

# INSIGHTS

ISSUE **1** 2020

HS FLEX HEAVY.

Heavyweight automation.

USER-FOCUSED.

Five industry reports.



# Preface

Dear business partners and customers,  
dear employees,

the long-expected cyclical downturn in the machine tool sector has arrived, and it is being exacerbated by many factors that you will be finding out about day by day in media reports. Hermle is affected by this downturn as well. Nevertheless, we are looking to the future with confidence and we are well prepared for such fluctuations thanks to our 'breathing company' concept.

In view of the current developments regarding the Corona virus, Hermle's executive board has decided to cancel this year's Open House. For Hermle, the health of customers, partners and employees has highest priority. Taking the currently available information into account, we concluded that all risks must be avoided. We appreciate your understanding for this decision. In addition, many national and international trade fairs have been postponed. You can check our participation status at any time at [www.hermle.de/termine](http://www.hermle.de/termine).

However, we are pleased to report positive news as well. We are consistently pursuing our development of economically viable automation solutions, currently in the form of our new 'HS flex heavy' handling system. It boasts a transport weight of up to 1,200 kg and two storage modules for up to 18 pallets that can be adapted to four different Hermle machining centres. You will find detailed information about it in this issue.

Together with the entire Hermle team, I hope in our common interest that the Corona virus problem will be overcome within the next few months so that we can get back to doing what we do best, at home and abroad - which in our case means building good and reliable machines so that you can achieve perfect results.

Best regards,



your Franz-Xaver Bernhard  
Director of Sales, Research and Development



**NEW**  
automation solutions  
up to **1,200 kg**

# HS flex HEAVY

HEAVYWEIGHT AUTOMATION.



PERFORMANCE-LINE.

HIGH-PERFORMANCE-LINE.

A lot of our customers are currently facing skills shortage with the global competition at the same time increasing the cost pressure. Machines with an automation system may be a remedy. This is why their quota in production buildings is expected to continue to increase. To remain competitive in the long run, a flexible-to-use solution as Hermle's HS flex heavy handling system is needed. Incidentally, HS flex is also available as a 450 kg variant.

#### AUTOMATIZATION WITH HS FLEX HEAVY

C 32 / C 400 - WORKPIECES UP TO 800 KG\* / 600 KG  
C 42 / C 650 - WORKPIECES UP TO 1,200 KG\*

\* much higher workpiece weights are possible when loading the machine by crane



# PIONEER WITH A LONG TRADITION.

OVERVIEW OF HERMLE'S AUTOMATION SOLUTIONS.

The whole industry wonders if and why use automation systems. This is what we have also done at Hermle – more than 20 years ago. The question in Gosheim is no longer why but where and how.

The beginnings were modest, with simple automation and handling solutions, but as early as the mid nineteen-nineties a specially founded subsidiary took over the operations. No matter whether for handling systems, pallet changers, robotsystems or complex projects – you will get the best-possible solution for the automation of your enterprise from Hermle.

## Your benefits from Hermle automation

- Higher degree of utilisation
- Increased production capacity
- Minimized machine-hour rate
- Shorter order throughput time
- Lower capital commitment
- Fewer shutdowns
- Better time allocation



## Handling systems

Automatize the handling of workpieces in a wide variety of shapes, sizes and weights with the aid of handling systems to achieve advantages in cost and time.



▶ HS flex

## Pallet changers

Improve the productivity of your Hermle machining centre by using pallet changers with modular rack storage systems.



▶ PW 3000

## Robot Systems

Whether pallet handling or workpiece changing – our flexible robot systems help you reach the next level of your production.



▶ RS 05-2

## Linear linking

You are planning a new production plant or want to connect several Hermle machining centres in a network? Together we'll find the perfect solution for your enterprise.

## Order management

However individual the automation solutions are – the software is always the same. The intuitively operable HACS software helps the operator in daily tasks and makes for more intelligent execution of orders.



# PRECISION FOR THE VIEW ON THE ANTIBODIES.

euroimmun.de

from left to right Martin Rateike (Division Manager Design Engineering, Production and Assembly), Alexander Schmalz (Head of Department Machining and Production), Sven Beckenfelder (Programmer and Operator of the 5-axis milling centres), all from EUROIMMUN AG, Thomas Mielke (HPV Hermle Vertriebs GmbH).

