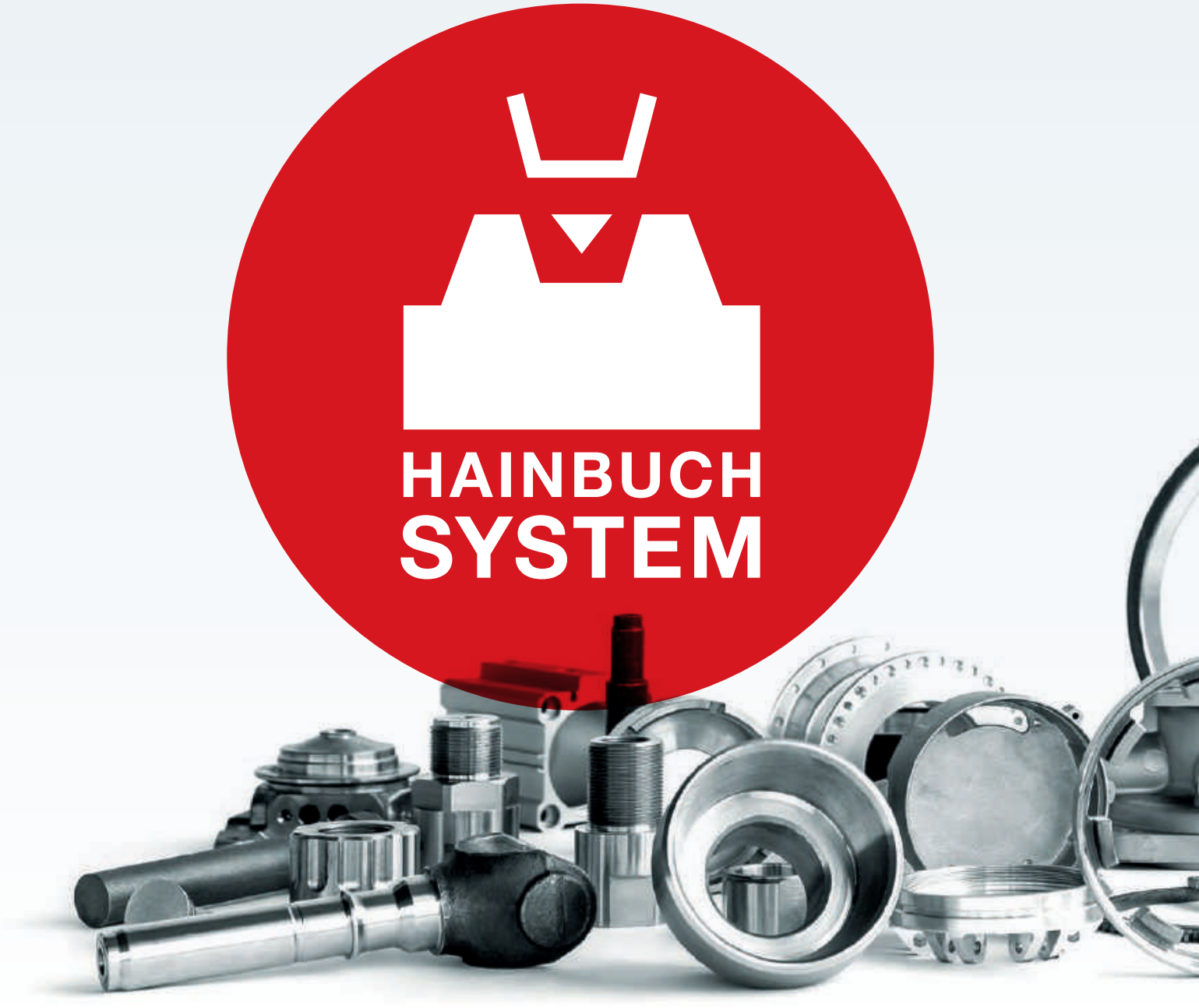
