



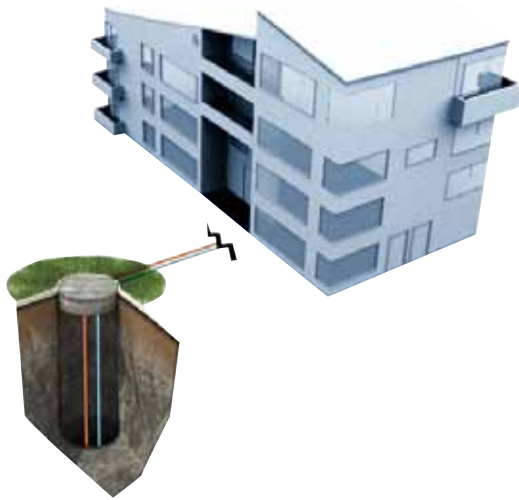
Heat pumps

for larger residential and commercial installations



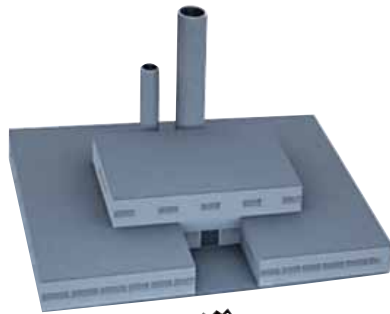
MADE IN SWEDEN

Different energy sources



Rock

The heat pump collects stored solar energy from a collector in a hole drilled into the rock. The depth of the hole can vary, depending on the heat pump selected.



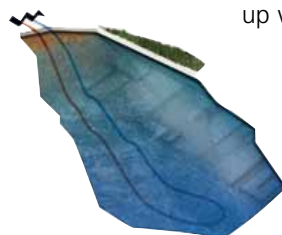
Surface soil

The heat pump collects stored solar energy from a buried collector, that is, a hose filled with refrigerant. Buried at a depth of about 80 – 100 cm, the length of the hose varies, depending on the heat pump selected.



Groundwater

The heat pump collects stored solar energy from the groundwater. Normally, there is one well for drawing up water and one for returning it.



Process heat



Water treatment plant

The heat pump recovers stored solar energy heat from drinkingwater in a water treatment plant. No collectorhose is needed. The principle is very much like the groundwater principle. The energy recovered is used for hot water production and heat production in a large industrial facility.



Industrial process heat.

The heat pump uses waste energy from process heat in an industry. With the help of a heat exchanger and a temperature control, a suitable collector temperature can be obtained for the heat pump with a high COP as a result. The energy recovered is used for hotwater production and heat production in a large industrial facility.

Docking

As many as nine NIBE F1330 can be connected together to achieve an output of up to 540 kW. It is also possible to cool via brine on hot summer days.



Places where you find heat with NIBE



The Esrange Space Centre uses ground source energy at $-35\text{ }^{\circ}\text{C}$ ($-31\text{ }^{\circ}\text{F}$).

The Esrange Space Centre in Kiruna in northern Sweden has invested over £100,000 in a ground source energy system. Energy from beneath the earth's surface is now used to heat the whole of the hotel in which the space scientists are accommodated; fifteen boreholes and three NIBE Fihgter 1330 pumps connected in series make sure that no-one has to shiver even when outside temperatures are as low as -35°C (-31°F). More information at www.nibe.eu.

- Heat pumps used 3 x Fighter 1330 (40 kW)
- Space heated 2600 m² hotel space
- Heat source 5 boreholes
- Cost saving Appr. 270,000 kW p.a.



Ground source heat pump keeps Spanish church cool in summer and warm in winter.

In Sant Andreu de la Barca, near Barcelona in northern Spain, stands the Sant Llop Church. It is a modern church, designed by the architect Oriol Florejachs. In Spain as in many other countries, maintaining the right temperature inside churches is a problem: they are often too warm in summer but cold in the winter. However, Sant Llop being a newly built church it was possible to create a solution for ensuring an even temperature all year round. More information at www.nibe.eu

- Heat pump used Fighter 1310 (25 kW)
- Space heated 380 m²
- Heat source Ground source energy
- Cost saving 72 % of calculated equivalent heating/cooling costs for a traditional system

Information about several other real estate objects can be found at www.nibe.eu

NIBE™ F1330

Perfect solution for larger and heat consuming buildings.

