



Hi-Pres[®] HVAC/R systems and equipment

Dear customers and partners

As director of the Hi-Pres Marine & Offshore, HMO division, I am very pleased to be able to introduce you to the Novenco Group Division dedicated to the Marine and Offshore industry.

It is a challenging time for marine and offshore business with a drastic reduction in the number of vessels ordered and built in 2009.

In HMO we have managed to maintain the number of employees in these difficult times and today we have a highly qualified staff of over 150 people situated in key countries, the majority being project managers and HVAC engineers.

To overcome the challenging market situation Novenco is looking for growth in several core business activities and focusing on new business development. In addition Novenco has increased R&D to meet client demand to deliver environmentally friendly products and develop systems and products with low energy consumption. We constantly aim at finding the most cost effective solution for the Heating, Ventilation, Air Conditioning and Refrigeration (HVAC/R) for your projects.

Novenco see positive trends that owners are demanding state of the art systems and products. This indicates that the strategy chosen by Novenco is the right one.

We also see a positive output from our new factory in China where we have delivered products since mid 2008. The product quality is a proof of the factory's success.

The Market has welcomed our new refrigeration plants and our product range makes us now one of the few OEM suppliers of complete HVAC/R systems.

Please don't forget to ask for our reference lists. They are second to none in the industry and our systems are now installed in more than 12,000 vessels and platforms for customers worldwide.

I hope you will find this brochure interesting and informative. Please do not hesitate to contact our sales staff with any questions you may have or look at our homepage.

Yours Sincerely

Bredo Hagberg

Director Hi-Pres Marine & Offshore





HMO offices around the world



Head quarter - Denmark

Novenco Hi Pres Marine and Offshore is one of the largest HVAC/R system suppliers to the marine and offshore industry in the world. We have sales and engineering offices in 6 countries, ensuring that we can offer a local service in the key ship and offshore building regions.

We manufacture much of the HVAC/R equipment ourselves, which means you, the customer, can be sure of a high quality and, if you need, custom made products. We also take care of the detailed HVAC/R design including heat load, pressure drop and sound level calculations. 2 & 3-D drawings including installation drawings for turnkey projects can also be made.

DENMARK

The Marine Office and Production Factory was first established in 1952 under the original name Nordisk Ventilator.

Since then the company has developed and grown into an international, recognised market leader.

The Danish marine office is the centre for merchant vessels, workboats, car carriers, mega yachts, cruise and passenger vessels sales. The office is also the Novenco centre for product development, design and engineering.

The office carries out project management including, system design, supply of HVAC equipment, planning and executing installation works and commissioning.

NORWAY - OSLO

The main office for offshore is located in Oslo and has existed since oil exploration commenced in the North Sea in 1963.

This office is responsible for supplying HVAC/R systems to all types of offshore installations including fixed platforms, Jackups and FPSO's. All these projects require special knowledge of the offshore rules and regulations.

The department is capable of handling projects ranging from simple equipment deliveries to the most complex projects involving total turnkey responsibility.

In the modern, highly complex world of offshore exploration, drilling and production, the focus is on providing equipment for life time use, reduced maintenance and reliability.

The Offshore reference list shows, that clients repeatedly return to place new orders and have selected Novenco as their main HVAC/R supplier for many years.

NORWAY - BERGEN

The Bergen office was established in 1967 to serve Norwegian ship owners, Norwegian Navy and Norwegian shipyards.

Today the office is a thriving centre of expertise, with responsibility not only in Norway, but also in other selected markets such as Finland, England, Spain, Portugal and India.

In addition, the Bergen office has become a centre of excellence for the Novenco navy sales.

The office handles design, supply HVAC/R equipment, perform project management and plan and execute installation works.

HMO offices around the world

ITALY

The office in Italy was established in 1996 as a site office. The office consists of project managers, designers and service personnel. The office works very closely with Denmark and takes care of special projects primarily in Italy and Southern Europe.

CHINA

The Novenco Marine and Offshore China Office was established in 2007 to serve the increasing chinese marine market.

Hi-Pres Marine and Offshore China is the center for sales, design and project handling, with offices in Shanghai, Guangzhou, Shandong and Tianjin covering all shipyards in China, as well as in Japan and Taiwan.



HMO China also handle design and project handling for other countries and areas in Asia, such as Vietnam, Korea and India, and general support for all HMO offices.

Novenco have production facilities in China, the factory in

Wuxi was established in July 2007. This factory produces cabin units, Air handling units and cooling plants with the same quality as the Danish factory.

