

SEPTEMBER 2017



# REPORT

**ISSUE 33** THE MAGAZINE FOR CUSTOMERS, EMPLOYEES AND FRIENDS

## **MANDRELS ALL OVER**

New Solutions  
for I.D. clamping

### **MEDICAL**

Prescribed clamping solutions

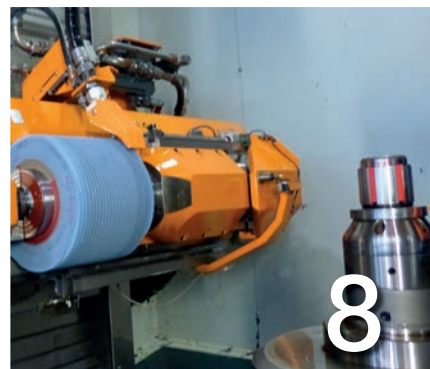
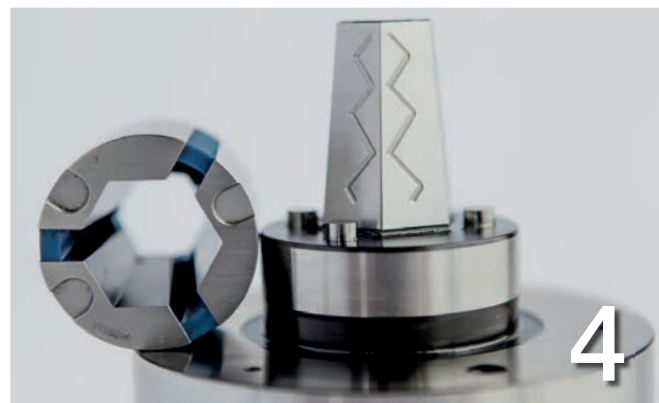
### **BEHIND THE SCENES**

The process optimizer



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## We are all creatures of habit sometimes

Dear customers, dear employees, dear friends,

»Habits« are an important aid and orientation. Developing habits saves energy and, above all, time. It is a pity however when the power of habit determines everything and one cannot get involved in different procedures anymore. The search for the appropriate clamping device is similar. Most of the time, one reverts to the easy-to-use jaw chuck which is

already known. But why not even dare to try something new and relying on the specialists when it comes to the topic of I.D. clamping? Do you know our mandrels yet? You will be amazed of the capabilities and clamping forces of the individual mandrels. We clear up prejudices and introduce our mandrel variety. Let us know what you think about it.

Sincerely,  
HAINBUCH Executive Board

Gerhard Rall

Hans-Michael Weller

Sylvia Rall

## IMPRINT

HAINBUCH GMBH  
SPANNENDE TECHNIK  
Erdmannhäuser Straße 57  
71672 Marbach

Tel. +49 7144.907-0  
Fax +49 7144.18826  
info@hainbuch.de  
www.hainbuch.com



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# MANDRELS ALL OVER

Who does not know this: For the complete processing a reasonable internal clamping device is missing. The emergency solution is often called: jaw chuck or conventional mandrels with slotted clamping sleeves. Both versions quickly reach their limits in terms of accuracy, stiffness and opening stroke. On the contrary to our mandrels. They are equipped with state-of-the-art clamping technology, which works convincingly even for very critical applications.





# What is your I.D. clamping challenge?

Do you have the right clamping device for your application? Here are our clamping solutions that make it easier for you to come to a decision.

## MANDO T211 and T212

They are still stealing the show of the young ones.

The MANDO mandrels are equipped with state-of-the-art and advanced clamping technology, which is convincing in all applications. With extremely wear-resistant chrome-nickel steel, the segmented clamping bushing has very hard and rigid segments. All functional surfaces are ground in a single set-up, so that a high degree of concentricity is guaranteed.



## NEW: MAXXOS T211

The edgy and ultra-strong mandrel

A mandrel with hexagonal pyramid shape instead of a round cone is predestined for a demanding and process-safe production. The segmented clamping bushing with the hexagon socket sits absolutely form-locking on the clamping pyramid and allows for maximum machining performance. If you are looking for process reliability and best torque transmissions you will be very happy with the MAXXOS T211. The lubrication, in conjunction with the tightness, guarantees a very constant running production and thus the highest reliability.



## Suitable accessories: TESTit

Clamping force measurement also for I.D. clamping

For a safe, precise and productive process a regular check of the clamping force is essential. The small, handy and inexpensive TESTit clamping force gauge helps. It not only works perfectly for external diameters and under rotation, but also measures the holding force of mandrels precisely for inner diameters. Data is transmitted via Bluetooth to a tablet.



