

# Clamping solutions for turning, milling, grinding

**Flexible manufacturing and faster set-up  
with the HAINBUCH modular system.**



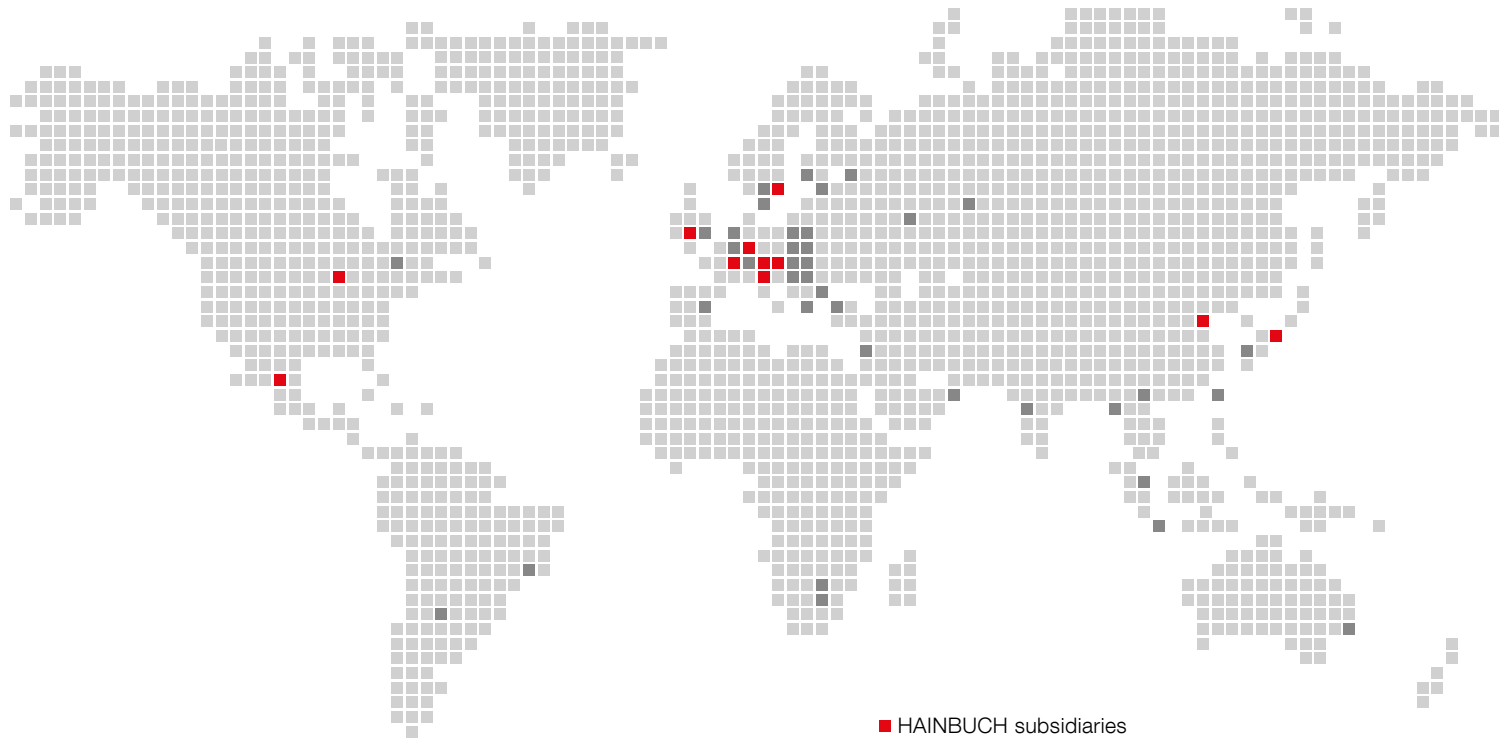


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# WE ARE AT YOUR SERVICE

Locally and worldwide



■ HAINBUCH subsidiaries  
■ HAINBUCH agencies

INTERNATIONAL **12** SUBSIDIARIES

WORLDWIDE MORE THAN **850** EMPLOYEES

OVER **1000** SPECIAL CLAMPING SOLUTIONS PER YEAR

FOUNDED IN **1951**

INDUSTRY **4.0** DIGITAL FUTURE SOLUTIONS

OVER **45** DESIGN ENGINEERS

SPANNTOP INVENTED IN **1977**

**IQ** CLAMPING DEVICES WITH INTELLIGENCE

LIGHTWEIGHT DESIGN CLAMPING DEVICES **CFRP** MADE OF CARBON FIBER

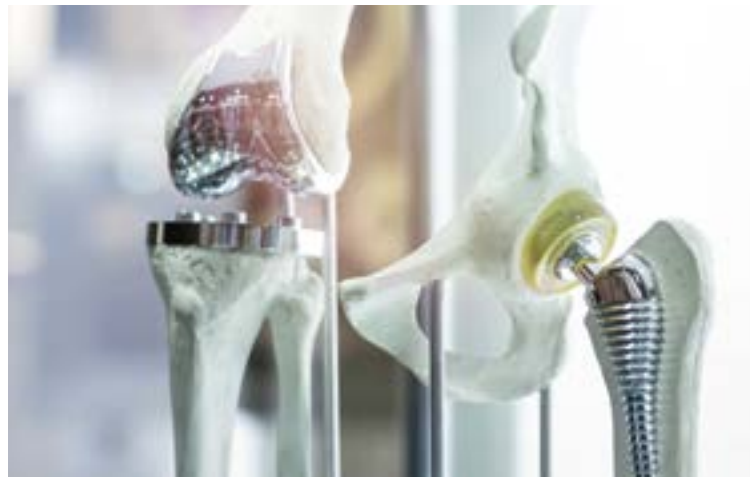
MORE THAN **150** PATENTS



AUTOMOTIVE



AEROSPACE



MEDICAL



E-MOBILITY







TURNING



MILLING



GRINDING



GEAR CUTTING



# TWO CLAMPING GEOMETRIES

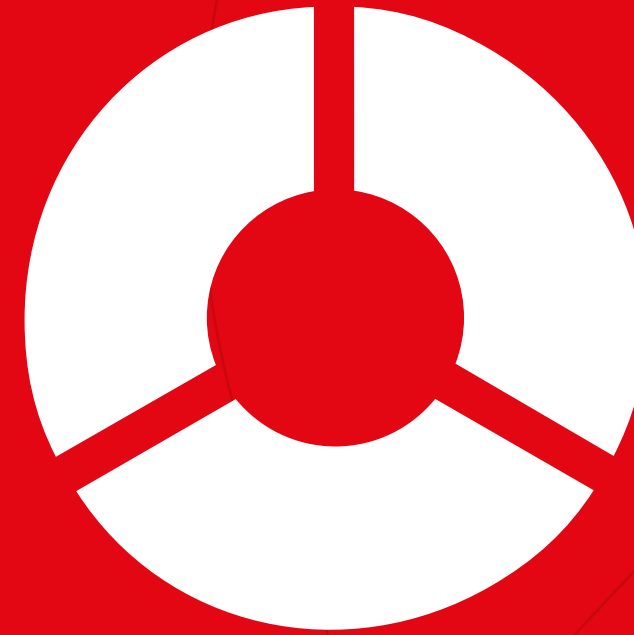
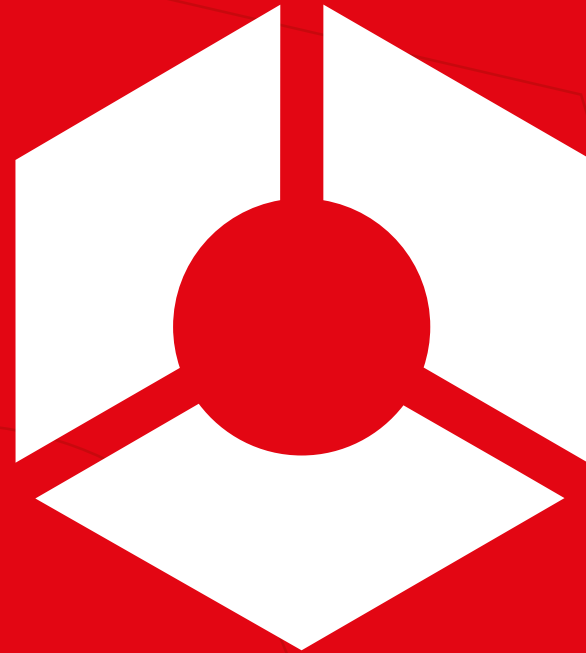