SINGAPORE

Novenco (S) Pte Ltd in Singapore was established in 2007 to serve the growing market in Singapore, with focus on the marine and offshore sectors.

The office has expanded rapidly since 2007 and is now both a sales office and capable of providing full turn key project management services.

For larger Offshore projects this office gives clients in Singapore a unique service with fast response time, linking up closely with the Offshore department in Oslo.

BRAZIL

With the increase in Marine & Offshore activities and the market request for stronger local participation, Novenco opened a new sales office in Rio de Janeiro, Brazil in 2009. Novenco has for several years been a major supplier to Petrobras. To open a Novenco office was a natural movement to strengthen our customer support in Brazil.



Range of services provided

The delivery of a HVAC/R system to a complicated project such as a passenger or navy ship or an offshore platform requires strong project management and accurate design work. Our project managers and designers have been in the HVAC business many years and have the experience to run the most complicated projects.

PROJECT MANAGEMENT

The project manager remains in charge of the project until it is successfully handed over to the customer. He has specialist knowledge and is there to ensure that the project is kept on track.

The project manager is the single point of contact between the customer and the project team, consisting of design Engineers, the production, the installation team and the commissioning Engineers.

SYSTEM DESIGN AND ENGINEERING

The Hi-Pres Marine & Offshore division has qualified staff to design and engineer all types of ships and offshore platforms.

Our Design Department is responsible for all stages of the design including drawings from single line to full room layout, diagrams for heating and cooling, electric and control diagrams.

HMO is specialized in high pressure air-conditioning systems that meet requirements for small duct dimensions, low sound level and individual control in the cabins.

PRODUCTS

Novenco have production facilities in Næstved, Denmark and Wuxi, China.

The production covers key HVAC/R components; including air handling units, axial flow fans, self contained units, fan coils, centrifugal fans, air heaters, dampers, cabin units and cooling plants. For additional equipment, HMO has selected partner subsuppliers to complete the product range.

By controlling our own production process, we are able to guarantee Novenco quality and reliability.

We take a flexible approach to design and production. In many cases our equipment is custom built to meet our client's specification.



Range of services provided



COMMISSIONING AND SUPERVISION

Our experienced service technicians offer supervision of the installation and commissioning of the entire system.

The commissioning consists of checking, adjusting and balancing of the air condition and ventilation systems to operate according to the design objectives.

It include the following items:

- Checking system components in accordance with drawings and technical specifications.
- Checking installation for conformity to design.
- Performance verification of all HVAC/R equipment and automatic controls.
- Balancing of air and water distribution system.
- Measurements of sound levels and vibrations related to the HVAC/R system.
- Recording and reporting the results.

RETROFIT

Over the years this department has grown into an important back up facility to serve our clients after the Novenco installations are handed over.

Novenco Retrofit provides services needed for conversions, upgrades and replacement of all types of HVAC/R

systems, including those from other manufacturers. We specialise in surveys and proposals for complete conversions, including design, materials, installation and commissioning.

We have extensive dry dock experience, typically involving exchange and installation of equipment on vessels ranging from cruise ships and ferries to merchant vessels. Our key clients are ship owners and shipyards across the world.

SERVICE AND SPARE PARTS

Novenco Service and Parts handles service on all systems delivered by Novenco. With more than 60 years of invaluable experience in designing and producing HVAC/R systems, Novenco can provide after sales services that are second to none.

It is extremely important spare parts are available at short notice and this department takes pride in being able to provide a fast efficient service.





Type of Offshore Projects

Novenco have been supplying HVAC systems to the offshore sector for over 25 years and are today a well recognized and respected supplier to this demanding market. The well known demands for high levels of documentation and custom built equipment are all part of a normal days work for our offshore team.

FIXED PLATFORMS



Offshore fixed platforms vary depending on application from drilling, production, living quarters to process platforms. Each type offering technical challenges for the HVAC requirements. At the Novenco offshore office the range and complexity of projects we can handle is extensive. On projects with lower specification demands we can offer standardized equipment from our marine product range. However, it is more often required to design and supply high quality systems complying to the most stringent specifications such as Norsok or Petrobras Brazilian rules. On these types of projects we custom build and test each unit to the clients own specifications.

What ever the platform type and where ever in the world it is located Novenco offshore division will strive to find the best technical and energy efficient solutions.

FLOATING PRODUCTION STORAGE OFFLOADING VESSELS



With increasing demand for new oil developments and production in deep water locations the floating platform concept or FPSO has become necessary. These vessels take the form of a ships hull converted into a fully functional drilling, production and storage facility. As these vessels can be moved anywhere in the world the spectrum of climatic conditions for the HVAC systems ranges from tropical hot humid climates to harsh arctic extreme cold conditions. Novenco offshore have extensive knowledge and experience of providing all the HVAC and ventilation systems for both living quarters and process utility areas on a FPSO.