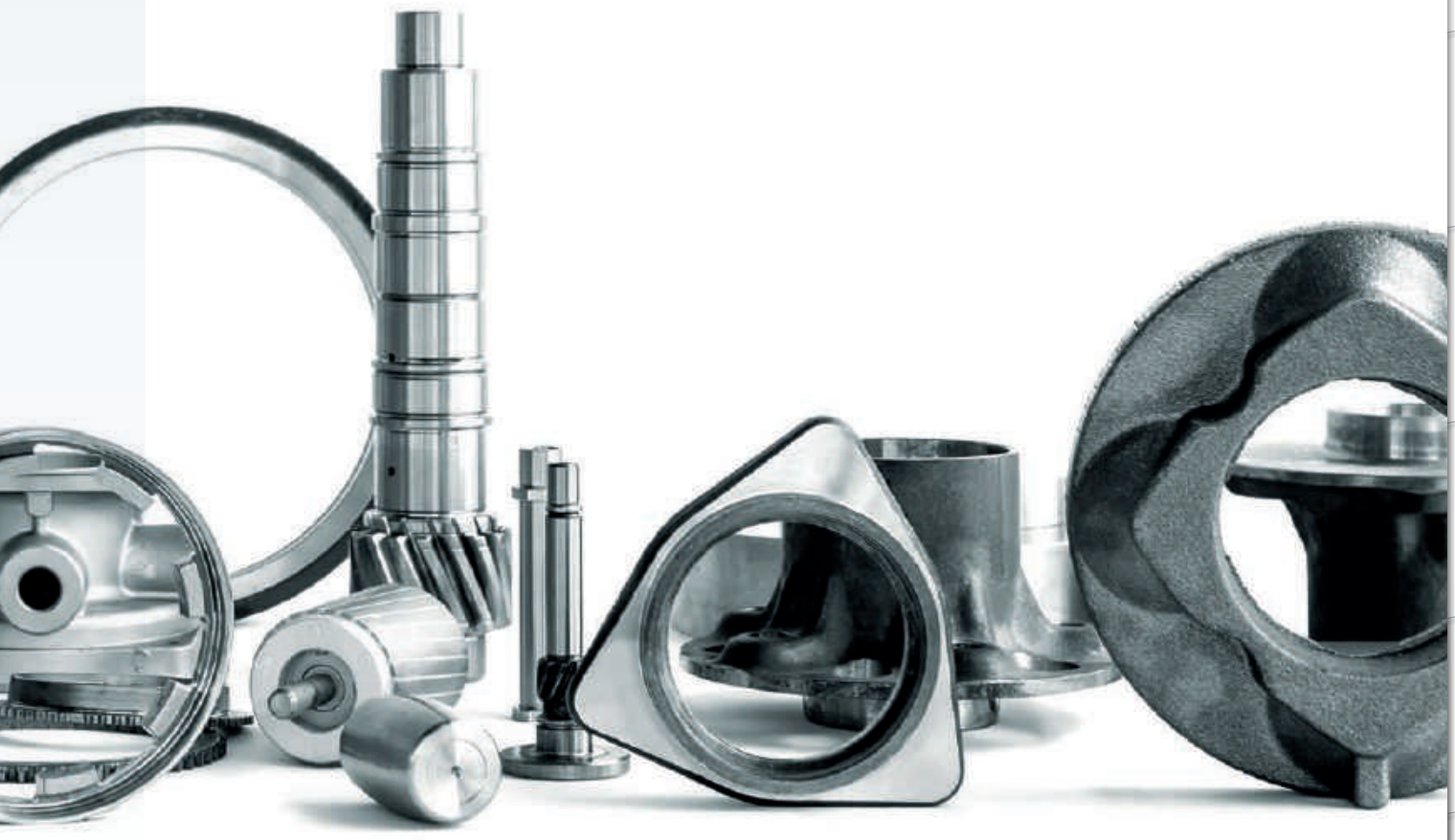
The HAINBUCH SYSTEM



