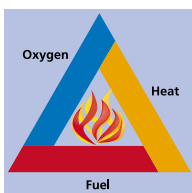
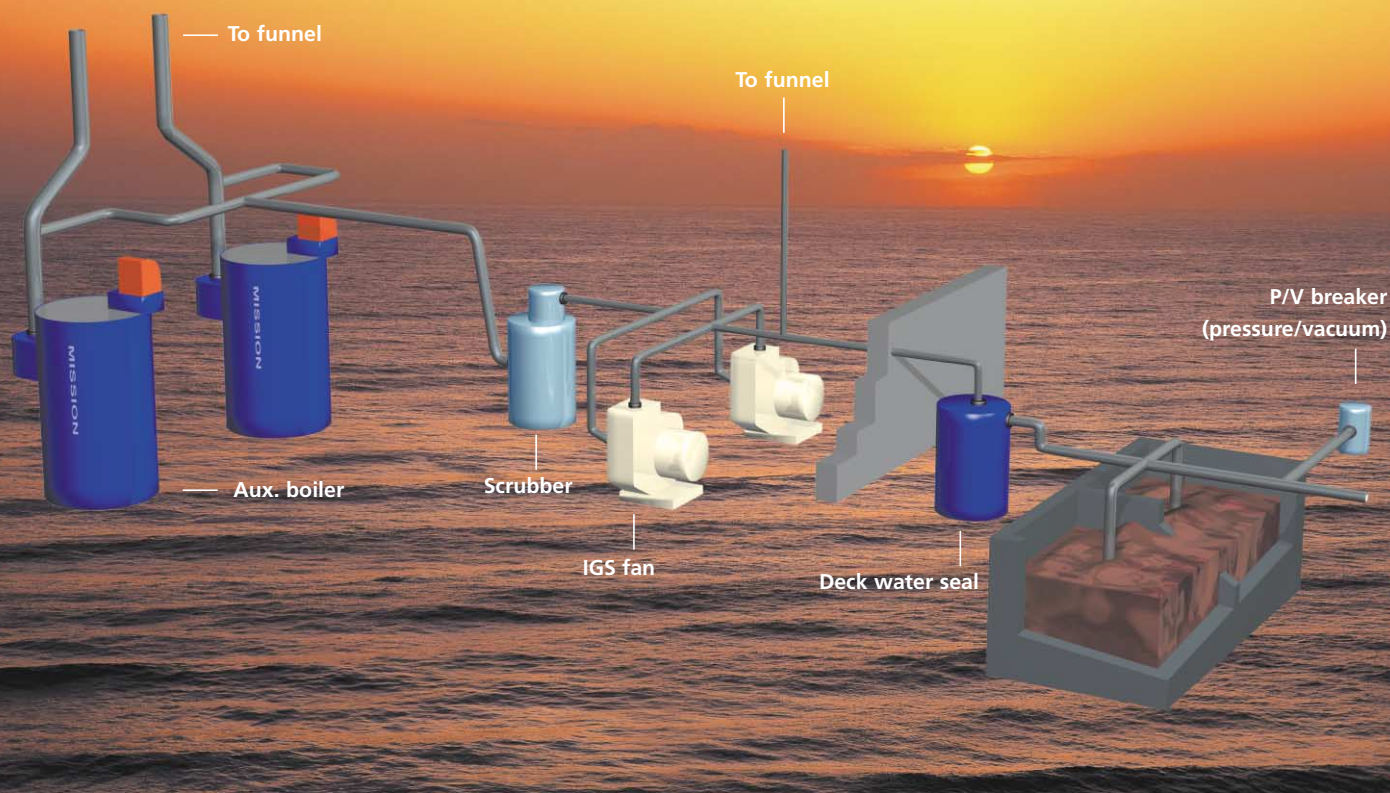


Inert Gas Systems for the tanker industry



Risk Management during sea transport, unloading and tank cleaning is crucial to the tanker industry. International IMO/SOLAS conventions requiring installation of IGS plant have therefore existed since 1974. Aalborg Industries offers an innovative, compact IGS solution that can be controlled and monitored in unison with the boiler plant.

Inert Gas Systems help prevent explosions in cargo tanks



Aalborg Industries IGS

The Frontline crude oil tankers, "Golden Stream" and "New Vista", built at Hitachi Zosen Corp. are equipped with IGS of 20,250 m³/h respectively 20,630 m³/h capacity.

