

Nolato Magasin

No 29 | November 2018

Shenzhen, China

Theme: Expansion

Team receives recognition | Third major expansion in Hungary
Diversification and cooperation in Malaysia | New Shenzhen plant
Expansion in Switzerland | New EMC plant in Győr
Increased capacity in US | White plastic can be green
Virtual prototyping saves time, money and lives

Expanding at lots of sites around the world

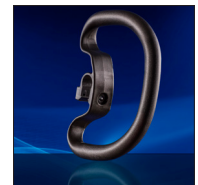
Many of Nolato's units around the world have been developed over the past year to increase capacity.



➤ Find out more on pages 4-11

Gas in moulds to create hollow products

Pumping gas into a mould allows hollow-body products to be created as a single piece.



➤ Find out more on pages 12-13

Green polyethylene with a smaller carbon footprint

Polyethylene from sugarcane is a great way of manufacturing pharma packaging with a smaller CO₂ footprint.



➤ Find out more on page 13

Digitalisation is making us even more efficient

Digitalisation is part of Nolato's day-to-day work and can be found everywhere that it creates customer value.



➤ Find out more on pages 14-15

Expansion, sustainability and digitalisation



Christer Wahlquist
President & CEO

In the beginning, 80 years ago, it was just Torekov, a little village on the Bjäre Peninsula in south-west Sweden.

Torekov still plays an important role in the Nolato Group as the location for two of our development and production units. But we're now present

on three continents and have development and production facilities in Skånes-Fagerhult, Hallsberg, Götene, Ängelholm, Hörby, Lomma, Gothenburg, Trollhättan, Beijing, Mosonmagyaróvár, Negoiesti, Newcastle, Portsmouth, Shenzhen, Győr, Pengang, Baldwin, Degersheim, Stargard and Suzhou.

Nolato is constantly growing and expanding in lots of locations to create additional capacity and the right geographical offering for our customers.

This issue of Nolato Magasin provides some examples of our ongoing expansion around the world. Expansion that is necessary to provide our existing customers with the resources they want. And to create capacity for continued growth.

You can also read about our successful trials to manufacture pharma packaging from plastic made from sugarcane instead of oil. And what we're doing to manufacture hollow, and consequently lighter, products for customers.

We also look at how Nolato is managing the digital transformation that we hear so much about. We're doing this in the same way as everything else in our business; we're using those things that create value for our customers and that make us better, faster and more efficient.

Welcome to a new issue of
Nolato Magasin!



Jimmy Wallin and Thomas Lindberg, Senior Manager Marketing & Sales and Technical Manager respectively at Nolato Polymer, receive the award from Husqvarna President Kai Wärn.

Nolato Polymer team earns accolade from Husqvarna

At Husqvarna Group's annual global supplier day, held this year in Malmö, the Entrepreneurial Award went to a team from Nolato Polymer: Jimmy Wallin, Senior Manager Marketing & Sales, and Thomas Lindberg, Technical Manager.

Kai Wärn, President and CEO of Husqvarna Group, presented the award at the supplier day dinner:

"This team has distinguished themselves by creating and generating value above and beyond the regular partnership. Combining passion, professionalism and commitment, this team is a shining example of what can be achieved with the right mindset."

"In true partnership, Husqvarna has continuously challenged this team and this

team has truly accepted and embraced the challenge. Besides regular business development and continuous improvement activities, this team oversaw the effective reallocation of business from other suppliers. This particular project was managed under tremendous time constraints and without any interruptions."



Our magazine is produced for our customers, shareholders and employees, and anyone else with an interest in the Group.
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Nolato Plasttechnik receives Brose award

Gothenburg-based Nolato Plasttechnik produces a number of plastic products for Brose, one of the world's leading automotive industry suppliers.

Nolato Plasttechnik's assignments include the production of cooling fans for Volvo Cars' new series of models.

Nolato Plasttechnik received the Key Supplier 2018 award at a ceremony held at Brose's headquarters in Coburg, Germany.

"Brose has an evaluation system that uses a number of fact-based meta-indicators," explains Christian Meding, Senior Marketing and Sales Manager at Nolato Plasttechnik.

