



EXPERT NEWS #2/2012

SPORT

# NEW RULES

OPEN THE WAY FOR MORE HEAT

# CONNECTED FUTURE



# HOT CARS

ALSO NEED HEATING

HEATING INSTALLERS CAN NOW ALSO OBTAIN REFRIGERATION QUALIFICATIONS!

# 60 YEARS OF CONTINUOUS DEVELOPMENT

**IN A NUMBER OF FARMS IN SKÅNE**, pigs rooted around contentedly at the start of the 50's. Company founder Nils Bernerup exploited his success in pig farming to expand his business activities. In 1949 he founded Backer Elektrovärme (which is now the core of NIBE Element) and three years later NIBE-Verken saw the light of day. With 5000 SEK in equity, and three hard-working employees, bread bins and dustpans were made on the premises in Markaryd. Amongst the sweat and the tears, the first water heater was welded together in 1955 and the journey towards a sustained profitable company development was started.

**60 YEARS LATER** we are listed on the stock market, have made several acquisitions and expanded our product range considerably. NIBE is still at the start of the journey, but with a completely different starting platform. Regardless of fragile national economies and political breakpoints, the world today is about reducing energy consumption, improving the environment and indoor comfort and increasing the use of renewable energy. Exactly the areas that we operate in.

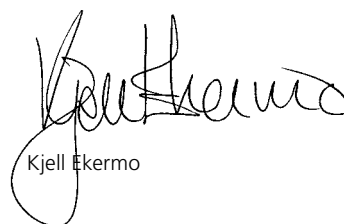
The beginning of the year showed a very clear decline in the Swedish heat pump market, with all product segments falling. A very low amount of new builds, the introduced mortgage level ceiling and a general awareness of the troubled economic environment are the main reasons. Despite a sharp decline in the largest volume area, i.e. ground source heat pumps for the residential segment, we could increase our volumes together and thus have gained market share. Fortunately, amidst the general decline, the property segment still shows a

reduced fall and the launch of our new generation of ground source heat pumps NIBE F1345 at the Nordbygg Fair was very timely.

**MANY VISITORS TO THE FAIR** showed a keen interest in our new building concept and future communication and control option with NIBE UPLINK, heat pumps that connect themselves to the Internet. An interest that was continued after the fair and many people have been in touch with additional questions and information requests. We are confident that this most advanced, yet easy to use, generation of heat pumps will have a major impact in Sweden and in Europe.

During the autumn a lot will happen that we will have to come back to. Staffan and his gang at NIBE are broadening our training programs with a course that provides HVAC installers with refrigeration expertise. The training along with the organization's certificate gives full authority to perform refrigeration installations. Marketing opportunities will increase for you with the extended product range, including NIBE SPLIT. We are generally moving towards more and more complete climate installations involving heating, cooling and ventilation.

**EARLY SUMMER IS ALREADY HERE** in all its stunning glory and we are approaching a long-awaited summer vacation. Wishing you a wonderful holiday and with our promise of continued support.



Kjell Ekermo





# HOT CARS ALSO NEED HEATING!



Outside Tierp – sixty kms north of Uppsala – one of the most exciting event facilities in Sweden has emerged in record time.

The drag racing track with more – Tierp Arena.

**THE MOST VISIBLE** in the way of buildings are the open stands for 30,000 people - but appearances are deceptive! There is so much indoor space that it takes 10 or so heat pumps to heat and to cool the various facilities.

The build in Tierp has been special in many ways. Not just because what has been built is extremely unusual - a drag racing track with conference facilities and lots of different spaces. But also because it has been built extremely quickly.

“It was started in October 2010 and races were taking place the following June!”

Explains Krister Johansson from Infjärdens Värme AB, who project managed all the HVAC at Tierp Arena.

What you see when you come to the Arena is the huge horseshoe-shaped stand in laminated timber. Below it is retail space, toilet facilities and much more. The actual “bend” in the horse

shoe is built on two floors, where the race cars can drive underneath while corporate guests and others can see the races from above, from inside the conference rooms.

“We have installed two NIBE F1330 -



40 in this part”, explains Krister.

“And an important feature is that we connected free cooling via fan convectors. There are large areas of glass and it can get very hot on a summer day!”

Another NIBE F1330 of 30 kW is

found in the team building, where up to 2500 team members can shower, eat and use the toilet facilities.

Most of the spectators, however, will remain outdoors. But 30,000 visitors will need to go to the bathroom ... Therefore, six bathroom sections with 20 toilets each have been built under the stands. Each section is heated by a NIBE F370 exhaust air heat pump.

“We have probably gone through most of NIBE’s range”, says Krister. “Including a number of water heaters for the various campsites.”

