

SEPTEMBER 2015

**HAINBUCH**

REPORT

ISSUE 31 THE MAGAZINE FOR CUSTOMERS, EMPLOYEES AND FRIENDS

**THAT'S HOW
IT'S DONE –
»ALL IN ONE«**

The HAINBUCH
modular system

HAINBUCH PROFILE

The specialist in workholding solutions

USER SPECIAL

»Clamping cases« scrutinized



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The HAINBUCH modular system

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IMPRESSUM

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EDITORIAL



What a year!

Dear customers, dear employees, and dear friends,

Incredible how the world has changed in recent months. And how the market is ever increasing its pace. The new media are blessing and a curse, globalization also. Not to mention the automation. A real constant issue that really is omnipresent in the trade press. Of course, we are affected by it as well. Higher parts variants, smaller batch sizes, greater automation and more flexibility should not be in conflict. On the contrary, it should be in line. Because the competition is increasingly getting tougher. But please do not sacrifice quality. And that's the crux. Top notch should be everything but it also should be reasonable. So once again it puts the

production process into the focus. And here is true »Reduce to the max«. Also we have our new fully automatic solution with maximum output for you. All details can be found on page 12.

But before you keep scrolling, you should know one thing: This is not a »normal« Report. There were just so many practical clamping cases that we do not want to withhold, and so this time primarily our customers have the say. And only secondarily we. So, now you can turn the page and you are right in. Be inspired!

Sincerely,
HAINBUCH Executive Board

A handwritten signature in blue ink, appearing to be 'GRall'.

Gerhard Rall

A handwritten signature in blue ink, appearing to be 'Weller'.

Hans-Michael Weller

A handwritten signature in blue ink, appearing to be 'SRall'.

Sylvia Rall



THAT'S CHILD'S PLAY:

The HAINBUCH modular system

Our clamping solutions give you maximum flexibility.

Rotating or stationary, manually or hydraulically – HAINBUCH clamping devices are in every respect »upgradeable«. And converted in no time. 15 seconds for a change of a clamping head change-over, in a minute from external to internal clamping or in just two minutes to jaw clamping. The adaptations make it possible. That's maximum benefit with minimal set-up time.

And so very positive for productivity efficiency. You only need to choose between the classic round RD and the innovative-hexagonal SE variant. It all depends on what you plan to machine. But for this our experts will tell you all about it and for sure will find the right solution for your company.

That's how it's done – »All in one«!



The HAINBUCH modular system – always the suitable clamping device!

Clamping devices **Rotating**



TOPlus chuck

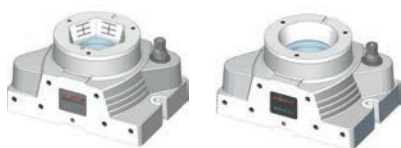


SPANNTOP chuck

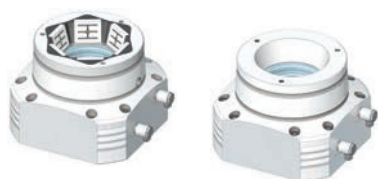


TOROK manual chuck

Clamping devices **Stationary**

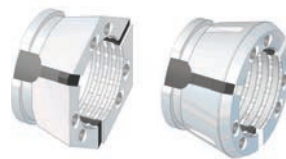


MANOK plus manual chuck



HYDROK hydraulic chuck

Clamping element



Clamping head –
O.D. clamping

- Circumferential clamping
- 3 different versions: for raw material, precision machining, and for in-house machining
- An abundance of profile clamping possibilities
- Coolant-resistant, rubber-metal connection, prevents chips in the chuck
- Clamping range SE Ø 4–100 mm, Clamping range RD Ø 4–160 mm

Adaptation clamping device



MANDO Adapt mandrel –
I.D. clamping

- Quick change-over from O.D. to I.D. clamping without adjusting, due to CENTREX interface
- Concentricity <0.005 mm can be achieved between chuck taper and mandrel taper
- Clamping range Ø 8–120 mm



Jaw module size 145 or 215 –
jaw clamping

- Deadlength 3-jaw clamping
- Can be used rotating [under RPM] and for stationary applications
- Change-over from clamping head or mandrel clamping to jaw clamping in less than 2 minutes

The favorites of our customers may soon be your favorites as well. Because they offer an infinite number or variations and let you experience all the [clamping] options and what they have in common. They are well thought out, flexible and precise. Exactly what you need for efficient manufacturing. Try it!