EUROIMMUN develops and produces devices for fully-automated medical diagnostics. The components are made on 5-axis machining centres from Hermle. The HS flex automation solution increases flexibility of the parts range and manufacturing scheduling and minimises non-productive times.

Molecular infection diagnostics analyses smallest amounts of DNA of bacteria or viruses. The development of the reagents and devices necessary for the purpose is based on processes requiring absolute precision and comprehensive know-how. EUROIMMUN AG has both.

The laboratory diagnostics specialist is currently building between 300 and 500 serial instruments a year. In addition there are various production facilities for the production of various in-house diagnostic instruments. "The production figures are highly variable – and we unable to do long-term planning," Martin Rateike explains. "Two years ago we were looking for milling centres with a connected automation system to increase our in-house production depth and still be able to produce flexibly." Rateike is sceptical about bought-in systems not produced by a single manufacturer – he fears long downtimes in the event of faults and unclear responsibilities.

**"CONSEQUENTLY WE HAD THE COURAGE – IN RELYING ON HERMLE SERVICE – TO TAKE THE RISK AND ORDERED A C 32 U WITH THE NEW AUTOMATION SOLUTION."**

Martin Rateike

The machining centre with HS flex turned out to be the perfect solution for EUROIMMUN. "We are able to produce different parts in variable numbers quickly and precisely. This is also a reason why we ordered three further milling centres with HS flex automation from Hermle."

Usually one employee is responsible for two machines, and at peak times even three machines at the same time. Combined with unmanned shifts this offers precious leeway in production scheduling for EUROIMMUN. The workpieces are machined between 20 minutes and six hours. Thanks to the HS flex system, setting up and loading the pallet storages is done in a half shift only without interruption of the machining process.

"We increased our in-house production depth thanks to the Hermle machines – we machine milled parts to 98% by ourselves now thus saving time and money," Rateike concludes. The automation system makes unmanned shifts possible and helps to balance peak times in the best possible way. The four milling centres with HS flex automation offer EUROIMMUN the security to be able to produce independently and flexibly without having to give away technological know-how.