Many clamping devices are available in two different clamping geometries.

## SE variant

The version with hexagonal geometry offers a 25 % increase in holding force, relative to the round variant, and unique rigidity – thanks to full-surface contact of the clamping element in the clamping device body.

Moreover, it is more effectively sealed against contamination, and thus it is more wear-resistant than the conventional RD variant.

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



## RD variant

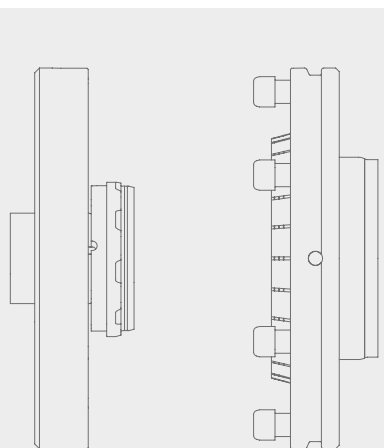
The version with round clamping geometry has significantly higher holding force than conventional 3-jaw chucks and collets due to the pull-back effect and circumferential clamping.

**On the market since 1980 –  
invented by HAINBUCH.**

# THE MODULAR SYSTEM FOR CHUCKS & STATIONARY CHUCKS

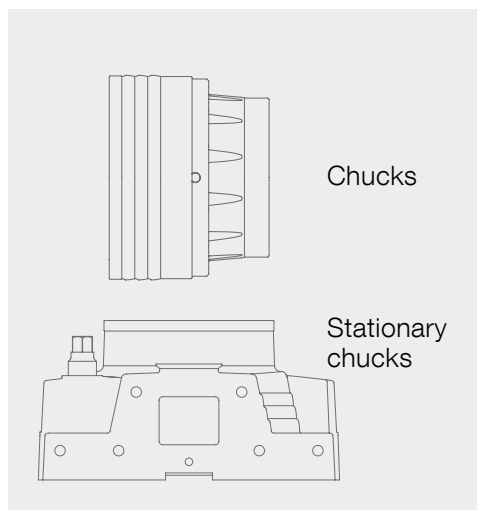
A system that offers everything »upstream« and »downstream« of the clamping device.

