

Ω NIBE

Wind Components



NIBE – world-class solutions in sustainable energy

Ω NIBE Wind Components

NIBE Industrier AB is an international 682 M€ company with 8000 employees. The company is focusing its business on three business areas: NIBE Element, NIBE Energy Systems, and NIBE Stoves. Since 1997 listed on the Stockholm stock exchange.

NIBE Element is one of the three NIBE business areas. NIBE Element is the market leader in Northern Europe and a leading international manufacturer of components and systems for electric heating and resistors.

NIBE Wind Components is a cooperation between NIBE Element group companies, providing components or technology for the wind turbine industry.

This cooperation mainly consists of the following NIBE companies:



Danotherm Electric A/S specializes in design and production of power resistors mainly for use in power electronic equipment.

Focus Area: Motor controls, Wind turbines, and Railway systems.

Danotherm runs production units in Denmark, Poland, and Italy.



JEVI A/S designs, manufactures, and supplies electric heating solutions for customers in the offshore, onshore, marine, process industries, HVAC systems, wind turbines, oil and gas industry. Our production facilities are in Denmark and Netherlands.



Lund & Sorensen A/S was founded in 1989. The company specializes in almost all kinds of heaters, offering one of the largest programs in the industry. We supply to general industries and to the wind turbine industry. Most of our solutions are customized.

Lund & Sorensen A/S is a worldwide leading company



SAN Electro-Heat A/S, founded in 1950. Produces and supplies heating products all over the world with our main focus on Wind Power, Railway Systems, Process Industries, and Heating Cables. The product range comprises among others standard as well as customized products for nacelle heating, heating for gear boxes and hydraulic systems as well as load resistors for fast control and regulation. Production units in Denmark, Poland, and China.

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We are all
ISO 9001 certified:



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World Wide Representation



NIBE Wind Components

During the summer of 2009, Nibe Wind Components was founded. Nibe Wind Components is a division of the Swedish NIBE Element, and coordinates sales to the wind sector globally for the four Danish companies of SAN Electro Heat A/S, Danotherm A/S, JEVI A/S and Lund & Sorensen A/S.

The company was established to offer our customers optimal service by uniting the coordination of the sales of all four companies in one office.

Our main office is situated in Vejle, Denmark. However, due to our representation - sales as well as production - all over the World, we are in a position to service our customers anywhere.

TOP 10

We supply eight out of top ten wind turbine manufacturers in the world, with the largest range of heating components.