The Chevron tanker "Frank A. Shrontz" (centre page), built at Samsung Heavy Industries, is equipped with an 18,750 m³/h IGS.

Leading the way in safety

Aalborg Industries has almost 30 years of experience in the development and delivery of around 600 Inert Gas Systems (IGS) to the world's major tanker operators. In fact, Aalborg Industries helped pinpoint the causes and factors involved in the series of tanker explosions that in 1969 prompted the tanker industry to voluntarily introduce the IGS to help prevent explosions in cargo tanks. Regulations for installation of IGS on tankers were adopted by the International Conference on Safety of Life at Sea (SOLAS) in 1974.

Risk-reduction made compact

The extensive expertise gained over the years was put into Aalborg Industries' own compact and efficient IGS plant which was first developed in 1996/97. Trend-setting product development and constant design improvements are key factors in the innovative approach of Aalborg Industries.

A thoroughly global group of companies, Aalborg Industries is the world's only IGS producer who is also a boiler manufacturer. We offer our customers the benefits of combined control of IGS and boiler systems – always ensuring optimal performance.

Risk Management with an innovative design



Based on years of experience

During transportation and storage of crude oil and refined products there is a real risk that explosive gas mixtures form in cargo and slop tanks. Often referred to as the fire triangle, the three elements in a tank explosion are flammable gas, oxygen and heat. By controlling the oxygen content in the cargo tanks, the IGS prevents explosions, even when the two other elements are present.

Flexible capacity

Aalborg Industries' IGS plants are designed for capacities of 3,000-30,000 Nm³/h. Our IGS solution

effectively reduces the oxygen content in cargo tanks to below 8% by supplying inert gas. The IGS washes and cools the boiler flue gas, converts it to an inert gas, and distributes it to the cargo tanks.

Cost-effective solution

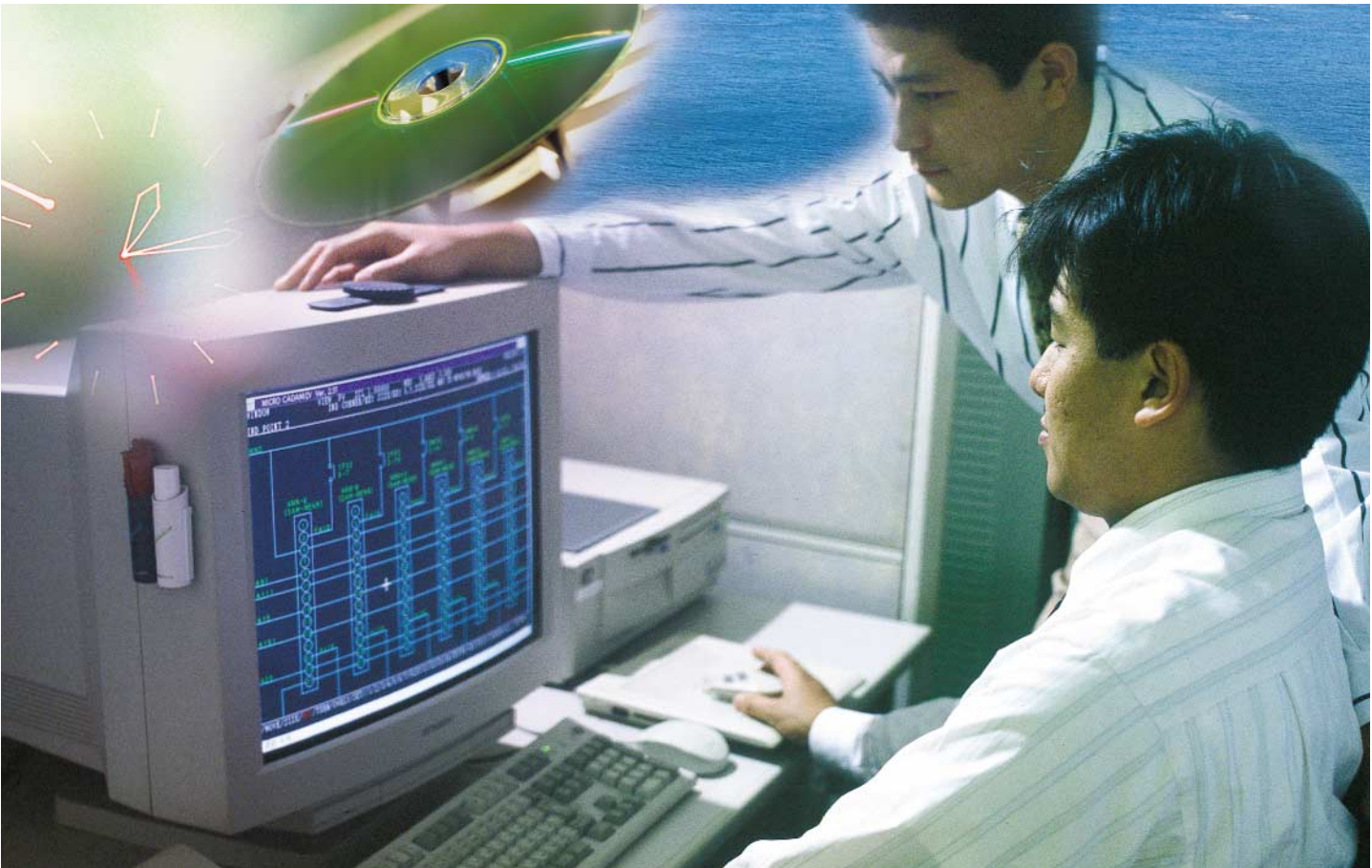
The design of the corrugated packing in scrubber and demister ensures highly effective removal of solid particles, SO_x and water mist. The innovative, compact design gives low cooling water consumption and therefore high efficiency and low power consumption.