## Quick change-over interface

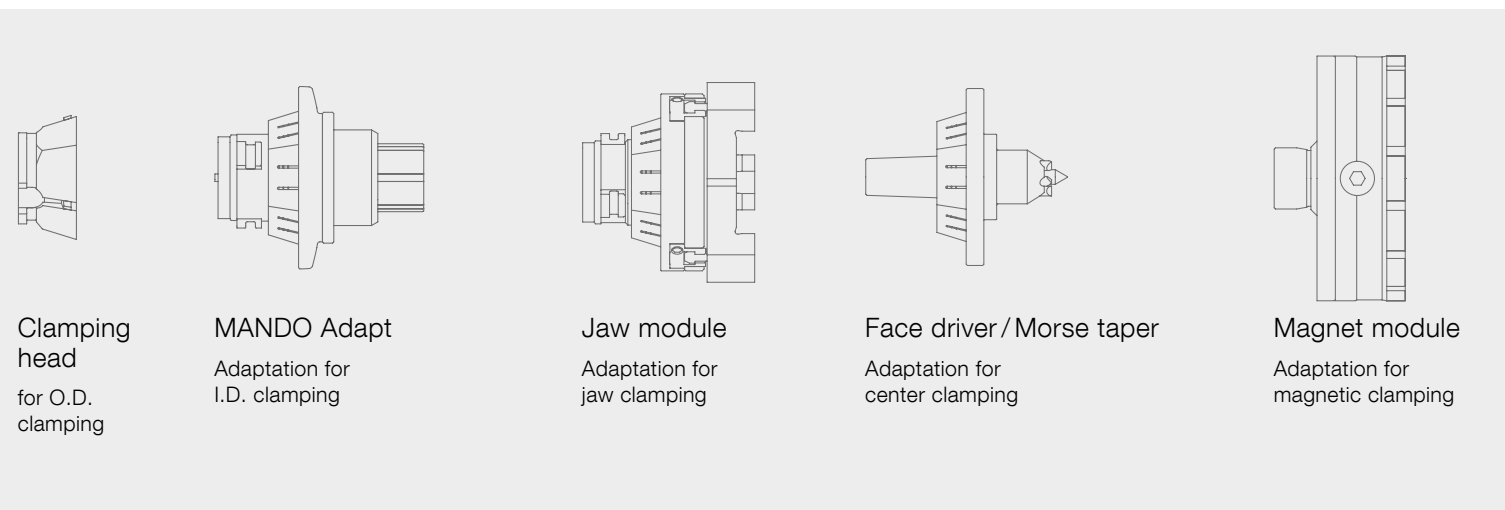


For connection on the machine:  
For fast set-up of the clamping device without alignment.

## Clamping devices



## Clamping elements and adaptations



For fast change-over to O.D./  
I.D. clamping/jaw clamping and  
magnetic clamping or clamping  
between centers.

## Accessories

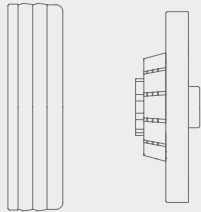
- Changing fixtures
- TESTit clamping force gauge
- vario part/vario quick/  
vario flex end-stop systems
- End-stop/front end-stop blanks
- Drawtube adapters
- Grease and torque wrenches

»Little helpers« that make work  
easier and more efficient.

# THE MODULAR SYSTEM FOR MANDRELS

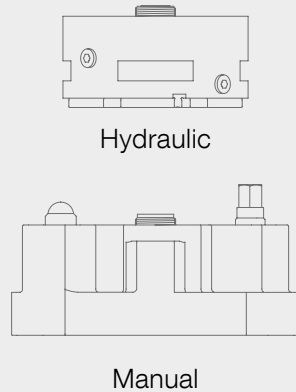
A system that offers everything »upstream« and »downstream« of the clamping device.

## Quick change-over interfaces or



For connection on the machine:  
For fast set-up of the clamping device  
without alignment.

## Actuating units or

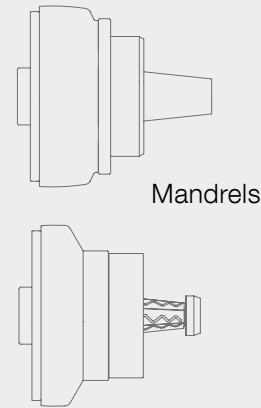


For connection on the machine:  
For hydraulic or manual actuation  
of the clamping device.

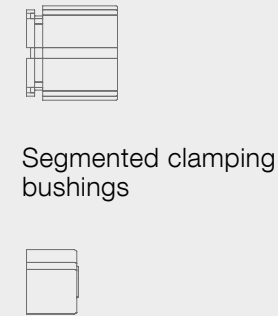
## Flanges



## Clamping devices



## Clamping elements



For fast change-over to different  
clamping diameters.

