Our History

Headquarters

Shipbuilding Industry

Research & Development

Certificates & quality advantages

Production Department

Refrigeration & A/C Units

Chillers & MGO Unit Chillers

Coils

Electric panel with PLC

Service

Trade

Our network

Our Products
1969 John Ligeros founded Psycotherm as a ship repair company for refrigeration and air conditioning equipment.

1974 The company operates cooperatively with mr E. Psathas and mr J. Iatros, adding new activity for manufacturing of catering equipment for ships.

1987 The partnership is suspended and the company is fully undertaken by John Ligeros. The main activity of the company is concentrated to the maintenance and repairs of marine refrigerating machines and air conditions.

1990 Initiating the commercial activity of the company, John Ligeros is appointed with the representation of companies GRASSO GEA, DORIN, and BUUS.

1996 Relocates to own building of 750 sqm in Piraeus 72, Chr. Smirnis str.

Member of

- TradeNet the world's largest maritime e-commerce platform.
- Hellenic Marine Equipment Manufacturers and Exporters.
2002  George Ligeros, fully undertakes the company and develops it further.

2006  Psyctotherm owns 2 buildings where the offices, the workshop, the machinery and the spare parts warehouse are accommodated.

2008  A new activity starts this year, the manufacturing of refrigeration and air conditioning units, and the old building is converted into a workshop.

2011  Acquires a coils manufacturing industry and start developing the new activity.

New departments are created and staffed with specialized personnel.

R&D department is staffed by mechanical engineers.
Manufacturing, assembly, service sections staffed by specialized technicians and electricians under the supervision of a production engineer.

2014  Coils manufacturing industry relocates to headquarters.

Our philosophy
We constantly look into new possibilities of development.
We focus on continuous training education and evaluation of our permanent staff.
We renew the equipment with machines of new technology for our production line.
We research for new materials, methods and solutions; this keeps us effective and competitive.
Our plan is directed to manufacture marine refrigeration and air-condition units according to our customer’s demands.
We expand our activities worldwide with an agent network.
The company operates on its own facilities at Piraeus in total area of 1800sqm.

We cover all our activities, commercial shop, storages, offices, and workshop for maintenance and manufacturing.

Features modern machinery equipment and new technology for our production line.

**Machinery equipment**

- 3 set fin press lines for 3/8”, 1/2”, 5/8”
- 3 set tube cutting machines for 3/8”, 1/2”, 5/8”
- 3 set tube bending machines for 3/8”, 1/2”, 5/8”
- 3 set tube expansion equipment for 3/8”, 1/2”, 5/8”
- CNC Punching machine 6mm
- CNC Sheet Metal Cutting machine 3000 x 6 mm
- CNC Sheet Metal Bending machine 3000 x 6 mm
- Supplementary equipment
On each new installation, our technician-consultant visits the installation site and records the desired operating conditions of the unit and the details of the installation.

A preliminary study is prepared by our engineers which includes the sizing of the unit, the preliminary selection of the proper equipment, the design of the unit on 3D drawing and the presentation of the unit to the client.

The design takes into account the special conditions of the sea, the demands of the client and the proper sizing of the unit in order to achieve maximum capacity with minimum power consumption and accomplish the highest level of efficiency.

As soon as the final solution is concluded, the equipment and raw materials are gathered. We use latest technology equipment and high quality raw materials purchased from well known manufactures, in order to achieve long lifetime of the unit.

The unit is assembled on our production line and runs a test operation.

When the unit is ready, it is transported to the installation site and placed on the ship.

After the installation of the unit our company can offer maintenance and repair services throughout the lifetime of the unit.
Calculation
The heating/cooling capacity and efficiency of each unit needed for a specific application is determined by a thorough analysis carried out for the specific working conditions and demands.

The use of specialized design and calculation software reflects the actual operating conditions as accurately as possible in order to dimension the units appropriately. Our company has developed calculation methods that take into account the specific needs of marine environment.

