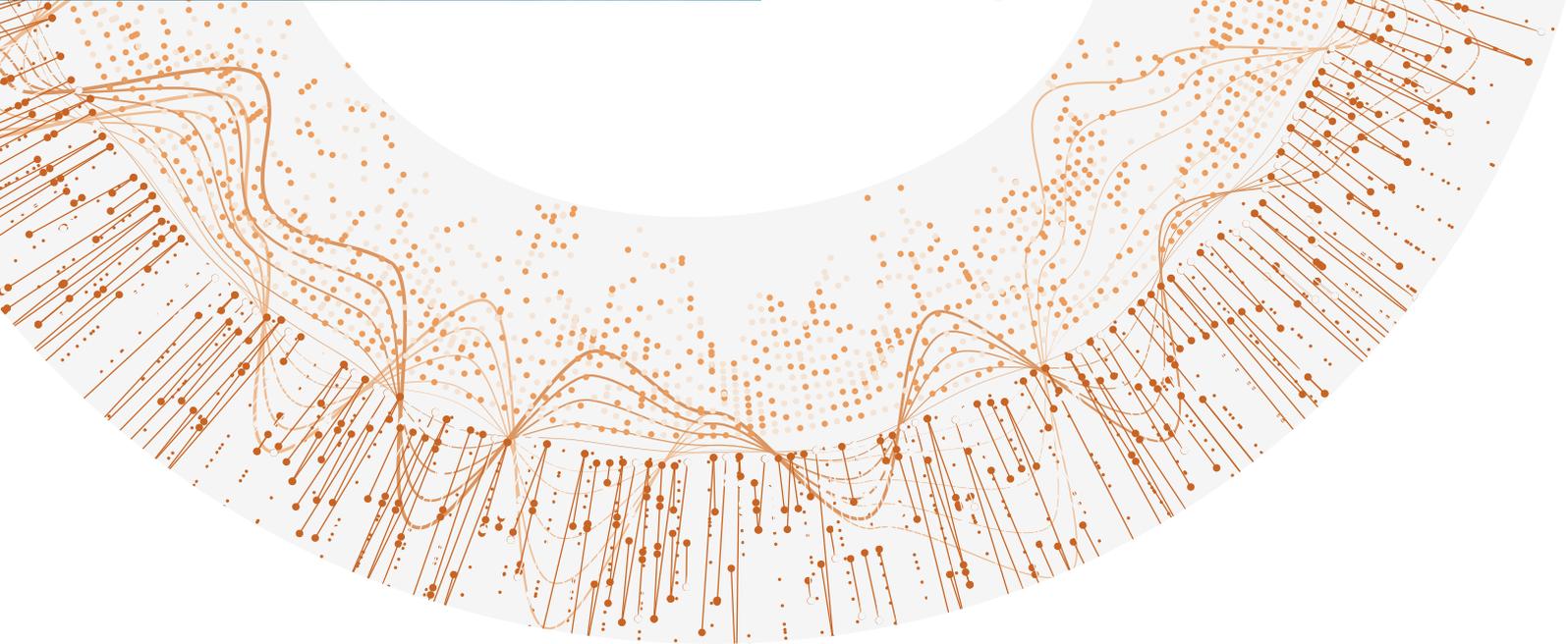


SECTOR
OIL & GAS



GORIZIANE

Innovating Together



ENGINEERING & CONSTRUCTION DEPARTMENT

The Engineering & Construction Department is made up of a team of in-house, multi-disciplined engineers who are able to face the most competitive challenges on the current market. This department mainly deals with designing, planning, constructing, and managing equipment and plants of the Oil and Gas Sector meeting deadlines given by customers.

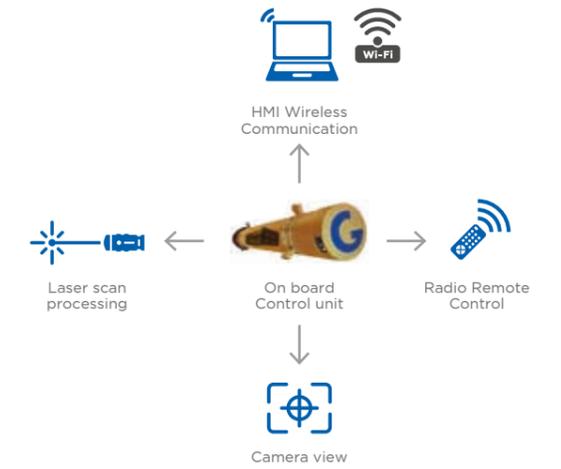


ENGINEERING & CONSTRUCTION

As regards machines, Goriziane is specialized in the design and manufacture of internal line-up clamps, **pipe facing machines** along with hydraulic power units, pipe bending machines and mandrels.

Our pipe facing machines (covered range 6"-82"), which have safety systems which stop automatically the rotating plateau when operators open protection grids, make precise bevels (with +/- 0,1 mm), do not chatter or stop during bevelling operations. They have low maintenance rate and components are not replaced frequently.

Our manual or motorized **internal line-up clamps** are built to handle wide variations in pipe diameter and wall thickness (range covered 6"-82"). They can be equipped with copper backing shoe system, purging system and special kits for cra pipes.



Goriziane's engineering team has also developed an innovative project which has led to the manufacture of a new internal line-up clamp: **V-ILUC**. In addition to the standard features this machine normally has, this new product is made up of a video laser tool and a high-resolution digital camera which provides instant and thorough inspection of the internal weld root pass. In case any defect is detected, it can immediately be removed saving time and costs in the production workflow. The laser scan is managed by an innovative web server HMI developed by Goriziane's engineers. The wireless connection allows self-test handling through remote control support. The algorithm performs laser scan and video camera reading by measuring welding scan; finally, it produces internal section reading and welding analysis.