## Accessories

- TESTit clamping force gauge
- End-stop blanks
- Drawtube adapters
- Adapters for air sensing control
- Grease and torque wrenches

»Little helpers« that make work  
easier and more efficient.





## Chucks

Our chucks are based on the clamping head chuck principle that we invented more than 40 years ago, and which has been used thousands of times over. With this fully encompassing clamping of the workpiece, compared to the distortion potential clamping of 3-jaw chucks, you have higher holding forces, fewer inertia losses, and are able to manufacture with greater precision.

### Advantages

- High run-out accuracy
- High holding forces and stability
- Highly user friendly set-up
- Many adaptation possibilities for changing over from classic O.D. clamping to I.D. clamping / jaw clamping or magnetic clamping – without disassembling the clamping device

### Benefits

- Long service life
- Flexible manufacturing
- Less scrap
- Longer machine runtime

## CHUCKS

### TOPlus/TOPlus mini

#### Chucks with hexagonal clamping geometry – the optimized version for the round SPANNTOP

Sizes 26, 40, 52, 65, 100  
Clamping range 3–100 mm

#### Variants

- Also available with reduced interference contour for small, narrow machine areas
- With or without pull-back effect when clamping the workpiece or as a pure through-bore chuck

#### Clamping elements and adaptations



Changeable from O.D. clamping to I.D. clamping / jaw clamping and magnetic clamping or clamping between centers – without disassembling the chuck



#### Advantages

- 25 % higher holding force than SPANNTOP
- Unrivaled rigidity due to full-surface contact of the clamping segments
- Resistant to contamination due to hexagonal clamping head geometry
- Absorbs vibration and reduces tool wear
- Run-out accuracy  $\leq 0.015$  mm

#### Applications

- Prototypes / single-piece manufacturing
- Series production
- Also ideal for hard machining and grinding

#### Advantages compared to jaw chucks

- Extremely high holding forces
- Cylindrically surrounding workpiece clamping
- Minimal inertia losses
- Run-out accuracy  $\leq 0.01$  mm

#### Advantages compared to spring collets

- Extremely high holding forces
- Cylindrically surrounding workpiece clamping
- High-strength steel-rubber composite connection instead of elastic spring steel

#### Applications

- For rigorous run-out requirements
- Prototypes / single-piece manufacturing
- Series production

## CHUCKS

### SPANNTOP nova / SPANNTOP mini

#### Chucks with the »classic« round clamping geometry

Sizes 32, 42, 52, 65, 80, 100, 125, 160  
Clamping range 3–160 mm

#### Variants

- Also available with reduced interference contour for small, narrow machine rooms
- With or without pull-back effect when clamping the workpiece or as a pure through-bore chuck

#### Clamping elements and adaptations



Changeable from O.D. clamping to I.D. clamping / jaw clamping and magnetic clamping or clamping between centers – without disassembling the chuck

## CHUCKS

### TOROK manual chuck

#### Chuck with manual actuation

Sizes 52, 65, 100  
Clamping range 3–100 mm

#### Variants

- In steel or CFRP lightweight version
- Hexagonal [SE] or round [RD] clamping geometry

#### Clamping elements and adaptations



Changeable from O.D. clamping to I.D. clamping / jaw clamping and magnetic clamping or clamping between centers – without disassembling the chuck



#### Advantages

- Manual actuation – a clamping cylinder is not required
- Sensitive clamping
- Workpiece stabilization through pull-back effect against end-stop

#### Applications

- Prototypes / single-piece manufacturing
- Series production
- Also for machines without hydraulics



#### Advantages

- Fast change of jaws with individual unlocking
- Large through-bore with insert bushings that can be changed from the front
- Proven wedge rod mechanism

#### Applications

- Prototypes / single-piece manufacturing

## CHUCKS

### B-Top3 jaw chuck

#### Jaw chuck with quick change-over option

Size 215  
Clamping range 12–300 mm

#### Clamping elements and adaptations



Changeable from jaw clamping to I.D. clamping or O.D. clamping – without disassembling the jaw chuck



## Mandrels

With regard to complete machining, often the first thoughts are a jaw chuck or conventional mandrels with slotted clamping sleeves. However, both of these options quickly reach their limits in terms of accuracy, rigidity, and opening stroke. Quite simply, the power of our mandrels is underestimated, yet they offer the latest clamping technology and top performance even in extremely critical applications.

### Advantages

- High run-out accuracy
- High holding forces and stability
- Highly user friendly set-up
- Workpiece accessibility from 5 sides

### Benefits

- Long service life
- Flexible manufacturing
- Less scrap
- Longer machine runtime

