

More powerful boiler concept for the largest FPSOs

Aalborg Industries is the leading supplier of boilers for marine vessels, and also for FPSOs and FSOs. The specialized FPSO Centre in Sweden has signed a large number of contracts. Some of the boilers have been installed in safe area engine rooms, but most of them have been installed on open deck in hazardous areas.

Top of its class - The D-type

The top seller is our MISSION™ D-type boiler. The standard MISSION™ D-type is designed for capacities up to 120 t/h saturated steam. It is a compact and very strong boiler designed for rough sea and high g-forces and is manufactured with the best technique available today. The boiler has been selected for some of the latest large projects, such as Espoir Ivoirien FPSO, Abo FPSO, Chi Linh FSO, Corocoro FSO and Cinta FSO.

A few years ago a large FPSO pumped up to 100,000 bpd; today it pumps twice or three times as much. As a direct result of the trend towards larger FPSOs and the increasing need of steam onboard these vessels, Aalborg Industries has developed an even more powerful version of its MISSION™ D-type boiler.

The 40 bar D-type

Today, the D-type can also be delivered for an operation pressure of 40 bar and with a built-in superheater for 400 °C. The boiler is a result of decades of experience from industrial boilers in combination with marine main propulsion boilers and auxiliary boilers. We have taken the best from the various fields and combined it into this new boiler - probably the best FPSO boiler in the market.

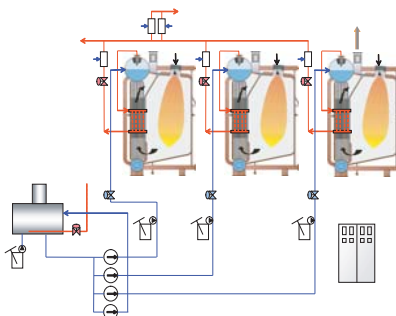
Bergesen's "Chinguetti FPSO"

Aalborg Industries received the first order for this new version of the MISSION™ D-type in May 2004. When Bergesen Offshore - one of the leading offshore players - signed their contract for the Chinguetti FPSO, they already

knew which boiler they wanted - our MISSION™ D-type for 40 bar with built-in superheater.



Bergesen placed the order with us for three boilers, each with a capacity of 80 t/h at 40 bar and 400 °C. We will also deliver a pressurised FW tank with deaerator, FW pumps, chemical dosing units etc. The equipment will be installed on deck in a hazardous area. Our delivery also includes a complete combustion system from Hamworthy Combustion with gas as the leading fuel and with diesel as back up, with fuel supply skids, control system, etc.



The steam system for Chinguetti FPSO

The MISSION™ D-type

Aalborg Industries' MISSION™ D-type boiler is a compact, vertical two drum boiler with square configuration and natural circulation. The furnace consists of membrane walls forming a fully water-cooled and gas-tight fur-

nace. The boiler is designed for one, two or three burners depending on the capacity. The burners are located on top of the furnace, which provides a long and natural flame path with a complete combustion. Large external downcomers secure good natural circulation at all loads. The boiler is designed with a real minimum of refractory.

Extended heating surface

An important design feature is the extended heating surface in the convection part. This surface consists of vertical heavy gauge tubes, to which a large number of steel pins are welded. As the pins have an excellent heat transfer property, the heat transfer capacity is many times larger than that of a conventional plain tube. Thanks to the turbulence around the pins, the self-cleaning effect is high. This special way of increasing the heating surface offers important advantages such as compactness, simplicity of design and high efficiency.

For superheated steam the boiler is equipped with a plain tube superheater able to superheat the full steam flow to 400 °C.

Promising future

The MISSION™ D-type boiler is already in its standard version the top model in our programme. The more powerful version has begun to form a new standard for the modern FPSO market. With this further developed MISSION™ D-type, we take another step in the right direction and we secure our position as today's market leader in boilers for the FPSO and FSO market.