Clamping head change-over [15 sec.]



Clamping device with clamping head

Remove clamping head

Clamping device without clamping head

Insert a clamping head

Clamping device set-up

Change-over to mandrel adaptation T211 [1 min.]



Remove clamping head

Insert MANDO Adapt T211

Fit on segmented clamping bushing

Screw in draw bolt

Clamping device set-up

Change-over to jaw module [2 min.]



Clamping device with clamping head

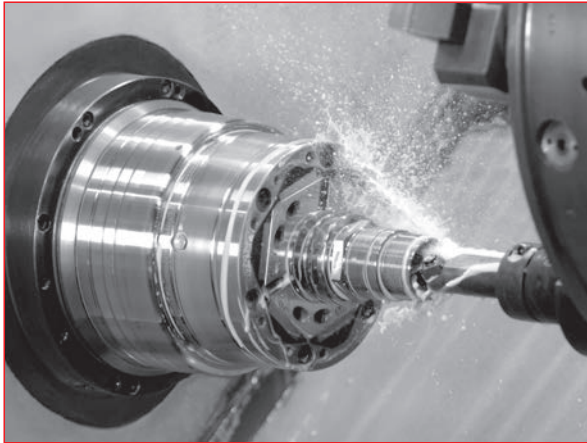
Remove clamping head

Insert jaw module

Secure jaw module

Clamping device set-up

Just simply well thought out – our modular system Topseller!



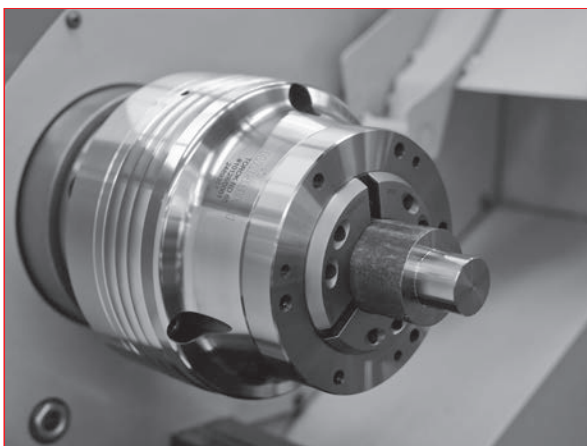
Chuck: **TOPlus** [with hexagon clamping geometry]

- 25 % higher holding power than SPANNTOP nova
- Unequalled rigidity due to full-surface contact of the clamping segments
- Absorbs vibration
- Concentric precision <math>< 0.015 \text{ mm}</math> possible



Chuck: **SPANNTOP nova** [with round clamping geometry]

- Typical HAINBUCH features, such as user friendly set-up, full passage, parallel clamping, optimal power conversion, extreme rigidity and superior holding power, as well as minimal wear and tear
- Concentric precision <math>< 0.010 \text{ mm}</math> possible



Manual chuck: **TOROK** [manually actuated chuck]

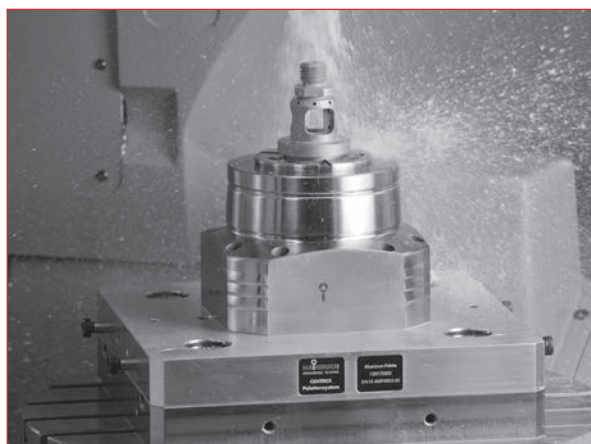
- Sensitive manual clamping is possible
- Concentric precision <math>< 0.010 \text{ mm}</math> possible
- Minimal inertia losses