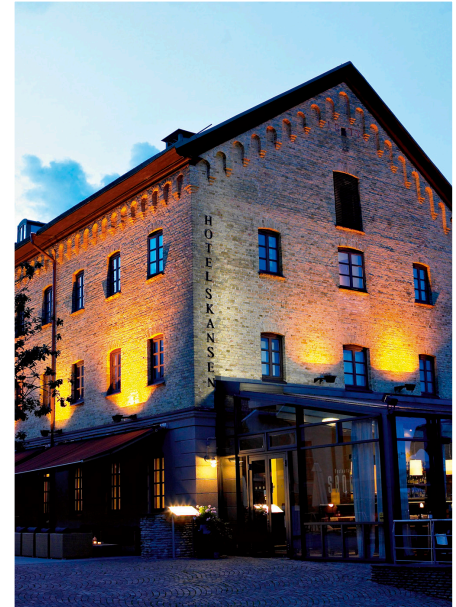
"We qualified for the Key Supplier 2018

award under this evaluation system, which doesn't involve any interpretation or personal assessment."

Nolato Plasttechnik has supplied at above expected levels for 12 months and has maintained good quality with no returns. Projects have kept to schedule, and order management and communication have worked seamlessly.

In addition, Nolato Plasttechnik has been proactive in including production planning buffers under demanding supply conditions to manage high-volume peaks.

"We're proud to receive this award," says Christian Meding.



Medical Camp will be held at Hotel Skansen in Båstad, Sweden.

Digitalisation is theme for Medical Camp 2019

The 2019 Medical Camp will be held in Båstad, Sweden on 13 June 2019.

Interesting speakers will cover topics such as digitalised production, the opportunities provided by virtual prototyping, and longer-term changes in medtech. You can learn from – and be inspired by – other customers, suppliers and influencers, and explore what digitalisation means for rapid new product development. Attendance is free, you only pay for your hotel room, but please reserve your place as soon as possible by contacting your local Medical Solutions sales representative.

The theme for 2019: Digital transformation

The medtech industry is digitalising faster than anyone could have predicted, and the process is still accelerating. IT is fundamentally changing the industry everywhere, from new product development to time to market and improved patient safety.

For any management group focused on growing business and increasing long-term profits, adapting to digitalisation and exploiting its opportunities requires well judged decisions.



The award from Brose was presented at its headquarters in Coburg, Germany. From left to right: Horst Wendler, Brose Plastics Purchasing Manager; Magnus Hettne, Nolato Plasttechnik Managing Director; Eirk Merboth, Brose Plastics Purchasing Manager; Christian Meding, Senior Marketing and Sales Manager at Nolato Plasttechnik; and Bernd Eichhorn, Brose Director of Purchasing.



New press line at Nolato Lövepac ensures quality

Nolato Lövepac has invested in a new press line to further strengthen its position as a leader and value-adding cooperation partner in punched gaskets. The new investment extends our customer offering with efficient quality assurance.

"The press line allows us to manufacture larger components using the company's unique quality assurance method for rubberised metal gaskets," notes Marketing and Sales Manager Jesper Johansson.



Nolato's plant in western Hungary has been significantly extended in recent years. The facility manufactures items for both Medical Solutions and Industrial Solutions.

Continued development in Hungary

Third major expansion in six years provides even better opportunities

Nolato's unit in Hungary has seen continual growth over the past 10 years. The company has now increased capacity once again with a new production hall.

In Mosonmagyaróvár, western Hungary, around 20 km from the border with Austria and just off the motorway between Vienna and Budapest, is one of Nolato's largest production units.

Nolato has been present in Hungary since 2000 and the Mosonmagyaróvár plant has been constantly developed over

that time. It's a large site with around 700 employees working on production for both Medical Solutions and Industrial Solutions.

Separate workflows

The workflows within Medical and Industrial are kept completely separate and the



environment is fully adapted to creating the optimum conditions for each business area.

Third major expansion

In 2018, the facility underwent further significant development. It's the third major expansion in six years and the aim has been to create even better opportunities to meet key customers' efficiency and quality requirements.

Efficient production environment

"We've expanded to create an efficient production environment for a new demanding customer project," explains Bart Nolden, Vice President Production

and Technologies at Nolato Hungary. "The project comprises a large number of components for a medical device."