Adapts to your workpiece

Our HAINBUCH SYSTEM is truly a transformation artist. You can use it to clamp 1,000 different workpieces – no matter how complex or different they may be. Adaptations give you everything you need for complete machining. The workpiece and the machining process define the adaptation and convert your basic clamping device – which remains on the machine – for the particular application.

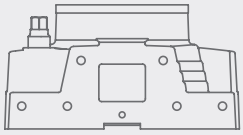
What does this mean? You can quickly switch to a different adaptation [O.D., I.D. or jaw clamping] without the need for alignment. This makes your processes extremely flexible, so that you can easily squeeze in short-term jobs.



HAINBUCH
SYSTEM

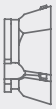
CLAMPING DEVICES

Chucks

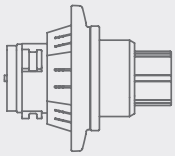


Stationary chucks

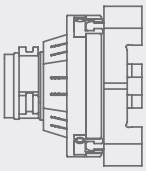
CLAMPING ELEMENTS AND ADAPTATIONS



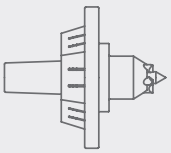
Clamping head
for O.D. clamping



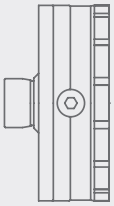
MANDO Adapt
Adaptation for I.D. clamping



Jaw module
Adaptation for jaw clamping



Face driver / Morse taper
Adaptation for clamping
between centers

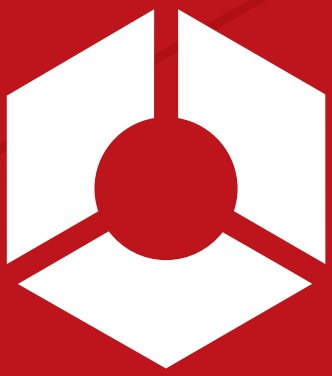


Magnet module
Adaptation for magnetic clamping

TWO CLAMPING GEOMETRIES

SE variant [hexagonal]

On the market since 2005 –
clamping geometry of the future.



RD variant [round]

On the market since 1980 –
invented by HAINBUCH.

Two clamping geometries

The basic clamping devices, clamping elements & adaptations of the HAINBUCH SYSTEM are available in both clamping geometries.

SE variant [hexagon]

The hexagon TOPlus version offers an additional 25 % increase in holding power relative to the RD variant – thanks to full-surface contact of the clamping element in the clamping device body.

Additional benefits over the RD variant

- Higher metal removal rates, higher output, lower piece costs
- Vibration dampening effect
- Particularly efficient for difficult machining
- Sealed against contamination from outside – low maintenance, consequently less machine downtime and increased process reliability. Particularly useful for fine-particle non-ferrous metals such as brass or even cast iron. Consequently also particularly well suited for stationary machining.
- Optimal lubrication due to lubricating grooves in the chuck body
- Full through-bore or top face run on the workpiece or front end-stop

The SE variant is indicated by this symbol [in the header]

TOPlus mini chuck

TOPlus chuck

TOROK manual chuck

MANOK plus manual stationary chuck

HYDROK hydraulic stationary chuck

SPANNTOP mini chuck

SPANNTOP nova chuck

TOROK manual chuck

MANOK plus manual stationary chuck

HYDROK hydraulic stationary chuck

RD variant [round]

The well-known SPANNTOP version with round clamping geometry in the chuck body and clamping head offers significantly greater holding power than what is offered by traditional 3-jaw chucks or clamping collets, thanks to the pull-back effect and circumferential clamping.

Your benefits

- High rigidity
- Precise concentricity
- Fast change-over
- Full through-bore or top face run on the workpiece or front end-stop

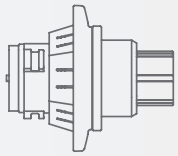
The RD variant is indicated by this symbol [in the header]

One system, two basic variants, even more possibilities.

The HAINBUCH SYSTEM

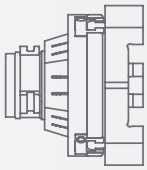
Clamping head
for O.D. clamping

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



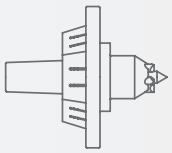
MANDO Adapt
Adaptation for I.D. clamping*

- Quick change-over from O.D. to I.D. clamping without adjusting due to the CENTREX interface
- Ideal for 5-sided machining
- High rigidity
- Clamping range Ø 8–190 mm



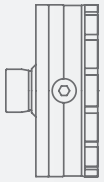
Jaw module
Adaptation for jaw clamping

- Deadlength 3-jaw or 2-jaw clamping
- Can be used rotating [under RPM] and for stationary applications
- Enlarges clamping range of the basic clamping device
- Machining between the jaws is possible [milling or drilling]



Face driver / Morse taper
Adaptation for center clamping

- Incredible flexibility
- Self-centering of the adaptation in the chuck ≤ 0.003 mm
- Extremely quick change-over without disassembling the chuck [1 min.]