Stationary clamping device: MANOK plus
[manual stationary chuck with adaptation possibilities]

- Sensitive manual clamping is possible
- Workpiece stabilization through axial draw force applied against the workpiece end-stop
- Short and stable clamping
- Ideal for 5-side machining
- Repeatability <0.010 mm



Stationary clamping device: HYDROK
[hydraulic stationary chuck with adaptation possibilities]

- Ideal for automated clamping
- Outer contour: angular contour allows lower space requirement
- Repeatability <0.010 mm



Our product overview brochure »modular system« is now available in 17 languages around the globe!

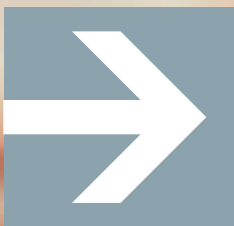
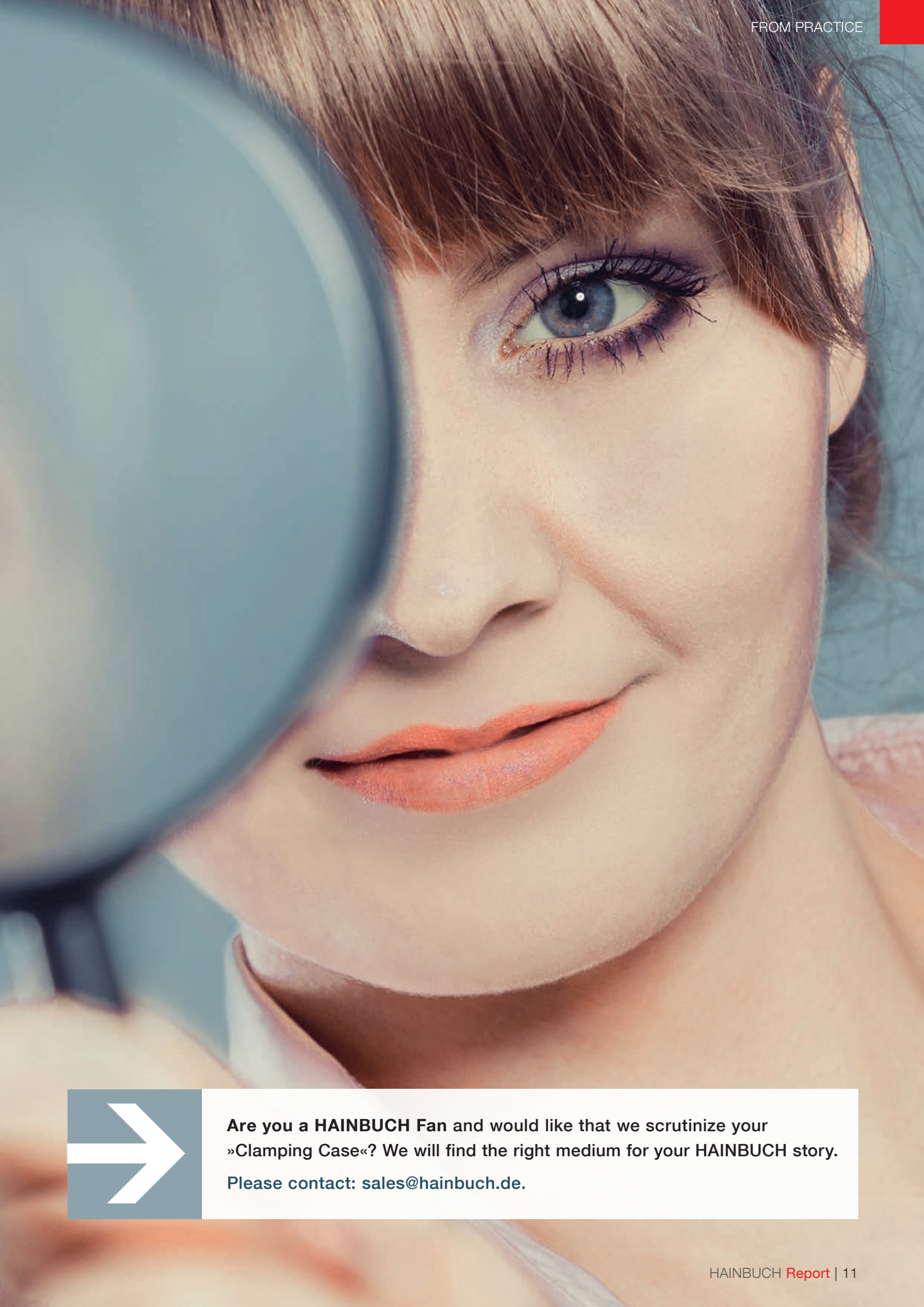
Get your copy or pdf by sending us an e-mail: sales@hainbuch.de

