WEKA MARINE STEEL COOLER

WEKA
MARINE

Content

TECHNOLOGY

Steel coolers are efficient cooling systems designed for installation in several maritime, stationary and industrial applications.

ADVANTAGES

Compared to an open circuit cooling system (inboard heat exchanger), a closed-circuit cooling system provides several distinct advantages.

INSTALLATION AND DESIGN OPTIONS

The Weka Steel Cooler is a custom-made cooling system engineered to meet the specific demands of the engine manufacturer and operating conditions of your vessel or industrial application. With over 60 years of experience in steel cooling, our sales and engineering team can help provide a reliable cooling solution to meet your specific needs.

Technology

A Steel cooler is a closed-circuit cooling system mounted externally on the vessel's hull below the waterline. The concept of steel cooling is similar to the application of a radiator on a car. Engine coolant is circulated through the steel cooler, which transfers heat from the coolant before it returns to the engine. The steel cooler is in constant contact with seawater allowing the cooling system to efficiently transfer heat between the coolant and seawater

Compared to an open circuit cooling system (inboard heat exchanger), a closed-circuit cooling system provides several distinct advantages. A closed-circuit cooling system eliminates the need for an inboard heat exchanger, raw water pumps, strainers, seawater piping, and the high maintenance associated with open circuit cooling systems. It also eliminates silt and sand build-up in the cooling circuit and protects the system from saltwater corrosion.

Advantages

For the most difficult circumstances

Each steel cooler will be designed and built according the heat source its requirements and operating environment. Steel coolers are more resistant to external forces, strong and solid. Because of its design characteristics, the weka steel cooler can be used in various applications and has several installation options. For example; stationary or industrial application, internally (sea chest) installed, externally installed (bottom or side mounted onto the ship's hull) and inland water applications.

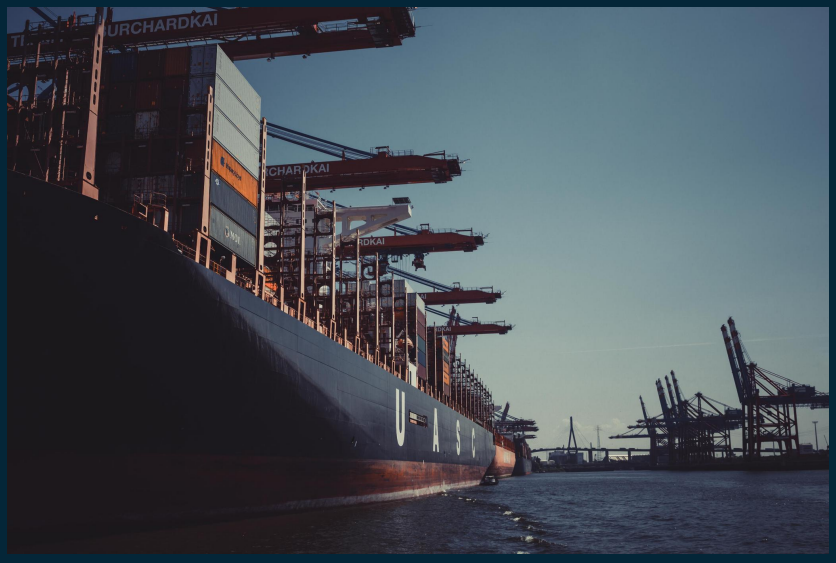
Our expert engineers and sales team will help you determine the best installation solution. Please note the operating conditions and hull design of a vessel weigh heavily on how a unit is designed.

- Eliminates raw water pumps, strainers, and filters
- in-hull protection
- Strong and solid cooler, which can cool in the most difficult circumstances.