## Micro mandrel

The small giant

It's fact that the Micro mandrel has more to offer than its size suggests. So far clamping of small diameters of less than 16 mm wasn't possible with our vulcanized bushings. This is a thing of the past. Even in the case of extreme collision contours, this technology offers the possibility to clamp smallest workpieces of down to 6 mm.



## MANDO G211

The miracle weapon for gears

The stiff and slim mandrel with optimized tooling contour is ideal for gear hobbing but it can also be used for gear cutting or gear grinding. Plus, can count on the advantages of the MANDO mandrel that are incorporated within the device anyways. If you would like to achieve a short set-up time for small batch sizes, a quick-change interface is available as well.

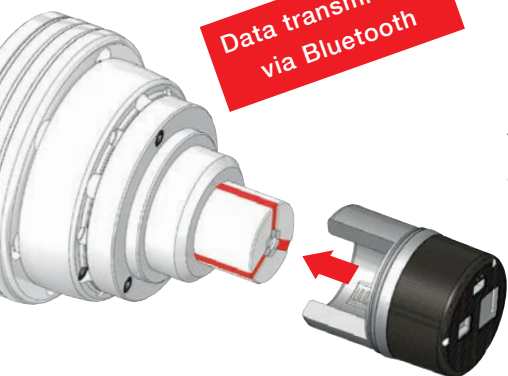
## Special mandrels

Customized for your needs

Where our standard mandrels not suffice, our special mandrels have no limits. We always have an individual solution for very special requirements that our experts develop together with you.