“Every building here is different from the others and being able to combine ground source heating with solutions that do not require boreholes has been a great advantage”

“This is evident in the two buildings located some distance away from the main building, at the entrance to the area, one of which receives the spectators and the other the participants.”

“Here we chose to install a NIBE SPLIT in each building. A clever solution that gave us economic heating and air conditioning in one.”

Whether you are interested in motor sport or not – if you happen to be passing, drive in and take a look at Tierp Arena. It is a hot place – in more ways than one...

# NATIONAL BOARD OF HOUSING

- new rules open the way for more heat pumps!

## P-MARKED

All owners of district heating can place conditions on the connected equipment. It creates a risk of arbitrariness and difference between municipalities with regard to the approved equipment.

The Swedish District Heating Association has developed the "P mark" which guarantees that a product meets the requirements. The NIBE FJVM 220 district heating module is one of the first of its kind to be awarded this mark.

## Heating installers can now also obtain refrigeration qualifications!

This autumn NIBE is expanding its training program radically. It will be possible for HVAC installers to obtain personal refrigeration qualifications on two occasions during the autumn. This, together with business certification for refrigeration, will give a company the legal right to perform complete refrigeration installation

**WILL WE SOON BE TALKING** about climate installers instead of heating installers?

More and more people believe so. In many parts of the world, it is already as much about work with cooling as with heating. In Sweden, pipe installers are coming into contact with refrigeration and refrigerants more and more frequently. Therefore, NIBE is now expanding its training program with a course that gives authorisation to work with these media.

"We became aware of this when we launched NIBE SPLIT last year", says Staffan Fritiofsson.

When installing NIBE SPLIT the outdoor unit and indoor unit are connected together by refrigerant lines. This must be done by a person with refrigeration certification as it involves handling a refrigerant. Many HVAC installers and HVAC companies in Sweden do not

currently have this qualification.

"More and more people in the industry are trying to develop as many skills as possible in their companies. This applies to electrical skills, as well as refrigeration qualifications. It not only provides an opportunity to take on new assignments but also means not having to rely on external help. Most importantly, this means that you can schedule jobs without having to consider when other companies have time to help.

The course that NIBE is now introducing is held at the company's own plant in Markaryd and lasts for a week, concluding with the award of a personal refrigeration certificate. With the personal refrigeration certificate a company can then obtain a business certificate and is then fully qualified to perform refrigeration installations.

The first four days will cover practical and theoretical aspects.

During the practical sections participants learn how to handle equip-

We have barely had time to learn the regulatory framework behind BBR 16, 17 and 18 and now BBR 19 has arrived. There are now more stringent requirements on energy consumption, even for houses that are heated by electric heating.

#### THE LATEST BBR REQUIREMENTS

have resulted in increasingly stringent requirements on all houses heated by electric heating, and therefore also those heated by heat pumps. For those that are heated by bioenergy or district heating, the rules have remained unchanged. Until now.

Something that bodes well for anyone working with heat pumps.

Generally speaking, the new rules have reduced the permissible use of energy for non-heated houses by 20 kWh per m2 per year. Regardless of which climate zone the building is found.

In climate zone III the new maximum energy consumption is 90 kWh per m2 per year, or 13,500 kWh for a 150 m2 house. A reduction of 3000 kWh. Nevertheless, this is still about 35 kWh per m2 above the values applicable to an electrically heated house.

Previously houses that were heated by district heating for example needed some form of supplement. Most often FT X - ventilation air recycling.

"The limit for district heating in combination with an FT X-ventilation unit is usually said to be 80-110 kWh per m2 per year," says Richard Carlholmer at NIBE.

This means that most houses passed the old rules with such a solution

#### DISTRICT HEATING PLUS EXHAUST AIR HEAT PUMP

But with the new rules, things will be different and most will have to look at other solutions.

Richard envisions that more will increasingly combine district heating with exhaust air heat pumps.

"We have already made a number of dimensionings where this solution has

been selected," says Richard Carlholmer at NIBE.