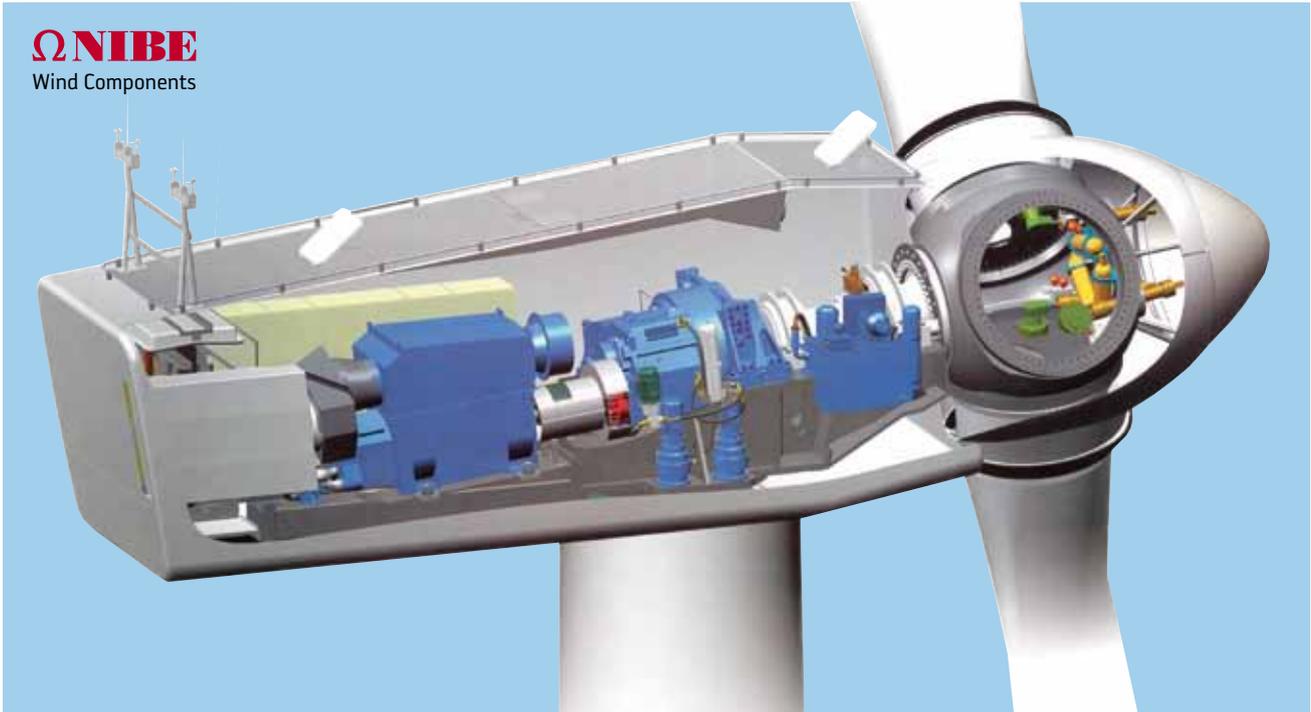


Backer - Sweden



Shenzhen - China

Electrical heating - less downtime



Ω NIBE
Wind Components

NIBE Wind Components wishes to make it easy for our potential customers, existing customers, and partners to get high quality solutions for a wide spectrum of heating related wind turbine applications.

NIBE Wind Components - Heating Equipment for Cold Climate - offers design, production, and supply of electric heating for the wind turbine industry. Production in Europe, America, and Asia.

Products: Customized or Standard

- Air Nacelle Heater
- Immersion Heater for Gearbox
- Heating for Hydraulic Systems
- Silicone Heaters
- Heating Blankets
- Dump Load Resistors
- High Watt Heaters for Measuring Equipment
- Load Resistors for Fast Control and Regulation
- Temperature Sensors

NIBE Wind Components strives to supply the highest quality products combined with a flexible way of working, throughout the process, all the way from sales, product development, manufacturing, and logistics. We provide products meeting all relevant standards and tests, certifying products according to customer specifications. Also, we are able to carry out tests for our customers in modern labs, constantly improving our product performance.



Wuqing Tianjin - China



Backer OBR Stargaard - Poland

Heating of fluids, glycol and hydraulics



External flow heater with motor, pump, and expansion valve. For heating of lubricating oil in gearboxes, e.g. in arctic areas where additional heating is required.

The built-in pump circulates the lubrication oil through the gear box. The flow heater is equipped with a pump, temperature limiter, and PT100 sensor. ETL approved.



The NWC submersible oil heater is intended for preheating of hydraulic oil before start-up to minimize system wear. The preheating also reduces traces of water in the tank. Easy to use in existing oil tanks, there is no need for permanent installation. The oil heater is fastened at the bottom of e.g. the oil tank with integrated magnets.

Immerge heater for hydraulic oil with magnets for fixation 2000W - 3x690V - 1W/cm². Available in other voltages and wattages upon request.

Glycol heaters



NWC glycol pre-heater consisting of flange heater mounted in pressure vessel.



The NWC glycol heaters are used for pre-heating of cooling water in the cooling/heating system in converters in wind turbines before start-up of the wind turbine



Tank heater for hydraulic oil.



The NWC glycol heaters are available in various materials and designs to meet customer requirements.





All our immersion heaters are available in required voltage, power and length, with flange or thread.

All the heaters are designed to comply with requirements and specifications for products used on wind turbines.

Immersion heater

The NWC immersion heaters - essentially used for heating and maintenance of oil and lubricating systems e.g. in gear boxes and hydraulic vessels.

You will benefit considerably from using our types of immersion heaters as the element may be replaced rapidly and almost without any use of tools, and furthermore the oil does not need to be drained.

The NWC immersion heaters are available in materials according to request.