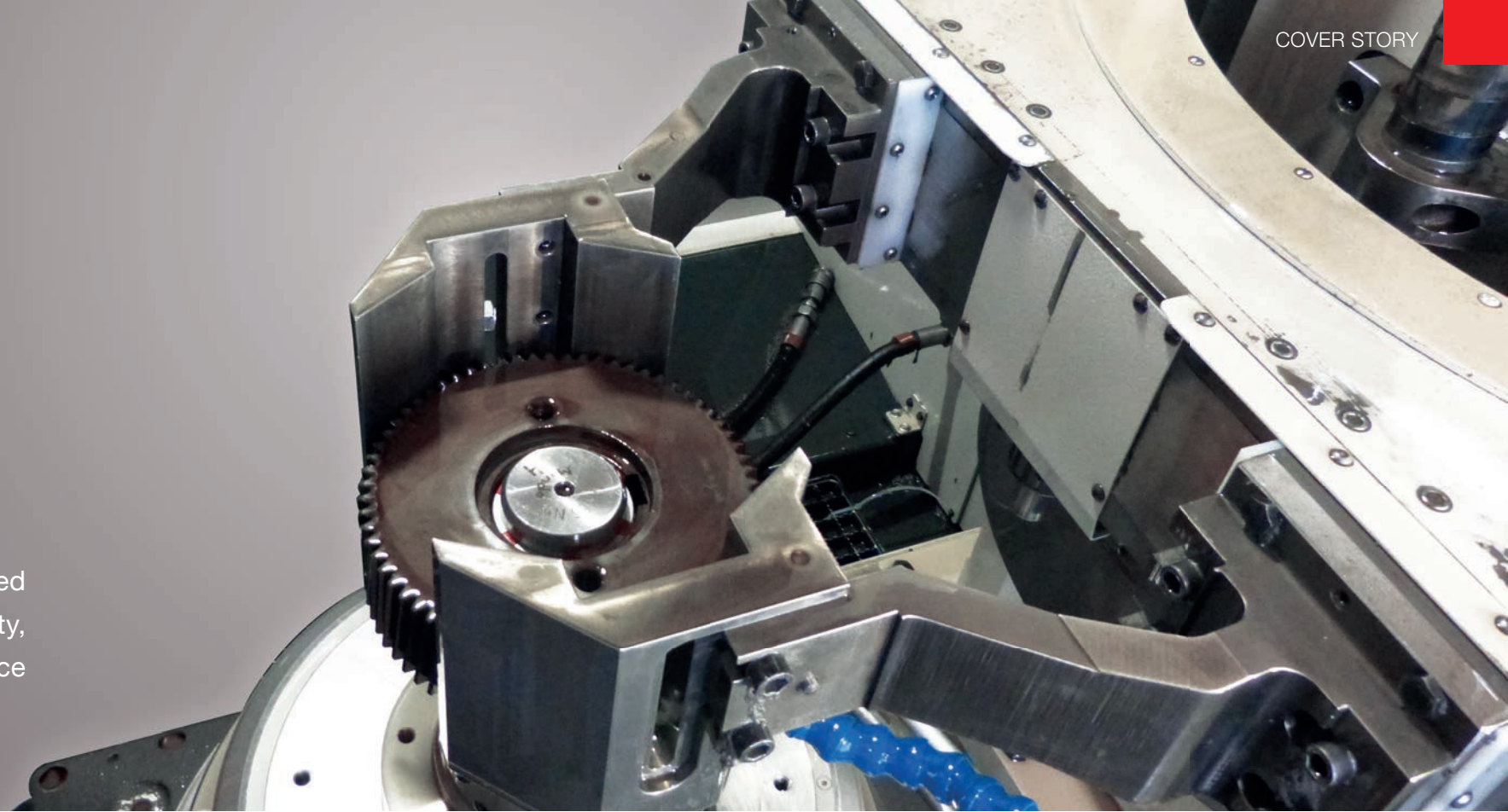
Data transmission  
via Bluetooth





# For Gears

Wittmann GmbH – a German gear manufacturer could not do better. The automated clamping devices provide fabulous results for tooth grinding. Perfect concentricity, desired flexibility, short delivery times and manageable costs. What clamping device can that be? The answer: Standard mandrel MANDO T211!



## Automated, low cost and ideal for complex components

Company Wittmann from Uhingen, Germany is happy to solve the gearing tasks of its customers. The 65 employee-strong job shop tries to meet every customer's request for involute-toothed components. The batches are usually between 10 and 100 pieces. Wittmann also produces individual parts, prototypes and series beyond the 1,000 mark.

Renee Reuter, Technical Consultant at HAINBUCH, got the chance after several visits in 2012 to prove the performance of the HAINBUCH products. Wittmann was looking for a better clamping system for a thin and disc-shaped component on a Burri BZ 362 gear grinding machine. A test with the manually actuated TOROK chuck size 100 and a mandrel adaptation was initiated. The results were consistently positive and the parts are still running today. When a Liebherr LCS 700 was ordered two years later, Liebherr proposed to use the special mandrel MANDO T213 from HAINBUCH. Oliver Mager, PHD, Management Board Member at Wittmann, reports: »We manufacture parts according to customer's requirements and basically we do not know with which component a customer comes to us tomorrow.« Thus, the focus for the new automated clamping concept was on

flexibility. »We have looked at Liebherr's recommendation, but have not adopted the concept. Instead we went with standard components from HAINBUCH. If the geometry of the workpieces makes this possible, everything else makes no sense,« says Mager.

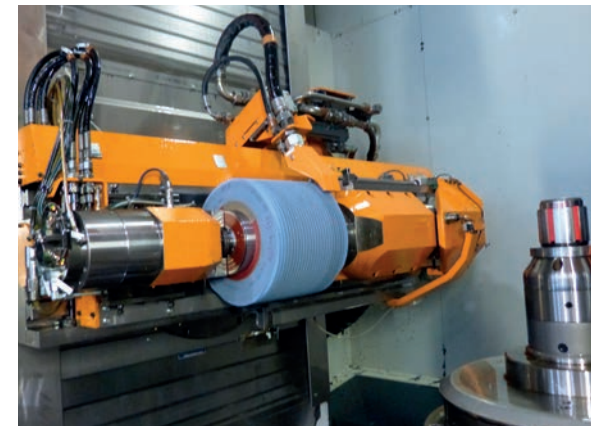
### Alternative clamping devices are out of the game.

Generally, these three options were available: a manual chuck, diaphragm mandrels or the mandrels from HAINBUCH.

The Liebherr machine has an automated handling system for the workpiece change-over. If this process is to be performed without operator intervention, a power operated automated clamping device is required.



This is how successful cooperation works. Renee Reuter [HAINBUCH] and Oliver Mager [Wittmann]



The HAINBUCH mandrel and the Liebherr machine harmonize ideally with each other.