»CLAMPING CASES« scrutinized

Theoretically, we could explain page by page our products, promise you a great return on investment and tell you how good we are. Practically, we leave that to others. Those who work every day with us and our products. Those who challenge us with new clamping tasks again and again and afterwards are as happy as we are, when we have found a solution. One that not only works, but also provides the desired advantages. Just because we have worked it out together.

Our customers are often our harshest critics. And our best. Without them we would not be where we are today. How such a common solution finding process looks like and what are at the end the results, can be found on the following pages. What is more meaningful than real »Clamping Cases«? Maybe you can discover yourself in one or another case again. Or get new ideas for your business.

If so, then we have already achieved one thing: to inspire you. And maybe your »Clamping Case« appears at this point at some time. We would be happy!



Are you a HAINBUCH Fan and would like that we scrutinize your »Clamping Case«? We will find the right medium for your HAINBUCH story. Please contact: sales@hainbuch.de.

1 »That's how it's done automatically«

User Special



Anyone who knows us knows: No production process is safe from us. Especially not if we ourselves are not happy with it. So we were also looking in terms of automation for a minimalistic clever solution that makes our work easier. And that does not necessarily amount to a robot, but still can be carried out independently of an operator.

The solution: a stocking and changing station, which is placed on the workpiece feeder belt of the vertical lathe. To set this up the spindle passes together with the chuck over the changeable combination consisting out of clamping head and end-stop, which is loaded via a pneumatic impulse within seconds reliably into

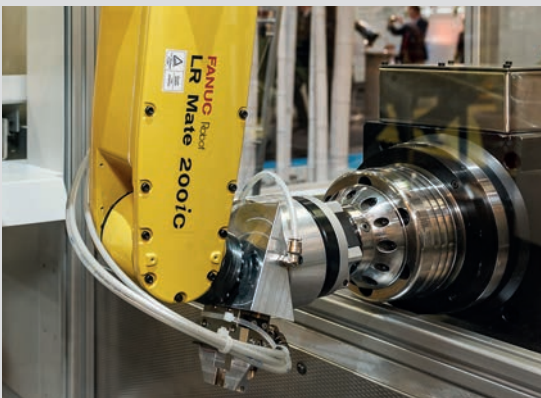
the chuck. The workpiece to be clamped can then be picked up and clamped directly on the subsequent changing station. The automation effort is minimal thanks to this arrangement. The machine's flexibility therefore is enormous. And with a clamp check with air sensing control or additional flushing capability the efficiency can be increased even further.

This simple, practical solution is also suitable for machining centers and horizontal lathes, because the changing station can be adapted directly to the industrial robot or the manipulator. A real high-tech talent. Just as you are used to from us.