The new building stands at 12 metres high, housing a production area of 1,800 square metres with a controlled environment and 1,200 square metres for technology and personnel.

Highly energy efficient

"The production hall is equipped with automated raw material systems and built to be highly energy-efficient," says Maintenance Flow Manager Szép Károly.

The new section uses only LED bulbs, which cuts electricity consumption for lighting by 75 percent. The process cool-

ing machines have been fitted in the ceiling to make better use of the production space. Using outdoor air for cooling during the winter half of the year saves up to 20 percent of the energy required for cooling.

Prepared for the future

"We have also designed the building to make it easy to install new injection mould machines for production," adds Szép Károly.

Nolato Hungary will use the new hall for manufacturing products that require very short cycle time. All new injection mould machines are electric rather than hydraulic and are at the cutting edge in terms of efficiency, quality, energy and production savings.



The new Nolato factory in Penang, Malaysia, produces both small design elements for consumer electronics and EMC solutions.

Diversification and cooperation in newly built Malaysia plant

Penang, in north-western Malaysia, has been called the Silicon Valley of the East, and it's here that Nolato has a new cutting-edge, high-tech production facility for EMC solutions and design elements for consumer electronics.

Nolato takes a comprehensive approach, summed up in the One Nolato concept, with the whole of Nolato cooperating to achieve the best for both our customers and Nolato.

One practical consequence of this approach is that we are able to coordinate operations in a single country, even when it involves different companies and business areas. The benefits provided by having a dual site and shared solutions is more important than each business having its own site.

So we have multi-units at a number of locations around the world manufacturing for different parts of the Group.

Two different businesses

The new plant in Penang, Malaysia, is a good example of this. The facility now combines two different businesses in a

shared modern and efficient production environment. Here Nolato Silikonteknik manufactures EMC shielding products and Lövepac Converting produces die-cut design elements for consumer electronics.

Cross-fertilisation

The General Manager in Penang is Allen Tan, who has been with Nolato since 2006, working in Kuala Lumpur, Beijing and Shenzhen before being tasked with setting up the new factory in Penang.

“Cooperation between the two companies and our multinational team here in Penang works really well,” says Allen Tan.

“The cross-fertilisation between the two is stimulating for our local unit and provides a lot of experience and good examples to follow.

“One example is the advantage we gain over our competitors through Nolato’s

strong emphasis on lean production,” he explains.

The Penang business is based on a number of similarly sized customers, which Allen Tan believes is a real benefit.

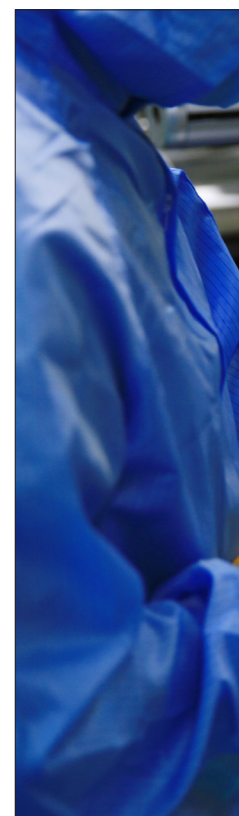
“We have a broad clientele rather than being dependent on individual large customers. Most of our customers are regional and well established in Southeast Asia. Some are part of large global groups, while others have emerged on their own in the region.”

The Malaysia-based facility has now also begun the process of achieving certification for the IATF 16949 automotive industry quality management system. Certification, which is expected to be completed by the third quarter of 2019, will result in further diversification by expanding the customer base.



THEME: EXPANSION

*Shenzhen in southern
as the world's lead*



ern China is growing rapidly
ng electronics hub.



New Lövepac Converting plant in southern China

In the Chinese city of Shenzhen, Lövepac Converting has opened a new plant specifically adapted to today's requirements for the efficient production of consumer electronics.

Shenzhen is situated next to Hong Kong in southern China. With a population of 13 million, it's one of China's largest cities. It is considered by many to be the world's leading electronics hub, with annual production worth USD 350 billion, more than many Western countries. Not bad for an area that as recently as the 1970s still largely consisted of countryside with a few small fishing villages.

