

# Eascoo Solution

## Box Cooler

- Perfect cooling for Marine and Hydro Power Plant



Eascoo Solution design, manufacture and service box coolers for marine industry. Our team is with rich experiences of box coolers for over 15 years. We made box coolers for new building vessels, especially working boats(PSV, AHTS, MPV, Dredger, tug, etc). And also drop in replacement for existing box coolers on vessels.

### **B series Box Cooler**

Our B series Box cooler includes tube bundle, tube sheet, gaskets water box and bolts, and that's all. It is almost the simplest cooler you can find. And each tube is a small separated cooler, basically you can think it is many small coolers connected in parallel.

The U tube bundle is placed in a sea-chest having inlet- and outlet grids. Cooling water is forced through The U-tube-bundle, the natural circulation of the outboard water in the sea-chest or by a circulation due to the speed of the vessel cools the water inside the tubes. The outboard water is heated and rises by its lower density, thus causing a natural upward circulation.

Our B series Box coolers is also a drop in replacement for Bloksma Box Coolers.

## Benefits of using box cooler

The using of box coolers result is low-maintenance, box coolers boasting long service lives and high availability.

- > Elimination of complete sea water circuit on board. When using box coolers there is no need for seawater pumps, filters, valves, pipelines etc., for cooling system.
- > Saving space in machine room.
- > Box coolers are almost maintenance free, operational costs therefore are much lower than for any other cooling system.
- > Box cooler is less sensitive for fouling.
- > Box coolers are ideally suited for operation in sandy, icy, shallow and silt polluted water.
- > Box coolers require less piping length and saving electrical energy because no seawater pumps.



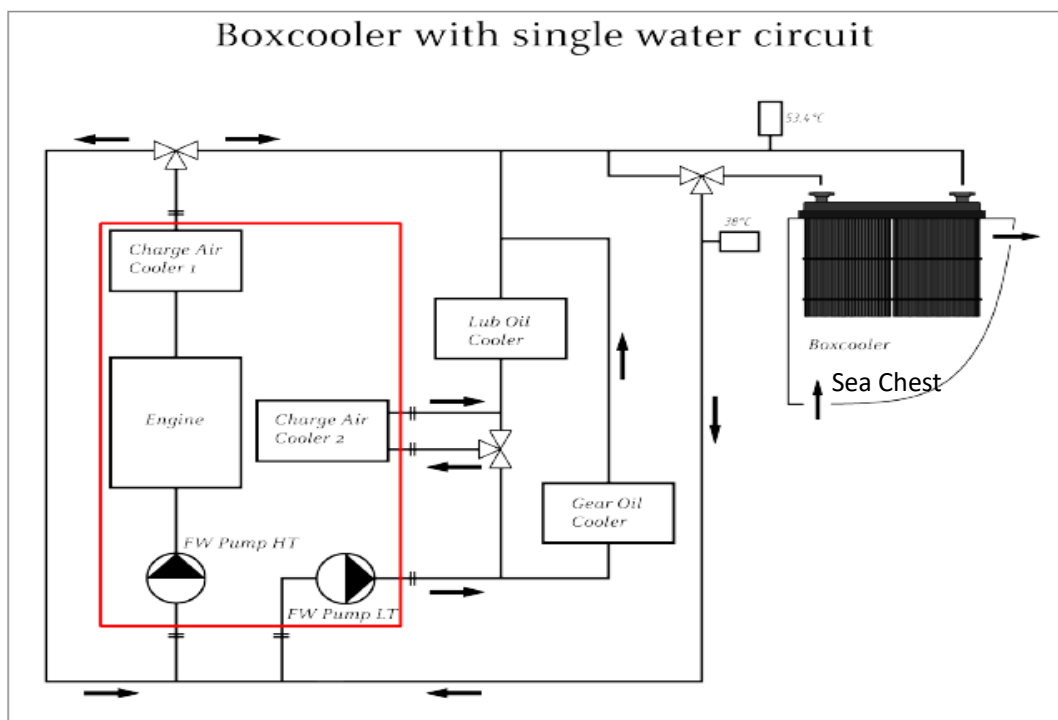
## Green Cooling & Cost Saving:

Box cooler is “green”!

With PHE or shell tube coolers, there will be sea water pumps needed for pumping the sea water into the engine room, cooling the hot circuit. By using box cooler, no sea water circuit to engine room, and so no sea water pumps for cooling, it saves electricity which generated from hydrocarbon on a vessel. So box cooler eliminates the carbon emission of extra electricity consumed by the sea water pumps for cooling system.

