

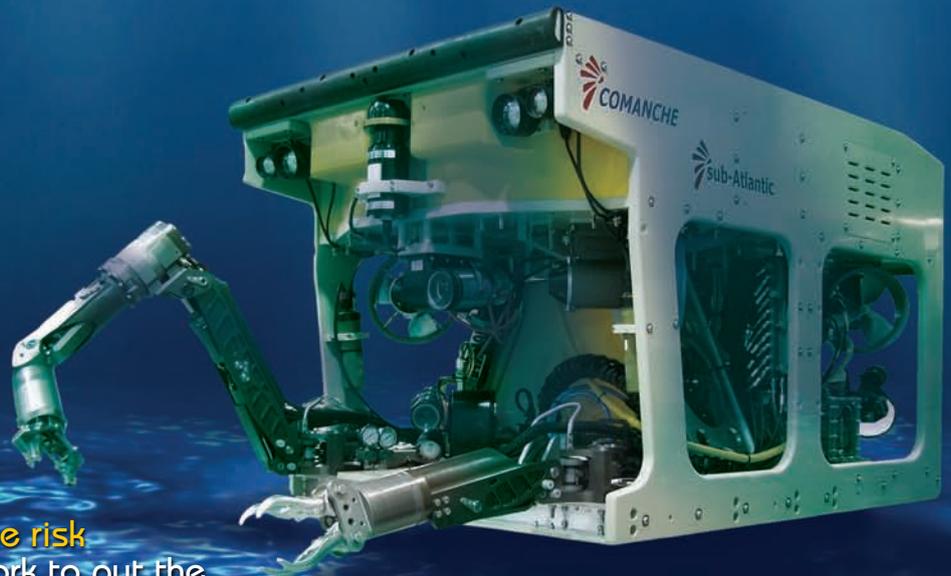
# EUROPEAN OIL & GAS

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FROM EXPLORATION TO END USER

## Ahead of the field

The UK subsea market continues to push boundaries in innovation and skills



### Reducing the risk

We must work to put the 'health' back into health and safety

### The art of communication

Robust communication equipment is vital for offshore workers

THIS ISSUE: Gas Infrastructure Europe



# Gathering Steam

## SPIRAX-SARCO

Spirax-Sarco is the global leader in the supply of engineered solutions for the efficient use of steam. Their solutions are used in a wide variety of industries. Their products include steam traps, pressure and temperature controls, condensate pumps, flow meters, level controls, heat transfer packages and a wide range of ancillaries. Their technical advice and expertise is the key to maximising the benefit of the products they supply. These benefits include improved overall energy efficiency, reduced water consumption and lower emissions, all of which have a significant impact on the environment.



Founded in 1935 to investigate and develop new concepts in engineering, Clayton Steam Systems is a world leader in the design and supply of advanced steam systems. The first such product was the Clayton Steam Generator, which was conceived as a forced circulation coil generator that could automatically produce steam from cold in just five minutes. A major advance in steam production technology at the time, the Clayton Steam Generator, in its current form, is still at the core of Clayton's offering.

The unique design particularly succeeded in terms of operational and efficiency advantages, as well as its small size and weight, which made it suitable for any steam application. The Clayton Exhaust Gas Boiler operates on the same tried and tested principle, and is supplied for a wide variety of industrial applications to recuperate heat from waste gases.

This design also gives rise to a number of advantages, many of which are a direct result of not using a large pressure vessel filled with water to produce steam. In particular, the Clayton Steam Generator offers inherent safety, high fuel to steam efficiencies, high steam quality, reduced blow down, and rapid start-up, amongst others.

Today Clayton Steam Generators are available in sizes from ten to 1300 Boiler Horsepower (BHP), which equates to 100 to 13,000 kilowatts (kW) or 157 to 20,000 kilograms (Kg) of steam per hour. The units are designed to burn natural gas, propane, light oil, and heavy oil, as well as a combination of fuels. In addition

to the generators themselves, Clayton provides a complete line of feedwater components that can be packaged together in a variety of skid-mounted configurations, and complete contained boiler houses. As such, the complete boiler system is pre-piped, wired, inspected and tested before delivery, ready for immediate hook-up on site.

