

MAREFSOL BV
KLOMPENMAKER 12
5253RH NIEUWKUIJK
Tel. +31 73 3034120
Info@marefsol.com
www.marefsol.com



4 Reefer vessels, built in China. Reefer system by MAREFSOL



MARINE REFRIGERATION

MAREFSOL delivers equipment and complete refrigeration systems for any type of seagoing vessel.

We delivered refrigeration systems for;

- Pelagic fishing vessels;
- Flat and round fish, Fishing vessels
- Reefer vessels;
- Juice Carriers;
- Tuna seiners;
- Offshore platforms;
- Cruise ships (Provision cooling).

Good quality and good service

FEATURES

- Long term experience and knowhow of natural refrigerants such Ammonia and CO₂;
- World wide experience;
- Skilled people for service, testing and commissioning;
- Tailor made solutions to the requirements of the customers;
- Advanced control systems with WIN-CC Human Machine Interface;
- Short lead times due to in house production.

Juice Carrier with 27000 M³ Tank capacity.



Pelagic fishing vessel



CONVERSIONS

Many conversions are carried out in China. We have a local team that can supervise the works of the yard that relate to the refrigeration system. Communication problems are reduced to a minimum due to the fact that our local supervisor speaks English.

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Marine Refrigeration Solutions

Ammonia/Pekasol system for flake ice machines and RSW cooling



Innovative designs

The new innovative fishing vessel of EKO Fish group that fishes Sole and Plaice will have an Ammonia / Pekasol refrigeration system that is connected to the Flake Ice machines, the refrigerated hold and a seawater cooler.

It is the first vessel for this type of fishing that is equipped with a system that uses a natural refrigerant. Additionally the fish is already cold when it is boxed with ice.

Good quality for a competitive price

SERVICE

- We do service an all vessels mentioned above and all the commonly used compressors, such as; Mycom, Grasso, Sabroe, Howden and Bitzer.
- We can deliver replacement froster plates for almost every type of platefreezer, including CO2 plates;
- Trouble shooting and problem solving;
- Refrigerant changes due to changing policies;
- Conversions;
- Heat exchanger repairs and replacements



Special parts required ? Ask MAREFSOL.

Service department / Quick response team



TESTING/CONSULTANCY

MAREFSOL has been involved in several tests that were performed to establish the freezing time of a new product or a certain type of fish. Based on these tests, new equipment could be designed or existing equipment could be improved.

MAREFSOL is also consulted by Insurance companies and Reefer operators in case of damage to the refrigerated cargo aboard of Reefer vessels and problems with the Airflow.

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Marine Refrigeration Solutions

Compressor & Chiller unit assembly

MAREFSOL has the expertise and the means to deliver complete assembled Compressor or Chiller units to the requirements of the customer. We have delivered many Brine Chiller units and RSW chiller units specially designed for Marine Applications as compact as possible but still accessible for service and maintenance.

These units can be delivered including the electrical switchboard with its controls, as well as the insulation system

R404A / Pekasol compressor unit; Capacity: 150 kW at -25 /+40 °C



Good quality for a competitive price

FEATURES

- Long term experience and knowhow of Natural refrigerants;
- Complete delivery and assembly of the package, incl. complete 3D design engineering by MAREFSOL BV;
- Delivery incl. P&ID, itemlists and Manuals;
- Low oil carry over due to the application of high efficiency oil separators;
- Tailor made solutions to the requirements of the Customers;
- Delivery including CE-PED declaration of conformity or certification by ships classification society;

Brine chiller unit for a Reefer vessel



The picture besides shows a R134A compressor unit with a starter panel, completely wired and including sea-water condensers. The unit is for an offshore application with very high standards. The base frame is made completely stainless steel. The sea-water cooled condenser have titanium tubes and complete titanium covers.

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Marine Refrigeration Solutions

Unit assembly

MAREFSOL BV has the expertise and the means to deliver complete assembled customized units .

Our possibilities range from the design and the production of the assembled units including: Compressors, heat exchangers with liquid separators, refrigerant pumps, oil drain tanks, valves, controls and its connecting piping. We are specialized in using Natural Refrigerants.