Designed components

It's in Shenzhen that Lövepac Converting has been producing small designed components with mechanical and/or cosmetic functionality for the telecom and consumer electronics industry since 2006.

Its products include logos, speaker grilles and other three-dimensional design elements. These are punched products that are applied with adhesive and supplied on a roll ready to be automatically assembled on customers' final products.

Diversifying into new areas

Lövepac Converting originated out of Sweden-based Nolato Lövepac in Skånes-Fagerhult, but is now a Chinese company that is wholly owned by the Group, with operations also in the capital Beijing, as well as Malaysia and Hungary.

"The Shenzhen factory has been involved in what has occasionally been a bumpy ride in the mobile phone sector for

more than 10 years, with customers such as Nokia and BlackBerry," says Lövepac Converting Managing Director Dan Wong. "By diversifying into new areas and new customers, the business has now developed considerably beyond this sector."

One-stop shop

In Shenzhen, long-term requests from world-leading customers for ever-larger supplies led to the production facilities in Shenzhen being upgraded and the formation of Lövepac Technology Shenzhen.

"This unit will offer our strategic customers a one-stop shop, from development and comprehensive function testing to high-volume supply," explains Dan Wong. "So we've invested in advanced conversion processes in class 10K and 1K cleanrooms, not only with flatbed and rotation options but also new innovative production solutions."

To continually guarantee high quality of supply without the requirement for high staffing of the machines, there has also been a particular emphasis on fully automated systems for quality assurance and inspection.

"We consider Lövepac Shenzhen to be Nolato's eyes and ears in southern China, a region with lots of customers and exciting opportunities for the future," concludes Dan Wong.



The facility in Degersheim, Switzerland, has been extended by 1,400 square metres of new production space to boost capacity.

Nolato Treff expansion with full cleanroom compliance for greater flexibility

Nolato Treff has extended its plant in Degersheim, Switzerland to meet an increased need for production capacity.

There has been significant growth in customer projects at Nolato Treff, which has led to a real need for more production capacity.

This has been met by a new two-storey building with around 1,400 square metres

of production space right next to Nolato Treff's existing plant.

Built to hygiene standards

"Nolato Treff's success is based on flexibility to quickly fulfil customer needs," explains Managing Director Guido Vollrath. "So we built the new production areas to the highest hygiene standards.

"That allows us to use them either as cleanrooms for medical production or for normal industrial production without

making major investments in terms of time and money. For example, the air treatment system and cranes are fully compliant with cleanroom standards."

Quick construction

"There was real demand from our customers for the new capacity, so we optimised the construction process. This resulted in the new production building being ready for use just eight months after construction began," says Guido Vollrath.

New cleanroom capacity in Newcastle



Nolato Jaycare has long been a leading manufacturer of pharmaceutical packaging for many of the world's best-known brands and over the last three years it has also included the manufacture of medical devices/components as a core competence in Newcastle.

As a result of a robust pipeline of both pharmaceutical packaging and medical devices requiring up to Class 7 cleanroom space, a 500 square metre cleanroom has been constructed at the Newcastle facility to house the new projects.

New EMC plant established in Hungary

Nolato Silikonteknik, which develops and manufactures electromagnetic compatibility (EMC) shielding solutions and materials, has opened a new plant in western Hungary.

The new facility is located in Győr, not far from Mosonmagyaróvár where Nolato has had a large medical and industrial production plant for a long time.

“All the largest automakers have a presence in this part of Hungary, along with their suppliers,” says Kristian Lydebrant, project manager for the new production facility. “We have wanted to establish ourselves as a supplier for some years now, but it’s a challenging industry and it takes time to break through.

“But there was an unexpected change at a potential customer and we had the chance to establish ourselves earlier than anticipated,” explains Kristian.

“Everything went to plan, actually even better than expected, as our initial customer’s needs increased rapidly. And we made our first delivery of our Trishield dispensed shielding solution in mid-August 2018.

“We’re now also planning to supply to the telecom industry in the region. But that will be our Compashield product, which consists of different shapes of extruded gaskets made to specific length for customers.”



EMC solutions are manufactured at the new factory in Győr.



Nolato Contour and Nolato Group management representatives brake ground.

Expanding to boost capacity at US-based Nolato Contour

Nolato Contour in the US is now also increasing capacity by enlarging production, including through new cleanrooms.

