

Clamping solutions for turning, milling, grinding

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



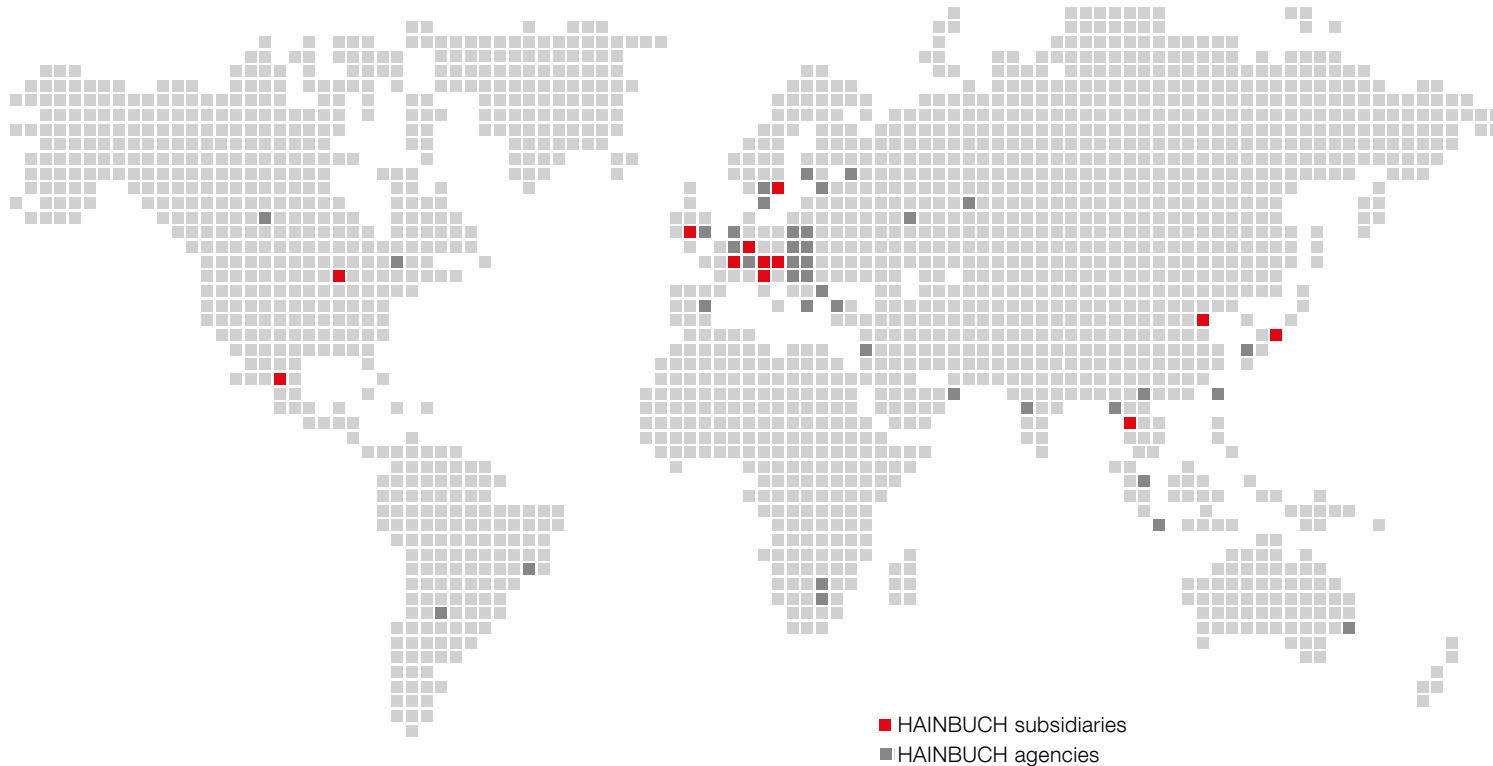


CONTENT

HAINBUCH Profile	04
Industries/machining processes	06
Modular system	10
Chucks	16
Mandrels	22
Stationary chucks/actuating units	28
Adaptations	34
Quick change-over systems	40
Accessories	44
Measurement technology/customized solutions	48
Product overview	50

WE ARE AT YOUR SERVICE

Locally and worldwide



INTERNATIONAL **12** SUBSIDIARIES

WORLDWIDE MORE THAN **900** 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