UL APPROVAL

Almost all the immersion heaters from NIBE Wind Components are available either as standard types or with UL/CSA approval. As the only manufacturer world wide, we offer the largest product range of immersion heaters with UL/CSA approval.



Silicone heaters



Battery box heater.
Custom design to any application.



Silicone heating mat pre-bent
for heating up pipelines.



Silicone heating mat with thermostat,
limiter, hooks, and springs.

Silicone heaters

The NWC silicone heaters are used for any application with precise and intimate heating requirements. Our silicone heaters are lightweight and thin, generating low thermal mass and rapid heat up characteristics, responding quickly to temperature control.

Our silicone heaters are available with or without insulation and are all customized.



SILICONE HEATERS

- Designed to customer requirements
- Easy to install
- No maintenance
- Flexible and lightweight
- Etch foil and wire wound technology





Heating blanket with thermostat.



Heating blanket for heating of wind turbine blades.



Heating blanket for tip with silicone surface.

Heating Blanket

NWC heating blankets for heating the edges of wind turbine blades. May also be manufactured for use elsewhere on the blade. Due to low weight and flexibility, the heating blankets offer the obvious choice for onsite repair use. All our heating blankets may be customized. Once the leading and trailing edge have been cured, ground, and polished, any procedures required may be carried out without any risk of grinding non-cured material and thus releasing hazardous substances into the atmosphere. The blankets may also be designed for use on various parts of the blade. For repair use on-site, they are just great due to low weight and flexibility.



Drum heaters.
Teflon/Polyester jacket with thermostat.
Adjustable quick release buckles.



Nacelle fan heaters



Fan heaters for frost protection in wind turbines.

Delta fan heater from 100V...690V...3-21kW. Various bracket systems as option.

Delta fan heater designed for harsh weather and rough environments. 240V...600V...9kW. UL approved.

Fan Heaters

The NWC fan heater is a rigid and reliable fan heater designed for harsh weather and rough environments wherever best quality materials and high performance are required.

The fan heater will perform superbly down to -40°C, as well as in high altitude. This heater is thus the perfect choice for high quality wind turbines in cold climate environments

This technology has been applied successfully for more than 15 years. Ongoing development allows for these products to continue to perform as quality units in the next generation of turbines

UL APPROVAL
The Delta fan heater from Nibe Wind Components is either available as standard CE or with UL/CSA approval.



Fan heater for nacelle heating

- Heaters are available from 3-21kW as standard units
- From 110V...690V
- UL approved types up to 240V...600V and max. 9kW

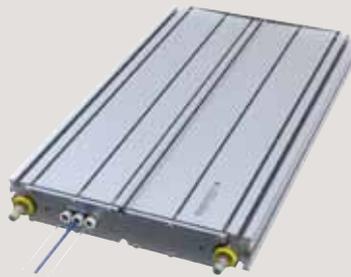


Customized centrifugal fan heater.

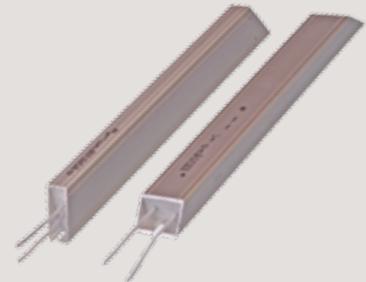




The CBS resistor is a low temperature rise LVRT (Low Voltage Ride Through) Energy Dump Resistor.



The CBW is a water cooled filter and LVRT Energy Dump Resistor.



Alpha resistors for charging capacitor bank.