Mager explains: »We finally decided on the HAINBUCH system for three reasons. First of all, the mandrels do not have to be aligned. Secondly, the clamping range of the clamping bushing has several tenths of a millimeter and so the workpieces can easily be loaded onto the mandrel. Thirdly, in many cases, many different workpieces can be covered with one clamping bushing, which are a few tenths apart in the bore dimension. And as the icing on the cake: when it comes to

### Facts of workpiece

- Involute-toothed components from all areas of the machine tool industry
- Gears with module 1 – 36

### Process

- Gear grinding

### Facts of MANDO T211

- Enormous clamping force even with small clamping diameters
- Clamping range  $\varnothing$  20 - 200 mm
- Large clamping range and vibration dampening due to vulcanized clamping bushings
- Standard segmented clamping bushing and workpiece end-stop for self-machining to size

### Benefits & Savings

- Clamping on a gear and profile grinding machine
- Excellent concentricities
- Short clamping distances, several tenths of a millimeter
- Low-cost: use of standard mandrels and segmented clamping bushings
- One segmented clamping bushing covers different components
- Quick and easy change-over of mandrels and bushings





## TIME SAVER

One can truly assert that Luigi Pucciarelli knows our business like the back of his hand. He has already been on board at HAINBUCH for more than 15 years. He is one of our teamleaders in production and is virtually predestined for the latest project »Ready To Go«.

A machine that doesn't cut chips is not making money. As well as employees that don't fill their working hours in an organized fashion.

Therefore, it is a good idea to optimize the production in the best possible ways. However, as time goes on, processes are passed on that are no longer up-to-date, true to the motto: »We have always done it that way«!

This is where Puciarelli, the set-up coach, comes into play. He observes work processes in his daily life and thinks it through, how they could run more efficiently. In coordination with colleagues, new ways are tried to become better and faster. This not only saves HAINBUCH a lot of capacity, but also affects the delivery time of our clamping solutions. For us and for our customers a win-win situation.



# THE PROCESS OPTIMIZER

One of our teamleaders in production, Luigi Pucciarelli, improves the processes on HAINBUCH machines.



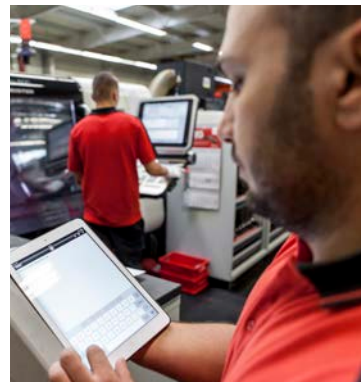
# IN SEARCH FOR SAVINGS

The main savings potential if it comes to change-over optimization lies in the organization of the set-up. At the point of action – the HAINBUCH production – we take a closer look at the activity of our process optimizer. Ready? So, let's go.



06:00

It is already humming in the production of HAINBUCH. But machine operator Patrik Lober has now the meeting for his set-up time optimization.



10:30

**Set-up process.** Pucciarelli observes the individual movements of Lober during the set-up process. Everything is documented accurately.



07:00

**Briefing.** In a discussion, the focus is first on the inner attitude, the current order situation, the global competition situation and why it is so important to permanently intervene at the right spots. Together the current process, and first improvement ideas are collected and goals are defined.



08:30

**Workplace inspection.** Now the actual analysis at the workplace follows. The working conditions on the machine are examined to decrease operator's moves needed during the machining process as much as possible and to increase efficiency.



11:30

**Motivation.** Lober is praised for his workplace, everything is tidy and set-up. Protective goggles are worn when cleaning with the air pistol. Work Safety is always a top priority for HAINBUCH.



12:00

**Quick solutions.** Every workplace is different, but often the same problems arise. Pucciarelli can immediately suggest improvements, which he has already given to other colleagues.



**Red dot.** For standard tools, a list was created and the tools already adjusted were sealed. All you have to do is to select the tool and you have saved the step of measuring.



**Helpful trick.** Close the door! The revolver moves faster with the door closed.



**Practically.** Only a few moves are necessary during change-over because the cart with all needed tools and clamping devices is already there.



**Green light.** As long as the machine is running, the operator checks the dimensions and inserts them into the drawing.

»I WOULD HAVE NEVER THOUGHT THAT JUST WITH A FEW CHANGES THE SET-UP PROCESS CAN GET OPTIMIZED THAT MUCH.«



**Follow-up.** In two weeks, the process optimizer visits the operator again to see if the changes have been successful.

## OBJECTIVES OF THE PROJECT »READY TO GO«

- Increase the machine cutting time
- Avoid machine downtime
- Simplify set-up procedures
- Avoid waste

Our project has been running since January 2017 and has resulted in many improvements.



Our centroteX quick-change system used by the tool maker company LINHARDT scores first place when it comes to set-up effort and accuracy. Thanks to the quick-change system, 12 clamping devices can be installed on 6 spindles without alignment in a record set-up time of 2 to 3 minutes!

