water treatment for electrolysis, particularly for purifying water, involves a pretreatment step determined by the source water, followed by polishing. Depending on the electrolyser technology, the polishing steps vary but generally include treatments ranging from softening to deionization. Once the raw water undergoes pretreatment, several impurities must be addressed to achieve ultrapure quality, such as ion content, hardness, TOC (Total Organic Carbon), silica, and gases.

Reverse osmosis (RO) effectively removes the majority of the ionic load by retaining ions, and molecules, including organics and silica. To achieve the low conductivities needed for electrolysers, a final deionization step is required, using either a mixed bed filter (like Ion exchanger) or an electrodeionization (EDI) unit. For electrolyser systems like PEM, which rely on ultrapure water, ongoing treatment is necessary beyond makeup water to remove continuous contamination from metal ions and organics. Introducing an internal side stream polisher in the electrolyser's anode circulation system helps maintain its longevity.

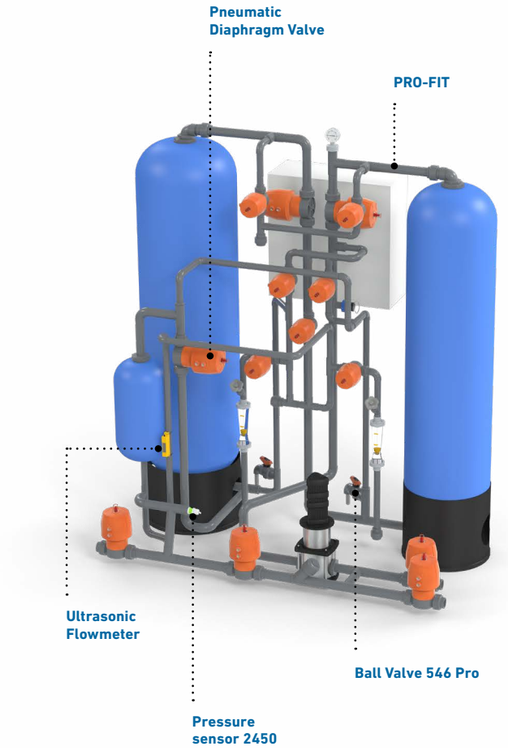
+GF+

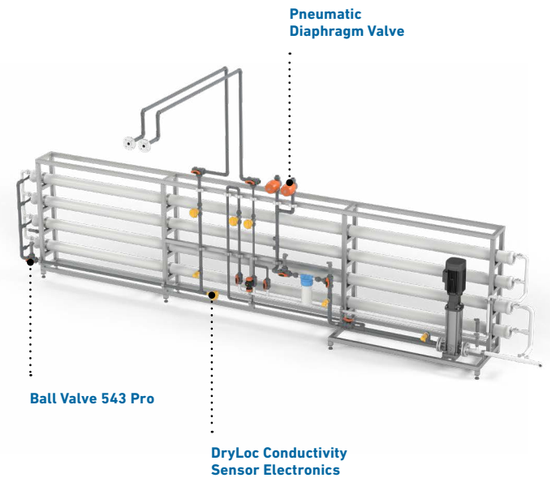
Ion exchange

Softening and demineralization units secure the production of pure high-quality process water in the industrial environment. Water purification, separation and decontamination of aqueous and other ion-containing fluids characterize the applications in the water treatment area. In this context, ion exchangers can remove unwanted ions in the water, thanks to selective synthetic resin beads, and release them during a regeneration process. The compact construction of ion exchange plants requires various piping solutions and components. GF Piping Systems provides complete solutions of high-quality piping systems, giving the maximum flexibility, while ensuring an entirely safe plant operation with a maximum uptime.

Benefits

- Safety: Product lifespan designed for 25 years
- Simplicity: In-house customizing
- Efficiency: Compact skids for fast installation processes
- Environment: Lower carbon and water footprint compared to steel systems





Reverse osmosis

Reverse Osmosis technology covers several filtration technologies all based on selective membranes porosities. Thanks to those selective porosity levels of semi-permeable membranes, impurities will be removed from a pressurized liquid. As this process requires no additional chemicals, energy consumption is low and handling is easy.