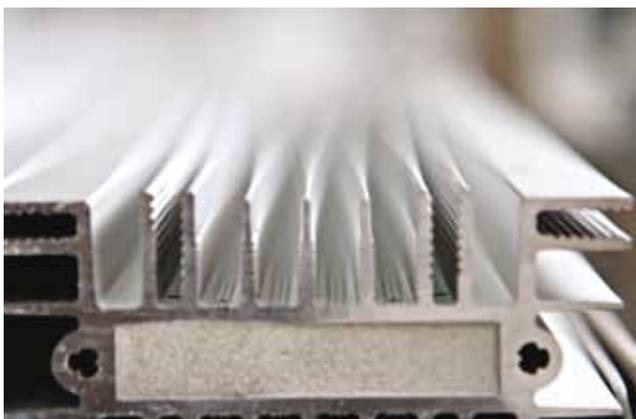
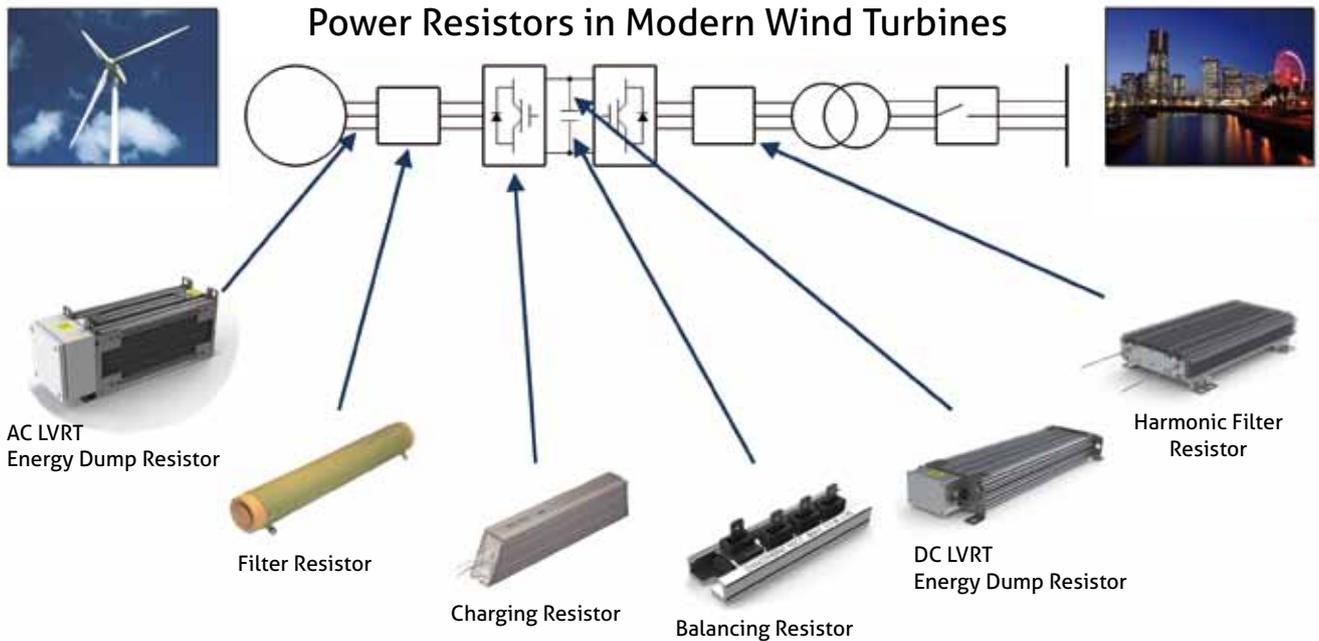
Resistors

Our programme includes traditional wire-wound resistors, steel grid resistors, the most advanced insulated high pulse load aluminium housed resistors and steel tube resistors also for high voltage applications.

The resistors are available with UL/CSA approval.



Below are examples of resistors in the power train of a modern wind turbine.



Control panels



Anti condensation heaters for cabinets with electronic thermostat.

Fan filter units in various versions with and without fan.

NWC provides conventional and PTC semiconductor control panel heaters and fan-assisted heaters ranging from 5W to 1200W, as well as tropicalized and EX versions.



Anti condensating heaters for cabinets with three power settings and independent fan circuit to aid climate cooling.



Thermostats

The NWC temperature and humidity controls range from 0°C to 60°C and 35% to 100% RH

Anti Condensation Heaters

Condensation forms due to fluctuating temperature, even in sealed enclosures. In combination with dust and aggressive gases condensation causes corrosion resulting in stray currents and arcing. Too high temperature, or for that matter a too low temperature, may also lead to serious component failure. The safety risk is enormous, and the cost of operational delays as a consequence is incalculable.