# READY, SET, GO

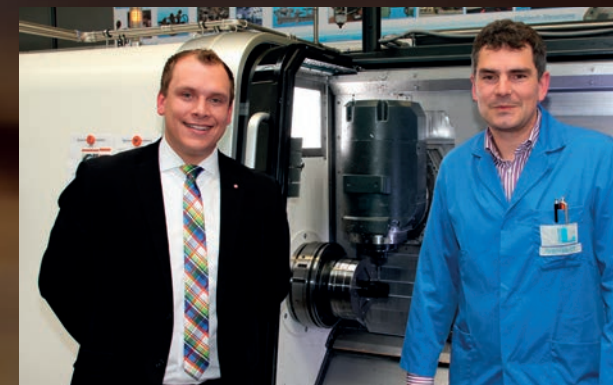
The toolmaking unit belongs to the LINHARDT Group in Viechtach, Germany. 35 CNC machines and a 3-shift operation suggest that a lot is manufactured here. One specializes in small series with batch sizes from 1 to 500. The competence lies however in the single part production. The toolmaking unit can offer the complete processing spectrum, from the drawing to the final product. 60% of the customers are outside the LINHARDT Group and otherwise the toolmaking department is the fire brigade for the LINHARDT Group. Therefore, the top priority is to avoid production holds and to achieve short throughput times. That is why Stefan Pfeffer, Deputy Department Head,

was looking for suitable clamping devices to reduce the high set-up costs. Pfeffer reports: »We set-up minimum every turning machine once per shift, say 30 minutes per change, makes 1.5 hours per day and machine.« Clearly too much for Pfeffer. At the 2-day Technology Forum of HAINBUCH, Pfeffer discovered the quick-change system and had become curious. Even for Pfeffer the set-up time reduction was of paramount importance, further requirements had to be met. The concentricity of 1/100 mm had to be kept while using the quick-change system. In addition, not only the HAINBUCH clamping devices should be able to be flanged onto the adapter plates.

»Up to now, we had 2 or 3 clamping devices for each machine spindle. We wanted to be able to use all clamping devices on all spindles to reduce this,« says Pfeffer.

## Challenge accepted and completed.

The challenge to bring all different turning machines and clamping devices under one blanket was therefore the task for the clamping technology specialist. Thomas Hummel, responsible Technical Consultant for HAINBUCH, reports: »For this purpose, we designed the adapter plates accordingly to fit the clamping devices. It was also necessary to minimize the collision contours in the work space. Therefore, the outer diameter of the interface was set to 320 mm and the diameter range for each clamping device was kept as small as possible. Overall, the clamping devices used cover diameters of 5 to 250 mm.« With centroteX, the operator now changes the clamping device in 2 to 3 minutes. A positive side effect of the setup time reduction is the increased flexibility. This means that it is also possible to switch more often per shift. The quick-change system is installed on 4 machines, two of which are equipped with a counter spindle. A total of 6 spindles are equipped with the basic flange. 12 chucks with adapter complete the kit. »The centroteX quick-change system is a universal solution for us,« praises Pfeffer.



Thomas Hummel, Technical Consultant at HAINBUCH, and Stefan Pfeffer, Deputy Department Manager in the toolmaking department of Linhardt GmbH & Co.KG, [f. 1.]



## Facts of workpiece

- Various workpieces, individual production & small series with batches from 1 to 500

## Process

- Total machining spectrum [turning, milling, grinding, drilling, EDM]

## Facts of centroteX

- Clamping device quick change-over system
- Repeatability between machines and clamping adapter <0.002 mm possible – without aligning
- Cross-machine use of clamping devices
- Power or fluid actuation of clamping devices possible
- Monteq change-over device for heavy duty clamping devices for easier handling and best possible interchangeability

## Benefits & Savings

- Set-up time reduction from 30 minutes down to 2 – 3 minutes
- No alignment
- Excellent concentricity
- High repeatability
- Flexible manufacturing, all clamping devices can be used on all machines