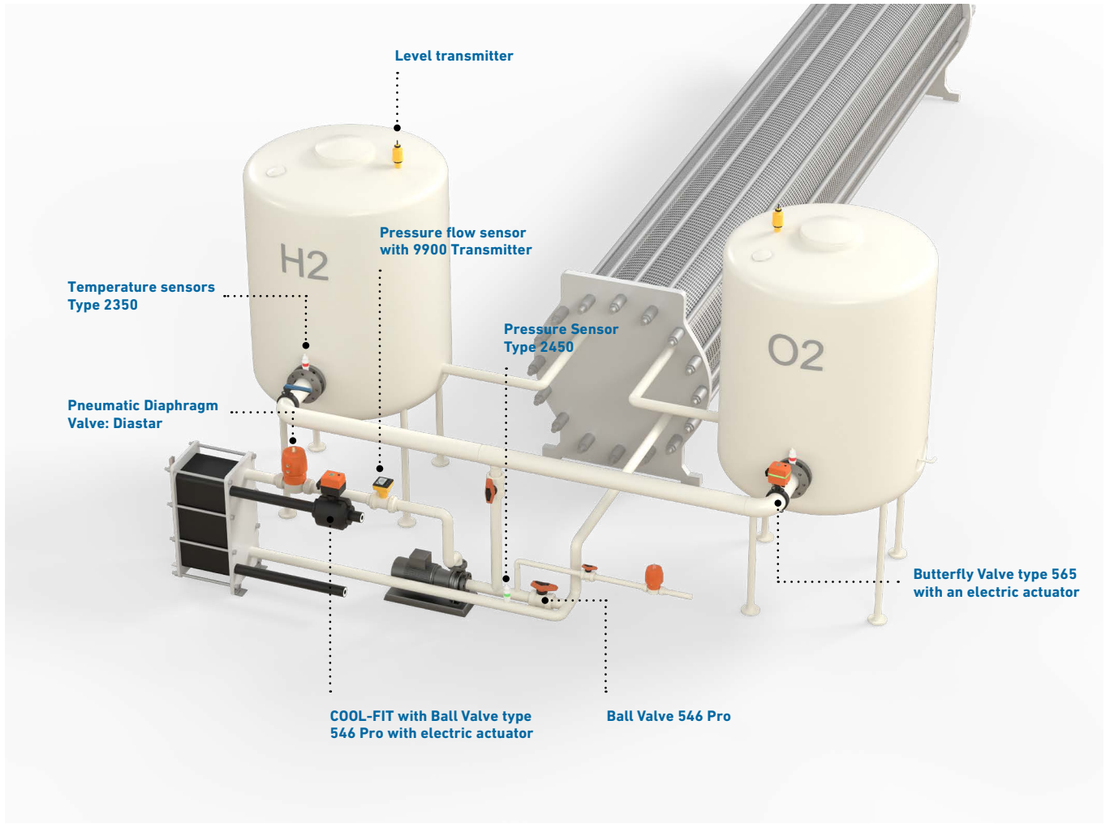
Benefits

- Safety: Our materials are designed for 25 years with 25°C water up to 16 bar
- Efficiency: Maximum of security and profitability for efficient processes thanks to mimized leach-out characteristics and smooth surfaces
- Environment: 25% lower carbon footprint compared to metal systems
- Performance: Less pressure loss

+GF+

Powering progress

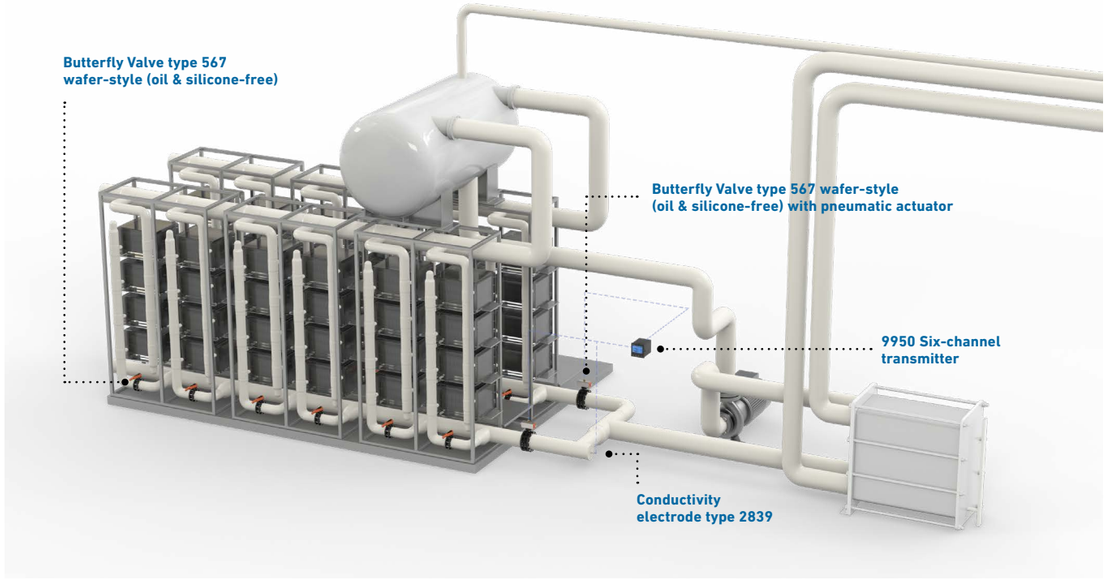
Electrolysers are at the core of the green hydrogen world. They break down water molecules into oxygen and hydrogen atoms through a process known as electrolysis, which requires electrical energy. For this process, polymer piping systems transport various liquids and gases, providing electrolyte and gas cooling, electrolyte feed and process water. To enhance the affordability of green hydrogen, we advocate for scaling up to reduce the costs of this small molecule as it progresses through the value chain.



