GS-Hydro Original Provider Of Non-Welded Piping Solutions





- Tens of thousands of piping systems installed around the world
- Global presence in over 25 countries through own subsidiaries and partners
- Over 600 piping specialists globally

GS-Hydro is the world's leading supplier of non-welded piping systems. By working closely with our valued customers, we developed the technology to build high pressure piping systems without welding. Connections were done based on different kinds of flange technologies depending on pressure ranges in pipeline.

Today GS-Hydro offers the broadest range of non-welded piping solutions on the market. Our core technology has been validated in thousands of applications for four decades and has been taken to virtually every corner of the globe.



1 Customer industries

GS-Hydro offers comprehensive non-welded piping solutions for a number of demanding industries:

- Offshore
- Marine
- Land-based

Non-Welded Technology Benefits

Revenue

Increase Customer's Revenue

- · Increased uptime
- · Higher revenue and profits
- · Faster start-up of operations
- Improved quality through engineering
- · High quality products
- Deep understanding of classification requirements
- Increased hydraulic system lifetime due to fewer component failures and operational stoppages

Risk Eliminate Risks

- · Reduced schedule risk
- · Reduced financial risk
- · High quality products
- Improved quality through engineering and prefabrication
- · Professional project management
- Reduced risk of contractual penalties
- Reduced resource risk through machining
- · No welding quality risk



Efficiency Improve Efficiency

- · Increased operational efficiency
- · Decreased installation costs
- · Minimized on-site work through prefabrication
- · No need for post welding X-ray testing
- No need for acid cleaning

ılı

No need for welding requirements

More value with non-welded

Choosing non-welded technology is the best way to manage quality and scheduling risks. Most of the work is done in workshop environment with reliable machinery.

Longer term benefit is based on the cleanliness of the system. Especially in hydraulic systems, impurities of hydraulic oil can be extremely harmful for the system's longevity.



Complete Offering

GS-Hydro offers a comprehensive package of products and services to create a non-welded piping system. In addition to products this includes all engineering services, prefabrication of components, on-site services and system documentation.

GS-Hydro's 40 years' experience in non-welded piping speaks for itself. We are present in most of the markets around the world. It is our mission to offer complete material and service packages for piping systems to help our clients to grow their businesses.

During the past few years GS-Hydro has invested heavily into people and engineering development to ensure a strong capability to execute increasingly demanding projects for both new build and maintenance markets.

Engineering - 3D models - Spool drawings

- Bill of materials

System documentation

- Engineering drawings
- Bill of materials
- Test reports (pressure test & flushing) Certificates

Products

- Flanges
 - Pipes & Tubes
 - Hoses
 - Fittings & Couplings
 - Clamps
 - Valves – Swivels

- Services
- Site survey
- Project management, Flushing supervision
- Fabrication
- Installation
- Pressure tests
- Hose management
- Machine rental, maintenance
- Spare parts

Prefabrication

- Bending & Flaring
- Grooving
- Coating





Non-Welded Technology

- Certified quality system (ISO 9001:2008) in place
- **Full materials traceability**
- F High quality materials and manufacturers

Approved by numerous classification agencies:

DNV GL	DNV GL Group
LR	Lloyd's Register of Shipping
ABS	American Bureau of Shipping
BV	Bureau Veritas
RINA	Registro Italiano Navale Group
RS	Russian Maritime Register of Shipping
NKK	Nippon Kaiji Kyokai
CCS	China Classification Society
KR	Korean Register

цh

Material choices

GS-Hydro connection technologies can be used with wide range of different pipe materials, starting from standard carbon steel and stainless steel materials and extending to more specific stainless steel grades (e.g. duplex and super duplex) as well as copper alloys (e.g. 90/10 and 70/30 copper nickel).

GS-Hydro recommends the use of cold drawn seamless tubes and pipes associated with GS-connections.



The GS Retain Ring system is used for piping with a maximum allowable working pressure up to 690 bar. Extensive testing programs have shown that the GS Retain Ring connection method is suitable for high and medium pressure hydraulic and other piping systems where high integrity, inherent cleanliness and fast installation times are needed.

The 37° Flare Flange system is used for piping with a maximum allowable working pressure up to 420 bar. The GS-37° Flare Flange System is used in a broad range of high and medium pressure piping applications in a wide variety of industries ranging from offshore and marine to different land-based industries.

The 90° Flare Flange system The 90° Flare Flange System is used for piping with a maximum allowable working pressure up to 40 bar. The 90° Flare Flange connection method is used for low pressure piping systems in a wide range of applications like hydraulic return lines, potable water, sea water, air and low pressure mud.

New Build & After Sales Markets

New Build Market

GS-Hydro offers high quality non-welded piping solutions for new build market. After several decades of executing new build projects, GS-Hydro has mastered a wide range of services ranging from site surveys to project management and on-site supervision.

After Sales Market

GS-Hydro is building up its After Sales offering to include comprehensive services for its customers. In after sales projects, which often consist of maintenance and modification projects, GS-Hydro offers short delivery times, high product quality together with professional engineering and installations.

- Site survey
- Hydraulics reliability assessment
- GS-Smart Care (Hose Management)
- Preventive replacement
- Emergency replacement
- Minor modifications such as shut-down
- Major modifications such as reclassification

111

GS-Smart Care

GS-Smart Care is GS-Hydro's Hose Management System which offers a smart way to recude hose related risks. It includes an easy-to-use internet-based software. For hose tagging we use latest RFID technology. Hose data can be accessed either via computer or with handheld RFID reader at any time – 24/7/365.





GS-Hydro is the original provider of non-welded piping solutions with numerous benefits for a wide variety of demanding applications. We create value together with our customers by providing innovative fluid transfer solutions which enable safe operation, reduced environmental impact and lower total cost of ownership. We deliver our piping and hose solutions globally in more than twenty-five countries through own companies and partners.