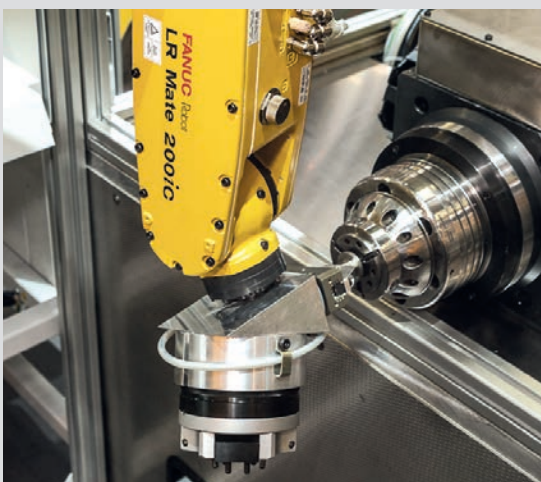
Small batch sizes, increasing part variants, ever increasing competition and less and less time. Does that sound familiar to you? Welcome to the club! And because we are very familiar with this issue, we have automation solutions – especially for small batch sizes. Here is one of the solutions implemented.



Stocking and changing station on the workpiece feeder belt to change-over the clamping head.



The robot inserts the clamping head into the clamping device.



The robot loads the clamping device and workpiece.



Automated change of clamping head

That's it:

- Set-up automation of changeable chuck items [Clamping heads, end-stops]
- Ideal for flexibility with small batch sizes, or multiple parts variants
- Unattended production in 3-shift operations
- Low expense for retrofitting
- Low investment compared to conventional automation

That's how it works:

- Clamping head and end-stop use a clever clutch mechanism
- The changing station sets up clamping head and end-stop together by an actuating impulse
- No alignment, ready for immediate use for workpiece clamping

2 »Change-over time reduced from 20 minutes to 30 seconds«



User Special



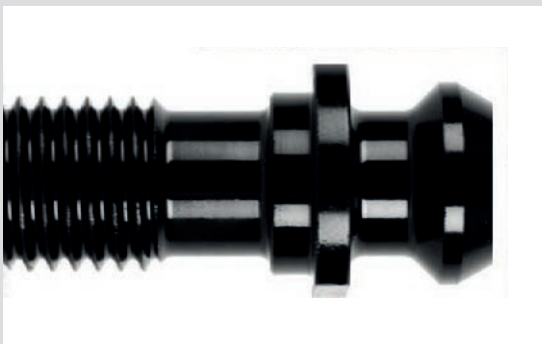
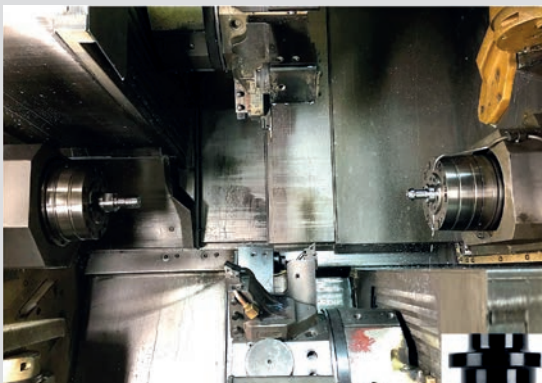
JM Performance Products President Andrew Rowley [left] and Plant Manager Craig Fischer.

Since production of the retention knobs began 5 years ago, the line has grown to encompass about 400 different versions for virtually every type of toolholder. The variety offered continues to expand. As the number of configurations grew, so did the need for faster change-over times and improved manufacturing capability to maintain precision when cutting materials with a hardness up to 225 HB. This led to a search for better workholding methods. The company was using 3-jaw chucks with soft jaws, but the workpieces would cause the jaws to wear and reboring the jaws took up about 20 minutes every day – sometimes every 12 hours, Fischer said. In addition, the company experienced pushback, where the bar stock slides in the collet during machining, when running at the toolmaker’s recommended speeds and feeds.