Alkaline Electrolysers (Atmospheric)

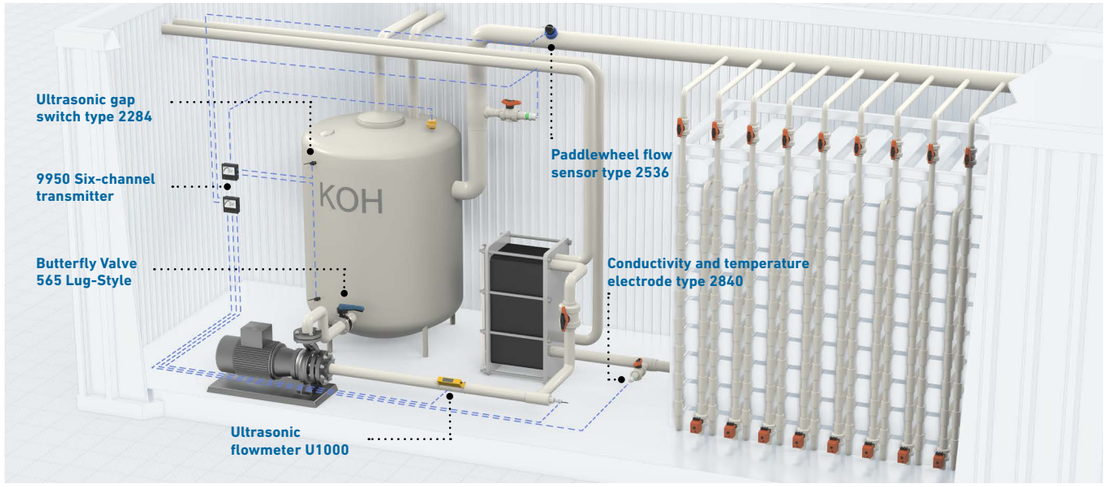
In an alkaline electrolyser, a solution of potassium hydroxide (KOH) helps split water into hydrogen and oxygen. When electricity is applied, water molecules break into hydrogen ions (H+) and hydroxide ions (OH-) at the anode.

Hydrogen ions combine with electrons at the cathode to form hydrogen gas, while oxygen gas is produced at the anode. This process, facilitated by KOH, creates hydrogen and oxygen without emitting pollutants.



Proton Exchange Membrane (PEM) Electrolyser

PEM electrolysers employ a proton exchange membrane and a solid polymer electrolyte. Water splits into hydrogen and oxygen upon applying a current, with hydrogen protons passing through the membrane to form hydrogen gas on the cathode side. The efficiency and lifespan of PEM electrolysis depend significantly on the quality of the water input. High-purity water is crucial for optimal performance.



Anion Exchange Membrane (AEM) Electrolyser

AEM, a low-temperature electrolysis method, utilizes polymeric AEM and cost-effective electrodes in a membrane electrode assembly. The anodic half-cell contains a diluted KOH electrolyte, while the cathodic half-cell, without liquid, produces hydrogen from water permeating the membrane. Oxygen is released from the anodic side.

Our customization engineers create precise solutions for hydrogen production plants, fine-tuning designs to reduce costs and complexity while enabling scalable production. Plastic pipes prevent the risk of stack contamination due to their corrosion-free properties, which positively impact the stack's performance and directly influence the cost of hydrogen production.