Magnet module
Adaptation for magnetic clamping

- End face axial clamping via neodymium magnet
- High face-run change-over accuracy
- High holding power of 140 N/cm²
- Assembly in 30 seconds without alignment

* Run-out accuracy < 0.005 mm between chuck taper and mandrel taper
Repeatability < 0.003 between stationary clamping device and mandrel taper

Clamping head change-over

10 sec.

Clamping device with clamping head | Remove clamping head | Clamping device without clamping head | Insert clamping head | Clamping device set-up

Change-over to mandrel adaptation

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

Change-over to face driver adaptation

1 min.

Clamping device with clamping head | Remove clamping head | Insert face driver | Secure face driver | Clamping device set-up

Change-over to magnet module

30 sec.

Remove clamping head | Insert magnet module clamping head | Clamping device with clamping head | Insert magnet module | Clamping device set-up

MOBILITY

Flexible manufacturing with reliable processes is crucial for success in the automotive industry. Whether for the engine, chassis, transmission or any other component – we develop and manufacture clamping systems that guarantee economical machining and reliable processes.
E-mobility requires manufacturers and suppliers to rethink: The drive train in electric propulsion concepts has considerably fewer mechanically stressed components, and fewer rotating components than combustion engines. The workpieces in an electric car that require machining are much smaller and more delicate. In addition, there will be an increase in aluminum and other lightweight materials. Therefore, use of machine tools will require more flexibility in the future, since the process can change fundamentally depending on the propulsion concept.

Your benefits

- Highest process reliability for small and large-scale production
- Flexibility in manufacturing for different parts and varying lot sizes
- Clamping solutions for high-precision transmission components, thin-walled sheet metal parts, NF metal or plastic components

AUTOMATION

Smart automated processes are everywhere, whether in everyday life or in production facilities. The increasing individualization of products, culminating in efficient one-off production, also necessitates rethinking in manufacturing planning – machines and systems have to be flexible and designed for automatic set-up.
To help you easily meet the challenges of automation and maximize the potential for savings, our focus in recent years has been on developing automation solutions. Whether you only want to automate the clamping device change-over or require complete manufacturing cells, we offer solutions to meet your requirements. Everything is user-friendly and efficient – just as you have come to expect from HAINBUCH.

You buy the machine, we do the rest.

Your benefits

- Automated change-over of clamping heads and clamping devices
- Solutions for automated workpiece loading
- One contact for comprehensive automation projects

MEDICAL

Given its high degree of innovation and the rapid pace of development, without a doubt medical technology is one of the most demanding industries. It is not just the high standards for hygiene and the bio-compatible materials that are difficult to machine, it is also the technical requirements imposed on tolerances and roughness values that necessitate extremely complex production processes. And here it is a good thing when there is a clamping device manufacturer like us, with years of experience and many innovative clamping solutions, who can help and advise the industry.

Your benefits

- Already-implemented, first-class clamping solutions for many workpieces and implants, such as hip socket, hip joint, spinal implant or dental screw
- Manufacture workpieces with precise contours and the highest quality
- Sensitive, mark-free and residue-free clamping of ceramic workpieces is just as possible as powerful clamping of titanium

AEROSPACE

In the aerospace industry the most rigorous requirements are imposed on accuracy, precision, and safety. Every start is a trial of strength for the components and every component is a technical challenge for machinists. And not just because the workpieces are complex and difficult to machine, the materials are also very special from the machining perspective: nickle-based alloys, titanium, and carbon fiber reinforced plastics [CFRP]. Therefore, with our machining and material know-how we are the right partner – after all we were the first with a CFRP clamping system.

