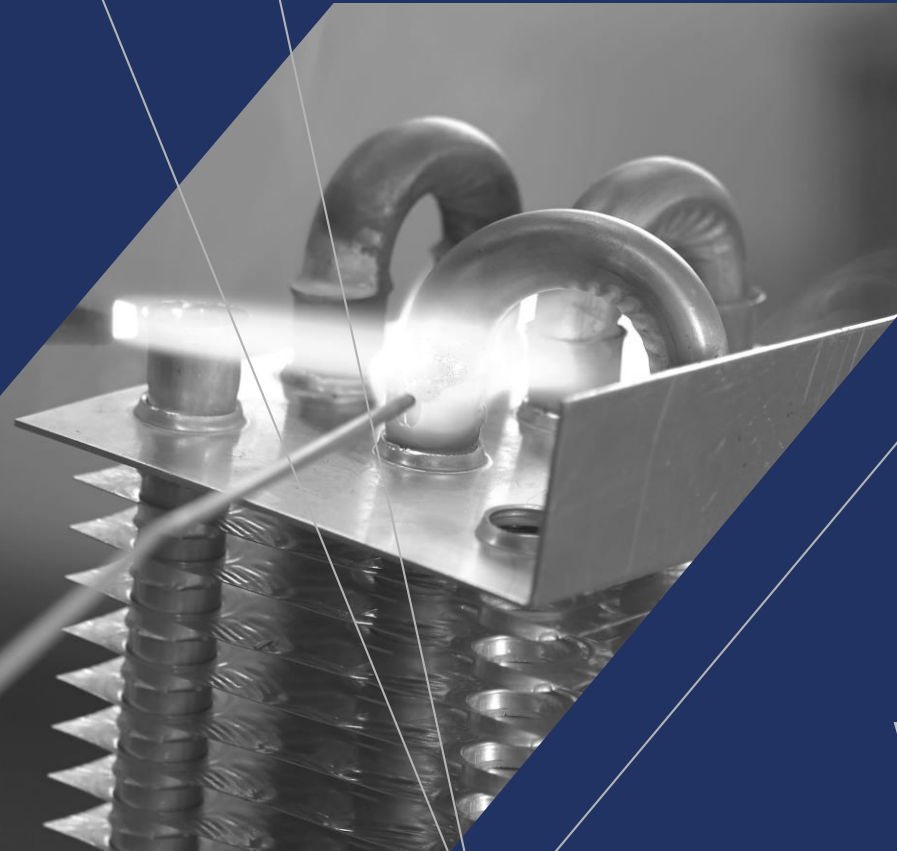




Service Department Presentation



www.psychotherm.gr

Leading, since 1969, in marine refrigeration systems, air conditioning and coils manufacturing.

We specialize in design, manufacturing & installation of refrigeration and air conditioning units for marine applications.

- Family owned company, established in 1969.
- Vast experience in marine market.
- Based in Piraeus, 2.000 m2 facilities, 30 people personnel.
- In house R&D dept., part of 10 Mio European programs.
- Co-operation with Universities & Science Institutes.
- 3 Seals of excellence for ORC & HTHP.
- ISO: 9001, ISO:14001 & ISO 45001.

Our Team has long experience on **marine services**, repairs & compressors replacements, having delivered special customized projects with high standards. With stock options on spare parts and inhouse manufacturing, we can deliver in tight schedules a complete service.

Innovation is part of our DNA and what drives us towards excellence. Psycrotherm constantly invest in innovation by participating in cutting edge research programs

We are proud members of HEMEXPO and WIMA associations



Typical HVAC & Refrigeration Services provided:

- Conversion of Refrigerants to compliant Green ones.
- Fabrication, repair / installation of coils, A/C and refrigeration equipment.
- Compressors and HVAC/R equipment replacement / conversion.
- Automation conversion.
- System upgrades.
- Troubleshooting recurring issues and operation improvement.

Service Hubs

Greece (HQ)

In house team of experienced technicians (> 10 years of experience each), plus a pool of experienced partners.

China – Brazil – UAE – Singapore - South Africa

Local partners specialized on marine applications, with many years of experience



Conversion of Refrigerants to compliant Green ones

Psycottherm service team specializes in the conversion of refrigerants to eco-friendly, **compliant green alternatives** that have low GWP and zero ODP.

We ensure that all refrigerants used meet the latest environmental regulations and standards, helping vessels reduce their carbon footprint and comply with sustainability standards.

Our team of experts handle the entire process, ensuring that the transition to green refrigerants is efficient and seamless.



Fabrication, repair and installation of coils

Our skilled team specializes in the design, sizing, and manufacturing of coils. Additionally, we provide expert installation services, ensuring that each system operates at its highest efficiency.



Fabrication, repair and installation of coils

Our coils are made with copper tubes and aluminum fins, instead of copper fins.

Thermal efficiency is equivalent, due to our material thickness 0,40 mm for tubes and 0,25 mm for fins.

This is an inexpensive solution compared to Cu/Cu coils with added benefit the lower overall construction, which also makes installation easier.

Also, we offer the option for coating the coil with epoxy anticorrosion paint.



Replacement / Conversion of Compressors

Specific refrigeration compressors types have significant disadvantages

Sabroe SMC compressors

- Very expensive spare parts and very high delivery time
- Reconditioned compressors available on the market are usually repaired with after market quality parts and their quality is questionable.

Bock FX compressors

- Often experience damages from liquid flood-backs.

