



Land

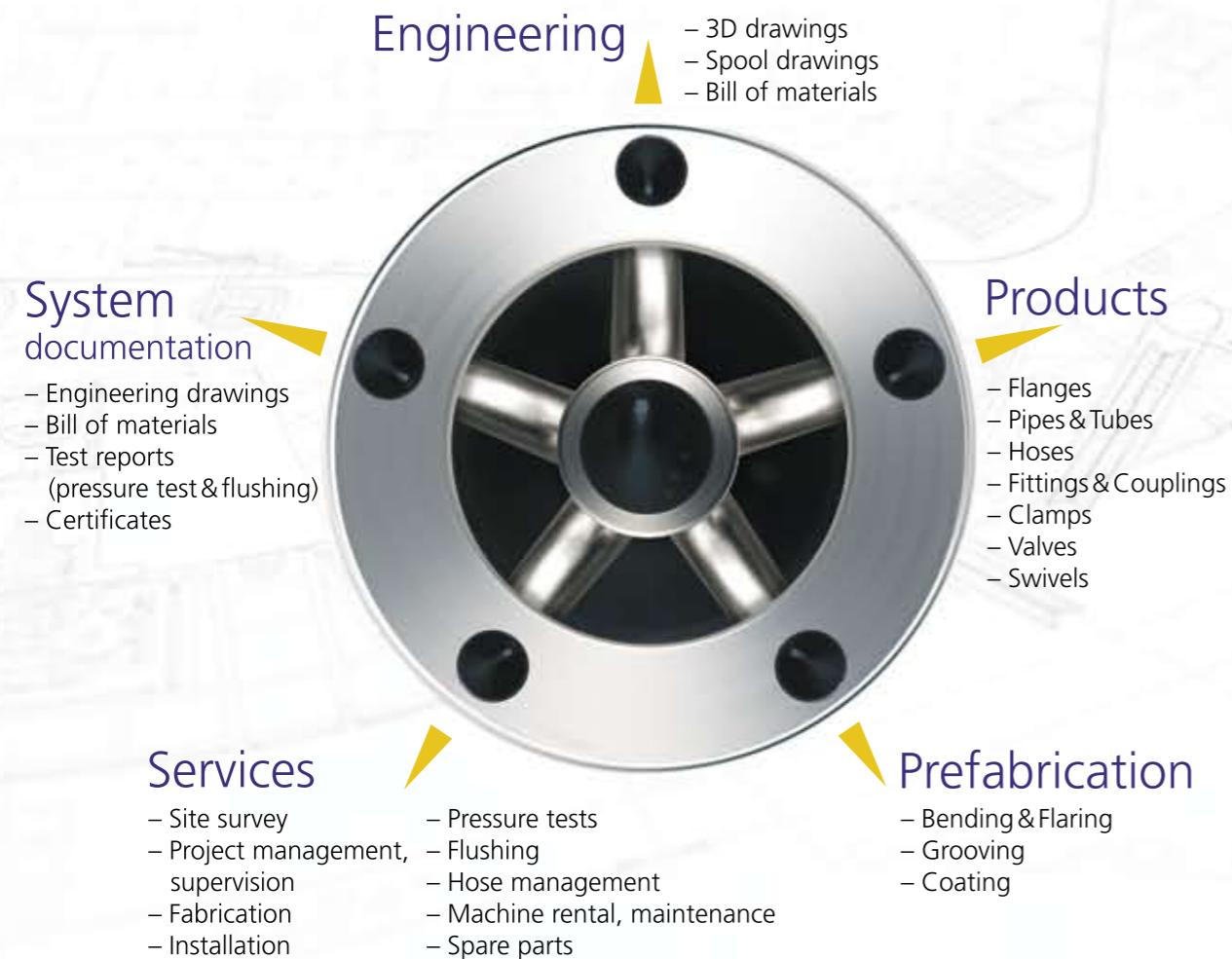
Marine

Offshore

Creating Value Together



GS-Hydro system offering



GS-Hydro's expertise covers the delivery of complete, non-welded piping systems, from design & engineering, materials & components and prefabrication to on-site work, including supervision, installation, flushing, testing, and documentation. Taking complete responsibility for the piping system allows GS-Hydro to optimize every phase of the piping project. This ensures high quality, cost-efficient and on-time delivery of the entire system.