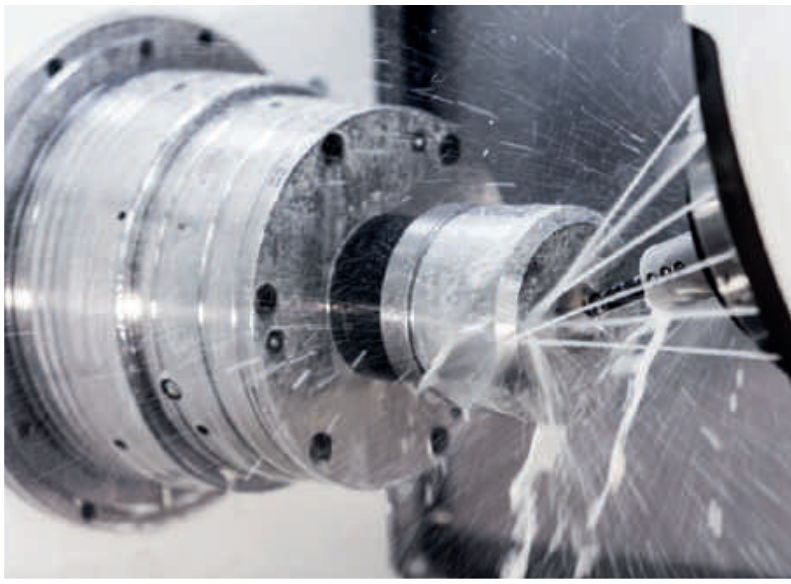
Your benefits

- Proven clamping solutions that are already in use at our customers' facilities
- High precision workholding technology for high precision components
- An expert partner in the area of innovative materials, such as CFRP

MILLING

Complete high-precision, multi-axis machining of milled parts imposes the most rigorous quality demands on the clamping device. On one hand, due to the immense forces that occur when milling and to avoid vibration, the workpiece must be securely clamped. On the other hand, high accessibility of the workpiece is necessary, i.e. the clamping solution should be as compact as possible.

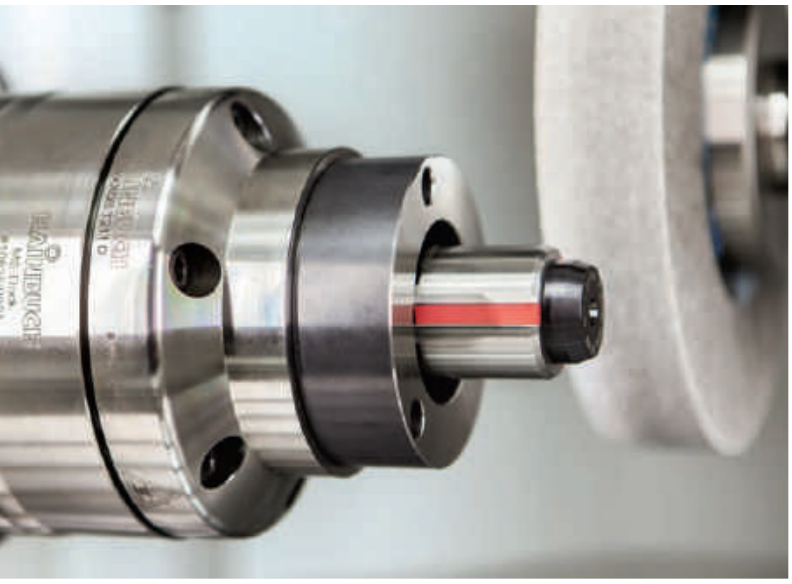
- High metal removal rates due to higher holding forces as compared to vise or jaw chuck
- Good tool accessibility through a wide variety of chucking possibilities with the HAINBUCH SYSTEM
- Less tool wear through vibration-damped clamping, and unequaled rigidity due to a full-surface contact of the clamping segments



TURNING

Special criteria are in force for selection of the right clamping device for turning. Through the rotation of turned parts, at high speeds in particular, centrifugal forces occur that require secure clamping of the workpieces. HAINBUCH clamping solutions are perfect in this regard. Whether chucks for O.D. clamping or mandrels for I.D. clamping – absolutely reliable clamping and the highest run-out accuracy are guaranteed with HAINBUCH.

- Less inertia loss relative to jaw chuck by clamping within the chuck body
- Change-over from O.D. to I.D. clamping or jaw clamping in max. 2 minutes without accuracy losses
- Circumferential workpiece clamping with the highest run-out accuracy



