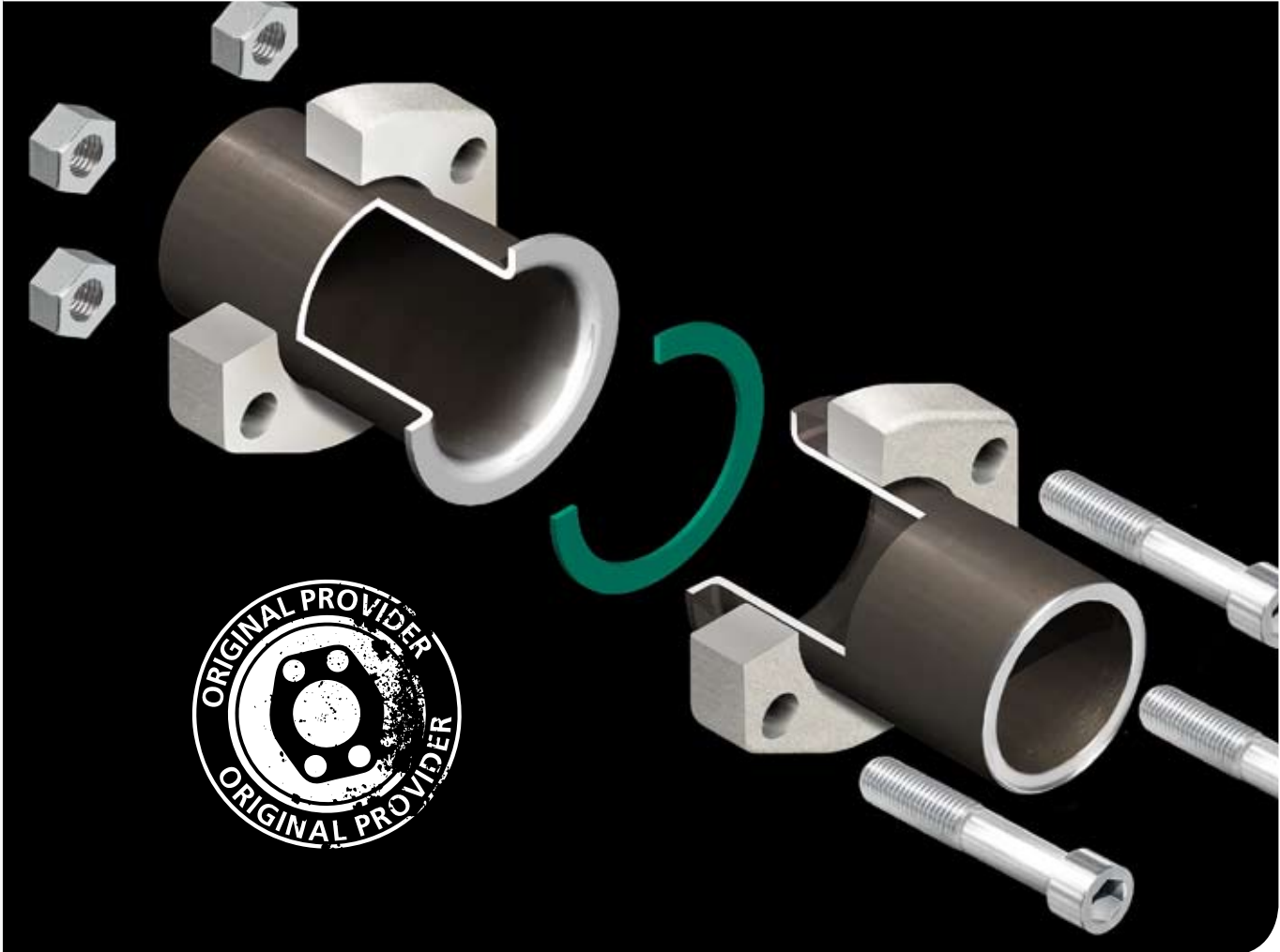


GS-90° Flare Flange System



GS-Piping Without Welding™

GS-Hydro is the world's leading supplier of non-welded piping technology and the Original Provider of the GS-Piping Without Welding™. GS-Hydro has over 35 years experience with hydraulic systems and non-welded connection technology.