"If you combine a NIBE F370/F470 with district heating module NIBE FJVM 220, consumption drops another 10 - 20 kWh per year per m2. One then passes the new rules with a good margin - regardless of climate zone

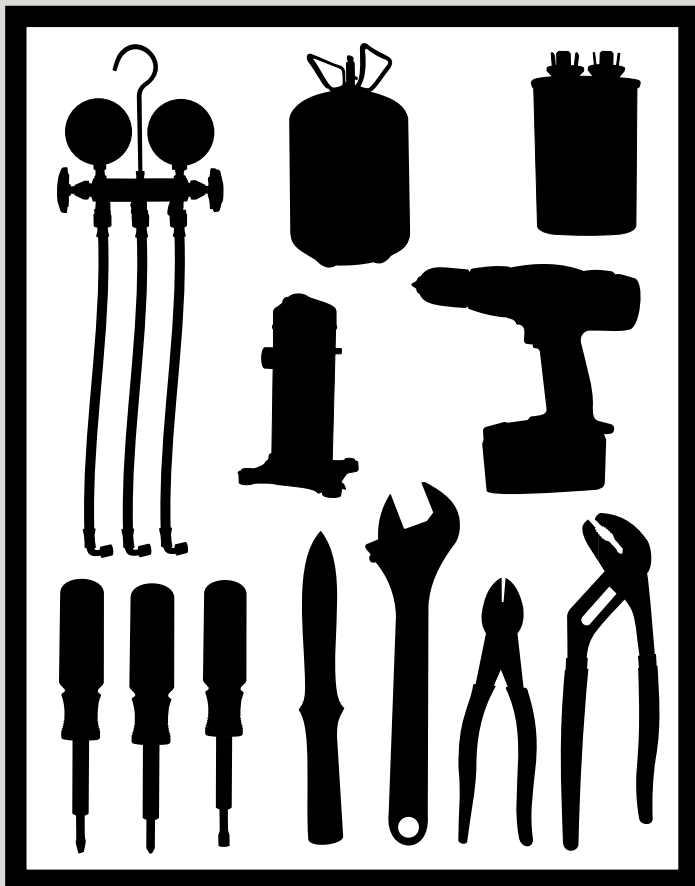
The major consequence could therefore be that people stop talking about installing "District heating OR a heat pump" and that "District heating AND a heat pump" will be more common.



NIBE FJVM 220.



NIBE F370.



#### REFRIGERATION CERTIFICATION TRAINING

**Course aim:** To give the course participant Refrigeration qualification and certification according to SWEDA C

**Course duration:** 5 days

**Time:** week 38 + week 46 (prel)

**Location:** NIBE Marketing centre, Markaryd

**Cost:** 14,300 SEK

**Application:** Mail to [staffan.fritiofsson@nibe.se](mailto:staffan.fritiofsson@nibe.se)

ment such as vacuum pumps and manometers. They also become familiar with different refrigerants and their properties - with and without glide.

During the theoretical sections emphasis is placed on the applicable rules and regulations.

On the fifth and final day, it's time for the practical test, which is like a driving test. There are a number of practical steps to take under the supervision of a practical examiner. One then has to show how to handle refrigerant properly, how to empty a system correctly, how to perform a vacuum suction, how to fill a system and commission it. Amongst other things...there is also a theoretical test from the accredited certification body for refrigeration, INCERT AB. Those who just need to renew their certification can do the theory test for this during day five.

"It's great to be able to offer this course", explains Staffan.

"I think this kind of broader skill is the key to increased profitability for many."



# New indoor module means that more people are choosing air/water heat pumps

An increasing number of those choosing new heating invest in air/water heat pumps. This is evident at NIBE in Markaryd where they account for an increasing share of sales. The increased interest is due not least to the development of new indoor modules.

**AN AIR/WATER HEAT PUMP** always consists of two units. The outdoor unit in which heat is collected from the surrounding air, and the indoor unit with the controls and water heater.

"It is the indoor unit that users are in contact with most", says Richard Carlholmer at NIBE.

"This is where the entire heating system is controlled, and is often the part that "is" the heat pump for the customer."

## NIBE VVM 500

The VVM 300 has been standard on the indoor modules for NIBE's air/water heat pumps. But now there is a completely new module, VVM 500, which is a part of 'the new generation of heat pumps'. The same modular construction, design, and not least unique display, as ground source heat pump NIBE F1245. And, with the possibility of remote control via SMS or smartphone.

"NIBE VVM 500 can be connected to either NIBE F2026 or our "professional"

model NIBE F2300 - from 6 to 20 kW. It has the same colour display with icons as our new ground source heat pumps and is easy to use. It also has an excellent hot water capacity. The 500 litre tank has an internal layering panel that separates the part where hot water is prepared from the remainder of the heating water. It has an integrated 9 kW immersion heater but can receive the entire 25 kW from an external boiler.

VVM 500 is supplied prepared for control of two or more climate systems, of pool heating and to receive heat from solar coils.

"Different customers chose NIBE VVM 500 for different reasons", explains Richard.

"We have customers that have large buildings with perhaps a couple of flats. But also those who simply want future flexibility".

"Whatever the reasons, we have noticed that completely new groups are now seeing air/water heat pumps as an alternative. Thanks to the new indoor unit.