GRINDING

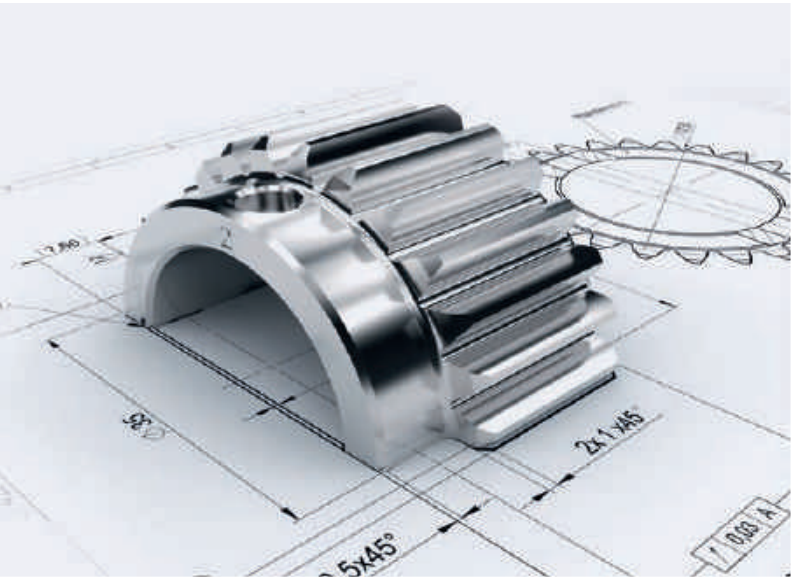
Modern manufacturing that involves grinding requires flexible and in particular high-repeatability clamping devices. In this regard each application imposes different requirements of the clamping technology. To achieve the required accuracy, among other things, it is important that any contamination [e.g. grinding slurry] is prevented from penetrating into the clamping device. Thanks to the large contact area of the clamping segments, our hexagonal TOPlus chucks and MAXXOS mandrels are significantly less sensitive to contamination than previous clamping devices. And thus unique in the market.

- Maximum concentricity and axial run-out accuracy
- Lightweight design model [CFRP], thus the spindle load is reduced and there is additional vibration dampening
- A higher surface quality is possible than with jaw or collet chucks
- Protrusion lengths of the workpiece are possible that are longer than is the case with jaw chucks, due to the unique clamping geometry

GEAR CUTTING

The gear cutting industry imposes the highest requirements on the accuracy of clamping devices. The machining of gears is a complex process in which the right technology is essential. In this regard, all integrated components must meet the most rigorous requirements for precision. Consideration of the interference contour plays a major role here. Whether for gear units, drive systems or all other components in this area: We have the right clamping solutions – for small and large-scale production.

- Better tool accessibility thanks to the significantly reduced interference contour
- Workpiece stabilization through axial draw force against the workpiece end-stop
- Process reliability through the possibility of positioning the clamping elements
- Special mandrel for I.D. clamping when gear cutting: MANDO G



CONSULTING & ENGINEERING

Smaller batch sizes and increasing parts variety in combination with ever more stringent tolerance specifications, more complex design and functional geometries – those are the challenges of modern production. But you hardly have time to constantly scrutinize, analyze and research your manufacturing processes. Let us do that for you, because we are well acquainted with everything involved in the process chain. 60 % of our business is one-off manufacturing. In addition to production coaching, our strength lies in the development of new products when the market has nothing suitable to offer. We work with you to develop the perfect special clamping solution – tailored to your requirements. And we also think about how to streamline, for example by eliminating measuring processes thanks to clamping devices with integrated sensors.

- Technical upgrading of older machines
- Optimization of set-up times
- Efficient parts manufacturing [improved quality of parts and less scrap]
- From the analysis to the custom developed product

PRODUCT SERVICE

If you have one of our clamping devices, then you should also receive the best possible support. In addition to a free 24-hour hotline in the event of a crash or emergency, we also offer you a extensive range of services. Because we know how important proper assembly and start-up, fast repairs, reliable spare parts service and regular maintenance are. Our specialists can be at your location in a jiffy when you need them. They make sure that our clamping devices deliver top results for a long time.

- On-site installation
- On-site service
- Repair & spare parts
- Maintenance & reconditioning
- Service contract
- Clamping force measurement
- Factory calibration of TESTit
- 24-hr troubleshooting hotline

TRAINING

The reality is that to be successful, you must continuously optimize your production processes, with a view toward digitization and automation. And who always has to be up to date in order to achieve that? Your employees! Motivated, satisfied and specially trained employees with technical expertise contribute to the company's success. Our training measures offer many practical benefits and are designed for optimal integration of the learnings in your everyday work processes. The combination of theory and practice makes it vivid and easy to understand. And if your time is scarce, then we will send an instructor to your location, or you are welcome to take part in one of our free webinars.

- Impulses for new ideas and strategies
- Knowledge advantage for your employees
- Simplified processes
- Optimal set-up processes in practice