GS-Piping Without Welding™ -Technology provides numerous benefits:

- Superior cleanliness
- Optimized flexibility
- Documented quality
- Lifetime cost-effectiveness
- Environmentally friendly

The Original GS-90° Flare Flange System

The GS-90° Flare Flange System is applicable to working pressures of up to 40 bar with a maximum pipe diameter of 608 mm to be assembled without welding. For class III piping, the GS-90° Flare Flange System has a maximum allowable working pressure of 16 bar. The GS-90° high quality pipe connections are reliable, fast, easy and completely leak-free, with high joint integrity and done in the most cost efficient manner.

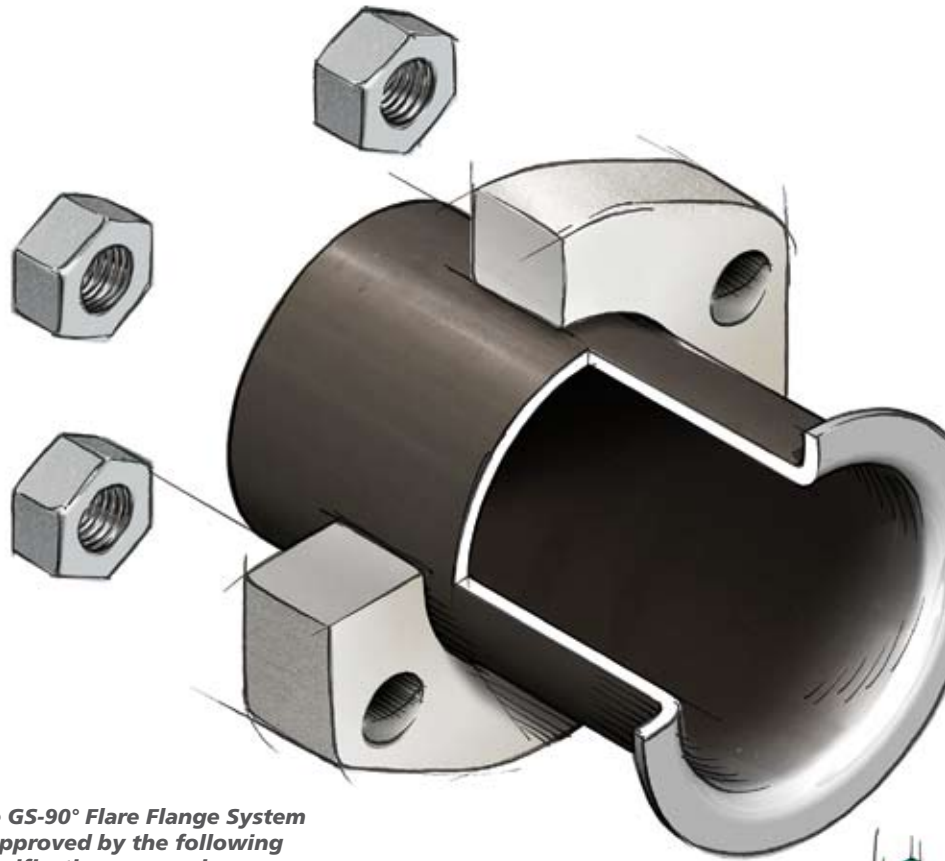
GS-Hydro's flaring technology is fast and completely clean. In the flaring process the end of the tube is clamped into an in-house developed flaring machine where a conical rotating tool flares the pipe end into a dye. Flaring of the tube end is carried out in the same way as in the 37° flange system, with an

additional rotating tool used to produce the 90° flare. The flange is installed onto the pipe prior to flaring. The assembly is easy and fast – done by placing a flaring cone on both the flared pipe ends with a seal in-between. The flanges are then tightened together to complete the connection. The GS-90° flaring can be carried out in the work shop or onsite.



• The GS-90° Flare Flange System is approved by numerous classification companies: Det Norske Veritas • Lloyd's Register of Shipping • Germanischer Lloyd • American Bureau of Shipping

GS-90° Flare Flange System



The GS-90° Flare Flange System is approved by the following classification companies:

- DNV** Det Norske Veritas
- LR** Lloyd's Register of Shipping
- GL** Germanischer Lloyd
- ABS** American Bureau of Shipping
- BV** Bureau Veritas
- RINA** Registro Italiano Navale Group
- MRS** Russian Maritime Register of Shipping
- NKK** Nippon Kaiji Kyokai
- CCS** China Classification Society

Piping systems according to other standards are also possible by request.