The total system responsibility for HVAC and refrigeration plant is with Novenco offshore which gives our clients the advantage of a single point of contact .

We are also engaged in other types of offshore projects providing the complete HVAC systems on the following types of installations

- Jack-up drilling and production rigs
- Semi submersible drilling and/or production rigs
- Semi submersible accommodation rigs
- Floating storage and off loading (FSO) vessels

Type of ship projects

Under the broad category of ships come many special demands for the HVAC/R supply and Novenco have always been able to supply "standard" design and equipment that is customized to satisfy the client's special requirements.

OFFSHORE VESSELS



We have a wide experience with the need for ventilation and especially cooling requirements on offshore vessels, ranging from Platform Supply Vessel (PSV) to the expanding fleet of Ocean Construction Vessels (OCV).

The challenge is that in addition to HVAC/R systems for Accommodation, there are winch, crane and ROV areas requiring large numbers of fans and cooling units. We



meet these demands by carefully designing and combining standard components into systems which can deal with the excess heat, providing reliable operation under all conditions.

CARGO SHIPS

The merchant cargo vessel Departments supply HVAC/R systems to all kinds of cargo vessels worldwide. We have extensive experience in supplying complete systems for the accommodation area, ventilation systems for engine room ventilation including control, cargo areas and to any rooms and areas on board the vessels requiring ventilation.

The global focus on environmental issues and energy consumption has led us to concentrate on further development of the efficiency of equipment especially in the area of axial flow fans, so that we in the future will



continue to meet the requirements for the lowest energy-consuming equipment.

WORKBOATS

Workboats or Tugboats with only few crew cabins and limited accommodation area require an air HVAC system which can be installed in limited space, but still be able to provide the necessary air conditioning to fulfil the requirements.

For these vessels, we have developed the Hi-Pres eACy Air Conditioning System which offers both low maintenance and user friendly handling during operation and not least a easy installation. The system comes as a package including the high-pressure self contained unit which can be installed on a very limited space e.g. in the cofferdam under the wheelhouse.



CAR CARRIERS



The challenge on Car Carriers is the requirement for very low noise both inside the vessel and in open air. Novenco is specialised in solving complicated ventilation jobs with requirements for low noise and low power consumption.

Novenco offers a newly developed Hi-Pres Car Carrier Ventilation Unit. It basically consists of a high efficiency fan, a closing damper, compact silencers, a demister and acid proof stainless steel housing. The unit meets the tough requirements for low power consumption and separation of water and salt particles. The unit can be custom-made to very low sound level. The Hi-Pres Car Carrier Ventilation Units are mounted directly on the top deck fulfilling all requirements from IMO

CRUISE AND FERRIES



Novenco's Cruise and Ferry Division also deliver complete solutions, particularly for ferries.

The Cruise and Ferry Division's reputation in the industry is second to none. We are specialised in the MicroVent VAV high-pressure system, the IDAC fan coil system and the revolutionary Flex-Air system. These unique systems all have ultra-low noise levels and minimum energy consumption.

The Air Conditioning System for most cruise ships and ferries request delicate control functions and high reliability, because their passengers always expect a comfortable voyage in a luxurious atmosphere just like a resort hotel onshore. On the other hand, from an economical point of view, ships' operators allow more space for passengers and less space for machinery including Air Conditioning equipment. The energy and space saving technology of Flex-Air Air Conditioning System meets the requirements from both sides.

The HVAC system design and equipment provide the highest quality indoor climate regardless of climate zone or extreme environmental demands wherever the vessels are operating.

Type of ship projects

YACHTS



Novenco's Yachts Division offers complete solutions covering all aspects of equipment, design, engineering and installation. The Yacht system design is using technology derived from the Cruise and Ferry business area.

