



## Compact combination: two boilers in one

*The CMB-VF-LONOX® revolutionizes  
multi-boiler systems*

The global shipping industry combines demanding logistics and precise time management with complex technology in the tightest of spaces. The demands that the industry places on its equipment are clear: while shipyards tend to value compact functional components that are easy to implement, shipping companies are primarily looking for reliable, efficient and autonomous operation, ease of use and a long lifecycle.

The SAACKE CMB-VF-LONOX bundles all of these features and has been specially developed for ships with multi-boiler plants, such as chemical tankers, LNG carriers and passenger ships. This vertical combination-type boiler does away with the need for an entire auxiliary boiler plant.

### Save an entire auxiliary boiler plant

One or two auxiliary boilers and an exhaust gas or a combination-type boiler are generally installed to cover the variable demand for steam. The installation of a SAACKE CMB-VF-LONOX does away with the need for an auxiliary boiler plant.



CMB-VF-LONOX®

LNG carriers

Dry cargo ships

Passenger ships

Tankers

## All benefits at a glance

- ↳ Compact 2-in-1 boiler solution
- ↳ Easy installation and extremely user-friendly
- ↳ Lower purchasing and operating costs
- ↳ Unrivalled steam output on the fired section of the composite boiler with a large control range
- ↳ Auxiliary boiler is always hot and immediately ready for use for high steam demand
- ↳ Low emission combustion up to Ultra-Low NO<sub>x</sub>\*
- ↳ Robust design for a long lifecycle and low maintenance expense
- ↳ Use of heat from auxiliary diesel exhaust gases can be integrated
- ↳ For extremely high control ranges (1:18) also as a two-burner system available

\* Up to an output of 13 t/h.

**The SAACKE solution in detail**

The CMB-VF-LONOX has a fired boiler section with a steam output of up to 18 t/h. This performance allows this composite boiler to supply both large and small steam consumers. A good control range is achieved by using a rotary cup burner. Since the boiler is always hot, it can immediately supply large quantities of steam on demand. The boiler control is fully automatic. If an auxiliary boiler is in place (e.g. on larger tankers in which two auxiliary boilers are otherwise required), the CMB-VF-LONOX and the auxiliary boiler can be operated in a master-slave mode.

Another benefit: while customary vertical combination-type boilers attain a maximum fired steam output of about 6 t/h, the CMB-VF-LONOX can reach an output of 13 t/h, or even 18 t/h for the CMB-VF.

The boiler system is also compatible with dual fuel applications and can be delivered with flue gas recirculation for emissions in the Ultra-Low NO<sub>x</sub> range if desired. For extremely high control ranges (1:18) it is also as a two-burner system available.

**Conclusion**

Gone are the times in which unused boiler plants take up valuable space and are a drain on operating costs (OPEX balance sheet) due to high downtimes and high maintenance expenses. The SAACKE market innovation, the CMB-VF-LONOX, halves the entire boiler system as a low-emission 2-in-1 solution without compromising the steam output. Purchase, operating and maintenance costs are reduced. The removal of an auxiliary boiler plant and the fully-automatic control simplify the operation and maintenance of the steam generation plant. The use of heat from auxiliary diesel exhaust gases can also be integrated.

**Technical data: CMB-VF-LONOX®\***

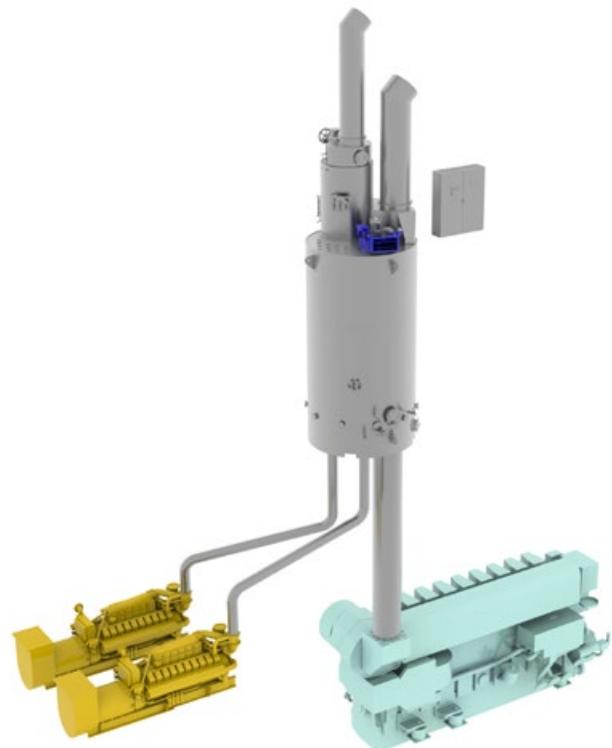
Applications	Dry cargo ships, tankers, LNG carriers, passenger ships	
Steam capacity		
CMB-VF-LONOX	Up to 13 t/h	
CMB-VF	Up to 18 t/h	
Fuels	MGO, HFO, gas	
Control range	Up to 1:7 / 1:18	
Low NO <sub>x</sub> emissions (without secondary measures and based on 3% O <sub>2</sub> in the exhaust gas)	Natural gas:	200 mg/Nm <sup>3</sup>
	Light oil:	300 mg/Nm <sup>3</sup> (fuel-nitrogen content approx. 0.02 percent by weight)
	Heavy fuel oil:	800 mg/Nm <sup>3</sup> (fuel-nitrogen content approx. 0.4 percent by weight)

\* Technical data of two-burner system on request

**3D PID before**



**3D PID after**



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