GS-90° Flare Flange System (technical data):		
	SAE	ANSI/JIS/BS/DIN
pressure* [bar]	10–50	10–40
size, pipe	16x1.5–220x6	21.3x2.1–608x12.5
size, flange	1/2"– 8"	1/2"– 24"
material, pipe	carbon steel, stainless steel, copper-nickel, duplex, super duplex, titanium (materials having elongation above 20 %)	
material, flange	electric zinc coated carbon steel, hot dip galvanized carbon steel, stainless steel	
material, seal	based on media inside pipe (e.g. Klinger® SIL C-4430)	

*) Maximum pressure depending on media

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GS-PIPING WITHOUT WELDING™

Numerous application possibilities

Within the **Marine Industry** the *GS-90° Flare Flange System* is suitable for sea water, fire water, air and sewer piping systems for sizes up to 8" and for working pressure as high as 16 bar. Pipe qualities include copper-nickel (70/30, 90/10), carbon steel and stainless steel. The main reasons for using the 90° system include major time and cost savings in prefabrication and installation, particularly with copper-nickel but also with other pipes.

The *GS-90° Flare Flange System* is utilized by the **Offshore Industry** for sea water, hydraulic oil, fire water and potable water applications on oil rigs for safety and cost reasons. The major benefit to the offshore industry is that the connection can be carried out onsite, which eliminates the need for hot work.

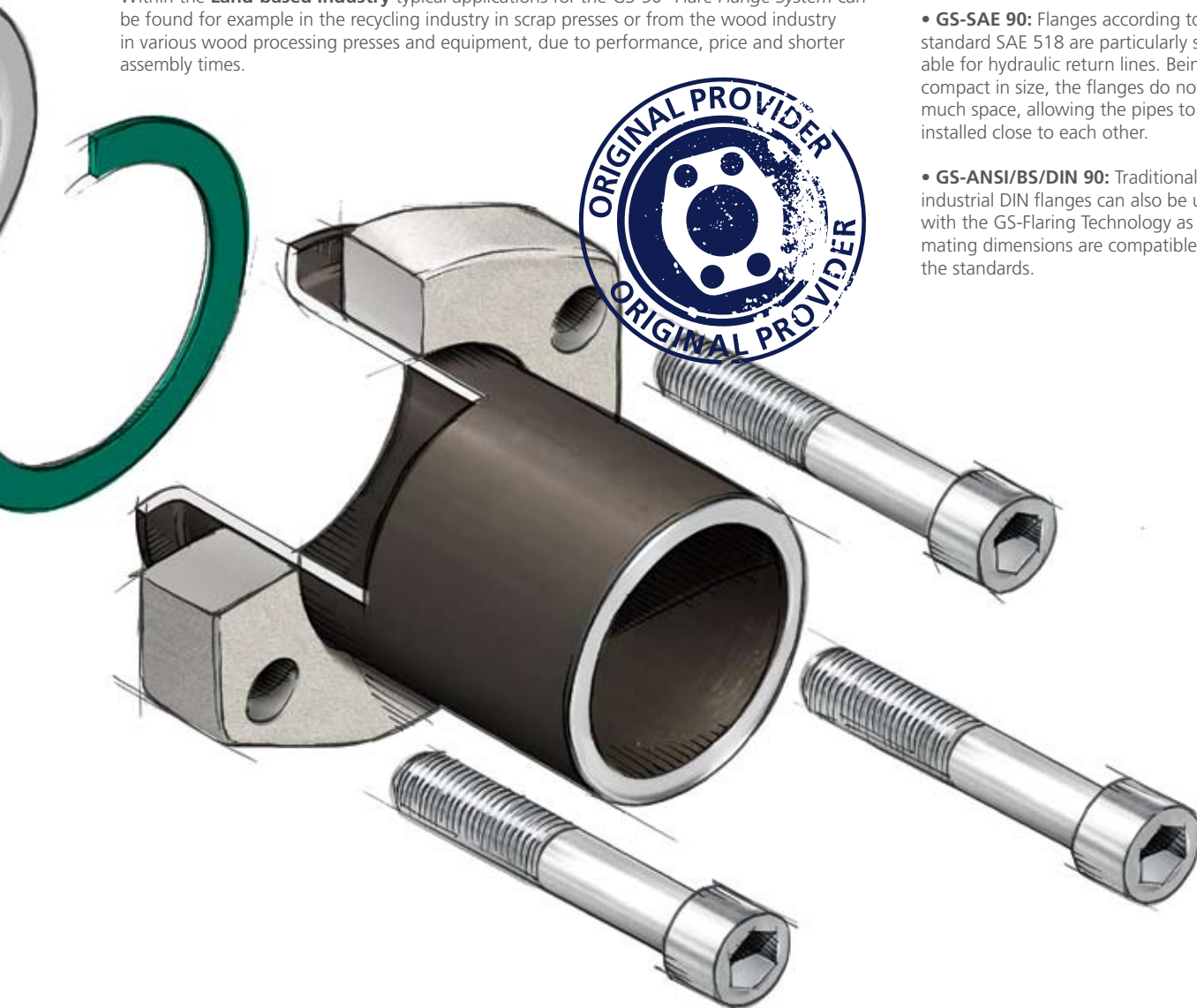
Within the **Land-based Industry** typical applications for the *GS-90° Flare Flange System* can be found for example in the recycling industry in scrap presses or from the wood industry in various wood processing presses and equipment, due to performance, price and shorter assembly times.