At the same times, box cooler saves the fuel cost because of no need for sea water pumps for cooling system. In most of the cases, the payback time is within 2 years for box coolers.

## Box cooler cooling system



## Applications:

Box cooler can be used for cooling the below:

Main engine,  
Aux. engine,  
Air Conditioning  
Bow thrusters  
Hydraulics  
Central Cooling

Traditionally, box coolers used on Offshore supply vessels, AHTS, Tugs, Dredgers, Ice Breakers. Now more other type of vessels, for instance tankers, container vessel, bulk carriers, fishing boats, etc, use box coolers. Box cooler is green and cost saving.

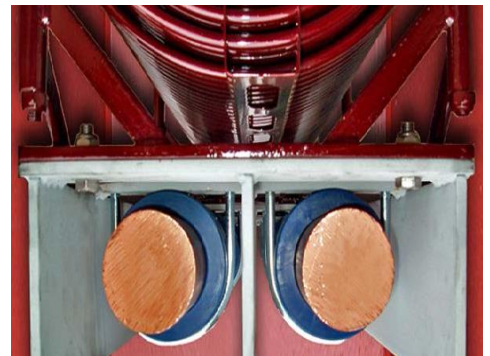
Box cooler is also perfect for Hydro Power Plant cooling



## Anti-Fouling:

Standard Anti-fouling method is Impressed Current Anti-Fouling system(ICAF). It generates  $\text{Cu}^+$  ions creating a continuous toxic environment preventing the settling of Bio-fouling.

Optional ultrasonic Anti-fouling at request, for both new building projects and replacement projects.



## Drop-in replacement, Renewing and Service:

We do drop-in replacements for Bloksma box cooler, NRF Box cooler, Klima Box cooler and Weka box Cooler. The mounting surface and the thermal performance will be the same. Pipe connection size can be at your request. We will provide you competitive solutions in fast delivery.

We provide renewing, after services, installation, site trouble shooting for box coolers. We helped shipyards install the box coolers right for hundreds of vessels. And helped ship operator solve fouling issues, improve thermal performance, repairing of box coolers.

Regarding box coolers you can always count on us.

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## Hydro Pressure Test of Box Coolers



## Box Cooler --- Green cooling

Marine Class Certificates available:

ABS

BV

CCS

DNV/GL

LR

RS

Other certificate TBD

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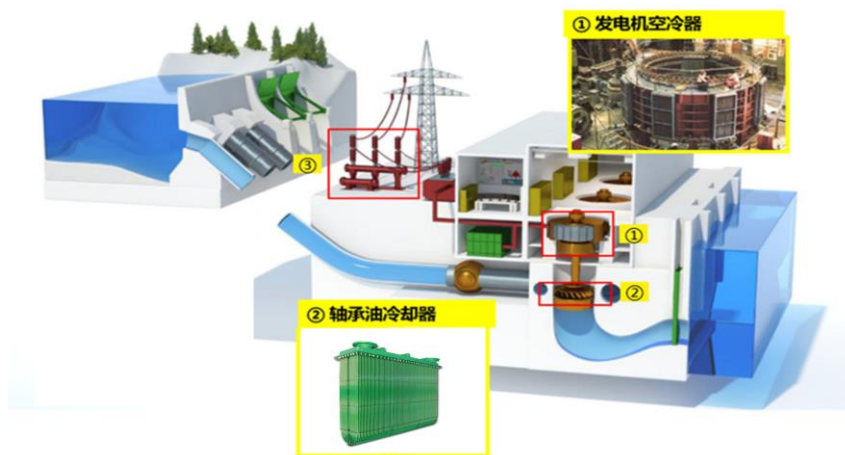
Phone: +86 21 20225257

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# Hydro Power Plant Application

## ■ Bearing oil cooling



### Principle:

The tube bundle of box cooler will be immersed into the water flow, using the natural flowing water of the Hydro power plant to cool the oil. Perfect cooling and no need for water circling pump.

### Features:

- > Simple structure, high reliability
- > Maintenance free
- > No need for water pumps and filters, lower energy consumption and operation cost.
- > Saving inside space

### Materials:

Materials available for tube bundle

- > SUS 304
- > Brass

Picture at left shows the location of box cooler installed.