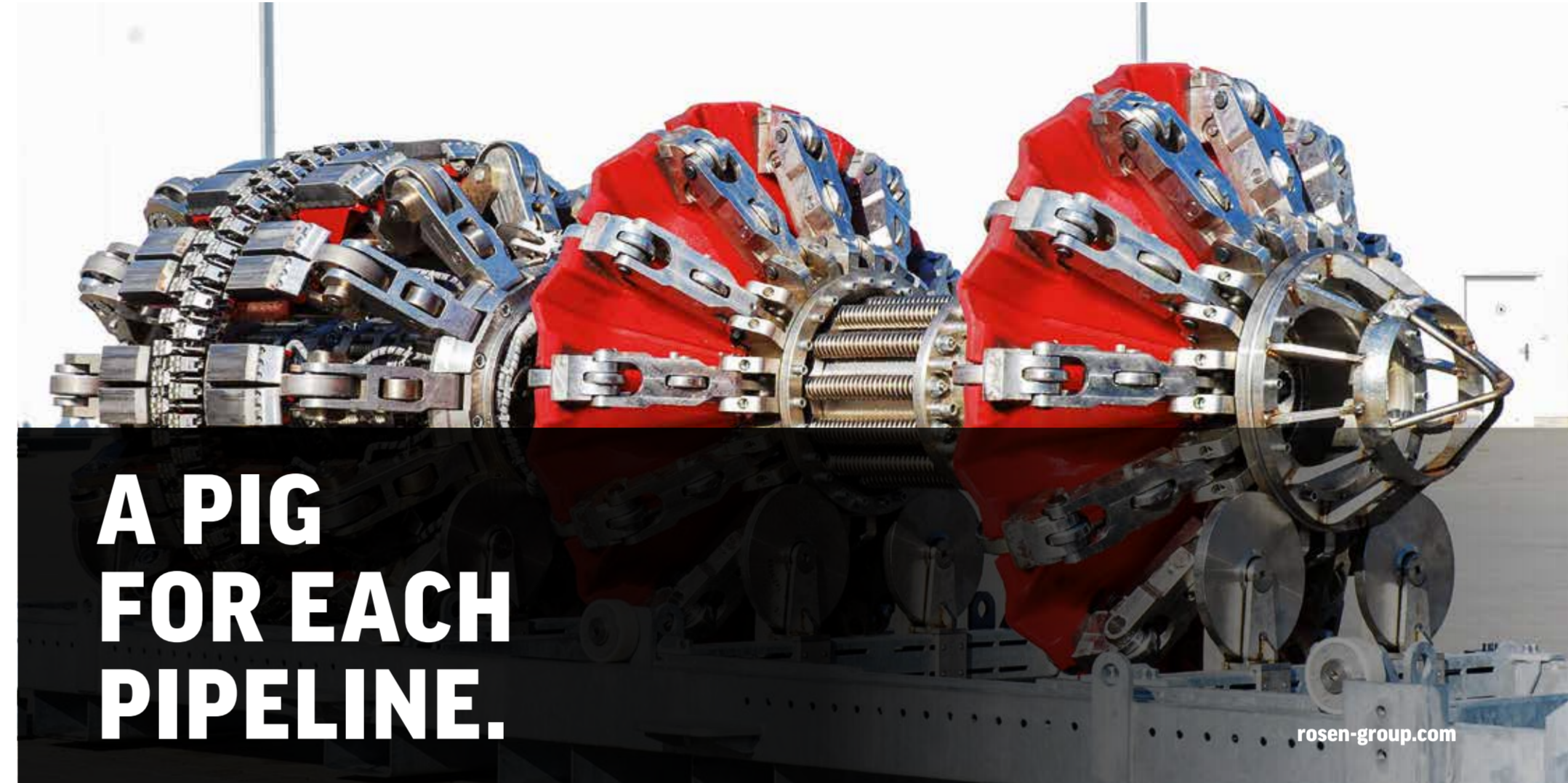
**A CONVINCING PROTOTYPE**

When visiting Hermle in February 2017, the decision-makers from EUROIMMUN were able to cast a glance on the HS flex system prototype. "The concept seemed promising to us. Consequently we had the courage – in relying on Hermle Service – to take the risk and ordered a C 32 U with the new automation solution," the division manager remembers.



top EUROIMMUN produces all parts for its fully automatic microscope on the Hermle machining centres. right 75 percent of the components are milled from aluminium blanks – as these assembled housing parts.

"Our unique feature is that we do not only develop and offer diagnostics but also efficient automation solutions for laboratories," says Martin Rateike, Division Manager Design Engineering, Production and Assembly at EUROIMMUN AG. This includes for example a fully automatic microscope with computerized analysis in immunofluorescence technology. Mr. Rateike studied biomedical technology and supervises the design of the devices from the start. In 2012 he already ordered the first machining centre from Hermle – a B 300 U. "We had invested before in the milling machine from another manufacturer and were disappointed particularly about the reliability", Rateike remembers. "Machine failures can never be excluded but it must be possible to remedy them easily and quickly."



# A PIG FOR EACH PIPELINE.

rosen-group.com

Variable sealing elements enable the inspection pig to move through pipelines with different diameters.

ROSEN develops inspection devices for pipelines. To be able to produce faster and more flexible in-house – that was the target of the investment in four C 42 U machining centres from Hermle with a robot-based automation solution. The system convinced and three years later Hermle was asked to install the same combination again.

"Finally our concern is the data," Nico Goolkate, Alternative Manager Shop Floor Machining at ROSEN Technology and Research Center GmbH says. He refers to measured data, collected by technologically ultra-sophisticated inspection devices: the pigs. They are the core business of ROSEN group and almost entirely produced at the headquarters in Lingen (Ems). The family-owned company was founded in 1981. Today Rosen is active in over 120 countries with 3,300 employees and develops inspection solutions for pipelines and the associated measuring devices.