Design
All units are designed with 3D CAD/CAM software in order to determine the dimensions and perform a static and dynamic analysis of the units. The balance point of the fans, the compressors, the pumps, the coils is evaluated in order to calculate the heating/cooling capacity and the efficiency of the unit on the specific conditions.

Coil Calculation
The finned heat exchangers are calculated with the specialized UNILAB COILS software for one-phase (water coils) and two-phase (evaporators, condensers, steam coils) flows. The analysis takes into account every detail in order to evaluate the coil performance such as the geometric characteristics, the air flow and static pressure, the environment temperature and humidity, the liquid characteristics, the pressure drop, the fouling factor and much more.
With each new unit the customer is provided with:

- An operation manual with installation and operating instructions.
- A maintenance and service manual with a troubleshooting guide.
- Schemes of the electric panel and connections.
- Test report.
- CE declaration of conformity.

Certificates

All units are manufactured in a production line certified with ISO 9001 for quality assurance. All the relevant standards and directives (EN standards, IEC standards, DIN standards, ECC directives) are closely followed at all stages of design and production. Class approval also available upon request. Our company is qualified in sellhca with ID 114760.

Guarantee

We provide products and services taking into account the customer’s needs. We can guarantee the high performance and long lifetime of our products. We provide 1 year guarantee for the HVAC and refrigeration units and coils.

Test certificate from a third party inspection-certification group is available upon request.

Quality advantages

- Top quality raw materials
- State of the art computer software for 3D modeling, design and analysis.
- Modern specialized machinery equipment.
- Qualified and specialized staff.
- Technical support
- After sales support
- Competitive cost and on-time delivery
- Quality control for improving of our products.
Available units:

- Deck air condition units.
- Packaged water cooled air condition unit.
- Split air cooled air condition unit (special for wheelhouse).
- Direct expansion air condition units.
- Refrigeration units.

Units technical characteristics:

- Compressors: The units include a scroll, semi-hermetic or open type compressors.
- Condensers: An air cooled, sea water cooled or fresh water cooled condenser can be installed.
- Evaporators: Are made of copper tubing with aluminum fins, designed and specially dimensioned to obtain the maximum output. Optionally an anti-corrosive treatment on the evaporator fins against sea breeze can be performed.
- Fans: The air conditions can include a centrifugal or plug fan with high air flow.
**Refrigeration & A/C Units**

- Electric panel: The electrical box includes all the components and terminal blocks needed for the installation. It includes an automatic switch, relay, thermal protection, indicator lights, etc.

- Safety devices: If the units are out of order, their operation is automatically stopped by various safety and protective devices.

**Manufacturing Process**

- Study and design with specialized software.
- Mounting of the unit frame.
- Assembly of the unit parts (compressor, condenser, etc.).
- Installation of the electric panel.
- Installation, connection and soldering of the refrigeration pipes and parts (valves, gauges, filters, etc.).
- Connection of the electric wires on the terminals.
- Leak pressure test of the unit with nitrogen.
- Creation of vacuum and refrigerant filling.
- Test run of the unit.
Chiller Units can be manufactured at a variety of cooling capacities. Chiller Units can include a MGO cooler in order to cool the marine gas oil fuel in order to raise the viscosity to the required by pumps and engines level. The MGO cooling system can be installed just before the engine or in other places in the system. Chiller and MGO Units are suitable for new buildings and also for existing vessels. They are ready for connection on fuel line and power supply.

Manufacturing process:

- Study and design with specialized software
- Mounting of the unit frame
- Assembly of the unit parts (compressor, chiller, MGO cooler, condenser, e.t.c.)
- Installation of the water pipes and parts (pump, valves, e.t.c)
- Installation of the electric panel.
- Installation, connection and soldering of the refrigeration pipes and parts (valves, gauges, filters, e.t.c.)
- Connection of the electric wires on the terminals.
- Leak pressure test of the unit with nitrogen.
- Creation of vacuum and refrigerant filling.
- Filling with glycol of the chiller/mgo circuit.
- Test run of the unit.
Arktos coils are produced by the new production line of Psyctotherm and can be used in a variety of applications as:

- Evaporators
- Condensers
- Dry coolers
- Steam coils
- Heating/cooling water coils

Our coils are suitable for use in a wide variety of HVAC, marine and industrial applications.