One solution provider

Welded system for industrial applications

With the extensive PROGEF system portfolio, consisting of pipes, fittings, valves, sensors, sealing materials, and related jointing, as well as automation technologies, engineering, and prefabrication solutions, GF Piping Systems offers unlimited capabilities for a multitude of industrial applications.

PROGEF systems are developed and manufactured according to global standards. The production processes undergo continual improvement through audits and evaluations to provide unwavering reliability and safety for your application.

Actuation
Pneumatic and electric actuators are an economical solution for installations with a high number of actuated valves. They are fast, adjustable and have a fail-safe mode.

Butterfly valves
Butterfly valves by GF Piping Systems are modular, what allows them to be combined with a wide range of actuators and accessories.

Safe connections
Aside from welding, flange connections are a safe and reliable mechanical connection.

Materials
Quality raw materials used to improve your overall system safety and reduce installation costs.

Measurement and control
Transmitters and controllers help to control and monitor your process data.

Diaphragm valves
GF diaphragm valves are a fully plastic solution and quickly adapt to different process conditions.

Cleaned products
Cleaned and packed in specified processes, GF offers silicone-free or oil-free products from the PROGEF Plus range.

Sensors
Our broad product portfolio of measurement and control with our sensors enables an all-in-one solution for our customer's automation needs. GF Pressure and temperature sensors have one-piece injection molded PVDF bodies that are ideal for corrosive liquids to save time and cost.

Flow rate measurements can be conducted in media ranging from highly pure to highly contaminated and allows tailormade solutions for almost any application. All GF flow sensors belong to the broad category of velocity-based flow measurement devices.

Ball Valve 546 Pro
The new generation, with a standard lockable lever (DN10-50), data matrix code and modular design, assures long-term sustainability. The Ball Valve 546 Pro meets every challenge and application, covering simple water applications to complex processes in hydrogen production.

Elevate your operations with our comprehensive solutions forming a synergy of quality, innovation and efficiency in every connection.

Hydrogen production

Cooling solutions

60 % lighter than steel and 50 % faster installation time

Central cooling systems play a crucial role in large-scale green hydrogen production, offering wet, dry, or hybrid cooling solutions. Green hydrogen facilities require cooling for diverse processes, including rectifier cooling, water and electrolyte recirculation, and cooling the generated hydrogen and oxygen gases. One widely adopted method is evaporative cooling, utilizing water as the cooling medium. This process involves transferring “waste” heat by sacrificing 1% of the water flow into the atmosphere. Evaporative cooling operates on the principles of open counterflow, open cross-flow, or closed loop configurations.

COOL-FIT is a cutting-edge technology piping system including pipes, fittings, valves, flexible hoses and tools, ensuring complete system integrity and a perfect seal. Designed and optimized for fast and easy installation and at least 25 years of operations with zero interruptions and maintenance, it is a reliable and efficient alternative to post-insulated metal piping systems.

Process cooling

The harsh environments in production areas makes insulation protection mandatory. COOL-FIT 4.0 from GF Piping Systems optimizes any industrial refrigeration set-up. Choose corrosion-free plastic piping systems to avoid metal contamination in clean manufacturing areas and reduce heat losses.

Enhanced energy efficiency by: 30%

The high-grade pre-insulation increases the energy efficiency of COOL-FIT by 30% compared to post-insulated metal piping systems. The integrity of the system enables a perfectly sealed cooling circuit and prevents energy loss. COOL-FIT can have a huge impact on costs and your plant’s energy consumption.

60% lighter than steel and 50% faster installation

Pre-insulated plastic piping systems weigh 60% less than post-insulated steel or copper piping systems, thus significantly reducing the transportation-related environmental impact. The pre-insulation and the simple electrofusion jointing method reduce the installation time by 50%. Installs can be performed by a single person, with no hard work required and thanks to prefabrication, installations in confined spaces are easy.

+GF+

Chilled water on rooftops

Pipe systems on rooftops for chillers and condenser units are exposed daily to the seasonal environmental conditions. Ambient conditions of -25°C / -13°F for several days are not uncommon in northern Europe, for example, and direct sunlight on black pipes can cause surface temperatures of +70°C / +158°F.

These extreme temperatures and general exposure to weather (wind, rain, UV light) create highly demanding conditions. GF Piping Systems’PE-100 black and COOL-FIT are designed for a life-span of 25 years with continued high performance under such harsh conditions.