The scrubber tower ensures stable cooling and cleaning performance under any operating condition. And the design of the filler material provides a well-balanced distribution of the gas flow and spray water in the scrubber tower.

IGS plant advantages:

- Effective gas cooling and cleaning
- Stable performance
- Low power consumption
- Minimum maintenance
- Long life

Easy implementation and on-screen documentation



Technological excellence

Aalborg Industries offers fast quotations thanks to the standard design of our IGS solutions. CAD dimension and arrangement drawings can be supplied on floppy disk for easy inclusion in shipyard drawings, supplemented by simple and standard technical specifications. This minimises the amount of engineering required by the shipyard – and improves overall economy.

Customer-oriented approach

We can provide a package offer and commissioning of the IGS and boiler plants.

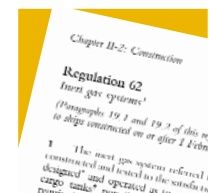
Maintenance

Less servicing and longer lifetime with:

- No maintenance of scrubber packings and demister
- High-performance lining
- Materials selected to cope with corrosive working environments



The IGS can be supplied with a topping up Inert Gas Generator with a standard capacity of 500 m³/h.



The IMO/SOLAS 1974 regulations – covering all new crude and product carriers of 20,000 tonnes dwt or above – require that the oxygen content in the tanks is controlled to prevent explosions.

Combined control of IGS and boiler systems



Easy remote control and monitoring of the integrated IGS and boiler system

The IGS system is optimised for maximum safety during cargo unloading and tank cleaning.



Versatility and integration

The boiler load can be controlled automatically in optimised operation to meet inert gas demand and steam demand for cargo unloading. Automatic operation also applies when boiler operation is required only for production of flue gas for the IGS.

Fuel oil saving during IGS topping up mode is made possible by installing a burner with a very large turn down ratio while maintaining a low oxygen content in the flue gas.

Designed for the real world

A PC monitor with a graphic user interface enables complete remote control and monitoring of the integrated IGS and boiler systems, either from the engine control room or the cargo control room. This joint monitoring of the IGS and boiler systems effectively simplifies operation and meets today's requirements for reduced ship crews.

Aalborg Industries offers both boiler plant and IGS from our own product line and can integrate them in a combined system.

World-wide service network

Aalborg Industries' international boiler and combustion technology and production network are certified to the highest quality standards. Consequently, the end users of Aalborg Industries equipment receive full technical support from our own dedicated engineers in both service and spare parts' supplies.



Complete capability

Recognised as the world's leading marine boiler manufacturer, Aalborg Industries also has an extensive production of inert gas systems, thermal fluid heating systems and heat exchangers.

Please visit our website:

<http://www.aalborg-industries.com>

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