As a supplement to our product range in anti-condensation, we are also in a position to offer a new filter fan series in EMC and standard versions with excellent performance and shielding characteristics as well as panel lighting and accessories.



Anti condensation heater, mounted on a galvanized bottom plate, and covered by a stainless steel protection grate.



Cartridge heaters



Immersion heaters for small oiltanks.
Built-in thermostat.
Customized solutions.

Cartridge Heaters

High watt cartridge heaters for building into tools, injection presses, nozzles, and moulds. The extremely high load in connection with the fine physical tolerances provides high heat transmission over a minimum area.

Special cartridge heaters with differentiated output, built-in thermal fuse, sensor or thermostat are available upon request.

Whenever NWC receives an inquiry from a customer, we always work very close with the engineers to calculate, design, and test what we expect will be the final solution. Thus generating satisfied customers and well defined solutions which will last for many years. NWC has the knowledge required for heating solutions, and our customers have derived their knowledge from the way the applications work. Together we form the strongest team and find the best solution.



Bolt heater.

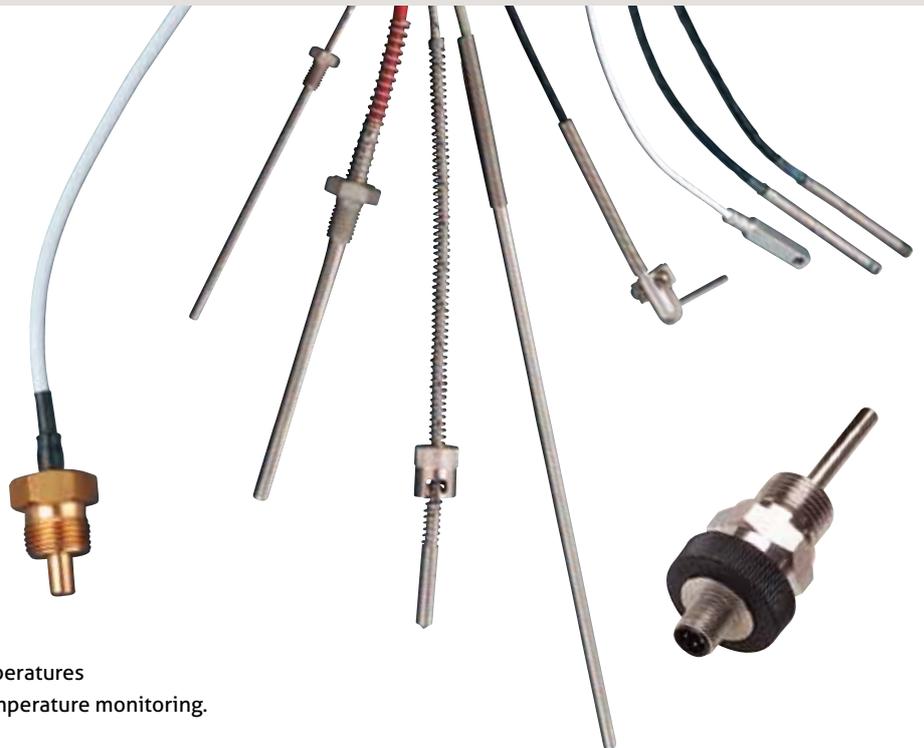


Temperature sensors



Temperature sensors are used in various places in the wind turbine, among other things for measurements in:

- bearings
- hydraulic systems
- gear oil
- control cabinet temperatures



Temperature Sensors

PT100 temperature sensors for monitoring temperatures in control cabinets, nacelles and for external temperature monitoring.

Hydraulic and lubrication oil monitoring. Used for e.g. gears and brakes.

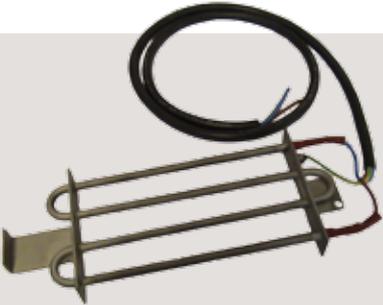
Humidity sensors for monitoring of humidity levels in nacelles and control cabinets.

Spring loaded PT100 sensors for bearing temperature measurement.