Nolato’s unit in the US, Nolato Contour, is based in the Swedish communities southwest of the Great Lakes in the state of Wisconsin, not far from Minneapolis.

Nolato has had a Medical Solutions unit here since 2010. The plant is now being expanded to increase capacity, with parts of the facility also being adapted to Industrial Solutions production.

New cleanrooms

“The facility is being extended by 2,500 square metres,” explains Director of Business Development Mattias Persson, who has been with Nolato Contour since Nolato acquired the plant. “The new section will include two new cleanrooms, one of which is already running at full capacity

with new medical production and the other is being prepared for further expansion.”

Production of hygiene products

“Alongside the new building, we’ve also created space in the existing plant to start production for the Industrial Solutions business area. This involves the production of hygiene products for the US market for a customer that Nolato already manufactures for in Europe,” adds Mattias.

Manufacturing of hygiene products will take place entirely separately from the existing medical production to ensure an efficient, customised production flow.

The new production will begin in the first quarter of 2019.

Nolato MediTech continues to grow



Nolato MediTech, based in Hörby, southern Sweden, is adding another 3,700 square metres at its plant, with completion due in the first quarter of 2019.

“Our business has developed very strongly,” commented Torkel Skoglösa, Managing Director. “The expansion mainly covers new production areas and will provide even better opportunities to continue our expansion in an optimal way.



Gas injection provides an effective method for producing hollow products, for example to reduce weight.

Gas in moulds effective way of making single-piece hollow products

How do you manufacture a hollow, completely sealed plastic product like a handle if you want to produce it as a single piece, without any join lines, gluing or welding? Easy: you squeeze out all the interior plastic using compressed gas.

To achieve lower weight and save on material, designers sometimes design a plastic product to be hollow, which is impossible for more complex shapes using traditional injection moulding.

The usual approach for producing these types of hollow-body products therefore involves injection moulding them in two halves, which are then glued or welded together. But this always results in a more

or less visible join between the two sections. And joining the halves involves an additional stage in production, adding both time and cost.

A single hollow product

A quicker and more efficient way is to manufacture the product as a single hollow piece when injection moulding. This can be done by using gas, which is pumped

into the mould after it has been filled with the molten plastic raw material.

“By using gas in injection moulding we’re able to create hollow plastic components in one go,” explains Thomas Lindberg, Senior Production Engineering Manager at Nolato Polymer in Torekov, Sweden.

The technique used is the push back process, which involves first filling the cav-

ity with material and then injecting gas which pushes back the excess in the injection unit. This material is then used in the next cycle.

A number of advantages

As the mould is cooled from the outside and the cooling is consequently more efficient on the outside edges of the cavity, the plastic cures more quickly towards the surface than inside the product. This allows the gas to push the still-molten plastic out of the inner sections of the mould, creating a cavity inside the outer sections that have already cured.

By adjusting the point in the process when the gas is injected, it's possible to fully control the thickness of the item.

The gas used is nitrogen with a high level of purity, produced close to where manufacturing takes place. It's released from the cavity once the plastic has cured.

Hollow-body products offer a number of advantages. They use less plastic in manufacturing, which is beneficial both from an environmental and cost perspective. They're also lighter than a solid product, providing ergonomic advantages, and environmental and cost benefits in terms of transportation.

Nolato uses gas injection technology for the production of items such as handles for chainsaws, strimmers and various other forestry and gardening products.

BACKGROUND: Nitrogen is an essential element in all living organisms, including as a component of amino acids – the building blocks of proteins. Nitrogen is abundant in the atmosphere, accounting for 78 percent of its volume.



The gas pushes the plastic against the sides of the mould, creating a cavity.



Polyethylene from sugarcane has the same properties as conventional polyethylene.

Green polyethylene with a smaller carbon footprint

Using ethanol from sugarcane as a 100% renewable raw material for the production of Polyethylene is a fully viable way of creating more sustainable plastic products. After exhaustive testing, Nolato Jaycare is now in a position to offer a full range of bio-based products for its pharmaceutical packaging customers.

Nolato's UK company, Nolato Jaycare, is one of Europe's leading producers of plastic pharmaceutical packaging. In seeking to reduce the carbon footprint of its products and meet changing customer requirements, the company has scoured the market for alternatives to fossil fuel-based plastics.