As an extension of this range, Clayton has also developed a series of steam generators for superheated steam. These units use the same proven design as the basic Steam Generator, but with the addition of an integral superheated section to the helical coil the steam is superheated to temperatures of up to 343°C and 57 bar pressure. The boiler can also be provided in a configuration that allows the user to provide either saturated or superheated steam as desired.

The third cornerstone of Clayton's business is a complete range of heat recovery systems and exhaust gas steam generators for marine, industrial and power plant applications. The most popular use of the units is co-generation, where as well as burning biogas, diesel, heavy fuel oil and natural gas for reciprocating engines, the system also recovers waste heat to be used for engine plant or in the factory's process and production activities.

To accompany its hardware, and to protect the investment made by its customers, Clayton has developed a successful water treatment programme designed to ensure trouble-free and cost-effective operation of its steam units. All of the chemicals used for this purpose have been especially tailored to Clayton Steam Generators to give the best possible protection. This includes a number of compounds for specific requirements such as preventing condensate corrosion, elevating the PH of the feedwater, protective coatings, as well as general purpose oxygen scavenging and control of residual hardness.

Having been operational for over 50 years in its own right, Clayton of Belgium is the company's headquarters for Europe, Africa, and the Middle East, ensuring the production, sale, and service of thousands of advanced steam systems throughout these regions. An extensive network of sales and service representatives serves to support this spread. From this location, Clayton of Belgium supplies a huge variety of customers including manufacturing, dairies, pharmaceuticals, power stations, beverages, hospitals, petrochemicals, aerospace, chemicals, textiles, automotive, electronics, shipping, food,

## ELSTER KROMSCHRÖDER

Elster Kromschroder, Osnabrück, is your effective partner when it comes to the safe and economical use of natural gas. The company was founded in 1865 and is a world leader in the manufacture of gas meters for domestic households and commercial premises. In the development and production of safety valves, controller components for heating systems and systems for measuring and controlling industrial heating processes, Elster Kromschroder likewise occupies a leading position in international competition.

horticultural, metal treatment, and converting.

Recently, Clayton of Belgium supported Ytong, part of the international manufacturer Xella, in the replacement of three heavy fuel oil fired conventional firetube boilers at its Burcht facility. The plant utilises steam in order to cure its concrete products, which are then used in construction projects. After a study into available technology, the Clayton Steam Generator was selected as the best solution, with two Model EG-604-1 units installed. The new system has a much smaller footprint than the old boilers, and also offers stable steam pressure even during rapidly varying loads. The Clayton Steam Generator also makes the old pressure reduction station obsolete, as steam can be fed directly to the autoclaves at the generating pressure.

Another notable development has been Clayton of Belgium's successful commissioning of a mobile steam plant in the Algerian desert. This type of solution is ideal for circumstances where a steam supply is required for more remote locations, or when portability is necessary. The complete steam system is installed in two trailer-mounted containers and is designed to run completely independently of any external services with a supply rate of over 8.5 tonnes of steam per hour. The first trailer contains the power and feedwater units, as well as a compact electricity generator, whilst the second trailer is home to three Clayton Steam Generators.

As these, and numerous other successful projects across the world, demonstrate, when it comes to providing an economical, safe, and reliable source of steam, even after all this time the principles behind the Clayton Steam Generator continue to generate results. 

Clayton of Belgium NV  
[www.clayton.be](http://www.clayton.be)

Products  
 Steam boilers



### FCU 500

For monitoring and controlling central safety functions in multiple burner systems on industrial furnaces. In accordance to EN 746:2010.

 kromschroder



### SIL PL

Information about the functional safety of thermoprocessing equipment can be found here:  
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