

## Product information

Waste Heat Recovery Unit /  
Exhaust Gas Economizer EMB/EME-VST

**SAACKE** MARINE SYSTEMS



## Reduce fuel consumption, save costs

*The Waste Heat Recovery Unit (WHRU) increases overall system efficiency through the use of waste heat from auxiliary diesel generators*

Against the backdrop of constantly rising fuel costs and increasingly intense competition in the shipping market, every ounce of efficiency counts. The SAACKE WHRU helps ship operators improve the overall energy balance by utilizing the exhaust heat from the auxiliary diesel engines. This reduces energy consumption and CO<sub>2</sub> emissions and, above all, lowers fuel costs.

The SAACKE WHRU is suitable for all ship types and sizes and is comparatively easy to install due to its compact dimensions and modest maintenance space requirement, which makes it particularly attractive for retrofits.

### Short payback time thanks to project-specific design adaption

SAACKE's experienced engineers will optimize the WHRU individually for each application. The perfect adjustment to the existing ship's design allows for the installation to be done during a routine class renewal docking with minimal additional downtime. Thanks to the reliable technical basis and low maintenance costs, the WHRU pays for itself within a short period of time.

LNG carriers

Tankers

Bulk carriers

Dry cargo vessels

## All benefits at a glance

- ↳ Higher overall efficiency
- ↳ Lower fuel costs and CO<sub>2</sub> emissions by reducing auxiliary boiler operating hours
- ↳ Double boiler option available as standard
- ↳ Customization for each project
- ↳ Low maintenance
- ↳ Short amortization time
- ↳ SAACKE service and commissioning

**The SAACKE solution in detail**

The WHRU is a smoke tube type exhaust gas boiler, which also partially acts as a silencer in the exhaust system. The waste heat contained in the exhaust gas is transferred through easy-to-clean plain smoke tubes, and the generated steam is fed into the ship's network, where it relieves the load of the auxiliary boiler and thus reduces the burner operating hours. The system can be supplied with its own steam space (boiler) or without its own steam space (economizer). Designed as a boiler with its own steam space, the WHRU operates independently of other steam generators in the system, while the economizer version must be connected to an existing boiler or to a separate steam drum. Both concepts can also be operated in dry running mode if needed.

A twin pass boiler option is available as a standard option and allows two auxiliary diesel generators to be connected to a common steam and water drum. This can save installation and maintenance costs and will usually also save space for installation.

**Summary**

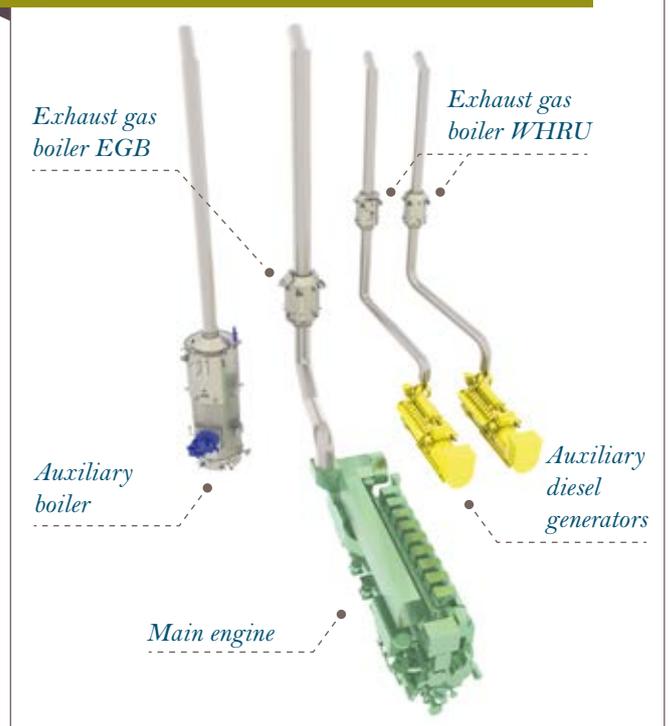
Increase the attractiveness of your tonnage in the shipping market by reducing operating costs – with the SAACKE WHRU! The combination of reliable technology, customization and low maintenance costs guarantees more economical ship operation with greater overall efficiency. In addition, SAACKE supports you with proven service during commissioning and maintenance.

Contact us for a project-specific offer including a return of investment calculation based on the vessel data and the operating profile.

**Technical data:  
Waste Heat Recovery Unit (WHRU)**

Area of application	Suitable for all ship types and sizes
Steam capacity	Is determined for each project (optional)
Design pressure	8 – 18 bar(g)
Medium	Steam

**Application example WHRU**



**Example systems: Waste Heat Recovery Unit (WHRU)**

Steam capacity t/h	Design pressure MPa	Main engine	Rated power at 100% MCR kW	Exhaust gas flow kg/h	Exhaust inlet temperature °C	Boiler height mm	Diameter mm
0.5	1	Wärtsilä W1350W8L20 at 85% MCR	1,421	9,288	335	5,400	1,200
0.7	1	Daihatsu 6DE-33 at 75% MCR	3,300	21,933	270	5,500	1,550
0.9	1	Daihatsu 8DE-33 at 75% MCR	4,400	29,244	270	5,600	1,700
1.4	1	Hyundai 9H32/40 at 90% MCR	4,500	30,470	310	5,600	1,800

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