**THE CHALLENGE: MANUFACTURE FASTER AND MORE FLEXIBLE**

"Our in-house production depth is 85 to 90 percent," Johannes Bolmer, Deputy Production Manager says. Eight 5-axis machining centres from Hermle AG with an adapted automation system make an important contribution. In 2016, this was quite different: "We faced the task to increase the output with the same personnel deployment. At the same time our production should become faster and more flexible." This is because pigs are unique products. However, both spare parts and new inspection devices have to be available short-term. Former manufacturing on the existing stand-alone machines – among them a C 20 from Hermle – satisfied the high demands on quality and precision – but offered too little capacity.

**"HERMLE PRESENTED ITS AUTOMATION SOLUTIONS AT A TRADE FAIR. FITTINGLY, THIS INPUT COINCIDED WITH OUR SEARCH."**

Nico Goolkate



from left to right Andreas Hürtter (HPV Hermle Vertriebs GmbH) with Michael Schnittker (Process Professional FTY), Daniel Geers (Teamlead Automation), Nico Goolkate (Alternative Manager Shop Floor Machining) and Johannes Bolmer (Process Professional) from ROSEN Technology and Research Center GmbH. right Four additional C 42 U will soon be linked with each other by the RS 2-L robot system.

"Hermle presented its automation solutions at a trade fair. Fittingly, this input coincided with our search," Goolkate remembers. What convinced him and his team: The automation solutions are often bought in by the milling machine manufacturers what does not result in a homogeneous system. "In contrast, Hermle as a single-source suppliers meets our requirement: All is from a single supplier and this is why we receive consistent and competent support from the beginning to the end," the Production Manager says. "Hermle exactly offered us just at the right time what we needed."

**TURN FOUR INTO EIGHT**

ROSEN expects the automation to triple its output. These expectations were surpassed and consequently the decision-makers planned the next expansion stage – four further C 42 U with RS 2-L robot system and tower rack. Above that, the unrestricted high precision and quality of the parts as well as the cooperation with the machine manufacturer were also decisive factors. "Hermle is always receptive to us and the competent service was always available any time," the Production Manager says.

In 2016, that was four 5-axis machining centres type C 42 U connected by the RS 2-L robot system to form a fully-integrated flexible production cell. The Soflex software solution collects the machine and operating data, arranges for making available the operating materials, and takes charge of detail planning and job control. The program communicates both with the machine tools and with the in-house CAD/CAM and ERP systems.

The process today is running smoothly: The creative idea is produced in close cooperation between the innovation centre and manufacturing. The design is passed to the Hermle machines by CAD/CAM programming. The next day the ordered component is ready for the pig which can thus immediately ensure trouble-free and efficient plant operation.



# “AUTOMATION RIGHT FROM THE QUANTITY OF 1 – THIS IS THE PREMIUM CLASS.”

hofmann-impulsgeber.de

from left to right Benjamin Schuh (HPV Hermle Vertriebs GmbH) with Markus Gräf (Head of Process Development) and Bastian Girg (Head of Marketing & Communication) from Werkzeugbau Siegfried Hofmann GmbH.

Shaping milling is one of the last and most demanding process steps in the production of injection-moulded tools. The toolmaker and machine builder Hofmann uses a production cell with four milling machines of the C 42 U type including a cleaning and measuring system linked by a robot for this.

The technological frontrunner in the toolmaking and machine building industry developed from the craft business for moulding tools founded in 1958 by Siegfried Hofmann in a garden house. Meanwhile the Lichtenfels-based company is managed by Stefan Hofmann as the third generation and offers holistic solutions from the injection-moulded tool up to complete automation of the injection moulding process.

### ERROR-FREE DATA FLOW THROUGHOUT THE MANUFACTURING PROCESS

“For us it is important to stand technologically at the forefront,” Markus Gräf, Head of Process Development at Werkzeugbau Siegfried Hofmann GmbH says. The driving issue both in machine building and in toolmaking is automation. It sounds trivial but it is not because mould-making is actually pure craftsmanship. “Usually the moulding tools are unique objects of which we only make one, maximally two items. It is a big challenge to automate this,” Gräf emphasises. The company successfully faces this mammoth task for some years now: When a new moulding tool is ordered after design, the central MES system assigns the appropriate data for the respective machining steps to the different workstations. It also organises the data feedbacks from the measuring operations, for example, which are automatically fed back to the system – that way typing errors are almost excluded.

