

HEINEN & HOPMAN

PRODUCTS

> Energy & Cost Saving Products



OUTSIDE 35°C
HUMIDITY 90%

22°C Inside

PROVIDED BY
HEINEN & HOPMAN



Heating



Ventilation



Air Conditioning



Refrigeration

HVAC ENERGY & COST SAVING POSSIBILITIES

A combination of economic considerations and the desire for a greener future are pushing professionals in the marine business to create designs and systems that last longer and have less environmental impact. As global innovator in the design, engineering and installation of customized solutions, Heinen & Hopman has made it a priority to stay ahead and offer our partners the flexibility to make greener choices. The following HVAC energy and cost saving possibilities are available:

1. Recycling cooling water and / or energy;
2. Choosing the right type of compressor;
3. Smart design of HVAC spaces onboard;
4. Smart ventilation solutions;
5. Saving on operating / maintenance costs;
6. Smart design and building solutions.

This brochure highlights the various possibilities for saving costs and energy with your HVAC installation. Our advice extends from the different products that we provide to designing the onboard HVAC departments in such a way that you save energy later.



RECYCLING COOLING WATER AND/OR ENERGY

Heat exchanger

Rather than simply disposing of it, the cooling water from the diesel engines is used for heating.

- Advantages:
- Lower electric power consumption;
 - Less electric cabling/starter/heaters, etc;
 - Savings of 5-150 kW on the generator output.

Heat recovery wheel in air handling units

The energy (heat-cold-humidity) in the exhaust air is used for pre-heating, pre-cooling and humidifying the fresh air coming in from outside.

- Advantages:
- Energy saving of up to 50% possible.

Absorption cooling

Hot (waste) cooling water from the diesel engines, normally disposed of over board, is reused for producing chilled water of 6°C to serve the HVAC installation.

- Advantages:
- Energy savings of 95% possible.



CHOOSING THE RIGHT TYPE OF COMPRESSOR

Turbocor compressor

The compressor has no oil or oil pump. The shaft is hanging in a magnetic field, which eliminates mechanical wear and tear.

- Advantages:
- Higher efficiency/less energy consumption;
 - Lower power consumption;
 - Smaller dimensions;
 - Lighter;
 - No oil and oil pump;
 - Maintenance free.



MGO-Cooler

The low sulphur fuel is cooled to raise the thickness to an appropriate level required by pumps and engines.

- Advantages:
- Lower emissions;
 - Save on oil pump repair costs;
 - Oil has higher greasing effect;
 - Fuel pumps last longer in heavy sea conditions.