## MANDRELS

### MAXXOS T211

#### Mandrel with hexagonal clamping geometry – the optimized version for round MANDO

Sizes A, B, C, D, E, F  
Clamping range 18–100 mm

#### Variants

- Run-out accuracy, Standard  $\leq 0.01$  mm or Premium  $\leq 0.007$  mm

#### Clamping elements



Changeable to different clamping diameters

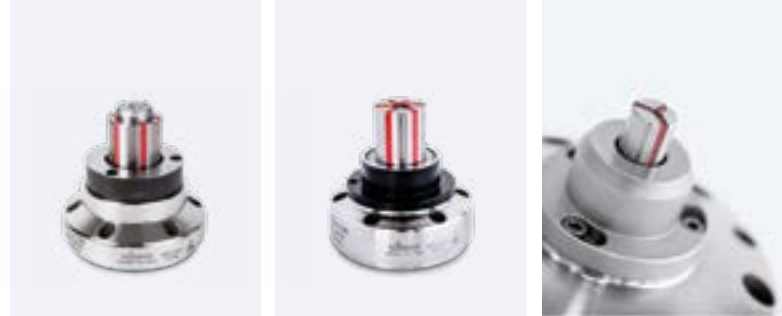


#### Advantages

- High transferable torque and holding force
- Unrivaled rigidity due to full-surface contact of the clamping segments
- Resistant to contamination due to hexagonal clamping geometry
- Absorbs vibration and reduces tool wear

#### Applications

- Prototypes / single-piece manufacturing
- Series production
- Also ideal for hard machining and grinding
- 5-sided machining



#### Advantages compared to jaw chucks

- Extremely high holding forces
- Cylindrical contact workpiece clamping
- Minimal interference contour

#### Advantages over hydraulic expansion technology

- Large clamping range in the clamping diameters
- Non-destructive empty stroke clamping set-ups
- Lower investment costs

#### Applications

- Prototypes / single-piece manufacturing
- Series production
- 5-sided machining

## MANDRELS

### MANDO T211 / T212 / T812

#### Mandrel with »classic« round clamping geometry

Sizes XXS, XS, S, 0, 1, 2, 3, 4, 5, 6, 7  
Clamping range 8–200 mm

#### Variants

- With or without draw bolt for short clamping lengths
- With or without pull-back effect when clamping a workpiece

#### Clamping elements



Changeable to different clamping diameters



## MANDRELS

### MANDO G

#### Clamping mandrel for gear hobbing and grinding

Sizes 0, 1, 2, 3, 4  
Clamping range 20–120 mm

#### Clamping elements



Changeable to different clamping diameters



#### Advantages

- Rigid radial clamping with pull-back effect when clamping the workpiece
- Extremely slender interference contour for tool run-out
- Three end-stop levels for high workpiece individuality
- Integrated flushing channels for chip removal

#### Applications

- Gear hobbing
- Gear grinding
- Gear shaping
- 5-sided machining



#### Advantages

- Rigid radial clamping with pull-back effect when clamping the workpiece
- Unique clamping bolt technology with changeable clamping units
- Extremely slender interference contour for tool run-out
- Integrated, permanent clamping force source, release via clamping cylinder
- Run-out accuracy  $\leq 0.01$  mm

#### Applications

- Prototypes/single-piece manufacturing
- Series production
- Also ideal for hard machining and grinding
- Also for machines without hydraulics

## MANDRELS

### Micro mandrel

#### Precision mandrel for extremely small clamping diameters

Clamping range 5.6–20 mm



## Stationary chucks and actuating units

Our stationary chucks are based on the clamping head chuck principle and are ideal for milling operation. Thanks to the possibilities of changing from O.D. clamping to I.D. clamping/jaw clamping or magnetic clamping, they are the perfect clamping devices for machining centers and they render a zero-point clamping system unnecessary.

### Advantages

- High clamping repeatability
- High holding forces and stability
- Highly user friendly set-up
- Many adaptation possibilities to change from the classic O.D. clamping to I.D. clamping / jaw and magnetic clamping – without dismantling the clamping device

### Benefits

- Flexible manufacturing
- Less scrap
- Longer machine runtime
- Long service life

## STATIONARY CHUCKS

### MANOK

#### Manual actuation stationary chuck with »classic«, round clamping geometry

Sizes 42, 52, 65, 80, 100  
Clamping range 3–100 mm

#### Clamping elements and adaptations



Changeable from O.D. clamping to magnetic clamping – without disassembling the stationary chuck



#### Advantages

- Manual actuation – a clamping cylinder or hydraulics are not required
- Sensitive clamping
- Workpiece stabilization through pull-back effect against end-stop

#### Applications

- Prototypes / single-piece manufacturing
- Also for machines without hydraulics



#### Advantages

- Manual actuation – a clamping cylinder or hydraulics are not required
- Sensitive clamping
- Workpiece stabilization through pull-back effect against end-stop

#### Applications

- Prototypes / single-piece manufacturing
- Also for machines without hydraulics
- Series production
- Also ideal for hard machining and grinding

## STATIONARY CHUCKS

### MANOK plus

#### Manual actuation stationary chuck hexagonal or round clamping geometry

Sizes 52, 65  
Clamping range 3–65 mm

#### Variants

- In steel or CFRP lightweight design
- Hexagonal [SE] or round [RD] clamping geometry

#### Clamping elements and adaptations



Changeable from O.D. clamping to I.D. clamping / jaw clamping or magnetic clamping – without disassembling the stationary chuck

## STATIONARY CHUCKS

### HYDROK

#### Stationary chuck with hydraulic actuation

Sizes 32, 40, 42, 52, 65, 80, 100  
Clamping range 3–100 mm

#### Variants

- Hexagonal [SE] or round [RD] clamping geometry

#### Clamping elements and adaptations



Changeable from O.D. clamping to I.D. clamping / jaw clamping or magnetic clamping of the stationary chuck



