

Replacement of burners and control systems

Efficient, price conscious maintenance of boiler plants on a long-term basis often involves replacement of the burner and/or the safety/control system to secure optimal and safe operation.

Upgrade the boiler by replacing the burner and/or control panel

When contemplating upgrade or replacement of the boiler plant, simply replacing the burners or the

control systems while retaining the actual boiler can be a feasible and viable solution which will secure the use of the existing boiler(s) for many more years while yielding

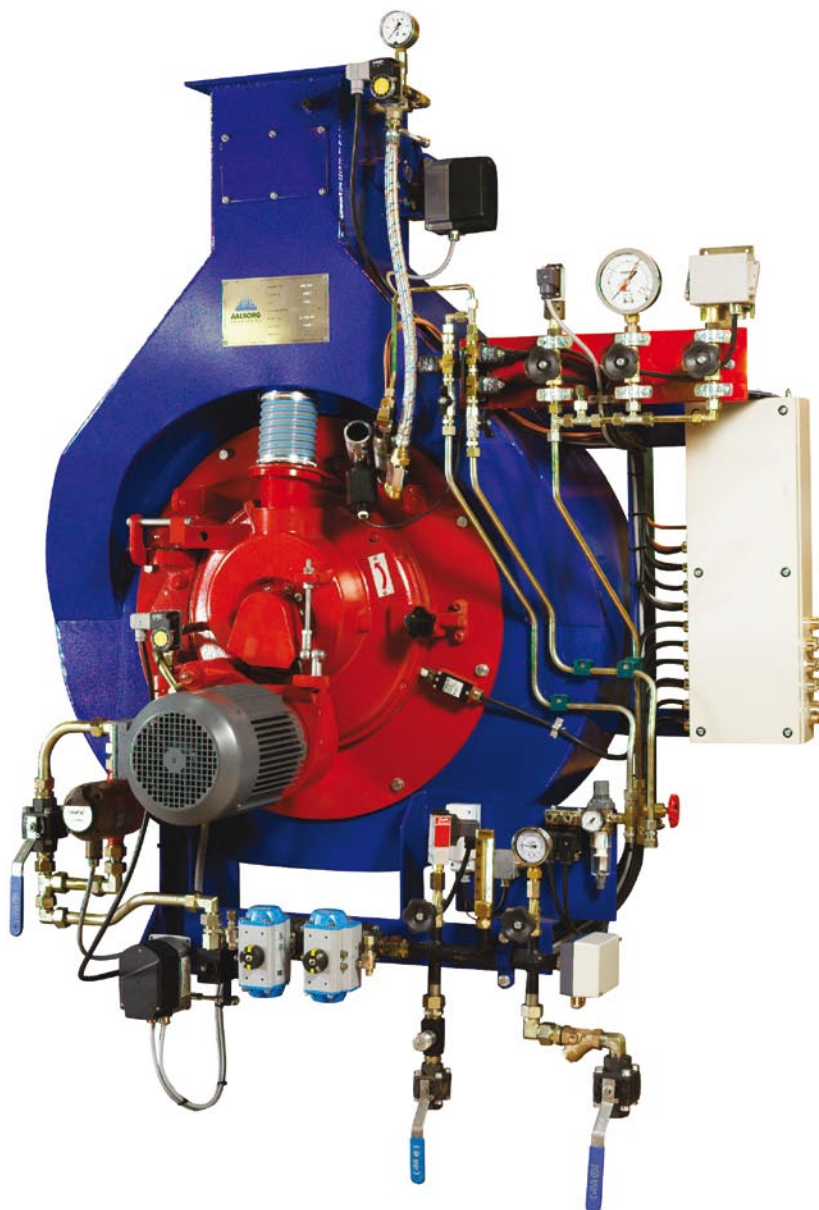
the required output and operating safety.

Safety/control systems/automation

Service and reprogramming of existing control systems is a natural part of their maintenance and upkeep, but in a number of cases installing a new control system is a more cost effective and faster solution because new automation is generally affordable, readily available and, admittedly, new! In addition it should be considered that trouble-shooting and reprogramming may require quite a number of manhours on the spot and thus be comparatively more expensive.

Older control panels can with advantage be optimised with more advanced yet accurate and durable components. Absolute and reliable control of a boiler plant is crucial for dependable and safe operation of the plant. A ship with its boilers out of operation is more or less rendered stationary with subsequent disruption of sailing schedule, loss of discharge possibilities and loss of earnings.

Aalborg Industries- KBE™ rotary cup burner for heavy fuel oil or diesel oil is equipped with an electronic air / fuel ratio control system.

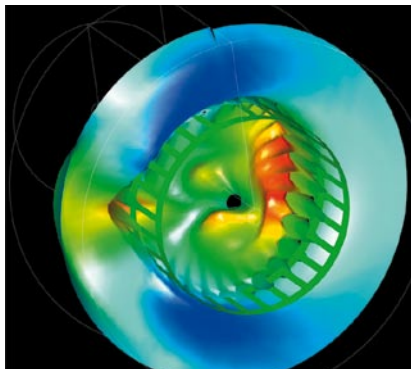


Burners

Aalborg Industries carries out complete burner and control system service and replacements, also of foreign brands.

Burner replacement may be chosen to convert to a cheaper fuel, for instance a change from diesel oil to fuel oil.

Subsequent procurement of spare parts and consumables around the shipping lanes of the world is a factor to consider after a burner/control panel upgrading. Standard, OEM manufactured parts are generally available with short delivery times whereas specially designed parts may cause the burner out of operation for a longer period.



Velocity distribution in a KBSA™ steam atomizing burner. Aalborg Industries engineers evaluate the combustion air distribution in a burner to increase its efficiency and reduce emission levels.

Aalborg Industries' control systems and oil/gas-fired burners

Aalborg Industries supplies replacement control/safety systems and automation as well as burners for a variety or combination of fuel(s) for all brands of boilers.

Our control systems are generally of the Aalborg Industries™,



MISSION™ or GOSFERN™ brands while our own burner types are of the KB™ and GOSFERN™ brands.

Control systems supplied by Aalborg Industries consist of original, high quality, standard components which subsequently make replacements and repairs considerably easier and safer.

The high number of control panels supplied by the Aalborg Industries Group every year contributes to a very reasonable price policy, both for complete control panels and more particularly for spare parts. In addition, Aalborg Industries has After Sales service companies in 14 countries along the world's major shipping lanes, ready to supply spare parts and carry out service assistance. These factors should be taken into account when calculating pay-back of the investment.

Aalborg Industries offers a wide range of fuel oil/gas-fired burners of types such as rotary cup, steam atomizing, pressure jet as well as Para-Flow dual-fuel types for all types of merchant vessels including offshore (FPS) types such as

Aalborg Industries replaced the burner and control system on board Vietsovpetro's FPSO "Ba Vi". A KBSA™ steam atomizing burner was installed on the existing boiler.

FPSO and rigs. Aalborg Industries is currently the leading combustion / automation service company for merchant, cruise and FPS vessels. In case of upgrading to a more advanced control system, Aalborg Industries provides technical advice on the various solutions available in the market.

Aalborg Industries' Global After Sales network is comprised of people with a marine engineer's backgrounds and practical experience from sailing with major international shipping lines. They are supported by our own boiler engineering departments with extensive experience in combustion and automation systems which give us a practical and technological edge when it comes to service, advice, supply and installation of burners and control systems.

Aalborg Industries supplies standard, OEM, high-quality spare parts from its location in ports in 14 countries around the world.