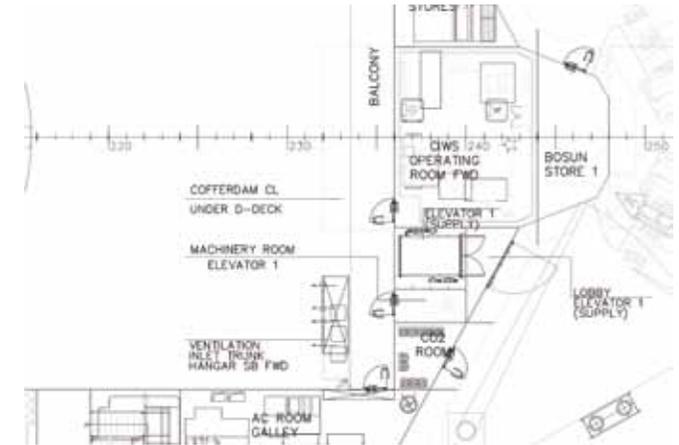
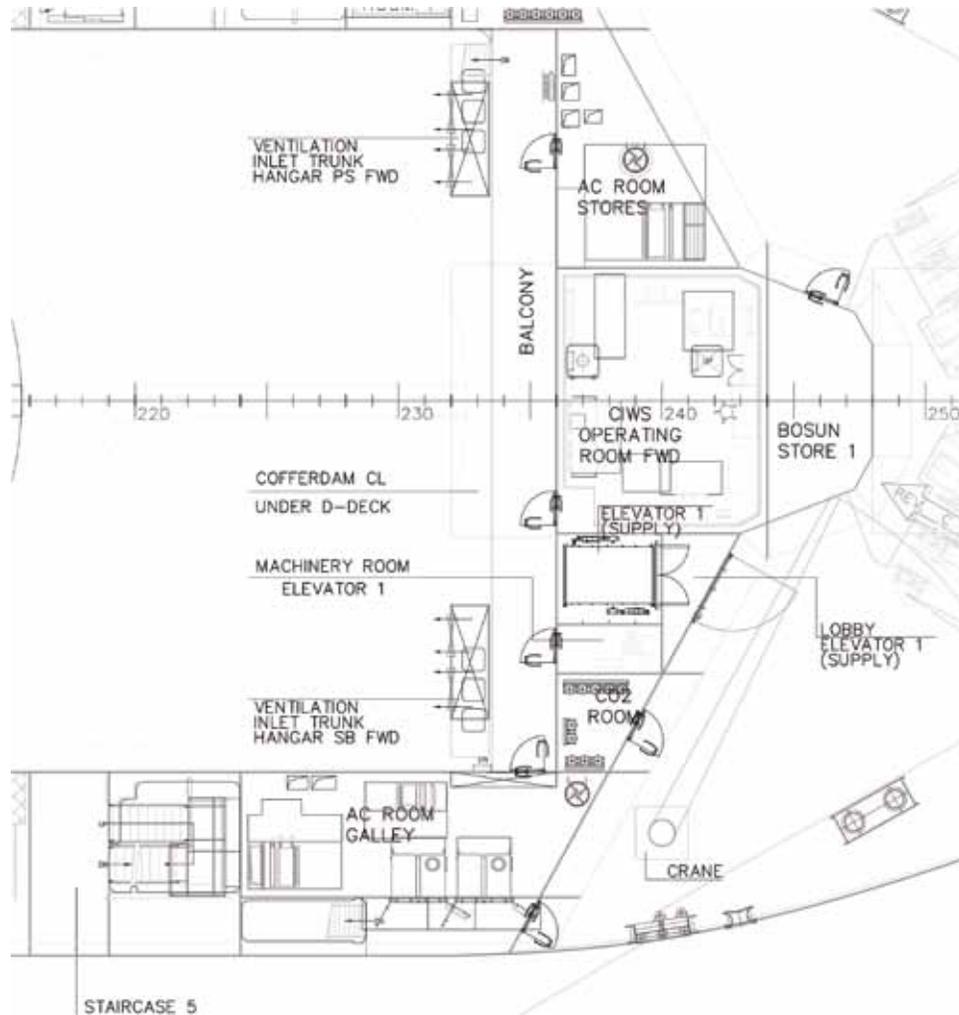


SMART DESIGN OF HVAC SPACES ON BOARD

Positioning technical spaces in the design phase

In the early pre-engineering phase we aim to design technical spaces with the fan air-handlers and vertical duct shaft in the centre of areas served by the units and fans.

- Advantages:
- Smaller ducts/air handlers/fans;
 - Less space needed;
 - Lower power consumption;
 - Reduced sound levels;
 - Weight saving.



SMART VENTILATION SOLUTIONS

Galley ventilation

Feeds air from the galley air-handling unit directly to the galley range hood and avoids using the air of other air-conditioned spaces.

- Advantages:
- Cost effective and energy saving;
 - Perfect working conditions for users.
 - No oil and oil pump;
 - Maintenance free.

Engine room coolers

Cooling down the engine room with coolers served by sea water or chilled water system instead of using air from outside. Removes the need for ducting through the accommodation spaces or large supply intake grids and engine room fans, while also lowering the sound level of the engine room fans.

- Advantages:
- Less ducting;
 - Lower sound level of engine room fans.

Engine room JET fans

Ventilate the engine room with jet fans instead of using regular fans and ducting.

- Advantages:
- Save ducting weight;
 - More space and visibility in the engine room.





SAVING ON OPERATING / MAINTENANCE COSTS

Frequency drives

Regulate HVAC equipment with frequency drives.

- Advantages:
- Saving energy;
 - Avoid overloading of the generators and high starting current.

Mist eliminators

Fitted in the intake of all the air supply systems.

- Advantages:
- Reduces the intake grid dimensions by 50%;
 - Reduces sound levels by 5 dB(A);
 - Separates the water from the supply air;
 - Saving on paintwork, corrosion and maintenance.

Spin filters

Separate sand and dust particles from the fresh air.

- Advantages:
- Lower cleaning costs after sandstorms or in high dust environments (estimated savings of up to €20,000);
 - Lower maintenance on bearing, fans and electronic equipment;
 - The filters are self-cleaning and save on maintenance costs.

Intercool system

The seawater used for cooling is transferred directly to a stainless steel plate heat exchanger and all the systems are reserved by fresh cooling water. The piping can be made of PVC. With such a cooling system for HVAC and refrigeration is supplied by water of the same temperature the whole year around.

- Advantage:
- Increases service life of the control equipment.