With its two large scroll compressors, NIBE F1330 is the ideal ground source heat pump for multi-occupancy buildings, industrial premises, churches and other large heat consuming buildings etc. The compressors collaborate and engage as necessary and give better power control, less wear and greater operational reliability.

The NIBE F1330 is a flexible product with advanced control equipment and can be adapted to several system solutions. The NIBE F1330 can give two different flow temperatures/double heat curves, for example, for a lower flow temperature in under floor loops than in radiators. The NIBE F1330 is also prepared for control of oil, gas, pellet fired or electric boilers.

NIBE F1330 is manufactured in four versions; these feature outputs of 22, 30, 40 and 60 kW.

System description

The F1330 consists of two heat pump modules and a CPU unit with a display to control the heat pump and any additional heating. The NIBE F1330 has built-in circulation pumps, making it easy to connect to the heating medium and brine circuits. The energy from the heat source is taken up via a closed collector system in which a mixture of water and antifreeze circulates. The heat source can be rock, soil, lake, exhaust air or other process heating.

Ground water can also be used as a heat source. This requires an intermediate heat exchanger. The brine emits its heat to the refrigerant in the heat

pump's evaporator. It then vaporises and is compressed in the compressor. The refrigerant, with its increased temperature, is led into the condenser where it emits its energy to the heating medium circuit.

Advantages

- The heat pump consists of two units which contain less than 3 kg refrigerant per unit
- Docking possibility – up to 540 kW achievable
- High COP – provides savings and shorter payback times
- No emissions
- High flow temperature (65°C) – means great installation flexibility
- LCD display – clear information on conditions, operation and temperature
- Programmable for climate control – cost efficient solution all year, heating and cooling
- Control unit for swimming pools – high savings

Example of area of use

- Heating and hot water for the property
- Cooling (air conditioning)
- Agriculture (pig farm, crop cultivation etc)
- Vineyards
- Waste heat
- Water works
- In conjunction with refurbishment of property
- Docking with solar systems, pellets, ventilation systems (recovery)
- Cooling water (industry)
- Schools, children's homes, churches, hotels



NIBE F1330

- COP 4,50*
- Sizes 3-phase 22,30,40 kW
- Integrated water heater No
- Compressor Scroll
- Delivery temperature 65°
- Soft start Yes
- Load monitor Yes
- Electric cartridge Accessory

Our most powerful ground source heat pump. A real power station for apartment blocks, industrial premises, churches, etc. The biggest model is 40 kW. 2 – 9 heat pumps can be connected and controlled in one system. Facility to communicate via the Internet/text message using accessory RCU.

*At 0°C for incoming refrigerant and 35°C for outgoing heat carrier temperature for the NIBE F1330-30.

Height: 1,580 mm Width: 600 mm Depth: 625 mm



NIBE F1330 - 60kW

- COP 4,50
- Sizes 3-phase 60 kW
- Integrated water heater No
- Compressor Scroll
- Delivery temperature 65°
- Soft start Accessory
- Load monitor Yes
- Electric cartridge Accessory

With its two large scroll compressors, NIBE F1330 is the ideal ground source heat pump for multi-occupancy buildings, industrial premises, churches and other large heat-consuming buildings. The NIBE F1330 is a flexible product with advanced control equipment and can be adapted to several system solutions. The NIBE F1330 is prepared for control of oil, gas, pellet-fired or electric boilers.

Height: 1,645 mm Width: 600 mm Depth: 625 mm

This brochure is a publication from NIBE. All product illustrations, facts and specifications are based on current information at the time of the publication's approval. NIBE makes reservations for any factual or printing errors in this brochure.
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NIBE AB – Heating
Box 14
285 21 Markaryd, SWEDEN
Tel. +46 433 - 73 000
www.nibe.eu