We build our units in our own workshop where we can build up to 9 meters height. With two overhead cranes we can lift 25 Tons of weight.



Good quality for a competitive price

FEATURES

- Long term experience and knowhow of Natural refrigerants;
- Complete delivery and assembly of the package;
- Complete 3D design and engineering by MAREFSUP BV;
- Delivery including P&ID, itemlists and manuals;
- Tailor made solutions to the requirements of the Customers;
- Delivery including CE-PED declaration of conformity or certification by ships classification society;



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Shell and Tube Heat Exchangers

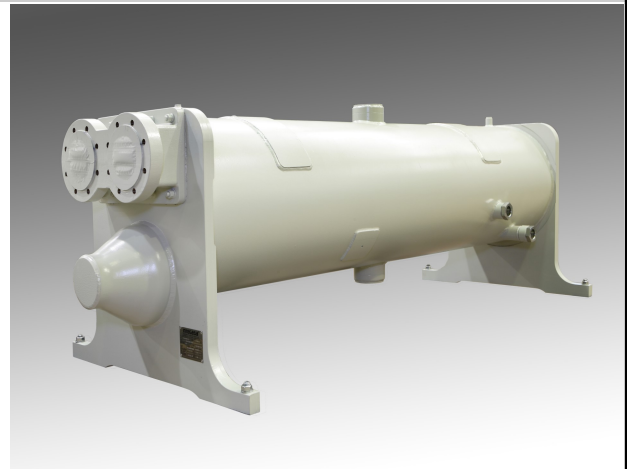
MAREFSOL BV is one of the leading designers and suppliers of shell and Tube heat Exchangers and has designed and delivered equipment for: Marine applications, Process and Off shore industry. 90% of the equipment that has been delivered by MAREFSOL, is tailor made for Refrigeration purposes and delivered to customers all over the world

Good quality for a competitive price

TITANIUM HEAT EXCHANGERS

MAREFSOL has great reputation and experience with the production of Titanium Heat exchangers. This material has a very good corrosion resistance and is in many cases applied aboard of seagoing vessels or in the process industry when a corrosive media is to be cooled or heated.

Welding of Titanium is a critical job as the welding process is sensitive to draft. Therefore it is common to weld the material in a so called clean room. Welding of the pipes is performed by orbital welding.



CU Ni HEAT EXCHANGERS

Additionally we have delivered many Cupro Nickel Heat Exchangers such as condensers, seawater coolers or other applications for which CuNi Heat exchangers were required. Besides the heat exchangers we also deliver CuNi Marine boxes for Cruise vessels.



STEEL HEAT EXCHANGERS

Many heat exchangers can be made of steel when the media that are running through the heat exchanger are not Corrosive. F.e; CO₂ Cascade condensers

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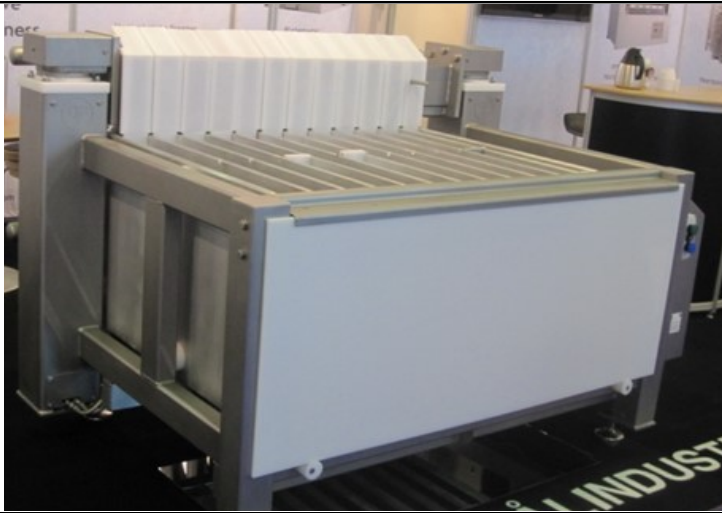