The piping system deliveries are coordinated by GS-Hydro's experienced project management. By working together with the customer's engineering team, GS-Hydro is able to provide the best possible piping layout. The wide range of materials and piping components, ensure that on-time deliveries can be guaranteed even in the most demanding projects. The use of accurately prefabricated piping modules forms the basis for a high quality piping system, as well as the fast and easy installation. Pipe spools can be prefabricated, using methods such as bending, grooving and flaring, to shorten the total on-site installation time. Because all piping is intrinsically clean and pre-washed, the total costs of the piping system are greatly reduced due to the minimized flushing and cleaning times. The successful completion of the entire piping system is ensured by GS-Hydro's experienced site supervisors.

Our customers



Optimal piping solutions for all offshore installations

The GS-Piping System is used in a wide variety of applications on all different types of offshore drilling and production installations, ranging from fixed platforms and jack-up rigs to TLP's semisubmersible rigs, SPAR's and FPSO's. With almost 30 years of experience in the rugged conditions of the North Sea, the GS-Piping System has also proven to be the ideal piping solution for supply, research and seismic vessels.

The GS-Piping System is extensively used for high pressure hydraulics, but it is also ideal for low pressure piping systems in all areas of offshore installations, including drilling, utilities and processes. In addition to offshore yards, the GS-Piping System is also used by manufacturers of equipment for offshore installations.



Piping systems for the marine industry

GS-Hydro's piping solutions are extensively used in the shipbuilding industry for hydraulic, seawater and other piping systems. With special requirements for high integrity and cleanliness, fast installation and flexible engineering, GS-Hydro's non-welded system brings major time and cost benefits for shipyards, ship owners, and marine equipment suppliers. The hydraulic applications for vessels include winches, hatch covers, ramps, thrusters and steering gears. As automation has become pervasive throughout the marine industry, our solutions for hydraulic piping can be found today in vessels ranging from the size of oil tankers to customized sailboats.



Wide variety of applications in land-based industries

GS-Hydro piping systems are installed in a number of different customer environments. Pulp and paper, mining, metals, automotive, aerospace & defense, recycling stations, sugar plants as well as test systems for car manufacturers, just to name a few. A wide set of different applications are excellent examples of GS-Hydro piping systems value, strength and quality for diverse customers.



Technology benefits

Added value for customer

Attributes of GS-piping without welding

Customer benefits

Superior Cleanliness

Clean systems – longer life time, cost savings, less maintenance.
Hot oil flushing cleans the system – cost savings and environmentally friendly process.

Optimized Flexibility

One stop shopping – all you need for high pressure piping system.
Customer needs differs – pick the optimal technology for different needs .

Documented Quality

Type approvals and certificates – high quality, low risk, good traceability.
Trained installation teams – high quality system deliveries.

Lifetime Cost-Effectiveness

Prefabrication – time and cost savings during installation.
Easy and quick modifications – short maintenance time.

Environmental Friendliness

Leak free – low risk for oil spills.
No need for chemicals in flushing – easier waste management process.