"Electricity will not get cheaper in the future, so I wanted to take this opportunity to invest in the sun's free heat while we were building", says Joakim Wulf in Hjärnarp. Joakim heats 270 sqm using a NIBE F2026 air/water heat pump, 3 x 24 pipe IntelliHeat solar panels and a NIBE VVM 500 Indoor unit.



## Success AT NORDBYGG – AGAIN!

Without sacrificing our Småland humility, it feels like it's getting a bit of a habit...

This year there was a lot of attention around the new ground source heat pump, NIBE F1345, and the new system for remote control via broadband – NIBE UPLINK.



The launch of NIBE's new "remote control system" is imminent. NIBE Uplink for the NIBE F1345 ground source heat pump will be launched in days.

But – there are several ways of checking heat pumps – without being in the same room... Professional News teaches you the difference.

#### **NIBE RMU 40: Remote Monitor Unit**

RMU is the simplest form of remote control, but also the one with the most possibilities.

RMU is simply an extra display with control buttons that are connected by cable and can be placed anywhere within "cable distance".



A good solution for anyone who has a heat pump in the basement, but who wants to control it from upstairs. Or for those who have several heat pumps at different locations in the same building, but who want to control and monitor them from one place.

#### **NIBE MOD BUS 40**

If you want to integrate a heat pump in "smart homes" or complex building control systems, the MOD BUS 40 is the one

for the job. It integrates NIBE F1345 in a so-called BMS (DU V). Everything is connected via an RS485 connector with four cables and is ready to go!

#### **NIBE SMS 40**

SMS 40 allows you to ask questions and give commands to your heat pump via SMS. You can access almost all parameters, and as a bonus, you can even receive an indication when the power goes down because the transmission is carried out with its own SIM card with battery backup! If you want simpler control, an app for Android telephones is available that sends an SMS in the background ....

#### **NIBE UPLINK**

NIBE UPLINK is the latest addition in terms of remote control and remote management of heat pumps. An Ethernet cable connects the heat pump to broadband, which connects the heat pump to the NIBE Uplink server and can be administered and monitored in detail by all authorised persons who have some sort of internet connection - for example an iPad in a caretaker's car... Alarms are sent automatically. A perfect solution for those with a lot of units to monitor.

# THERE'S SO MUCH HEAT OUT THERE...

– Just waiting to be collected

Some 30 years ago the Swedish company NIBE started to manufacture ground source heat pumps. What was then seen as a novelty, is today the primary source of heating in new houses in large parts of Scandinavia. Heat pumps have also played a major part in Sweden reducing its dependency of fossil fuels for heating by close to 80%.

And as someone said – if it can heat a house in Scandinavia, it can heat a house anywhere!

**TODAY NIBE IS A MAJOR** player in the heating industry with an annual turnover of some € 900 million and more than 6,000 employees on three continents.

A large part of this is the result of the success of ground source heat pumps. With the aid of a ground source heat pump, solar energy stored in the ground can be collected and used to heat homes and commercial buildings.

Warmth builds up underground from

the first days of spring when the surface of the earth starts to thaw, to high summer, when the rays of the midday sun penetrate deep down into the ground. By the time the autumn leaves are falling, there's enough energy stored in the ground to heat up any house throughout the coldest winter. A heat pump collects and upgrades this naturally occurring warmth.

Even a wet and cool summer can still provide enough energy to maintain a

comfortable indoor temperature in the coming winter.

If at any point it gets too hot inside the house, the same system can be used for cooling.

Drawing on the lower temperature underground (between 4 and 12 C° ) passive cooling also exploits nature's own resources – simply for cooling instead of heating.

It's amazing, but true.

## THREE KINDS OF HEAT PUMPS

Heat pump is a word with many different meanings. Today NIBE produces three kinds of heat pumps.

### Exhaust air heat pumps

An exhaust air heat pump ventilates the building and recovers the energy in the warm air, reusing it to warm up your sanitary water and fuel a central heating system. Ideal for heating domestic premises and tap water.

### Ground source heat pumps

Drawing heat from surface soil, bedrock or the water in a nearby lake, this is a great option for heating houses, multiple-unit properties and other larger buildings. Available with or without an integrated water heater.

### Air/water heat pumps

These pumps extract heat from the ambient outside air. In contrast to simpler types of air-to-air heat pumps, they are connected to the building's heating system and are able to produce both heat and hot water.

## HEAT PUMPS MEANS RENEWABLE ENERGY!

The 20/20/20 European directive imposes compulsory targets on the EU's 27 member states, specifying that 20% of energy consumption must be met by renewable sources by 2020. Since ground source heat pumps are now classified as a renewable energy source their installation will help member states reach this ambitious target. And in many cases, local or regional authorities are offering home owners subsidies to switch their existing.



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