GEA Grasso compressors

- Discontinued models, only spare parts can be available.

Mitsubishi FA compressors

- Difficult to find, long lead times and expensive compressors.



Replacement / Conversion of Compressors

Psycctotherm Team proposes the installation of a new unit or a different type/brand of compressor. Our experienced team evaluate which type of compressor is most suitable for each case. We propose either Dorin which is a reciprocating compressor manufacturer from Italy, or Hanbell which is a screw compressor manufacturer from Taiwan.



Hanbell Screw Compressors Benefits

Hanbell offers a large series of Screw compressors with the following benefits:

- Simple and robust design which provides high reliability and low vibration and noise level.
- Reduced cost.
- Increased durability to flood-backs in comparison with piston compressors.
- Fewer maintenance requirement.



Automation conversion

When the automation systems constantly malfunction, we undertake their complete retrofit.

Psycctotherm Service team installs new control panels, new power distribution electrical panels, new Mitsubishi PLC and HMI programs.

The program is compiled by our company, is fully flexible and adjustable upon customer request, and is also unlocked.



Automation conversion

Retrofit in the automation system of the main AC unit on the bulk carrier Navios Melodia.

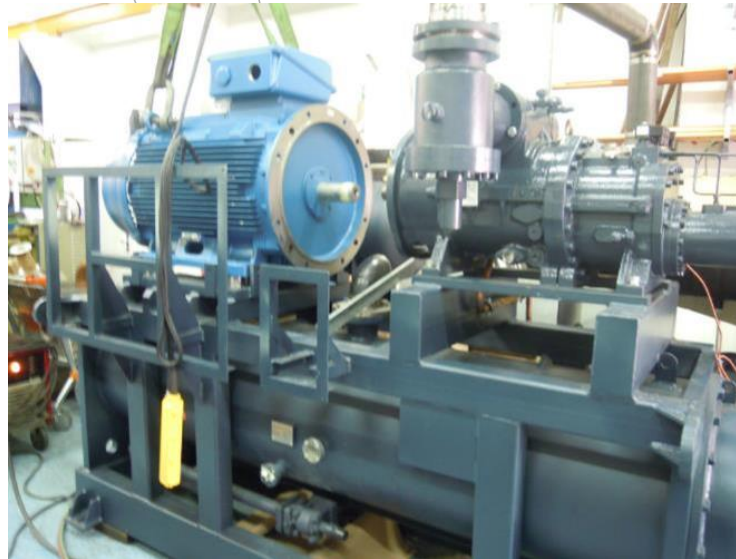
The Psycototherm Team installed new control panels, new power distribution electrical panel and a new PLC and HMI program.



Before and after pictures for the controller screen

System upgrades

Manufacturing and installation of new sea water cooled marine chiller units with open drive screw compressors.



System upgrades

Liquid flood-backs is a very common issue that often leads to compressor damage, especially in Hi Air Korea Co. systems.

To prevent this, our team installs suction accumulators, ensuring smooth and efficient system operation.



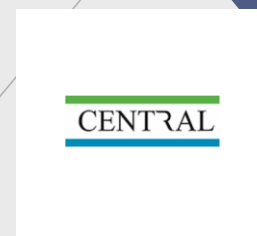
Troubleshooting recurring issues

Our highly experienced team can provide remote solutions and support, available 24 hours a day, 7 days a week.

We are always ready to assist, ensuring continuous service and quick response times.



Indicative Reference Customers



Indicative Reference Customers



Indicative Reference Customers

ASM MARITIME BV
ASSO MARINE SHIPPING CO
AVIN INTERNATIONAL LTD
BERNHARD SCHULTE SHIPMANAGEMENT
CARRAS SA
CELESTYAL SHIP MANAGEMENT
CENTRAL SHIP MANAGEMENT LTD
CHARTWORLD / CHARTERWELL
CONTSHIPS
EMPIRE BULKERS LTD.
EURONAV SHIP MANAGEMENT (HELLAS) LTD
EVERGREEN MARINE LINE
HELLENIC NAVY
INTERUNITY
FUNDADOR COMPANIA NAVIERA SA
GASLOG
GOLDENPORT SHIPMANAGEMENT LTD

KYKLADES MARITIME CORP
LARUS S.A.
LASKARIDIS SHIPPING COPR.
LOAD LINE MARINE SA
MASTERMIND SHIPMANAGEMENT LTD
MINERVA MARINE INC.
MODION MARITIME MANAGEMENT SA
NAFTOMAR SHIPPING & TRADING CO LTD
NAVIOS CONTAINERS MANAGEMENT INC
NEDA MARITIME AGENCY
NEPTUNE LINES SHIPPING
ONEX SHIPYARDS
PANTHEON TANKERS MANAGEMENT LTD
PETRONAV SHIP MANAGEMENT LTD
PLEIADES SHIPPING AGENTS SA
PRIME TANKER
SEA JETS

SEASTAR SHIPMANAGEMENT LTD
SEA TRADERS
SEA WORLD MANAGEMENT SAM
SPRINGFIELD SHIPPING CO
STAMCO SHIP MANAGEMENT CO LTD
SUPER-ECO TANKERS
TECHNOMAR SHIPPING INC.
THENAMARIS INC.
TMS TANKERS LTD
TRUST BULERKS LTD
TSAKOS COLUMBIA SHIPMANAGEMENT (TCM) SA
UNISEA
V GROUP

Thank you

“The best way to predict the future is to create it.”

Alan Kay, Computer scientist

