

HN Group benefits from high temperature water

The HN Group A/S company is one of the leading sub-contractor manufacturers in the field of plastics in Denmark. It is based in Billund which somehow is known as the Danish plastics industry's "Silicon Valley", being for example the home to the Lego headquarters. For some time now, the company uses equipment from the WITTMANN Group, including TEMPRO plus D high temperature equipment.

Engineer Kasper Hageemann

The HN Group was formed out of three previously independent companies by mergers and acquisitions, the oldest of them dating back to 1941. Today, the HN Group is a privately owned limited company. Today's owner and Chief Executive Henrik Nicolaisen had founded one of the previously independent companies in 1991.

Since 1986, WITTMANN BATTENFELD has been supplier to these previous companies. At present, the oldest BATTENFELD injection molding machine still in use dates from 1994, driven by drive-on-demand hydraulic technology, which during the past 23 years has saved a lot of energy. Over the years, HN has purchased a comprehensive number of injection molding machines, CNC robots, temperature controllers, material dryers, and material blenders from the WITTMANN Group.

Today, the HN Group's injection molding department consists of more than 50 highly automated production cells. The finished parts – high-volume, low-volume, prototype series, and zero series – are sold to the Danish industry, and are exported to other European countries. HN manufactures many complex parts, including 2-component, 3-component, and insert-molded parts. The customers are located in the medical and electronics sector, in the automotive, food, and toy industries, as well as in the energy business (wind, solar, gas, water). Some of them must rely on just-in-time delivery.

Partnership with the WITTMANN Group

In Denmark, the WITTMANN Group is represented by Wiba Tech ApS in Fredensborg. Lately, HN has purchased a large number of WITTMANN TEMPRO plus D180 mold temperature controllers from Wiba Tech. These temperature controllers enable mold temperatures of up to 180 °C, using water as heating medium.

We met Allan Hansen, the HN Group's Sales and Marketing Manager, and the Purchasing Manager, Kim Sørensen. We asked them about their WITTMANN TEMPRO devices, and why they use now water temperature controllers instead of units using oil as the tempering medium – apparently a major change that had been made.

Why is high temperature necessary?

Allan Hansen:

Processing advanced raw materials like Ultrason, Fortron, and Peak, you need mold temperatures above the water boiling point. Formerly, this was possible only by using thermo-oil as heating medium. Using hot oil has some obvious disadvantages, using hot pressurized water instead is much better. Just take the fact that the specific heating capacity of water is more than twice the heating capacity of oil. Reaching the appropriate temperature, and changing it, can happen much quicker and with more accuracy when using TEMPRO plus D180 water temperature controllers.

Which challenges do you see, using hot water under pressure?

Kim Sørensen:

There are two of them. Let's talk about the safety first. Our staff is well-trained, and they know how to deal with pressurized water. In regard to this, we have never had any problems. The second point is rather complex, but is solved by the cyclic medium exchange function of WITTMANN TEMPRO temperature controllers. Higher temperatures and increasing pressure lead to water extractives that tend to damage the technical components. Cyclic medium exchange counters this effect. A successive water exchange takes place that is executed every ten minutes for a short term of half a second only. A magnet valve opens and adds a small amount of fresh water, and the same amount of water is discharged via the cooling water outlet simultaneously. Thus, in the course of ten hours, the water is changed completely, without disturbing the process.

How does HN Group see WITTMANN BATTENFELD as a supplier?

Allan Hansen:

The reason for our long-term mutual customer/supplier relationship is from our point of view simply based on positive experience. We see WITTMANN BATTENFELD as a decent and trustworthy partner and supplier of quality products.

Kim Sørensen:

We know that WITTMANN BATTENFELD supports us professionally in regard to sales counseling, spare parts supply, or preventive and ad hoc service respectively. WITTMANN BATTENFELD understands that we are in need of quick response at any time.

For the future, HN Group considers the WITTMANN BATTENFELD *SmartPower* injection molding machine. This machine completely covers their needs. Due to its servo drive and unique KERS technology, it offers a lot of additional advantages: innovative design, durability, minimal need for maintenance, and low energy consumption. Above that, every WITTMANN BATTENFELD machine comes with the advanced, user-friendly and highly integrative UNILOG B8 machine control.

Allan Hansen and Kim Sørensen also mention the WITTMANN BATTENFELD "one-stop shop" concept, providing everything from one source. Finally, they refer to the machines' control as a major advantage, being able to control the injection molding machine as well as all the peripheral devices, using only the UNILOG B8 machine control. It is even made possible to overlook a complete production cell using a smartphone, or a tablet, from anywhere in the company premises. These advantages altogether may tip the scales for the WITTMANN BATTENFELD *SmartPower* technology in the future.

Pictures and captions



Insert-molded part, produced at the HN Group's plant in Billund, Denmark.



One of HN Group's new TEMPRO plus D180 high temperature water controllers (right, in the background), connected to a WITTMANN BATTENFELD injection molding machine. This production cell also comprises a WITTMANN CNC robot on the machine and a WITTMANN material dryer (in the foreground).



Purchase Manager Kim Sørensen in the HN Group's injection molding department.