Benefits

- Efficiency, pressure drop down to a minimum (full bore fittings and valves)
- Quick and 100% drip-free connections to the chillers
- 100% reliability and 25-year designed life-span
- No corrosion and no metallic residue, complete pressure-bearing plastic solution

+GF+

Hydrogen usage

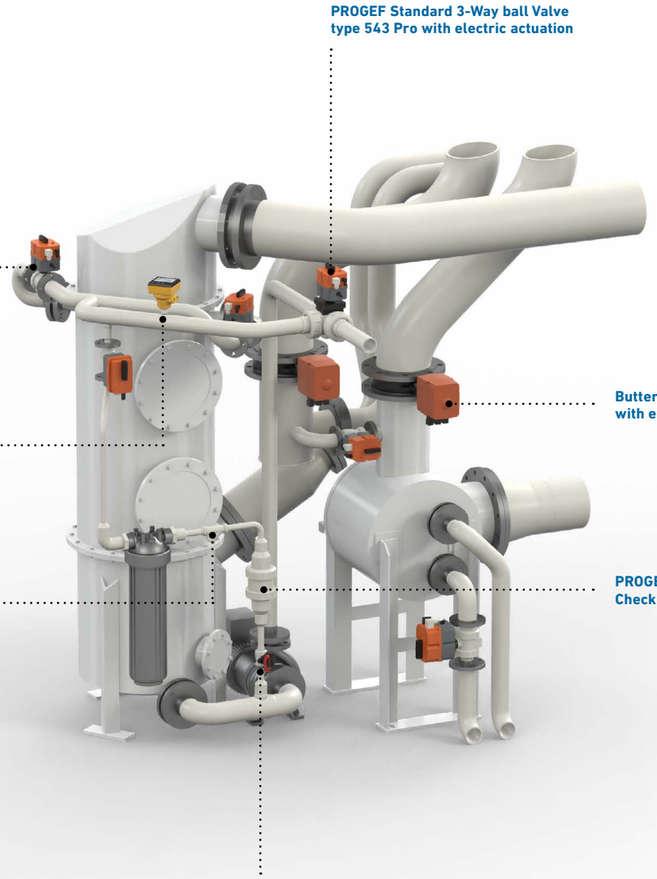
PEM fuel cell systems

Hydrogen gas enters the fuel cell at the anode, where it splits into protons and electrons. The protons pass through a membrane to the cathode, while the electrons create an electric current. At the cathode, oxygen from the air combines with the protons and electrons to form water, generating green electricity in the process.

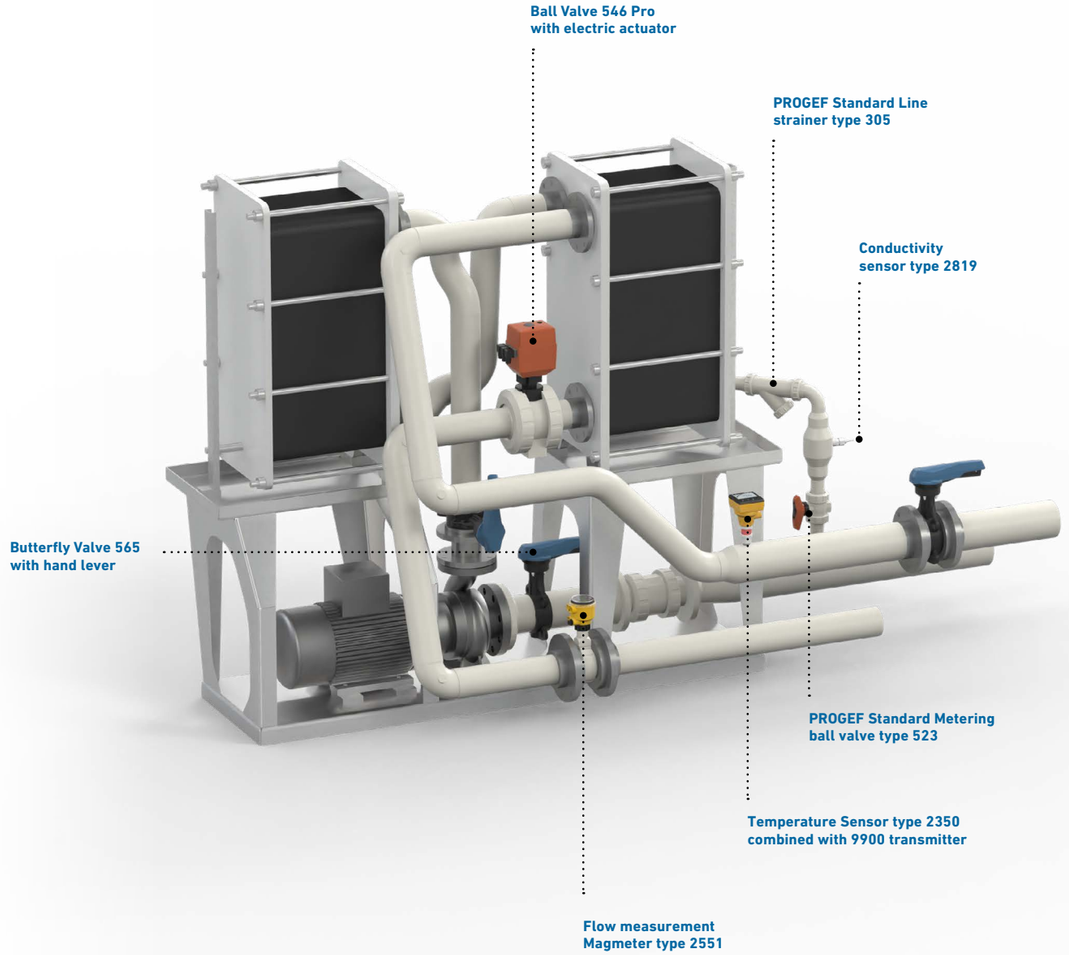
Paired with a hydrogen storage system, fuel cell systems facilitate pollution-free energy generation. Their applications span from sub-kW individual cells to MW virtual power plants, providing building heat, power supply, power for off-grid applications and engines for vehicles, planes and ships.