"The key requirement was not to compromise with respect to the properties of the packaging," explains Joe Barry, Managing Director of Nolato Jaycare. "Therefore, we've conducted extensive testing both in-house and through third parties in order to be confident that the environmentally sustainable alternative performs at least as well."

Made from sugarcane

One of the 'green' plastics to meet the specifications is produced from ethanol made from sugarcane. The process of producing sugarcane-based polyethylene is exactly the same as for fossil fuel-based polyethyl-

ene and therefore it has the same properties, characteristics and aesthetics as conventional polyethylene.

Nolato Jaycare has processed the sugarcane-based plastic with excellent results in both injection moulding and various types of blow moulding.

Conducted numerous tests

"We've now carried out many tests and we are confident our containers and closures produced from green polyethylene meet all requirements both internally and from a customer standpoint," adds Joe Barry.

"We're now taking a holistic approach to sustainability by not only offering a range of bio-based products but also exploring 100% PCR (post-consumer recycle) and biodegradable pharmaceutical packaging," he adds.

"As a key part of our strategy, we will continue to explore every practical alternative in our drive to be at the forefront of a more sustainable future."



Digitalisation offers opportunity for even greater efficiency

Digitalisation is something that affects everyone these days in every walk of life. It's also an important issue for Nolato. But we view it more as part of our day-to-day work and an opportunity to be even better at what we do.

“In the foreseeable future the core technologies used by Nolato such as injection moulding will be needed to manufacture high volumes of complex, high-quality products,” notes Berndt Johansson, Strategic Business Development Manager at Nolato AB.

“So there’ll be no total digital transformation of Nolato’s operations. Instead, we’re focusing on leveraging the excellent opportunities offered by digitalisation. Just as we leverage all other opportunities to constantly become leaner and eliminate everything in our business that doesn’t create customer value.

“Digitalisation is simply part of our day-to-day business and it can be found wherever we believe it creates value,” explains Berndt Johansson.

So here are some everyday examples of how Nolato is taking advantage of digitalisation.



Automated marketing

Much of Nolato’s marketing involves 1-2-1 and F2F (one to one and face to face) marketing. But our website and other dig-

ital media are also important for us for building customer relationships.

Incidentally, Nolato first created its website in 1996, so we were quick to take advantage of the internet. Market automation is now a key term in this context. It uses digital systems to automatically identify possible customers for more efficient marketing.



Digital sales support

Our website also provides digital sales support. For instance, through interactive guides, which are used by several Nolato units that produce standard products aimed at a broader clientele.

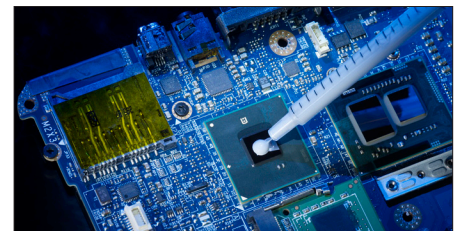
For example, the website features digital guides that help customers choose the right product and receive samples and quotes.

A basic online store integrated into the website has also been used for the sale of standard products. And it’s directly linked to the relevant unit’s business systems, so online orders can be handled the same way as manual orders.



Connected products

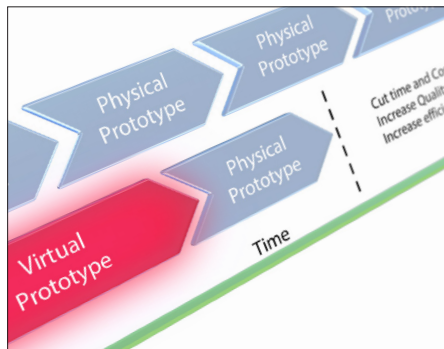
For more than 20 years Nolato has been integrating electronics into the production of connected customer products. Experience from portable consumer electronics, especially mobile phones, has provided us with know-how that’s now of value in many different areas. For instance, in medtech it’s now the rule rather than the exception for products to be connected and contain advanced digital technology that integrates with other parts of the products.