PT100 temperature sensors.

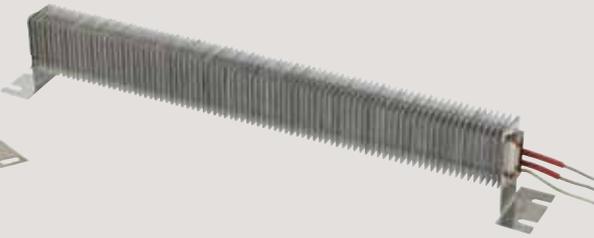




Heating element for commutator.



Finned heating element.



Stripheater - High power. UL approved.

Heating Elements

You will find both standard and customized solutions for any industrial heating purpose in our large programme. Duct heaters and heat exchangers are some of our specialties. Our many years of experience in heating solutions have led to a position of having or developing, in cooperation with our customers, at all times a product based on our wide portfolio.



Duct heaters used for air heating for example drying ovens, moulds and curing of rodends.



Member of:



DANISH WIND
INDUSTRY ASSOCIATION



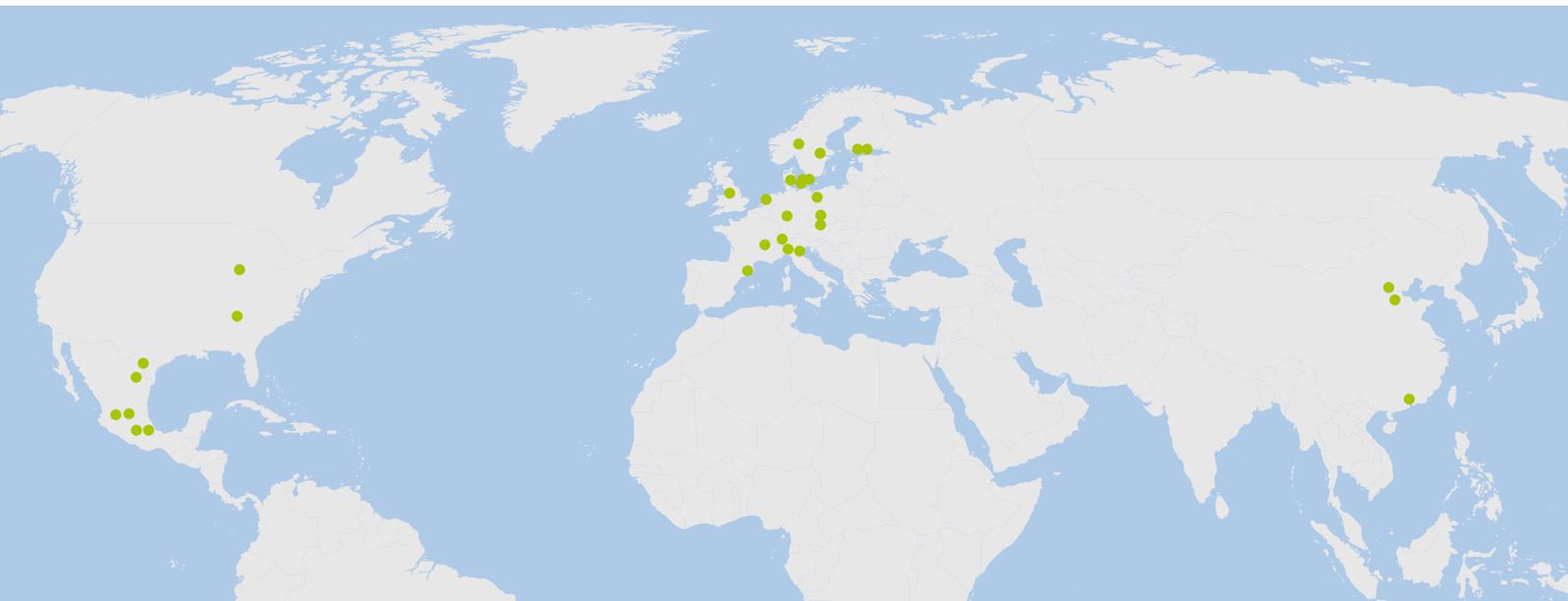
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