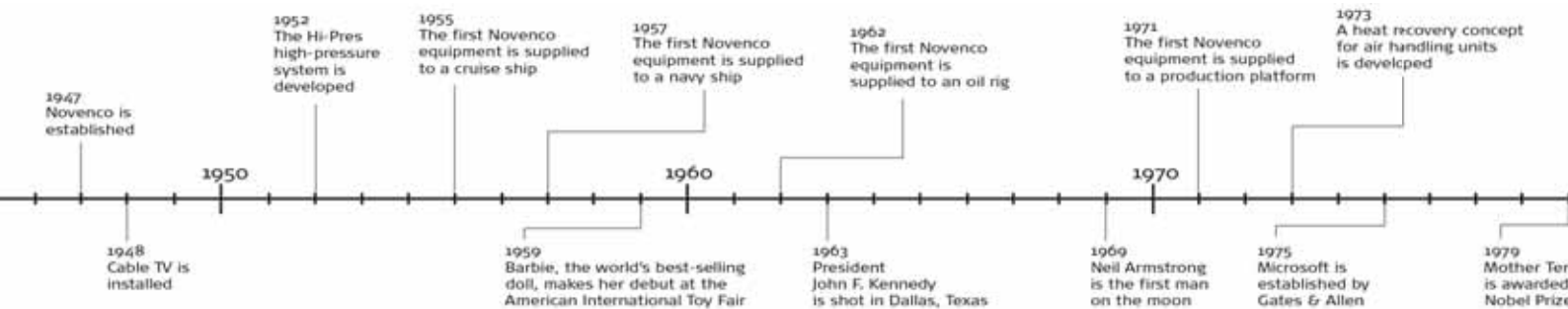
Novenco is specialised in the high-pressure Super Speed system, which delivers extremely high air quality at minimal sound levels. The Novenco super speed system for yacht is a high pressure single pipe VAV air conditioning system in which the primary treatments of the air take place in the air handling unit and final treatment in the air supply units, with electric reheating coils. The room comfort is controlled by a unique digital user panel designed by an interior architect.

NAVY



The first Novenco Navy systems were supplied in 1957 to 20 minesweepers for the German navy.

Since then, this number has risen to over 500 systems for navy ship of all types. No matter if the target is high-speed, high-reliability, heavy-shock resistant, NBC protection etc. Hi-Pres Marine and Offshore can supply a tailor-made system fulfilling all client demands. Novenco's standard equipment is of high quality and suitable for low shock but in addition we have designed and developed special key HVAC components such as AHU's, NBC units and FCU's for full scale shock. Other equipment has also been modified for scale shock to meet specific project requirements, through complex testing processes.





And finally

OUR MISSION

To offer energy and cost efficient HVAC/R solutions to serve the need for comfort and safety.

OUR VISION

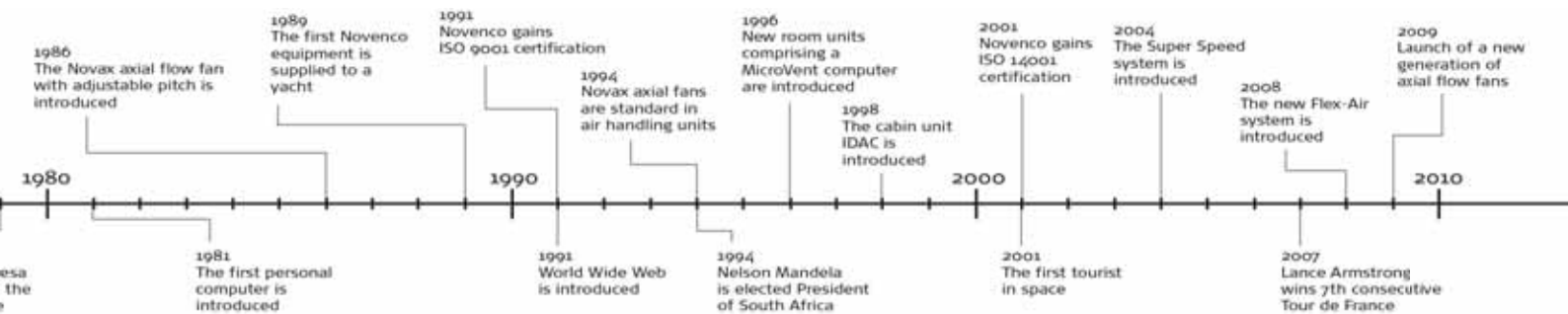
To be our customers' preferred global supplier, be cost focused and profitable, and deliver innovative components and systems to our chosen segments.



Main offices ● Representatives ●
Please see our contacts on the last page.

Our main advantages

- Own flexible production
- Quality in design and equipment
- Reference list second to none





HI-PRES Marine and Offshore

Novenco develops and manufactures Air Conditioning, ventilation and refrigeration systems marketed and distributed worldwide through subsidiaries and agents.

The company was founded in Denmark in 1947 and has become one of the world's leading suppliers in this market area.

The HI-PRES Marine and Offshore division is part of the Novenco group.

We are widely acknowledged as a professional supplier of high quality energy-efficient marine and Offshore HVAC/R systems.

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