#### Advantages

- Hydraulic actuation
- Compact square design
- Automated multiple clamping in the smallest possible space

#### Applications

- Prototypes / single-piece manufacturing
- Series production
- Also ideal for hard machining and grinding

#### Advantages

- Mandrels can be used on machining centers
- ms dock: sensitive clamping by hand – no hydraulics required – can also be used on the lathe
- hs dock: automated multiple clamping in the smallest possible install space

#### Applications

- Prototypes / single-piece manufacturing
- Series production
- Also ideal for hard machining and grinding
- 5-sided machining
- Also for machines without hydraulics [ms dock]

## ACTUATING UNITS

### ms dock / hs dock

#### Actuating units for MAXXOS and MANDO mandrels

Sizes XXS–4, 5–7, A–F

#### Variants

- ms dock: rotatable up to 50 rpm or 7,000 rpm
- hs dock: hydraulic or spring-loaded hydraulic clamping

#### Mandrels







## Adaptations

What determines the machining; and what determines how you clamp the workpiece? In practice, this is often the clamping device – since set-up costs time and money. However the best results can only be achieved when the clamping optimally fits the workpiece. With our adaptations you leave the basic clamping device on the machine and change-over from O.D. clamping to I.D. clamping/jaw clamping and magnetic clamping, or to clamping between centers in no time at all, with the assistance of the adaptations.

### Advantages

- Extremely fast set-up time [1–2 min.]
- No disassembly of the basic clamping device
- Interface of basic clamping device to adaptation:  
run-out  $\leq 0.005$  mm / repeatability  $\leq 0.003$  mm
- Short throughput times, no combining of job orders  
depending on the clamping device that is mounted

### Benefits

- Flexible manufacturing
- Longer machine runtime
- Long service life



## ADAPTATIONS

### MANDO Adapt

#### Adaptation for changing over from O.D. clamping to I.D. clamping

Sizes	XXS, XS, S, 0, 1, 2, 3, 4, 5, 6, 7
Clamping range	8 – 190 mm
Suitable for the following basic clamping device sizes	42, 52, 65, 80, 100, 125

#### Variants

- For hexagonal [SE] or round [RD] clamping geometry of the basic clamping device
- With or without draw bolt for short clamping lengths
- With or without pull-back effect when clamping the workpiece

#### Suitable basic clamping devices



#### Advantages

- Extremely fast set-up time [1 min.] without disassembling the basic clamping device
- Self-centering on the basic clamping device
- Large clamping range and vibration dampening through vulcanized segmented clamping bushings

#### Applications

- Prototypes/single-piece manufacturing
- Also ideal for hard machining and grinding
- 5-sided machining
- Also for machines without hydraulics



#### Advantages

- Extremely fast set-up time [2 min.] without dismantling the basic clamping device
- Self-centering on the basic clamping device
- Enlarged clamping range of the basic clamping device
- Deadlength clamping without pull-back effect
- Optimum lubrication and resistance to contamination thanks to lubricating system

#### Applications

- Prototypes/single-piece manufacturing
- 5-sided machining
- Also for machines without hydraulics

#### Adaptation for changing from O.D. clamping to jaw clamping

Sizes	145, 215
Clamping range	25 – 209 mm
Suitable for the following basic clamping device sizes	65, 80, 100

#### Variants

- For hexagonal [SE] or round [RD] clamping geometry of the basic clamping device

#### Suitable basic clamping devices



## ADAPTATIONS

### Jaw module

## ADAPTATIONS

### Face driver / morse taper

#### Adaptation for changing over from O.D. clamping to clamping between centers

Suitable for the following basic clamping device sizes 42, 52, 65, 80, 100

#### Variants

- For hexagonal [SE] or round [RD] clamping geometry of the basic clamping device
- With spring-loaded centering point or without [MK4 reception]

#### Suitable basic clamping devices



#### Advantages

- Extremely fast set-up time [1 min.] without dismantling the basic clamping device
- Self-centering on the basic clamping device
- Support of long workpieces

#### Applications

- Prototypes / single-piece manufacturing
- Also ideal for hard machining and grinding
- Also for machines without hydraulics



#### Advantages

- Extremely fast set-up time [30 sec.] without disassembling the basic clamping device
- Self-centering on the basic clamping device
- End face axial clamping via neodymium magnet
- Manual actuation

#### Applications

- Prototypes / single-piece manufacturing
- Also ideal for hard machining and grinding
- Also for machines without hydraulics

#### Adaption for changing from O.D. clamping to magnetic clamping

Suitable for the following basic clamping device sizes 52, 65, 80, 100

#### Variants

- For hexagonal [SE] or round [RD] clamping geometry of the basic clamping device

#### Suitable basic clamping devices



## ADAPTATIONS

### Magnet module



## Quick change-over systems

The HAINBUCH quick change-over systems fit on almost every machine. With centroteX and mandoteX you can manufacture to order and virtually eliminate set-up times. And this is accomplished with repeatability to  $\leq 0.003$  mm on the interface. Naturally, we also have special designs that we can adapt individually to your machine and your clamping device.