The answer was found in collet chucks from HAINBUCH America Corp., Germantown, Wis. »What really impressed us with the HAINBUCH SPANNTOP chucks is their quick change capability,« Plant Manager Craig Fischer said. »Our change-over time literally went from 20 minutes to 30 seconds.« Andrew Rowley, president of JM Performance Products added.

»Thanks to the hardened chuck jaws, we have reduced wear and runout and have gone from 0.001" to 0.0004" tolerances. Also, the HAINBUCH collet design results in better gripping and the elimination of pushback.« Although HAINBUCH offers serrated and rough-surface collet pads as an option, HAINBUCH indicated JM Performance Products wouldn’t need them. »We tested it in a Mazak Hyper Quadrex machine with two spindle heads and that bar did not budge when we were running with regular, smooth-surface collet pads,« Fischer said. He also added that the workholders not only improve process accuracy but also extend tool life 40 to 50 percent, because holding the bar stock more firmly minimizes vibration detrimental to the carbide cutting edge. »If you get microfracturing on the edge, it’s just gone,« he said, adding that the company can run high-performance carbide tools at the recommended machining parameters to further improve productivity.

JM Performance Products Inc., Fairport Harbor, Ohio, offers a retention knob that has quickly gained acceptance as a means of extending tool life and improving tool performance.



The manufacturing set-up at JM Performance Products for a high-torque retention knob [inset] involves two opposed HAINBUCH chucks mounted in a Mazak turning center, such as this Hyper Quadrex dual-spindle unit.



SPANNTOP

Workpiece

- Retention knob
- Material: 9310 alloy steel

Details SPANNTOP chucks

- Typical features of all HAINBUCH power chucks, such as high holding power, parallel clamping with high accuracy and easy set-up
- Minimal inertia loss compared to 3-jaw chucks
- Concentric precision <0.01 mm possible
- Numerous extensions from the HAINBUCH modular system are available

Advantages /Savings

- Faster and easier change-over
- Reduced wear and runout
- Better gripping and elimination of pushback

3 »A system for all incidents«



User Special



It was a gamble that Jürgen Balting entered in 2009 when he took over the insolvent Paul Henkel GmbH & Co. KG in Germany and transformed it into the HeBa Fertigungstechnik GmbH &

Co. KG. But the new beginnings and the investments paid off.

20 employees in three shifts make sure that the varying between 100 and one million components batches are produced and

delivered on schedule. But for that it also needs a modern machine park, the right tools and clamping devices. Only then the small subcontractor can keep the overhead low and the production flexibility. Eight lathe and three machining centers are at HeBa in use. All very modern. And in the meantime, almost

all equipped with HAINBUCH clamping devices.

Ideal clamping device

2011 Balting was looking for a replacement for the 3-jaw chuck to its automated Mori Seiki, the chuck was too big and bulky and not really easy to set-up. Ideally the new solution should have adaptation options, because it was inconvenient always to change-over the entire chuck. It had to be smaller due to the narrow working space and quickly to set-up. »So we discovered the HAINBUCH modular system with its adaptations«, explains Balting. »In this range, no other manufacturer could offer this.« Since then, the hexagonal TOPlus chucks size 100 are in use on the Mori. Including the matching clamping heads and the MANDO Adapt mandrel adaptations of the internal applications. For larger components, for which the clamping

heads are not sufficient, HeBa utilized the jaw adapter. So with one system all processing steps can be realized with a minimum of effort: from milling the contour, drilling of transverse and oblique bores, turning internally and externally as well as turning the outer contour. »The system was really a winner,« so Balting. »We use it on each spindle. Always with pull-back effect. As little scrap as possible. And such a high part quality with minimized interference contour and set-up time – which one can only dream about.«

New to the team: Jaw module

The combination of TOPlus chuck and jaw adapter has been utilized successfully for two years at HeBa. When the new jaw module was introduced to the market, HeBa switched right over. First, the stroke and the clamping range was greater, secondly the newcomer scored