Our high performance **pipe bending machines** are made of high resistant steel which can bend pipes up to 74" diameter. They can operate with pneumatic or hydraulic mandrels. The new innovative cylinder configuration makes the machines perform better. Among our range of products, external line-up clamps and roli cradles can also be found.





As regards plants, Goriziane has a deep expertise in the design and construction of pipe handling systems such as double and quadruple joint plants manufactured for the onshore field, but for the offshore as well, thus plants which have been installed on pipe laying vessels around the world; moreover, Goriziane has been providing customers with firing lines and rollers, stingers and stinger rollers.

The machines and plants manufactured by Goriziane stand out for their precision, reliability and longevity. All machines and plants can easily operate in harsh environments characterized by extreme weather conditions.

In addition to standards products, our engineers are able to design special non-standard products, thus **tailor-made** machines and plants which meet the most demanding customers' needs.

Our team accomplishes **turnkey projects** starting from design and procurement of material and components, going through manufacturing and project management to supervise scope of work, up to installation and commissioning of manufactured products.



MAINTENANCE, REPAIR, OVERHAUL

Oil and Gas does not mean exclusively engineering and construction to Goriziane. This Department is indeed linked to the other Company Division, i.e. Maintenance, Repair and Overhaul.

Goriziane carries out **Maintenance, Repair, Overhaul and upgrade of equipment and plants of the Oil & Gas, Naval and Marine Sectors, at customer's site or in-house.**

Technical assistance is provided in the shortest time to restore machines and/or plants avoiding prolonged downtime.

GSE MANUTENZIONI

GSE Manutenzioni is part of Goriziane. Thanks to its 20 year-activity, GSE is specialized in technical maintenance on board of vessels and offshore platforms, however it is able to repair a wide range of products which include draw-works, pumps, winches, cranes, compressors, generating sets, thus to operate in other Sectors such as Naval and Industrial as well.





CUSTOMER'S SATISFACTION FIRST

Goriziane takes care of its customers even after material shipment, providing them with constant and valuable after-sales support. All the activities are carried out with special attention to quality and health, safety and environment protection. Goriziane products are certified to the internationally recognized ISO 14001 - BS OHSAS 18001, ISO/TS 29001 and ISO 9001 standards.

Goriziane constantly invests in **Research & Development** by aiming at providing customers with innovative products and fulfilling the most demanding needs.

"Customer's satisfaction first" Goriziane first of all aims at Customers' satisfaction which is gained by building long-lasting relationships with its Customers. Goriziane operates worldwide, and local offices have been established in:



Goriziane Offshore Asia with headquarters in Singapore



Goriziane Group Azerbaijan with headquarters in Baku



Goriziane Group China with headquarters in Yantai



Goriziane is member of "Polo Offshore", a network of partners that work successfully in the offshore market and "IPLOCA", International Pipeline and Offshore Contractors Association.

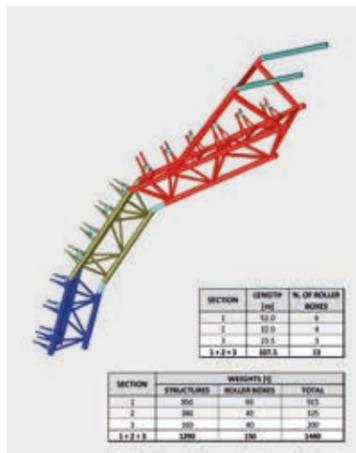


CASE HISTORY



Construction of stinger, China

Goriziane has entirely equipped the first pipe laying vessel of Yantai Salvage Bureau, built at ZPMC shipyards in China, with machines and systems, i.e. pipe handling system – firing line and rollers, 105-meter stinger and stinger handling system, variable length linkage, “ASPO” - firing line umbilical management system, and welding equipment for double joint including the pipe induction heating coils.



Onshore Double Joint for Er Sai, Kazakhstan

Goriziane was responsible for design and construction of a complete pipe handling equipment to allow double-joint production for pipes with a diameter range from 6” to 36”.



subsea 7

Portable Double Joint Facility for Subsea7

Goriziane engineering team accomplished a real innovative offshore solution for its Customer Subsea7. A portable double joint system stored in a container was manufactured for pipelay vessel Seven Borealis taking more than 20,000 hours of development and design, 400 tons of steel, 25,000 meters of cable, 3,700 hours for commissioning at yard, and employed a team of 110 workers.

The system is made of 2 modules of rollers with the following dimensions:

- module 1:** length 28 mt, height 6 mt, width 10 mt, 250 tons
 - module 2:** length 28 mt, height 6 mt, width 7,5 mt, 200 tons
- It is also equipped with two carts which shift the pipe on the second and then third rails.



Pipe Handling System for PLBH vessel, Azerbaijan

Thanks also to the local presence through its Azeri branch in Baku, Goriziane awarded the project for the design and supply of firing line mobile rollers and stinger rollers for the pipelay vessel Israfil Huseinov.



Telescopic Linkage for Castorone

Goriziane engineering team has also expertise in designing subsea equipment. It accomplished the manufacture of a telescopic linkage for Castorone pipelay vessel. It was installed between the second and third stinger ramps allowing a smooth stinger movement.



Double Pipe Facing Machines for Heerema

Goriziane engineers manufactured some tailor-made products for its customer Heerema: double pipe facing machines able to bevel pipe-in-pipe configuration with two consecutive bevellings. Just one machine for the work of two (range 10"-20"). Increase in process optimization.





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