Marine Refrigeration Solutions

Vertical plate freezers

MAREFSUP B.V. has extensive experience with plate freezers. The freezers have been installed in all continents as well as many fishing vessels that freeze their catch aboard. Vertical plate freezers are very effective in freezing large quantities of bulk products such as ;

- Whole fish
- Meat products
- Pet food
- Vegetables / Fruit pulp



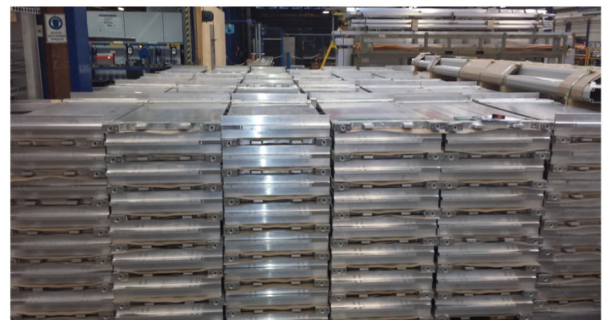
Good quality for a competitive price

REPLACEMENT PLATES FOR PLATE FREEZERS

MAREFSUP B.V is specialist when it comes to replacing plates of existing plate freezers. With the knowledge and experience of the problems that users have faced in practice, MAREFSUP B.V. has developed plates which have a higher quality (stronger and therefore longer lifetime) and better heat transfer than most current plates. Furthermore these plates can be easily fitted on all brands of plate freezers.

The plates, which are European made, can be delivered for Ammonia systems, high pressure CO2 systems and brine systems (among other). We can also supply high quality hoses for the connections.

Already thousands of plates have already been replaced without any problems (perfect fit, no leakages, good heat transfer) and with very satisfied customers.



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Marine Refrigeration Solutions

Static Air cooler elements

Static air cooler elements are mostly installed in the refrigerated holds of fishing vessels. They are very often connected to a Ammonia refrigeration system and sometimes to a CO₂ system.

The dimensions of the static air cooler elements can be according our standards or client requirements. In general, tailor made solutions are required for the refrigerated holds of fishing vessels.



Good quality for a competitive price

AIR COOLERS (GALVANIZED)

The cooler as shown in the picture below is a so called dry cooler for cooling of compressor oil. The cooler is equipped with explosion proof fans and motors and is designed for an ambient temperature of 45 °C. The design is according ASME and the witness test was carried out by LRS.

We delivered;

- Dry coolers;
- CO₂ and NH₃ air coolers.
- Static air cooler elements (Finned Coils).



We deliver galvanized coolers with flat fins and spiral wound fins. The galvanizing process (Hot dipped) guarantees a lasting contact between the fin and the pipe, as well as a very good corrosion resistance. The distance between the spiral wounded fins can be varied according the clients requirements or to what is advisable for the application. Usually a fin distance of 6 to 8 mm is applied for the dry cooling application with an increasing distance to 18 mm in case of low temperature applications.

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Marine Refrigeration Solutions

Pressure vessels

Pressure vessels are considered to be simple and easy to produce. In many cases however specialized vessels are required such as liquid separators, oil separators and high pressure vessels for CO₂ that are used in refrigeration plants or industrial process plants for the chemical industry.

In these cases our knowledge to design such equipment can be essential to make a proposal to the specification of the client.



Good quality for a competitive price

LIQUID AND OIL SEPARATORS

We are proud that we have the design knowledge to calculate liquid separators for any kind of refrigerant, based on the required capacity, operating temperature, type and circulation rate of the refrigerant.

For oil separators for Ammonia screw compressors we can guarantee a maximum oil carryover of 5 to 10 and ppm.

Additionally we have designed and produced CO₂ oil separators for screw compressor packages with a design pressure of 48 Bar as well as CO₂ liquid separators with a design pressure of 34 Bar and a design temperature of -50 °C.



We can offer completely assembled liquid separators that are fitted on a frame together with the refrigerant circulation pumps, valves, filters and other belongings. Please check our PDF brochure "Unit assembly"