The growing interest in hydrogen's role in mobility has brought fuel cells into sharp focus. Our easy-to-use conductivity sensors for process and pure water applications, contribute to measuring accuracy within water loops of hydrogen fuel cell systems.

Cooling circuits for PEM fuel cells



Hydrogen fuel cell



Hydrogen usage

Tank liner components

Hydrogen, as the lightest element, naturally exists in a gaseous state under ambient conditions, albeit with low volumetric energy density. Despite the advantages of various storage methods, challenges persist. Compressed Gaseous Hydrogen (CGH_2), stored in high-pressure vessels, emerges as a viable option for both stationary and transport applications, such as buses and trucks.

+GF+

The right H_2-partner for manufacturers of type IV pressure tanks

Storage at 700 bar is becoming a standard pressure in transport applications. For those tanks we offer top-tier tank liners (inner components). Our lineup includes the highest quality of injection molded and extruded plastic components made of PE100 and different grade of PA. With excellent gas barrier properties and impact resistance, our products are suitable for numerous application including automotive, hydrogen gas transportation, and stationary long-term storage tanks.

+GF+

Hydrogen distribution

H_2-ready distribution systems

With the evolving hydrogen energy transition, the demand for delivering green hydrogen to diverse sectors and applications is increasing. This entails the need for new hydrogen gas distribution networks or upgrading existing natural gas networks to be hydrogen-ready. Distributing and storing hydrogen creates challenges for system owners due to the gas' low density and increased combustibility. In metallic pipelines this can lead to embrittlement and results in failing systems. To create reliable connections, alternative materials such as polyethylene have become more common to transport and distribute hydrogen in a safe way.

Scan the QR-code for our downloadable H_2 certificates:

+GF+

ELGEF Plus System

GF Piping Systems has become a global leader in plastic piping systems, thanks to the exceptional versatility and reliability of ELGEF Plus (PE100) fittings and saddles. The wide array of components encompasses spigot fittings and an extended range of electrofusion fittings, including a unique modular electrofusion system. GF Piping Systems delivers market-oriented solutions utilizing high-quality products and by that extremely safe electro and butt fusion welds. On top of that, the company offers a complete system package, including ELGEF Plus made-to-match tools, welding machines, and services. With ELGEF Plus, customers benefit from outstanding customization options and flexibility, enabling efficient installations and infinite application possibilities. Beyond reliability, the polyethylene range contributes to global sustainability by having one of the lowest carbon footprints compared to metal systems.