### Advantages

- Repeatability between machine adapter and clamping device adapter  $\leq 0.003$  mm possible – without alignment
- Machine-overlapping utilization of clamping devices
- For easier handling, the Monteq changing fixture can be implemented for heavy clamping devices

### Benefits

- Drastic reduction of clamping device change-over times
- Increase in production time
- Longer machine runtime

## QUICK CHANGE-OVER SYSTEMS

**centroteX**

**Quick change-over system with extensive assortment of standard clamping devices or individual clamping devices**

Sizes S, M  
Change-over time 1 – 5 min.

### Variants

- For horizontal or vertical lathes
- For small spindles up to chuck size 65 [centroteX S] and large spindles [centroteX M]

### Clamping device adapter with clamping device



Available with various standard chucks, jaw chucks and mandrels



### Advantages

- Extremely fast set-up time of the complete clamping device
- centroteX S: <1 min. set-up time – one locking screw – for small spindles
- centroteX M: <5 min. set-up time – six locking screws for large spindles
- Machine-overlapping utilization of clamping devices

### Applications

- Prototypes / single-piece manufacturing
- Series production
- Also ideal for hard machining and grinding
- 5-sided machining



### Advantages

- Extremely fast set-up time for MAXXOS and MANDO mandrels
- < 1 min set-up time – three locking screws
- Machine-overlapping utilization of mandrels

### Applications

- Prototypes / single-piece manufacturing
- Series production
- Also ideal for hard machining and grinding
- 5-sided machining

## QUICK CHANGE-OVER SYSTEMS

**mandoteX**

**Quick change-over system especially for mandrels**

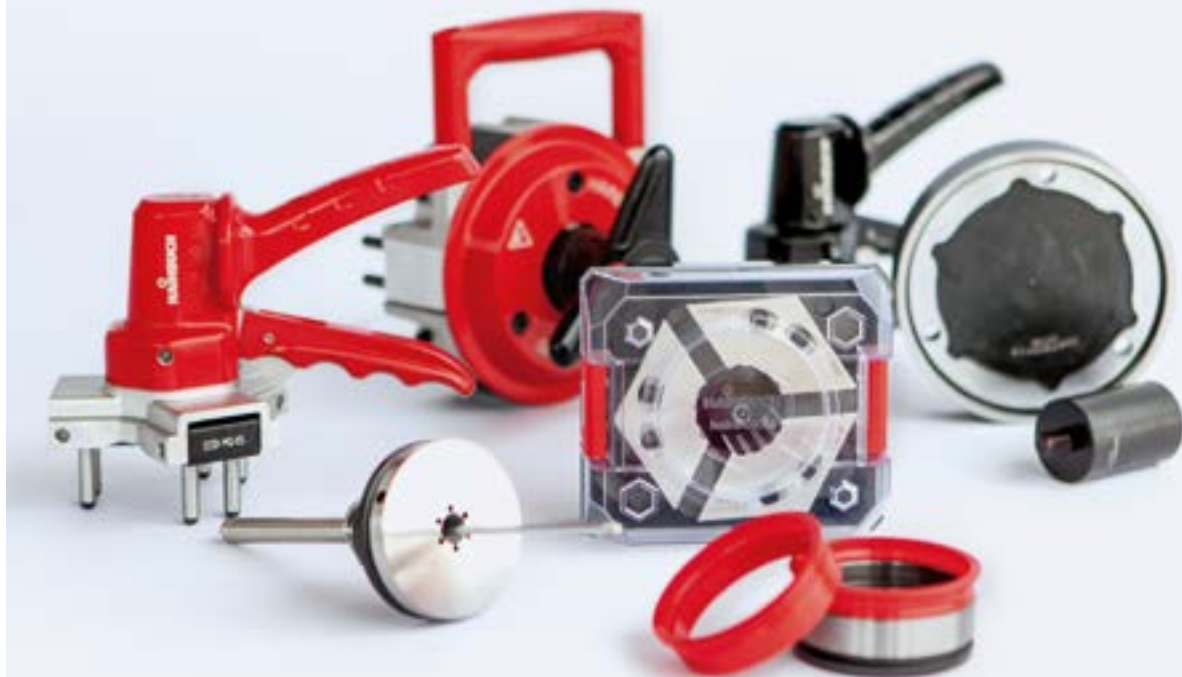
Suitable for the following basic mandrel sizes  
Change-over time XXS–4, A–F approx. 1 min.

### Variants

- For horizontal or vertical lathes

### Clamping devices





## Accessories

Underestimated? Yes, our accessories are underestimated. Our little helpers make a lot of things superfluous, enable the machine to work without disruption, support the machine operator, provide for reductions in set-up times, and they are easy on the wallet.

At HAINBUCH you get a no-hassle package and this includes consultation, assembly/ commissioning, professional storage of the products, as well as the accessories.

Upgrade your manufacturing with practical and useful accessories. At HAINBUCH you will find everything you need as production optimizers.



**End-stop systems vario part & vario quick**

With the standardized workpiece end-stops, you can dispense with making your own end-stops, save time at set up, and you can even use the end-stops multiple times.