**“FOR 20 YEARS ALREADY WE ARE PRODUCING WITH HERMLE MACHINES AND KNOW THAT WE CAN BOTH RELY ON PRECISION AND ON THE SERVICE AND SUPPORT.”** Markus Gräf

To optimise also the machining of the mouldings, Hofmann in 2013 invested in two C 50 U from Maschinenfabrik Berthold Hermle AG automated by a RS 3 robot system. “For 20 years already we are producing with Hermle machines and know that we can both rely on precision as well as on the Service and Support,” Markus Gräf explains.

### AUTOMATION FOR ULTRA-PRECISE INDIVIDUAL COMPONENTS.

When Hofmann intended to extend its manufacturing capacity in 2017, the decision makers again opted for an automation solution from Hermle: A linear system with a robot and four C 42 U. “it fitted exactly in the building,” the Head of Development jokes and explains that the 5-axis machining centres have the relatively largest traverse path for the size of the machines and are optimally suited for the parts range. “In addition there are very few systems on the market that can machine 3D contours from hardened steel with this precision.” And this is what matters. On the C 42 U machines only the hardened mouldings are finish-machined. “This step takes between one and 50 hours and this is why we need a machine which keeps precision and accuracy constant throughout this long time, regardless of the ambient influences such as temperature or coolant used,” Gräf emphasises.

Although he and his team knew what to expect, the result surprised them. The RS-L system freed up more capacity than assumed. In addition the four C 42 U work in some cases twice as fast as the older machines – and with such precision that much less reworking is required for Hofmann and his team. On top, there are the time savings by the automation. “Now it is only the setting up what slows us down,” Markus Gräf summarises.



top System operator Kevin Stark is in charge of setting up the tools and workpieces and checking the measurement results. bottom Markus Gräf is convinced: “There are very few machines on the market that can machine 3D contours from hardened steel with this precision.” right Hofmann builds turntable moulds for components of different plastic materials such as this iron body.



# AUTOMATION SOLUTION DEFYING DIFFICULTIES.

piesslinger.at

The robot cell is controlled by a master computer.

Piesslinger specialises in aluminium finishing. Hermle provided support in the automation of parts manufacturing and demonstrated that different tolerances and difficult surfaces must not necessarily be a criterion for exclusion for unmanned machining.

Piesslinger is among the oldest companies in Austria. Its roots go back to a scythe forging shop founded in 1553 in Molln in Upper Austria. The family-owned business today with more than 400 employees specialises in aluminium components and surface technologies.

The aluminium component sector employs about 90 employees predominantly mechanically finishing aluminium as profiles and sheets. The clients are from the plumbing, medical technology, sports and audio systems sectors. “Our customers primarily come from the premium price sector – major orders include maximally 100,000 pieces per year with typical manufacturing lots being in the range of 200 to 1,000 pieces,” Roland Hackl, Section Manager Aluminium Components from Piesslinger explains. He considers the broad range of manufacturing options, starting from machining via punching, bending or canting up to the following surface finishing such as grinding, polishing or brushing, powder coating or anodizing as the ultimate strength of the company.

### AUTOMATION PROJECT TO SECURE THE FUTURE OF THE LOCATION

To remain competitive with machining, Piesslinger wanted to enter into the automated parts manufacturing about three years ago already. “Therefore it was the objective to be able to produce specific sheet or profile parts more efficient by automation and at the same time fully utilise the new machining centre with them,” Hackl explains. The challenge was not only the small numbers. “It turned out to be a big difficulty in our project that we have tolerances of ± 5/10 millimetres for our extruded profiles. Still, the parts finally had to be milled precisely to the ± 1/10 millimetre. These differences in tolerance had to be compensated by appropriate devices and an intelligent clamping concept,” the Section Manager explains.