Advanced jointing technologies and tools

GF Piping Systems offers both butt fusion and electrofusion machines designed for optimal performance and ease of operation. Butt fusion machines ensure a homogenous joint with high welding quality, minimizing distortion and maintaining stability. Similarly, our electrofusion machines allow complete documentation of the process, are compact and portable, and offer excellent data storage options, making them versatile even in the harshest conditions. Both machines feature intuitive controls, robust construction, and easy operation, making them essential tools for efficient pipe welding. Alongside our wide array of welding technologies, we provide a corresponding range of installation tools, covering everything from cleaning, cutting, and chamfering to clamping or squeezing tools. It's all about equipping installers with everything they need right in the trench for seamless welding.

Approvals for Hydrogen Distribution

Safety is key when it comes to the distribution of hydrogen. Our product ranges, which are used for reliable hydrogen distribution, have the relevant approvals from KIWA (AR214). In addition to that the ELGEF Plus and MULTI/JOINT® 3000 Plus product ranges are 100% hydrogen ready, tested by the DBI (Gas-Technology Institute in Leipzig, Germany).

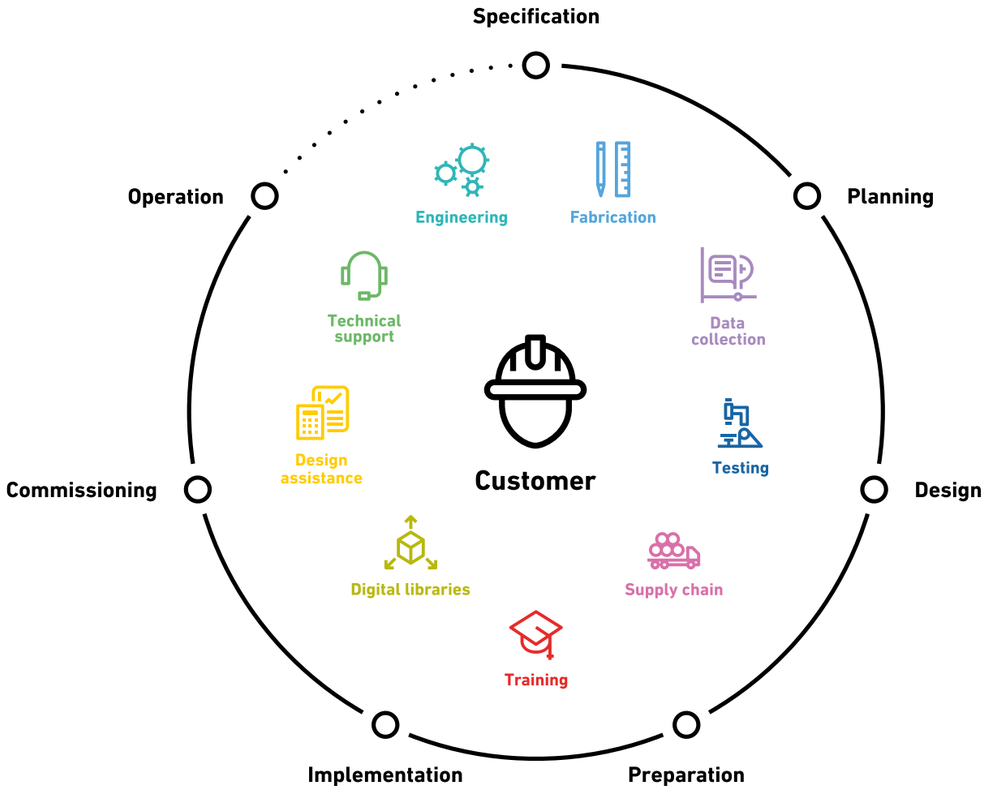
MULTI/JOINT® 3000 Plus

Using the MULTI/JOINT® 3000 Plus system, hydrogen pipe networks are quick, safe, and simple to connect without the need for special tools. Thanks to the flexibility of MULTI/JOINT® 3000 Plus, meeting the specifications of a wide variety of materials and the outside diameters of the pipelines is no longer a challenge. Connections or repairs are carried out by means of a restraint pull-out resistance system. This eliminates the need to work with thrust blocks. Thanks to the one-size fits and grips al principle, stock costs can be saved.

+GF+

One H_2 partner from planning to commissioning

With Specialized Solutions, the global leader GF Piping Systems provides project support every step of the way to achieve construction excellence. Allowing owners and planners to concentrate on their daily business without interruption.



Jointing technologies
GF Piping Systems is a pioneer in developing advanced welding machines for a broad portfolio of jointing technologies. As a comprehensive solution provider for jointing excellence, we offer not only the necessary fusion technologies but also the appropriate installation tools, ensuring long-lasting connections. With a global jointing training program, international machine rental and a worldwide network of service centers, our customers benefit from expert know-how and practical on-site consultancy.