GS-PIPING WITHOUT WELDING™



Non-welded GS-Hydro technology



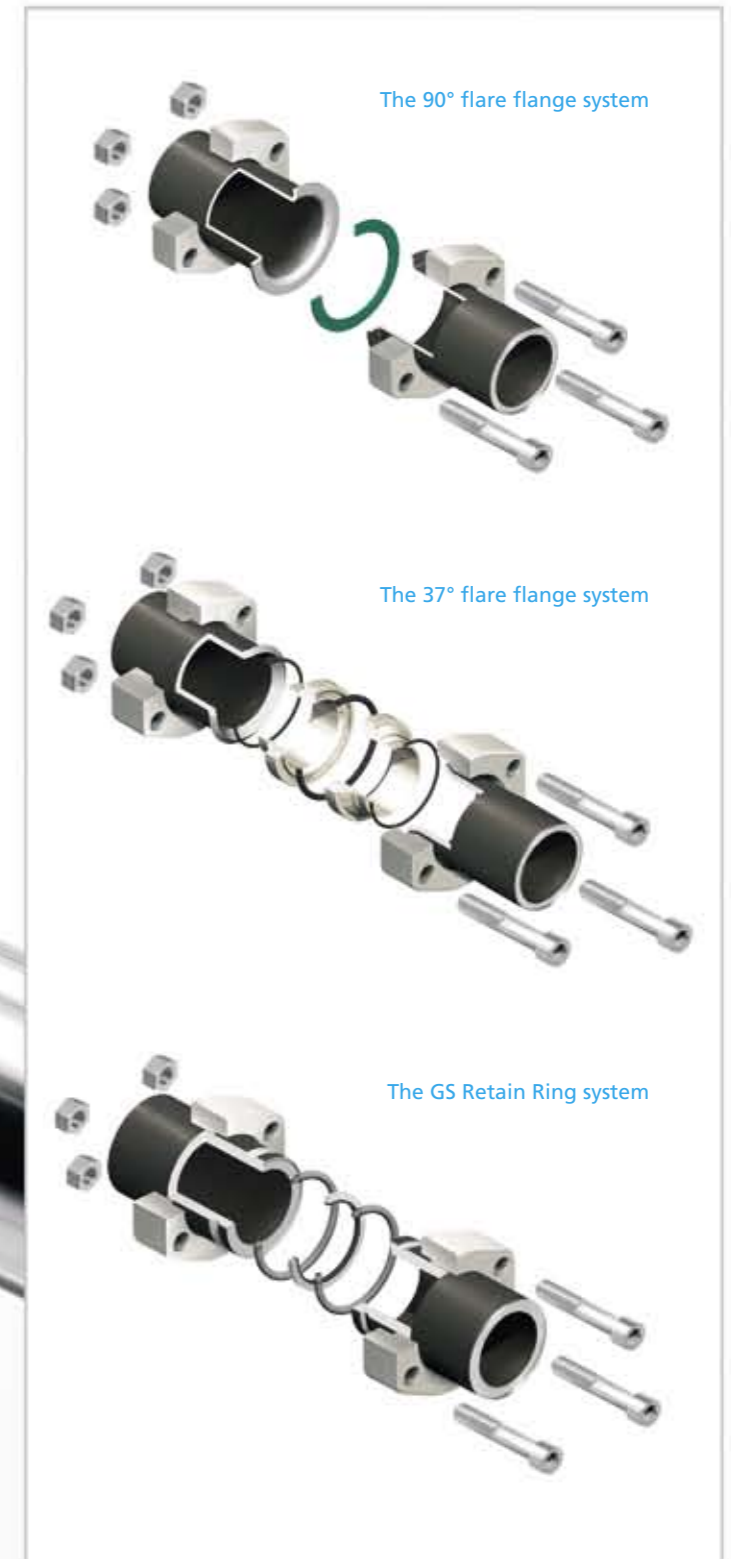
37° 90° RR

The ORIGINAL GS-Piping System consists of three flange systems, which allow piping systems with working pressures from 10 to 690 bar and pipe diameters between 16 and 600 mm to be assembled without welding. The Retain Ring and 37° Flare Flange systems are used for high pressure connections and the 90° Flare Flange connection for low pressure applications.

