

## New Cleanroom for Multin Hittech



In order to provide you with a better service, and to prepare for further 'clean' activities, Multin Hittech has invested in an entirely new, cleanroom that complies with the most recent standards for the manufacture of mechanical products. At the same time, the available floor surface has been maximised to take advantage of the new building's potential.

This is all a result of Multin Hittech's move in 2005 from the address in Zoetermeer to Oostsingel 209 in Delft, and of the move of production activities from 's-Gravezande, where a cleanroom formed an important manufacturing resource.

### Interlock

The new cleanroom and the goods locks conform to ISO-class 7 for particles. ISO-class 8 applies to the changing room. An important feature for maintaining desired particle levels is the protection system on the doors: interlock. This system prevents both lock doors being opened at the same time, enabling the air to be refreshed 15 times every hour using an advanced filter system that cleans the air. Besides particle control, climate control is also essential. A cooling system, in combination with a steam humidifier, maintains the temperature and humidity within the required limits under all

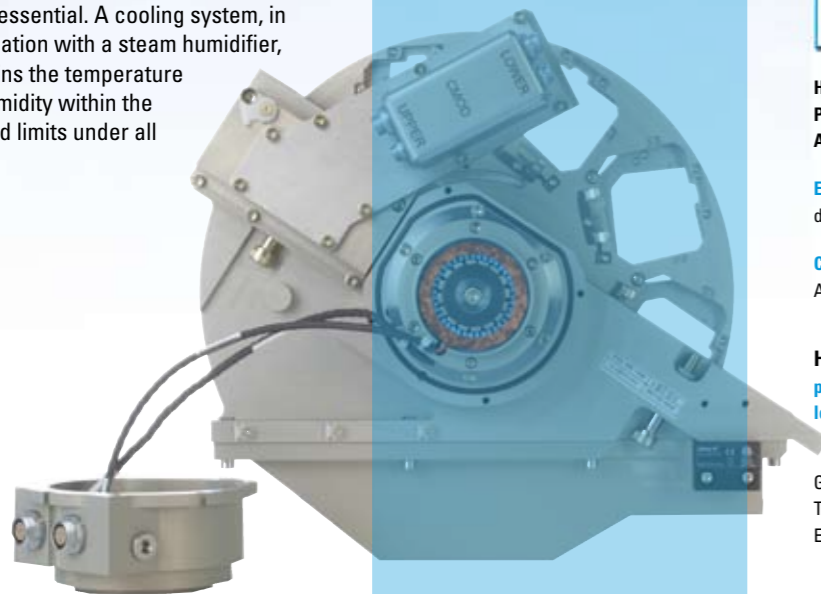
climatic conditions existing outside the cleanroom.

### Lock chambers for Goods

A further improvement on the old situation is the separation of the goods flows through the construction of an incoming and outgoing goods lockchamber. The incoming lockchamber incorporates a small storage area where the stock that is about to enter the cleanroom is placed. There is also a machine for cleaning components when necessary. In the outgoing lockchamber, finished products are packed for transport. The packaging selected prevents contamination of the product. This lockchamber even has a small mobile crane for handling larger and heavier products. With this new cleanroom, Multin Hittech is ready for the future.

### A few cleanroom dimensions:

Surface area:  
Cleanroom: 141m<sup>2</sup>  
Changing room: 9 m<sup>2</sup>  
Incoming goods lock: 15.6 m<sup>2</sup>  
Outgoing goods lock: 13.6 m<sup>2</sup>



## Hittech Update

Gieterij Nunspeet Hittech  
PRINTING 3D PLASTIC PATTERNS:  
THE ALL-IN-ONE OPTION

Gieterij Nunspeet Hittech has recently carried out successful tests for printing 3D plastic patterns. This enables the rapid printing of a pattern that can be used as a hand-formed pattern. The manufactured plastic pattern can therefore be used both as a visual pattern and for producing a series of castings. Furthermore, the pattern can be used as the basis for the pattern plate for series production.

Using a 3D CAD file, an STL file is created that is then sent to the printer. This works like a sort of inkjet printer that prints layers of plastic rather than ink. The coating thickness is about 0.3 mm, and the plastic pattern's form tolerance is about 1.2 mm. This is sufficiently accurate for ensuring that the standard ISO 8062, CT9 casting tolerances are observed. This has proven an excellent technique for less complicated components. We are investigating whether this method could also be applied to complex castings.

Beginning of November, Gieterij Nunspeet Hittech will have such a machine in operation.

Gieterij Nunspeet Hittech develops aluminium pump  
QUALITY ENHANCEMENT AND LABOUR SAVINGS

Gieterij Nunspeet Hittech has been working for some time on a solution for transporting liquid aluminium. Many tests have been carried out that have succeeded in pumping material of 750° to 800°C. However, the problem was that the quality of the material was too badly affected. This was caused by gas-absorption in the liquid aluminium, which leads to small gas bubbles in the casting and results in lower tensile strength and elasticity. Seals might also experience leakage problems on parts under pressure or vacuum.

But Gieterij Nunspeet Hittech has recently succeeded in developing a pump system that even improves the quality of the material. After having degassed the material, this pumping system gives a further 10% post compression, enabling casting with continually extremely high-quality material.

This pump can transport up to 5 tons a day. Something which up to now would have had to be done manually.



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## Hittech NL

The News Letter of Hittech BV, The Netherlands

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## Kemetech Hittech enhances efficiency



To ensure continued series manufacturing in the Netherlands, unit costs will have to be forced further downwards. Since labour requirements largely determine these costs in the 'conventional' metal industry, solutions must be sought in the area of greater automation and increasing production capacity without having to employ extra personnel. To this end, Kemetech Hittech has developed an automated production cell with a 24 hour-a-day milling capacity.