Two different types of GS-Flanges

GS-90° Flare Flange System provides a higher quality solution with major time and cost savings compared to conventional welded piping systems. Wide range of customers within industries are marine, offshore and various land-based industry segments.

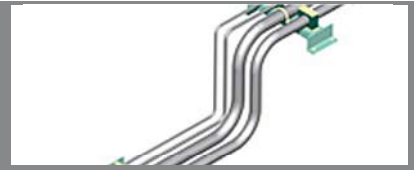
Different types of *GS-90°* -flanges provide the optimum solution for different applications and conditions:

- **GS-SAE 90:** Flanges according to the standard SAE 518 are particularly suitable for hydraulic return lines. Being very compact in size, the flanges do not require much space, allowing the pipes to be installed close to each other.
- **GS-ANSI/BS/DIN 90:** Traditionally used industrial DIN flanges can also be used with the *GS-Flaring Technology* as the mating dimensions are compatible with the standards.



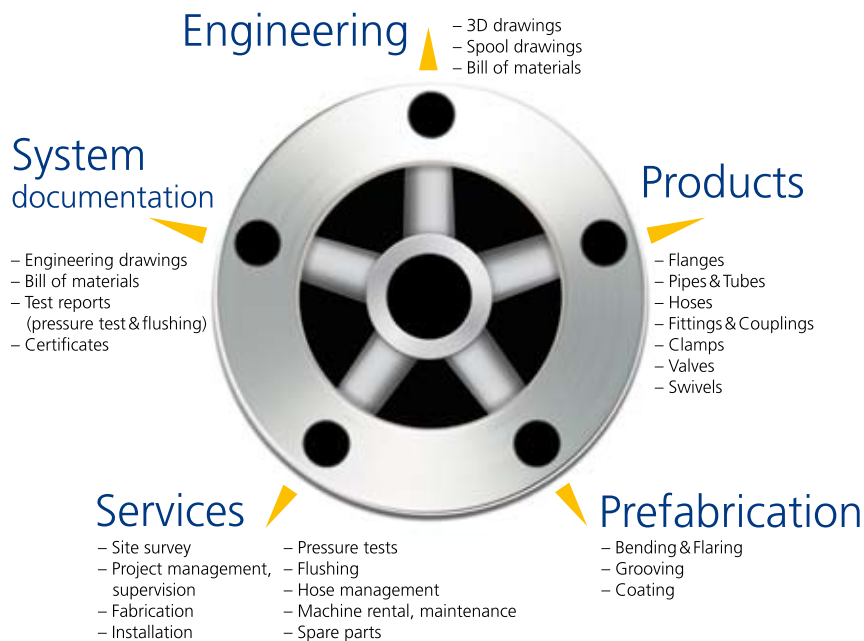
GS-Hydro is the world's leading supplier of complete non-welded piping solutions, with numerous benefits for a wide range of demanding applications.

Creating Value Together



GS-Hydro is the world's leading supplier of innovative, non-welded piping solutions for hydraulic, and other – both low and high pressure – applications with high demands on quality, reliability and cleanliness. Global GS-Hydro network helps customers to grow their business by offering high quality products and comprehensive services.

GS-Hydro system offering



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 Please view our web site to find GS-Hydro in Your region www.gshydro.com

• leak-free • reliable • highest level of cleanliness • small space requirement • prefabrication • fast and easy on-site installation • zero-fire hazard •