The 90° flare flange system is used for class III piping with a maximum allowable working pressure of 16–40 bar. The 90° flare flange jointing method is suitable for low pressure piping systems in a wide range of different materials ranging from mild steel to super duplex.

The 37° flare flange system is used for piping with a maximum allowable working pressure of 420 bar. The 37° flare flange jointing method is suitable for high pressure piping systems in a wide range of different materials ranging from mild steel to tungum.

The GS Retain Ring system is used for piping with a maximum allowable working pressure of up to 350–400 bar. In special applications, the retain ring system can be used with working pressures as high as 690 bar. Extensive testing programs have shown that the retain ring jointing method is suitable for high pressure piping systems in a wide range of different materials.



Non-welded technology Products

Materials and Components for the most demanding projects

GS-Hydro carries a large stock of piping material as well as individual piping components to ensure that deliveries are carried out on time – even in large, demanding projects.

Stocks include a comprehensive range of seamless precision steel pipes, in outside diameters of 6 to 273 mm. They are seamless, cold drawn pipes from high quality steel grades, annealed to allow further bending and flaring. Both St37.4 and 52.4 carbon steel grades are used, either black or electric zinc plated and chrome VI-free passivated for additional corrosion resistance. GS-Hydro's stainless steel pipes are manufactured from AISI 316L – being also seamless cold drawn – to be used in non-welded connection technologies.

GS-Hydro's broad component range completely covers all the necessary parts of a hydraulic system. The offering consists of DIN 2353 fittings (6mm...42mm) both in carbon steel and stainless steel, JIC J518 fittings (6mm...38mm), various types of pipe clamps, valves, hose couplings, adapters and hoses. All components are manufactured by qualified, high quality manufacturers.



GS-Hydro in brief



GS-Hydro is the world's leading supplier of non-welded piping systems. Operations began in 1974 with the commercialization of an innovative flange, which allowed the rapid and secure connection of pipes without the need for welding. Investing in continuous product and systems development, GS-Hydro now offers the broadest range of non-welded piping solutions on the market. Our core technology has been validated in thousands of applications for over three decades and has been taken to virtually every corner of the globe.

The main application for our technology is in hydraulics, where the high pressures place stringent requirements on pipe connections. However, we also meet the needs of all markets where customer requirements demand any one of the many benefits our technology provides over welding, such as superior cleanliness, serviceability, prefabrication, rapid installation or zero-fire hazard.

- Global presence through 17 frontline companies and agents
- Headquarters and production facility in Finland
- Over 30 years experience in non-welded piping technology
- Tens of thousands of piping systems installed around the world
- Provider of GS-Hydro original non-welded flange technology