Yearly installation check

When the annual check of the HVAC is performed we provide a report on the condition of the installation and give advice on preventive repairs

- Advantage:
- Avoid major repairs of the installation.

PLC System

The PLC system makes it possible to control the HVAC from our office via a computer network.

- Advantages:
- This can avoid service engineer travel costs and help ensure problems are fixed faster;
 - Allows us to give the onboard engineer remote help and advice.

SMART DESIGN & BUILDING SOLUTIONS

Pre-outfit delivery

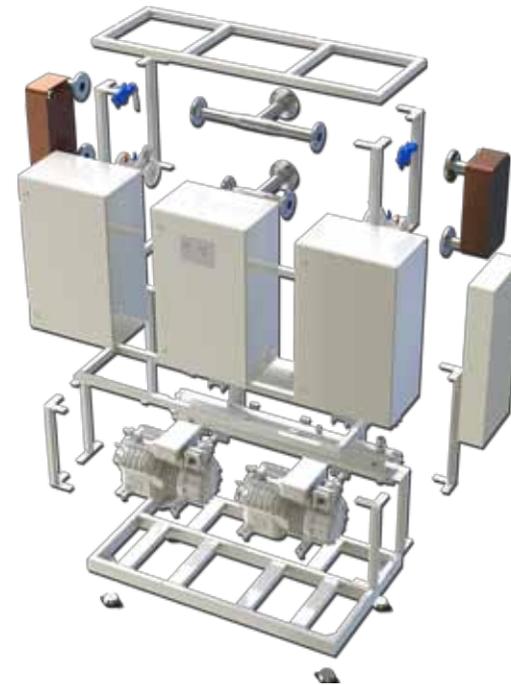
Duct parts and fittings are delivered marked based upon marks illustrated on drawings and delivered in boxes for certain parts of the ship.

- Advantages:
- No cutting and grinding on board;
 - Eliminating time spent walking to the workshop and back;
 - Cleaner surroundings (no extra duct pieces etc. lying around);
 - Savings of 10-20% on installation time;
 - No damage of the galvanized ducts during cutting and grinding;
 - Higher quality.

Replacement chillers

Our replacement chillers allow you to replace your chiller with a fully tested and pre-assembled chiller, specially designed and manufactured as an assembly kit.

- Advantages:
- No need to dismantle other machinery or piping;
 - No holes required in deck or bulkheads to get the chiller in.



Brazil

T: +5521 3587 4241/4244
E: info@br.heinenhopman.com

France - La Ciotat

T: +334 4204 8685
E: info@heinenhopmanfrance.com

France - Grasse

T: +336 3090 7786
E: info@heinenhopmanfrance.com

Germany

T: +49 4073 1680
E: info@drewsmarine.com

India

T: +9133 6499 1293
E: info@heinenhopmanindia.com

Italy

T: +3901 8745 7970
E: info@it.heinenhopman.com

The Netherlands (HQ)

T: +313 3299 2500
E: info@heinenhopman.com

The Netherlands (Rotterdam)

T: +317 8890 8050
E: binnenvaart@heinenhopman.nl

Norway

T: +47 6919 0900
E: admin@teknotherm.no

Peoples Republic of China

T: +8621 3253 2896
E: info@cn.heinenhopman.com

Peoples Republic of China

T: +86 510 8528 1763
E: ivo.klaric@teknotherm.no

Poland

T: +489 1433 1800
E: tmh@teknotherm.no

Romania

T: +402 3644 8222
E: office@ro.heinenhopman.com

Russia

T: +7 (4012) 308 801
E: info@heinenhopman.ru

Singapore

T: +65 6897 7879
E: info@sg.heinenhopman.com

South Korea

T: +8270 4901 0000
E: info@kr.heinenhopman.com

Spain

T: +349 3225 9668
E: info@es.heinenhopman.com

Sweden

T: +46 3121 7500
E: mats.uden@teknotherm.no

Turkey

T: +9021 6493 8118
E: info@tr.heinenhopman.com

UAE (Abu Dhabi)

T: +971 2550 4147
E: info@caspuae.com

UAE (Dubai)

T: +971 4263 5453
E: info@caspuae.com

USA - Fort Lauderdale, Florida

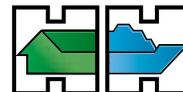
T: +195 4463 0110
E: info@arwmaritime.com

USA - Houma, Louisiana

T: +198 5876 7989
E: leblanc@leblancandassociates.com

www.heinenhopman.com

Heinen & Hopman encourages a more sustainable world. By providing eco-friendly solutions and services we offer our clients the option of reducing energy consumption and thus CO2 emissions. Visit greenmanifest.info for more information.



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