Other digital business opportunities

Nolato is involved in the internet of things, or IoT, by providing effective solutions for increased EMC shielding for 5G mobile

data systems. We've long supplied shielding solutions for previous generations of system, as well as for solving EMC issues in vehicles, medical devices, defence and security systems. We also develop and supply solutions for the dispersal of heat from processors and other electronics.



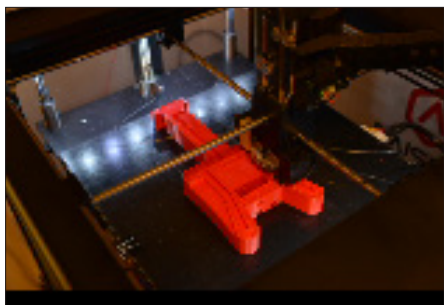
Virtual prototyping

Creating a product on a computer instead of in reality enables us to test how it will work in real life (or 'IRL').

Virtual products take account of everything that happens to the material in a product when it's manufactured and then used.

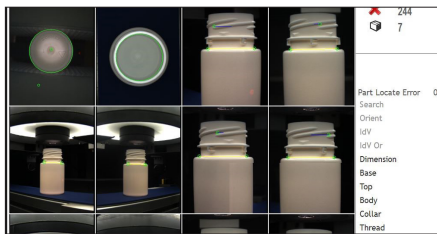
How many times can it be dropped from one metre onto a concrete floor without breaking? Will the spring last for the number of injections it's intended for? We can find these things out even before the product exists in reality.

Using our experience of physical prototyping, we can combine the best of both worlds – digital and physical.



3D printing

We don't manufacture customer products using 3D printing, as injection moulding is still superior for large volumes of high-quality plastic components. But we do use 3D printing for producing our own assembly fixtures, robot grippers and simple prototypes. It's a brilliant digital tool.



Quality control and monitoring

Digital systems are great for quality control. They don't need breaks or get tired. So we use them for monitoring and quality control of production.

Using cameras and computers, these systems can check in mid-production that manufactured products meet the required specifications. They check dimensions and shape, that items are the perfect thickness, that anything that needs to be sealed is sealed, and much more besides. And they reject components that don't make the grade. This allows us to supply perfect products straight into customer assembly lines.



Automated transportation

Digitally controlled forklifts allow an operator to 'call' a truck, which then collects the goods, transports them to the desired location, unloads at the right pallet point and waits for the next order.

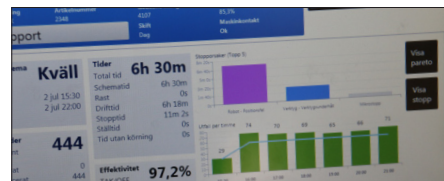


Cobots

Cobots – or collaborative robots – are digital robots designed to cooperate with humans in an unrestricted environment. Conventional industrial robots work in

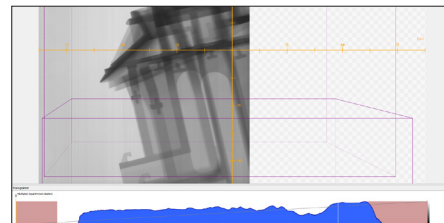
separated environments, but cobots can work in a regular production environment without protective measures. A cobot can even be transferred between different tasks. When they return to work they carried out previously, they remember the work and can orient themselves and know how the work is done. Cobots are easy to programme and in many cases the investment pays for itself in less than a year.

Cobots can perform the same movements as a human and use cameras and sensors to collaborate with other cobots on a task. So they don't need to be precisely programmed; they adapt their movements based on what other cobots are doing.