In the current situation, milling machines are loaded and unloaded manually. This costs time, causing the machines to be unproductive for long periods. After all, someone must always be present to mount products and start the machine. This time-loss and machine down-time were the most important reasons for automating the cell.

### Robot loading and unloading

The new production cell can automatically load and unload products and swap products during

operation, allowing production to continue unhindered. At a fixed time, a worker loads the feed system with raw products for different series. This is done per series. The number of products that are required for each sort is entered in the cell's computer. The cell is then started and, using its vision system, identifies the required product on the conveyer. The milling machine selects the appropriate processing programmes and the robot then positions the necessary tools and clamps in the machine.

### Completely processed final product

The robot swaps its grab and places the first raw product in the first clamp, which then closes. The robot now leaves the machine and processing begins. Once this is finished, the doors open and the robot grabs the product, turns it over two axes (one of 180° and one of 90°) and places it in the second clamp. The robot then places a new product in the first clamp and begins milling again. The machine releases completely processed final products. The robot washes the product and places it on a discharge system.

The production cell has been developed for series consisting of 10 to 100 units. The basic material is rectangular sawn aluminium with dimensions of 50 x 30 x 10 to 160 x 120 x 50mm<sup>3</sup>.

## C O L U M N dr ir C.P. Heijwegen – managing director Hittech BV

### Opportunity or threat?

Original manufacturing equipment companies are increasingly outsourcing production and operating further as an intermediate input/output company (head-tail). This development has been going on for years, but appears to be accelerating.

The world is so complex and is developing so rapidly that every business is being forced to consider which strategy to follow, its strengths and weaknesses, its critical and non-critical success factors, its market position, its core competences and the crucial conditions for survival.

Hittech sees these developments as an opportunity. An opportunity to clearly fulfil a partner role and to form an extension of the partner/client's business. This is how we have expressed this in our strategy. Hittech is your partner, active in development, production and supply-chain management. This makes us very valuable to product companies, simply because this is our core business. We are masters of our field. Such a synergy must of course be accompanied with clear agreements and transparent processes. And above all with mutual trust, outstanding communication and acceptance of each other's methods. You can rest assured that this approach is crucial to us.



More than 80 year's experience at MPP Hittech

## Machining and wet coating: a true art

If there is one company that has turned machining and wet coating into a true art, it is MPP Hittech. In fact, this specialist already has 80 year's experience in Delft, a town that has always hosted companies that lead the pack in the development and manufacture of complex technical systems and instruments for diverse applications and markets.

MPP Hittech was founded in 1990 through the merger of Optische Industrie De Oude Delft and Enraf Nonius which created Delft Instruments. In 2000, MPP was acquired by the Hittech group.

### Exceptional craftsmanship

MPP Hittech's customers have always operated in market segments (like medical and optronic industry) that demand high quality, craftsmanship and technical creativity, a fact that has clearly shaped the company's foundations, even in the new markets that have been entered over the years. And this despite the many significant changes that both MPP Hittech's customers and their products have experienced over the last 80 years. When it comes to complex processes that frequently test and reach the boundaries of technological capabilities,

customers will always beat a path to MPP Hittech's door.

### Specialisation strategy

Besides continuing to ensure quality and craftsmanship, the challenge in recent years has been to stay one step ahead of the increasing demands of a changing market. After all, reliability of supply, flexibility and short run-times have become just as important as the existing foundations. The Hittech group's acquisition played an essential role in this, and the groups specialisation strategy has enabled MPP Hittech to concentrate on its two core competences:

- Machining relatively soft materials, such as aluminium, brass and plastics.
- Wet coating of products for highly specialised applications.

This strategy has enabled MPP Hittech to dramatically simplify its organisation and processes, and enables more focussed investment in people, machines, measuring equipment and CAD/CAM systems.

### Network

MPP Hittech now outsources divested activities to other companies within the Hittech group or its select network of suppliers. The customer is therefore still able to approach MPP Hittech with complete product packages, and MPP Hittech is better able than ever to outsource work to specialist parties. This gives the customer access to the entire Hittech-group network without having to approach each company separately.

Moreover, the customer is assured of MPP Hittech's quality certification, something they value very highly.

### ERP system

To keep internal and external logistics on the rails, Hittech has recently invested in a new ERP system, Navision. Eventually, all the companies in the group will have access to the system, but MPP Hittech is the first and converted to this system in June. More investments will also be made in technical areas. Not just in capacity, but also in the expansion of the technical possibilities, for example in the area of five-axis simultaneous milling. MPP Hittech will be purchasing a third milling machine equipped with a loading robot, which will expand production possibilities even further.

Multin Hittech

## Complete range of services now available for medical products

Multin Hittech is now able to support medical clients with its complete range of services on the basis of Multin Hittech's own quality systems. Multin Hittech can even supply a product under its own CE responsibility. The customer then functions as exclusive distributor, and Multin Hittech strictly adheres to its strategy of refraining from supplying own products to the market.

Since the beginning of 2004, Multin Hittech has placed the medical sector at the forefront of its marketing strategy. This led to certification according to ISO13485-2003. This standard places demands on quality management systems for the design and production of medical equipment. In 2005, we were certified by KEMA Quality BV. Multin Hittech was also active in the medical sector prior to 2004, but

focussed specifically on assembly contracts. During 2004, this was expanded to development contracts. Since the beginning of 2006, the first medical products developed and assembled by us entered the market.



1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008

Growth of Multin Hittech in the medical market