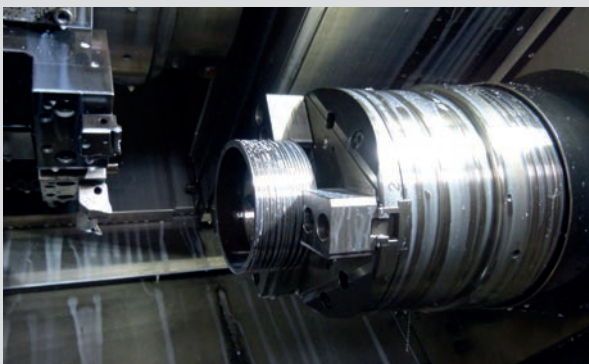


Once tried – seduced forever. Jürgen Balting, CEO of HeBa manufacturing technology in Germany, has acquired a taste. The HAINBUCH modular flavor. On its machines the entire system is in use and also newcomers as the jaw module he likes to try. They just have to fit in the clamping concept.



The workpieces are now running thanks to the HAINBUCH clamping devices like clockwork from the conveyor belt.

with hard jaws, standard toothing and pure radial clamping, and thirdly it was ever easier to set-up. Especially when it comes to components handled within the machine the jaw module was convincing. »The spindle, that hands the part over to the other one, pushes lightly against it. Because the jaw adapter moves along in the clamping direction, it never had an end-stop. With the jaw module now, we can move firmly against it,« explains Balting. Meanwhile, he has gradually equipped all machines with bar feeders and with TOPlus chucks. That was probably »love at first clamping«.



TOPlus chuck with jaw module and the Mori Seiki machine are the perfect team.



Modular system & jaw module

Facts workpiece

- Sockets for motors and various turning and milling parts
- Material: steel [of bearing steel 16 CrMo5 to 16 MN], galvanized material, casting material

Process

- Milling the contour, transverse and oblique bores, inside and outside turning, outer contour

Facts modular system

- Unique rigidity through large-scale carry of the clamping segments
- Insensitive to dirt due to clamping head geometry
- Absorbs vibrations
- Quick change-over to internal clamping [MANDO Adapt] and jaw clamping [jaw module]

Facts jaw module

- Jaw clamping in HAINBUCH chuck or vise
- Enlarged clamping range of the base clamping device
- Machining in-between the jaws [milling or drilling] possible
- Rotation [with speed] and stationary use
- Deadlength clamping
- Available in two sizes – optimized interference contour



Knöpfle travels...

... AND EXPERIENCES TWO INCREDIBLE WEEKS IN PEKING

Nine customer visits and the CIMT – our sales representative Christopher Knöpfle had a full schedule during his China visit. And after his return a lot to talk about.



Christopher Knöpfle what was your first impression of Beijing?

CK: The city is simply gigantic. In every respect. I've already noticed at the airport. Because there is not only 2, but about 50 baggage carousels. And then the adventurous taxi ride into town. Surrounded by a bustle of honking cars and much more scooters on which often half the household is transported. A 240L garbage can cross on the luggage rack was the greatest thing I have seen to be transported.

And what did you experience with the customers?

CK: Successes, I would say. You can tell that the level of awareness of HAINBUCH has increased. And so my Chinese colleague and I turned a few prospects into customers. The first visit was, however, very »troublesome«. To sit one and a half hour in a 32 degrees Celsius [90 degrees Fahrenheit] bus ride without air conditioning, that is no fun. Especially not in suit and tie and in-between Chinese in blue work overalls, seeing an overdressed foreigner like me, I was of course a welcome sensation for taking photos. The Chinese are enthusiastic photo-takers even in their own country. We took a taxi for the remaining customer visits, which was significantly more relaxing. And air-conditioned.

Speaking of »enthusiasm« how were the products at the CIMT received?