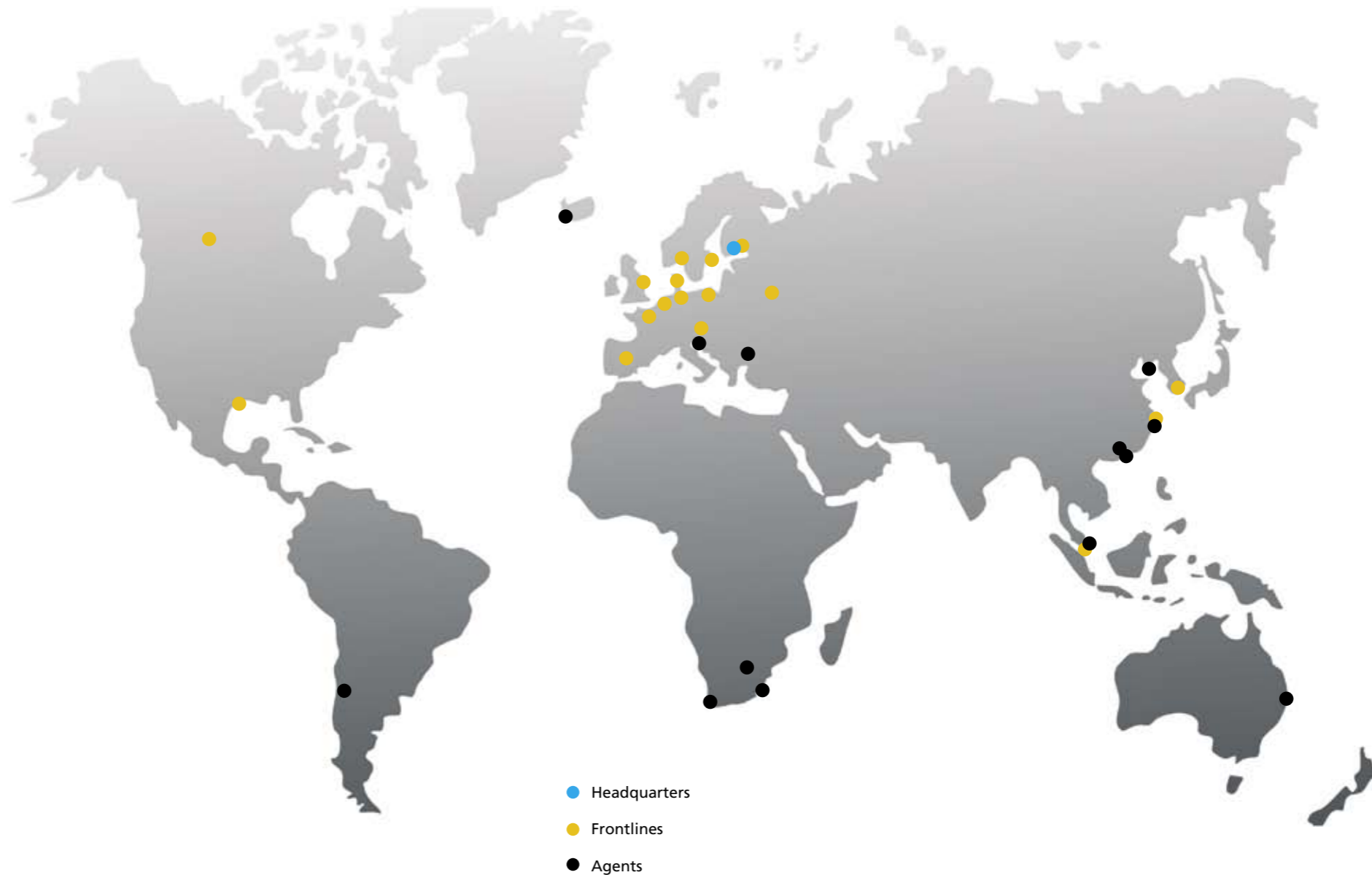
GS-Hydro organization



We operate directly through our own subsidiaries in 17 countries, which cover the key markets from Asia to North America. In addition to our own direct operations, we also use selected agents and distributors to complete our sales channel. With over 500 piping system specialists, GS-Hydro is able to deliver complete high-pressure piping systems to customers virtually anywhere in the world. Our aim is to help customers gain benefits from non-welded systems.

GS-Hydro aims to continuously develop the competence and experience of its workforce. We recognize that our people, their knowledge and competence, are our strongest asset through which we can add value to our partners' businesses. Our people provide the best service level, consistently.

We envision GS-Hydro to be the recognized global leader in non-welded piping systems and services. By partnering with our customers and selected suppliers, GS-Hydro delivers high-quality products, systems and services worldwide. Our mission is to provide innovative, non-welded piping solutions for demanding applications.



For global GS-Hydro contacts go to: www.gshydro.com

GS-Hydro is the original provider of non-welded piping systems with numerous benefits for a wide variety of demanding applications. The company operates globally in more than twenty-five countries through own frontline companies and agents. GS-Hydro supplies complete piping systems with engineering, products, prefabrication, services and documentation.



GS-Hydro
system offering



ISO 9001



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