Standard and custom designs are available. Modern machinery equipment and state of the art design software are used at the manufacturing process.

Each new custom design is fully analyzed and calculated in order to fulfill the specific working conditions and demands.

Quality assurance is guaranteed as fully certified raw materials are used and the coils are pressurized and tested for leaks.

Material thickness selection is always sufficient and reaches the higher limits in order to maximize mechanical and thermal endurance and hence extend coils life cycle.

**Manufacturing process**

- Study and design with specialized software
- Cutting and straightening the copper tubes.
- Pressing the aluminum fins.
- Manufacturing of the coil sides only with aluminium not galvanized steel with punching machine.
- Assembly the coil.
- Expansion of the copper tubes.
- Manufacturing/soldering the coil manifolds/distributors.
- Leak pressure test.
We design and manufacture electrical panels and perform electrical installation for industrial and marine HVAC equipment.

Panels are designed by our engineers and contain electrical drawings and installation documentation. The panels fully conform to the international standards.

**Manufacturing Process:**

- Design of the panel and selection of the elements and wires
- Dimensioning of the electric panel enclosure
- Cutting and bending of the electric panel enclosure
- Electrostatic coating of the enclosure
- Mounting of the electric panel elements (switches, automatic circuit breakers, contactors, overload relays, voltage monitoring, PLC or programmable controller, etc)
- Wiring of the power distribution and grounding
- Wiring of the relays and PLC or programmable controller
- Wiring of the panel door devices
- Wiring of the terminals
- Programming of the PLC or programmable controller.
- Test of the panel (insulation resistance, elements testing, continuity of conductors, etc).
Service

We have advanced expertise and experienced personnel on installation, retrofit and repair of marine air conditioning and refrigeration systems installed on different types of vessels. We offer the following services:

- Installation, commissioning and start-up of Psyctotherm HVAC and refrigeration systems in new buildings.
- Retrofit of old units with new Psyctotherm HVAC and refrigeration systems.
- After sales services on warranty and non-warranty systems.
- Retrofit of phase-out refrigerants with new refrigerants friendlier to the global environment.
- Installations, repairs, overhauls, and start-ups of marine HVAC and refrigeration systems, with identification and diagnosis of the fault cause.
- Preventative maintenance, surveys, replacement, and modifications as needed or requested by customers.

Installation & maintenance

The permanent staff of our company, with experienced and technically competent partners guarantees the result in every project we undertake. For customers with special requirements we are able to give specific solutions.

Our advantages are reliability, high performance, and ease of use. Quality is guaranteed with excellent services to our customer’s innovative products and maximum results.
Trade

We follow the international developments for supplying the market innovative new products.
The goal of the company is to strengthen the business relations with the firms that already cooperate and to expand to new ones.

We are authorized distributors for:
GEA-GRASSO, DORIN, HANBELL, XI’AN DAIKIN etc.

Heat exchangers and evaporators
WTK, ERBAY, AQUA SYSTEMS INC, SWEP etc.

Air Dryer AAG MAKINA
Refrigeration components
PARKER, TEMPRITE, GMC, OCS, ALCO, AC & HENRY, RANCO, ANACONDA etc.
Tools
APPION, MA-LINE, YELLOW JACKET, ACCUTOOLS, TST STAG
Motors, Inverters MITSUBISHI
Anti-vibration mounts AMC
Refrigerants HONEYWELL, DUPONT
Refrigeration oils ERRECOM

Also you can visit our e-shop site at www.psyctotherm.com
Our Network

We are currently developing a wide sales and support network in order to serve our customer needs, taking into account that marine companies have requirements all over the world.

Presently we have appointed local agents in various countries among with Cyprus, Bulgaria, Turkey, United Arab Emirates who can promptly provide their services upon request. They will provide you with the best advice and optimal solution as they have long experience in refrigeration and A/C units.