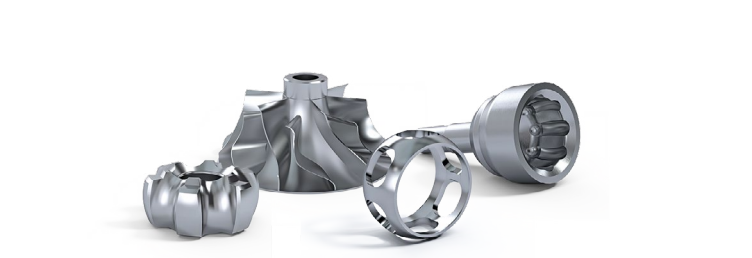
AEROSPACE



MEDICAL



E-MOBILITY

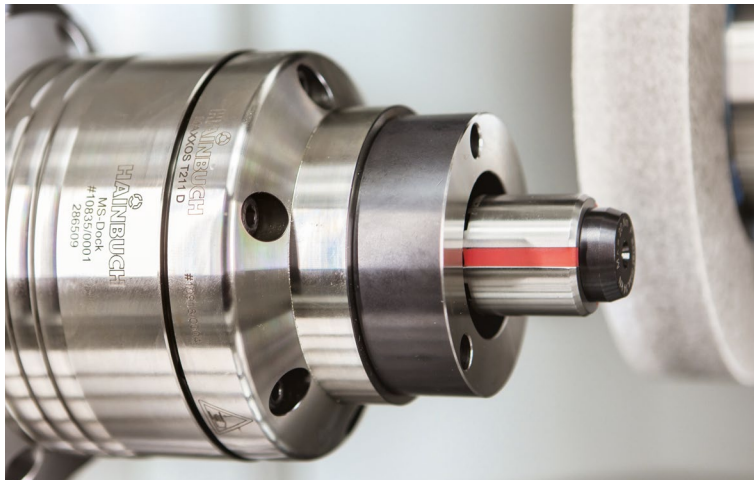




TURNING



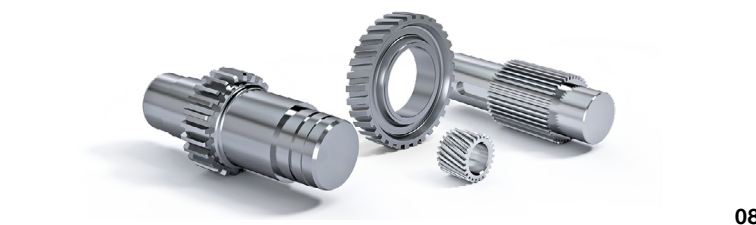
MILLING



GRINDING



GEAR CUTTING



TWO CLAMPING GEOMETRIES

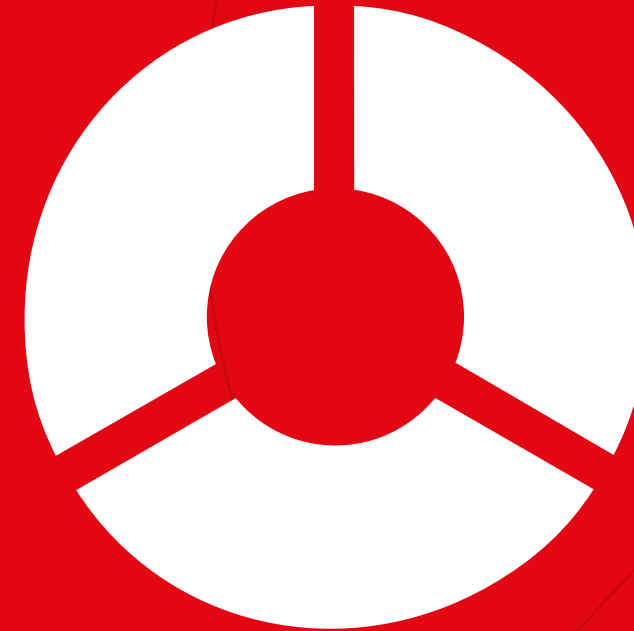
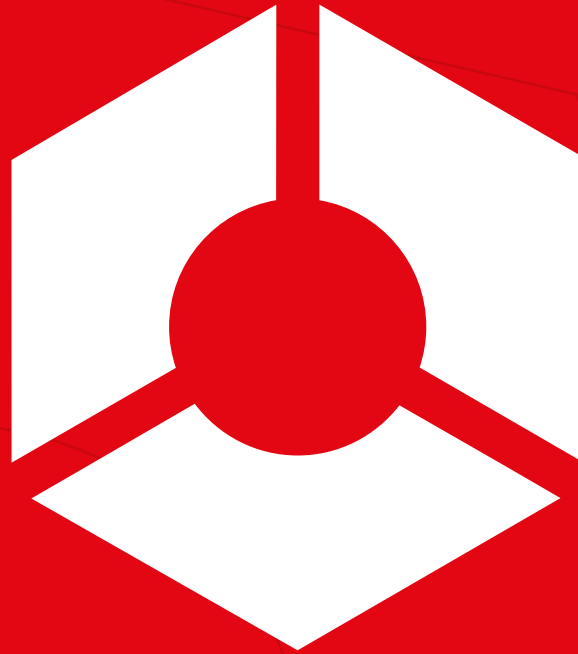
Many clamping devices are available in two different clamping geometries.