**vario flex end-stop system**

The workpiece ejector secures your process by automatic ejection of the workpiece, increases your productivity by saving cycle time, and it can be used flexibly.

**Blanks for end-stop & front end-stop**

The prefabricated end-stops can be used immediately and they save you time. In addition, they reduce your costs, since you do not need any work preparation.

**Storage system hainBOX**

Store your clamping heads properly to protect them from contamination and damage. The hainBOXes can be stacked and conveniently stowed in drawers.

**Chip protection ring for chucks**

The chip protection ring extensively protects the chuck mechanism from contamination. This reduces your machine downtime, increases your process reliability and extends the service life of your chuck.

**Changing fixture & holder**

Your auxiliary equipment for fast change-over to another diameter. Perfect ergonomics make it easy to work with. And to ensure that you always have your changing fixture on hand, there is also a holder »one for all sizes« to hook in. It can even be fastened on the machine.

**Flange & drawtube adapter**

The standard flanges fit on the major spindle standards and we configure the drawtube to your machine. This means that you do not have to design your own system and do not have to make any safety calculations.

**CENTREX duo**

The centering unit with a repeatability of  $\leq 0.003$  mm can be easily integrated into your own design and fits anywhere, even in the smallest installation space. If you equip your pallet system or your clamping devices with CENTREX duo, then annoying and time-consuming alignment is a thing of the past.



**TESTit clamping force gauge**

**Clamping force and draw-in force measurement device for regular control and archiving in accordance with DIN EN 1150**

Sizes AS 18, 32, 65, 65-4  
IS 28, 50, 70  
HSK [Hollow taperd shank] 40, 50, 63, 100

**Variants**

- IT module with or without display device
- TEST module for O.D. clamping, I.D. clamping, and draw-in force
- Plug gauges for AS 32 and 65 in different clamping diameters

**TEST module**



**IT module**

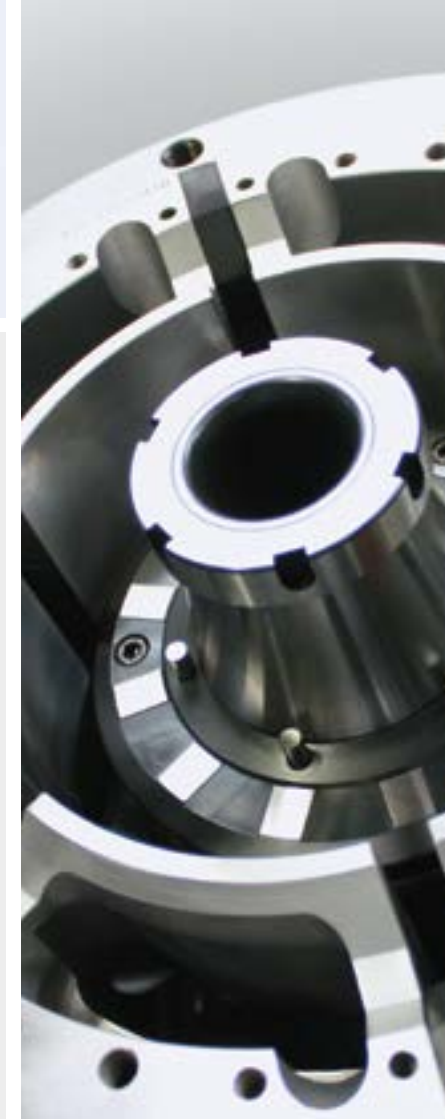


**Advantages**

- Determination of the ideal clamping force
- No deformation or loss of workpiece under deformation
- Two units, connected with plug & play: IT module – only needed once  
TEST module – for various measurement applications
- Software for visualization and archiving of the measurement results

**Applications**

- Process documentation
- Prototypes / single-piece manufacturing
- Series production
- Also for machines without hydraulics



**Customized solutions**

Demand is increasing for individually tailored clamping solutions that are precise, process-optimizing, and flexible. Together with our 45 design engineers and our R&D team, we can develop a customized solution for you, and we offer it at a price that enables a fast ROI.

We offer clamping devices that meet the requirements of fast-growth technologies, differentiated markets, and the increasing fusion with the IT world, and yet these clamping devices enable individualized production down to batch size 1. In other words, a completely individual solution in the customary HAINBUCH quality. Whether this is in the direction of special applications, Industry 4.0, automation or intelligent clamping devices.

**Facts**

- 50 % of our orders are customized solutions
- Large orders with over 100 clamping devices are not uncommon at HAINBUCH
- The project and development business is a favorite area at HAINBUCH; here we can consider the entire process
- Two awards for our intelligent TOPlus IQ chuck
- One award for our industry 4.0 solution in own manufacturing
- More than 1000 customized solutions per year

**CHUCKS**



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TOPlus mini **Page 18**



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**QUICK CHANGE-OVER SYSTEMS**

**MEASUREMENT TECHNOLOGY**



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HAINBUCH GMBH · WORKHOLDING TECHNOLOGY  
Erdmannhäuser Straße 57 · 71672 Marbach · Germany  
Tel. +49 7144.907-0 · Fax +49 7144.18826  
sales@hainbuch.de · www.hainbuch.com