Applications

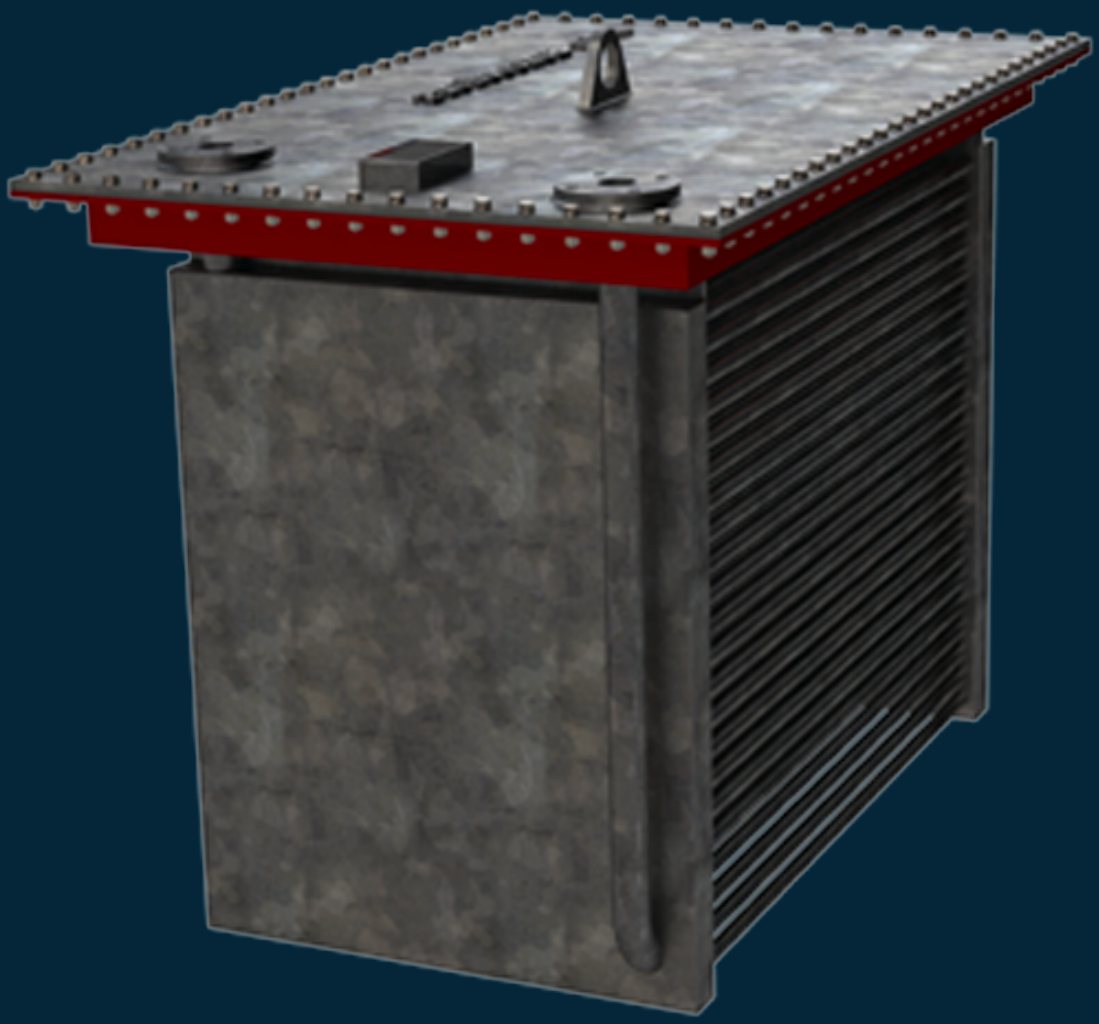
Marine Applications

- ATB
- Barges
- Commercial Fishing
- Dredges
- Ferries
- Landing Craft
- Lifeboats
- OSV
- Passenger Vessels
- Patrol Boats
- Pilot Boats
- PSV
- Push Boats
- Semi-Submersible (AUV & ROV)
- Tugboats



Heat sources

- Air Conditioning Units
- Bow Thrusters
- Compressors
- Electrical Equipment
- Generator Sets
- Hydraulics
- Land Based Applications
- Propulsion & Auxiliary Engines
- Pumps
- Reduction Gears
- Winches



Stationary Applications

- Buoys
- Drainage Systems
- Facilities' Climate Control
- Hydroelectric Plants
- Irrigation Systems
- Lift Stations
- Offshore Wind Generators
- Storm Sewer Systems
- Wave & Tidal Generators
- Pump Station Installation

Industrial Applications

- Air Conditioning Units
- Bow Thrusters
- Compressors
- Electrical Equipment
- Generator Sets
- Hydraulics
- Land Based Applications
- Propulsion & Auxiliary Engines
- Pumps
- Reduction Gears
- Winches

Materials

The Weka Steel Cooler is a completely assembled unit and is factory tested to ensure dependability. Depending on your application and situation the Weka sales and engineering team will assist you in selecting your material for your situation.

Steel Coated

In some situations, a treatment of steel coolers with phenol heat-cured coatings is necessary. This is important for the protection against galvanic corrosion and combines this with high heat-conductivity properties.

Steel Galvanised

Galvanized steel cooler is built with regular steel tubes that have been coated in zinc to make them corrosion resistant. Regular steel is made of iron which will rust when exposed to (sea)water. Over time rust will corrode a steel part to the point of failure. To prevent this from happening Weka will provide a custom-made steel galvanized cooler.

Installation & design options

Aftward or longitudinal

For marine applications, a Steel Cooler is mainly installed one of two ways, athwartship or longitudinal. Depending on the ship's hull design and vessel type.

External or internal installation

An external installation typically applies fairing and side plates for added protection and to improve streamlining.

Custom design

The Steel Cooler is sized to meet your engine's cooling requirements and operating environment. Our team will work with you to recommend features to optimize the functionality of your cooling system. Each Steel Cooler is custom made and complete sized for your application.

Stationary or industrial application

The Steel Cooler gives you the choice of being able to mount the units in several configurations. Typically mounted in the suction or discharge sump, the Steel coolers can be supported by means of brackets (customer supplied) or the units can be supplied with mounting feet for mounting directly to the sump wall or floor. Flanged connections are available and can be supplied with corresponding mating flanges. The mating flanges are available in carbon or stainless steel. This flexibility often allows for simplified piping schemes to and from the unit.

Sea chest installation

The sea chest requires careful planning. The inlet and outlet slots of the sea chest must provide a constant flow of seawater over the coolers tubes. The inlet slots are located at the base of the sea chest and should be positioned transversely to the outlet slots on the side of the sea chest. The outlet slots should be positioned as close to the top of the sea chest as possible. The outlet slots must always remain below the waterline, even when the vessel is in a light draft condition.
Weka provides shipyard, designers/naval architects and shipowners with required on-site services for installation and commissioning services. Or please refer to the installation manual for guidelines on slot quantity and sizing.