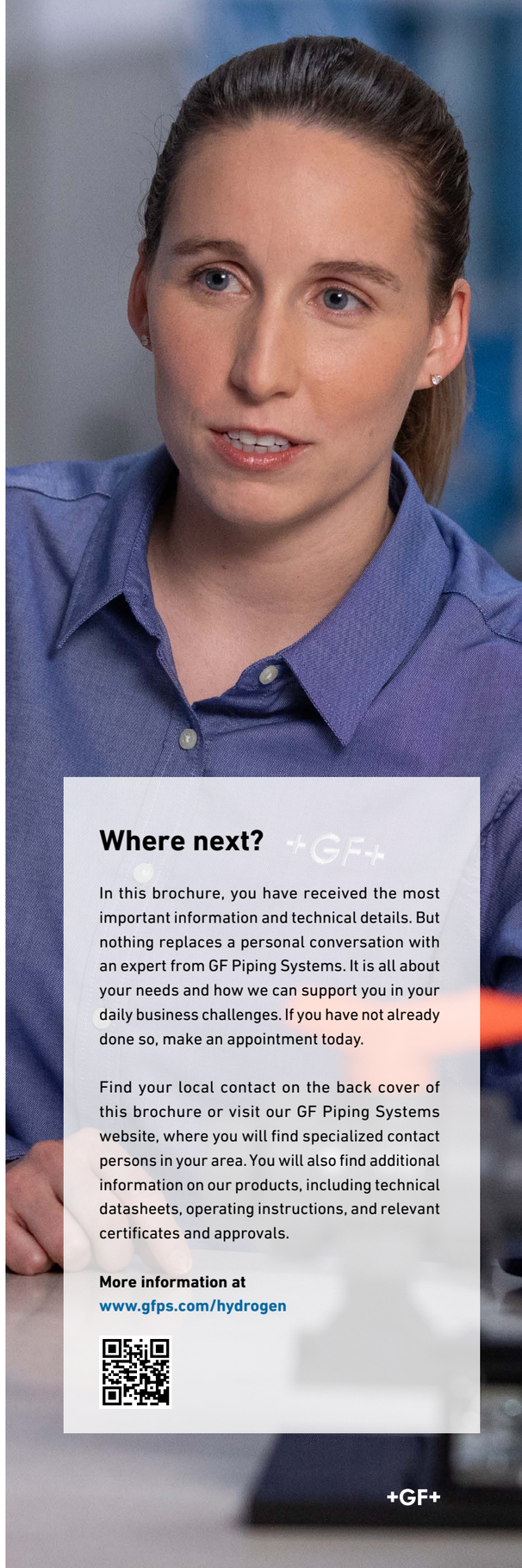
Advanced engineering: From metal to plastic
GF Piping Systems provides engineering and design support every step of the way, from part modification of an existing product, to full-system design from customer piping and instrumentation diagrams.

Off-site manufacturing
Helping speed up site work activities by prefabricating systems and standard products, including complete modules and installation sections off-site and delivering them directly to the place of use. With prefabrication workshops around the globe, customers save costs and time and increase their system reliability with proven and certified GF Piping Systems quality.

Ultrasonic Non-Destructive Testing (NDT)
The Ultrasonic NDT solution present at our prefabrication workshops provides scientific proof of weld quality at the point of installation. With Ultrasonic NDT, you can proceed with assurance, thanks to scientific proof that the welds are secure.

Testing facilities and training courses
We offer individual support through our specialists in our testing facilities to select the suitable material for the corresponding chemical resistance requirements. Numerous training courses are offered for installers, to master installation techniques related to our portfolio in a safe environment, using our instructional courses and our pioneering virtual reality training modules.

www.gfps.com/specialized-solutions



Where next?

In this brochure, you have received the most important information and technical details. But nothing replaces a personal conversation with an expert from GF Piping Systems. It is all about your needs and how we can support you in your daily business challenges. If you have not already done so, make an appointment today.

Find your local contact on the back cover of this brochure or visit our GF Piping Systems website, where you will find specialized contact persons in your area. You will also find additional information on our products, including technical datasheets, operating instructions, and relevant certificates and approvals.

More information at
www.gfps.com/hydrogen

GF Piping Systems

Local support around the world

Visit our webpage to get in touch with your local specialist:
www.gfps.com/our-locations

GFDO_BR_00107_EN (12.24)