# METAL MEETS MEDICAL

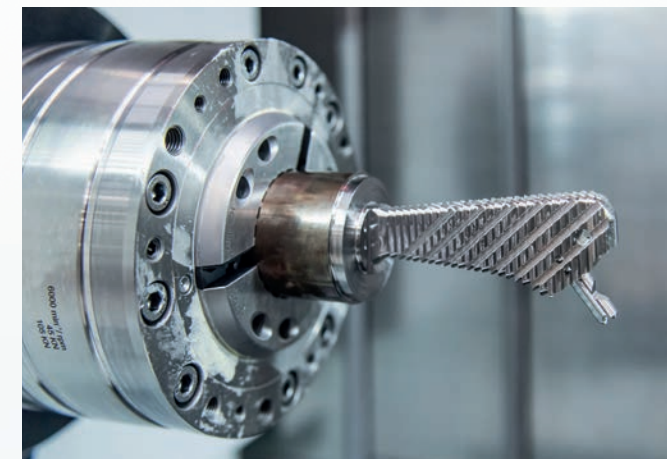
It is hard to believe what technical possibilities are available in the field of medical technology nowadays. Much of it has been unthinkable 20 years ago. However, in order to be able to manufacture customer-specific joints or other workpieces with the highest quality, you need an experienced specialist in this field. We help you to find the perfect clamping device.

## PRESCRIBED CLAMPING SOLUTIONS

With its high level of innovation and the rapid development rate the field of medical technology is certainly one of the most demanding industries. Not only the high standards of hygiene and the difficulty to machine biocompatible materials, but also the technical specifications for tolerances and finish require very complex production processes.

For this industry, this means continuous quality improvement and economic optimization of the processes. Therefore it is good to have a clamping device solution provider like us with many years of experience and many innovative solutions from the industry, providing advice and support. We have already implemented first-class solutions for many workpieces and implants, such as hip joint sockets, hip joints, spinal implants, dental screws and hip shafts.

With our clamping devices, sensitive, marking- and residue-free clamping of ceramic workpieces is possible as well as a powerful clamping of titanium.



SPANNTOP chuck with clamped hip shaft



Find our success story on medical technology at [www.hainbuch.com](http://www.hainbuch.com).

Whether hip joint or spinal implant, from single to mass production – the clamping solutions from HAINBUCH make it possible.



# NEWS

from all over the world



## U.S.A Change in leadership

Jim Woods says good-bye and goes into his well-deserved retirement. He started as a Sales Director in 2012 and took over the lead of the small team in April 2013. He systematically developed the team to HAINBUCH's largest sales-subsiary. Structures and processes were preceded by him and contribute to our success in the U.S.



## GERMANY

Exhibition highlight of the industry

The focus of EMO Hannover 2017 is on industry 4.0 and digitization. Sure thing, that HAINBUCH will participate with fresh ideas and a new booth design.

## Big in JAPAN

»Konnichiwa« [Good afternoon] – now HAINBUCH is also represented in Japan. The eleventh subsidiary has been founded and the first two employees are hired. Our office is located in Nagoya, about 1.5 hours from the capital Tokyo.

**Japan**  
**HAINBUCH**  
WORKHOLDING SOLUTIONS

## Meeting in AUSTRIA

In Vienna this year's HAINBUCH subsidiary meeting took place. One can imagine, that the Directors of 11 nations had a lot to discuss.



## THAILAND in double pack

The well-known team from Anuwat Chuenchom and Jutamas Ruensamran has founded a new company called »JUTAWAT Solutions«. They are now our official dealer. Furthermore our subsidiary HAINBUCH Thailand establishes a new sales team in our factory in Rayong. Both teams are working closely together to provide an even better service for our customers.

## MEXICO

Surpasses all expectations

Since the founding a year ago as a one man show, Ivan Ley, our long-term employee and now Managing Director, increased manpower to 6 employees. No wonder – it is booming in México and so more man-power is needed.



## ITALY

Under new Management

Davide Ghizzarda has been 11 years in outside sales for HAINBUCH Italia. He knows the market, the customers and also the processes of the subsidiary inside-and out. He is the ideal candidate for the position of the new Managing Director. Enrico Veronese, our former leader, who founded and managed the italian subsidiary for 16 years went into retirement. We are sure that his »life's work« is in good hands and will continue to grow successfully.



## VIP visit in INDIA

What an honor. Winfried Kretschmann, Governor the state of Baden-Württemberg, Germany has visited HAINBUCH during his exhibition tour on the IMTEX in Bangalore, India. Our sales representative Jochen Schneider was there, represented HAINBUCH and answered all questions.





**Now available!**



## CAD models – just one click away.

The CAD data of our HAINBUCH products are available online for all customers.

Your advantages:

- High-quality CAD files that can be used for any CAD system
- Always up to date
- Unlimited availability, 24/7

Visit the HAINBUCH Part Community: <http://hainbuch.partcommunity.com>