Hermle convinced Piesslinger by a mature concept based on standard solutions: a C 42 U, automated with the RS 2 robot system. “Also decisive was the good service concept with a high availability of spares and the flexible complete solution from a single source,” Roland

**“WE ARE ABLE TO UTILIZE OUR CELL BY 100% AND ALSO TRANSFER AN EVER INCREASING NUMBER OF COMPONENTS INDEPENDENTLY TO THE NEW PRODUCTION CONCEPT. THE HERMLE AUTOMATION SOLUTION WAS THE PERFECTLY RIGHT STEP INTO THE FUTURE.”** Roland Berger

Hackl justifies the decision. What’s more, the Piesslinger parts range optimally fits the new Hermle solution. Even so well that not only the five specified products but also further parts are already processed in the new machining centre. “Generally we can machine about 70 to 80 percent of our components with the Hermle C 42 U. Our manufacturing strategy is currently successively shifting towards automation – and this is why we think already about extending the system by another C 42,” Hackl says highly satisfied.

### GOALS MORE THAN ACHIEVED

Meanwhile Piesslinger can fully utilise the machining centre supplied in March 2019 and transfer an ever increasing number of components to the new manufacturing concept. “The new system is a milestone for us. We were able to make a big step into the future with it and ensure automated parts production which in turn secures the future of the location,” Roland Hackl finally emphasises.



left The robot can both transfer circuit boards, pallets or individual components to the C 42 and remove them. That way the cell can be used in an ultra-flexible way. right Roland Berger, Production Manager from Piesslinger

USERS.

VMV  
TEKNIK

DATES

YOU WILL FIND DAILY UPDATES ON OUR HOMEPAGE REGARDING THE DATES FOR FAIRS AND EVENTS.



# 5-AXIS-CONCEPT TO INCREASE MANUFACTURING CAPACITY.

vmv-technik.dk

from left to right Jørgen Jessen, Sales Manager from Hermle Nordic and Henrik B. Jensen, Technical Director from VMV, in front of the newly installed C 32 U from Hermle.

The Danish machine and toolmaking company VMV Teknik decided to invest in a new 5-axis machining centre from Hermle to extend its manufacturing capacity. Since last year, the C 32 U is completing even complex jobs in a reliable and precise way.

"Our customers come to us with high demands on quality and precision," Henrik Brejning Jensen says. He is the Technical Director from VMV Teknik ApS in Vejle, Denmark, about 70 kilometres south of Aarhus.

The Danish machining specialist produces tools for the synthetic materials industry as well as machine parts and workpieces for the offshore industry and machine builders. Jensen aptly sums up the current challenges for toolmakers: "Each step is important to achieve that the workpieces can have the required precision – from design over measurement up to precise machining." Finally the customer gets complex workpieces of titanium, Inconel and other materials.

The machining centre of the high performance line is equipped with a compact spindle reaching the maximum speed of 25,000 revolutions per minute. In addition, the Danish toolmaker ordered an additional magazine to provide space for 192 further tools, as well as an 80-bar-internal cooling. With the C 32 U, the company can precisely machine workpieces up to the weight of 300 kg and the dimensions of 650 x 420 mm (diameter x height). VMV Teknik additionally had the new machine prepared for retrofitting with Hermle's HS flex handling system. There is thus no further obstacle to automation.

**"OUR CUSTOMERS COME TO US WITH HIGH DEMANDS ON QUALITY AND PRECISION."** Henrik Brejning Jensen

## OUTLOOK ON GREATER THINGS TO COME

But there's more to it than the outlook on an enhanced Hermle handling system. "We are already thinking about when we can plan the next investment. We have another 5-axis machining centre from Hermle in mind – this time one of a greater series," Jensen reveals and continues: "It is essential for this that we can also precisely and productively solve even complex tasks at the same time with it. We will achieve this with Hermle machine."



The machine pool must be correspondingly versatile and reliable: In addition to turning lathes, amongst others, 3- and 4-axis milling centres are available for machining – among them also an older C 40 U machining centre from Maschinenfabrik Berthold Hermle AG.

"The increasing demand induced us to develop a concept enabling us to further enhance our manufacturing capacity," Jensen says. The decision on a 5-axis milling centre was taken quickly, and the manufacturer chosen just as quickly. "As we had gained very good experiences with the C 40 U, we again opted for a Hermle machine," the Technical Director explains. Consequently, VMV Teknik last year ordered a 5-axis milling centre of the C 32 U type.

Read the complete article at [www.hermle.de](http://www.hermle.de) in the Media / User Reports section.

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