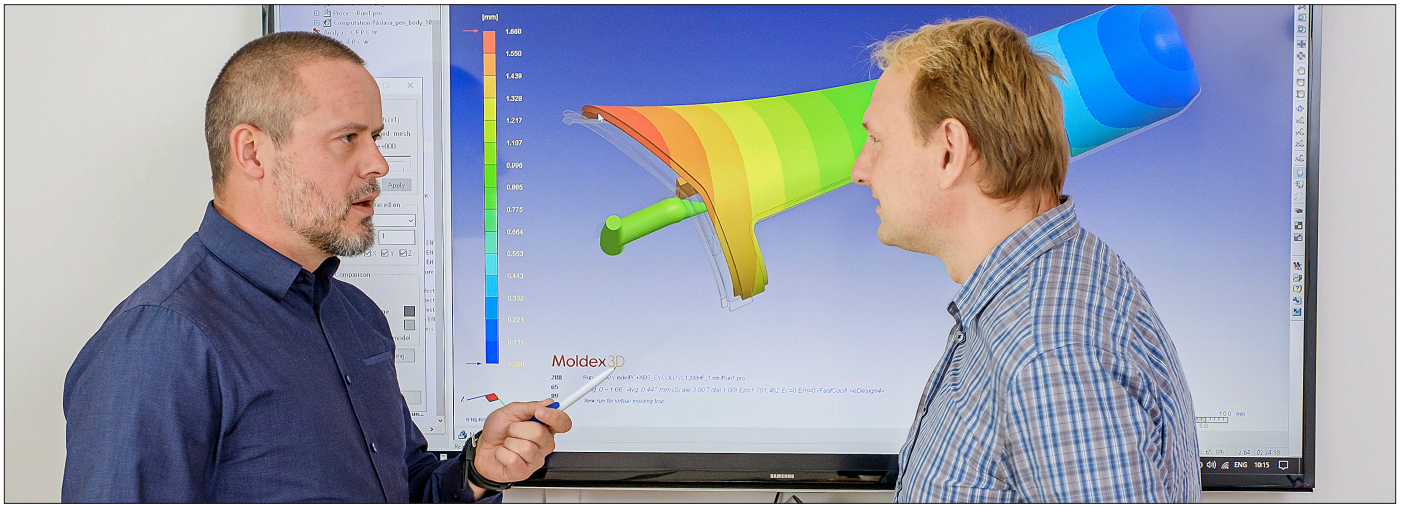
Connected production facilities

The systems in our plants are connected and are linked to other systems. Production planning is directly linked to the business system. Production meeting rooms have monitors constantly displaying the current status. All the machines are also connected and display their status in real time. Production is monitored and documented, causes of interruptions are analysed, fixed and reported. Everything is available 24/7/365.



CT scanning

Nolato mainly uses CT (computed tomography) scanning to optimise production. Scanning a reference sample allows us to create an exact 3D drawing, which can then be compared with the designer's CAD drawing. The computer can then perform a deviation analysis showing how reality matches up with the designer's specification. This analysis can then be used to optimise the mould and the process.



Patrik Ingvarsson and Anders Nilsson are experts in virtual prototyping at Medical Solutions.

Virtual prototyping saves time, money – and lives

Digitalisation has introduced many buzzwords. One to bear in mind is ‘virtual prototyping’, which is opening up new opportunities for medtech companies to save time and money.

A virtual prototype is a digital version of a new component. Instead of creating it in the real world, you create it on a computer, ready for testing in the virtual world.

This goes far beyond the simple dimensions of a CAD model, because creating a virtual prototype takes into account everything that happens to materials when they are processed during manufacturing.

Test it on your computer

The benefits come when you include the virtual component in a complete virtual product, as this allows you to start testing immediately.

“Want to see how many times an insulin pen with the new components can be dropped before it breaks, for example?” asks Anders Nilsson, Principal Engineer at Medical Solutions’ Technical Design Center, TDC.

“Go ahead – simulating thousands of falls in digital ‘gravity’ onto a ‘hard’ sur-

face will tell you. This gives you immediate insights right from the start of your project. Just imagine the advantages this gives you when it comes to quality and time to market for a new product.”

Get it right, right from the start

Anders Nilsson has extensive experience of prototyping in medtech industries. It has convinced him of the importance of getting things right, right from the start.

“The earlier in the process you identify an issue, the more you save in time and money investigating and rectifying it. Virtual prototyping is an amazingly powerful tool for avoiding delays and costs.”

Virtual products, real people

Building experience into virtualisation is TDC Medical Solutions’ forte – combining experience from real prototypes and manufacturing with insights from the digital world.



“This is our advantage,” says Patrik, “because we can combine the best of the digital world and real-world production.”

The technology is not only driven by the commercial pressures of time and costs, however. There is also the knowledge that bringing better products to market more quickly can be a literal lifesaver for people with medical conditions – real people, real lives, enhanced and extended by virtual prototyping.