CK: A trade show is somehow always a state of emergency. Of course we had the typical trade show panic attacks, after we experienced already a couple of issues during the set up. Too high supplied presenters,



rickety ladders for the lamp assembly, three meters high, dirty transportation vehicles that jeopardized the cleanliness of our carpet. And the question: Have we forgotten anything? Will everything work? How many customers will show up? They came. It was a real rush, hardly that the exhibition had opened. And they bought. HAINBUCH meanwhile has a very good standing in China. In one week of the trade show, we have increased six fold the customer contacts compared to CIMT 2013. Even so there were four non-Chinese speaking colleagues scheduled for show duty, it was quite a challenge for us to get across the benefits of our products. Thankfully there are product catalogs and videos, hands and feet, paper and pen. We certainly worked hard for the delicious Peking duck that we could enjoy on the roof terrace. All the better it tasted – seasoned with a touch of »success«.

Thanks Christopher Knöpfle for this short China-CIMT-analysis!





HAINBUCH

Of course you know exciting technology? But do you know OUR EXCITING TECHNOLOGY? After all, you are dealing with the inventor of the clamping head. Over 30 years ago it all started in a garage.

And what has become of it? A success story. So that's how it is having visions, you have to live them. No wonder our first invention was a sensation: the clamping head was the revolution. And the competition has not been stingy in the last three decades with copies. But none were as good as the original. Why it is like that? Because we have the tinkering and innovative drive in our genes. We always want to be the

first in everything and it's quite simply against our honor to copy anybody else. And probably that is the very reason why we are so visionary and passionate about it – regardless of whether it comes to products or services.

Our standards are high and so are our goals and for you the best is just good enough. That is why we can also be found in a variety of industries – from automotive and machine tools to aerospace and further to medical technology – and we don't see ourselves as a product, but rather as a system provider. With a claim in quality of course: There is THE clamping head – and everything else!



Facts & Figures

- Founded in 1951
- Family owned business in the third generation
- More than 750 employees worldwide
- 3 German locations, 9 international subsidiaries
- Over 30 agencies worldwide

A reliable partner

- Design of top class workholding solutions
- Optimization of production processes
- Reduction of set-up times
- Based on experience, 60 % of all production orders are one piece only
- Development, engineering and production of clamping devices

The specialist in workholding solutions.

Your challenge – Complex workpieces

- Drive and steering technology
- Electric motor parts
- Transmission Parts
- Bearing parts
- Medical and food technology
- Pump parts, hydraulic, pneumatic
- Engine parts

Our core competencies

- Vulcanizing: Since 1984 with own formula
- CFK: Lightweight chucks made of carbon fiber
- Electronics: Workholding with intelligence
- Engineering: 40 design engineers, avg. 800 solutions/year
- Patents – more than 150
- »Better fail with something new than copy successfully.«



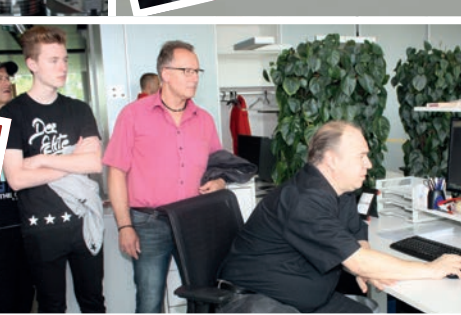


HAINBUCH in Marbach opens its doors

Who would not like having a look behind the scenes? But the »backstage« of HAINBUCH is usually not open to the public. At the end of June we made an exception. What is behind the glass facade? How does it look in the manufacturing area and what are they actually doing there at HAINBUCH?

The day started off and speeches were given – from Marbach’s mayor and the CEO Gerhard Rall, and in-between genuine Swabian Maultauschen plus a Viertele [quarter] of wine – and for the kids an entertaining colorful program. A great day – the pictures speak for themselves!





CLICK AND DISCOVER!

Did you know that our HAINBUCH website is now available in many languages such as English, Chinese, Spanish, Italian and even more?



- Are you looking for a particular product? The easier search function will deliver super fast results.
- Do you always want to be up-to-date? Not a problem with the »News« section.
- With just a few clicks, get the latest information quickly and easily – typically HAINBUCH.

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