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

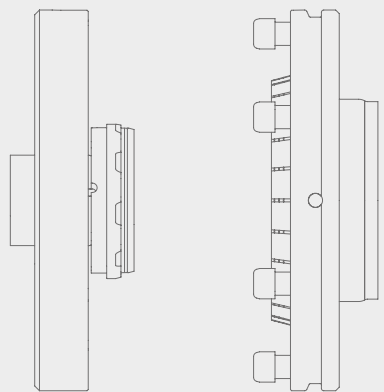
The version with round clamping geometry has significantly higher holding force than conventional 3-jaw chucks and collets due to the pull-back effect and circumferential clamping.

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

THE MODULAR SYSTEM FOR **CHUCKS & STATIONARY CHUCKS**

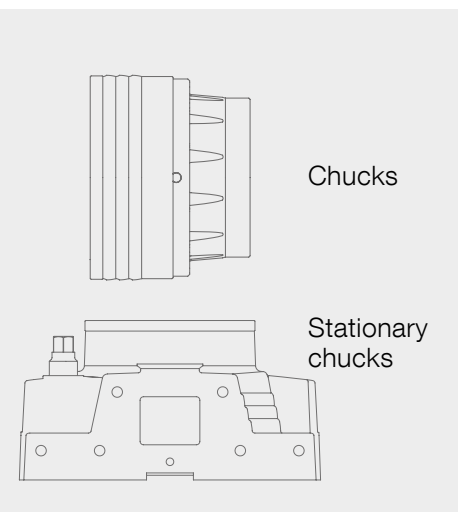
A system that offers everything »upstream« and »downstream« of the clamping device.

Quick change-over interface

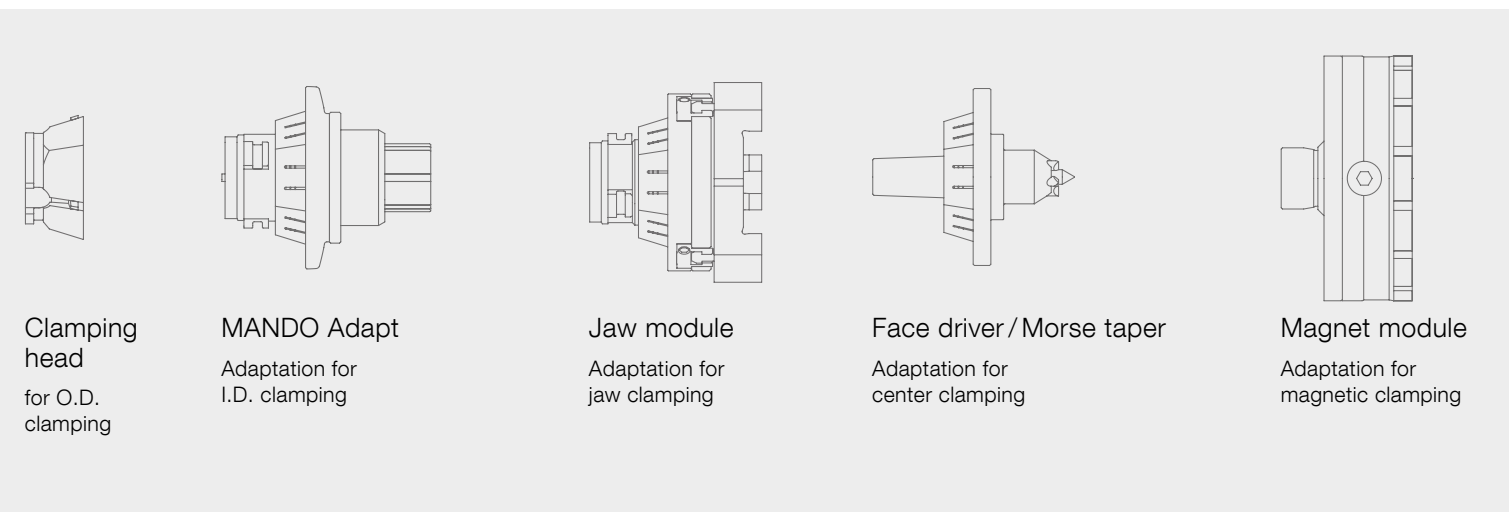


For connection on the machine:
For fast set-up of the clamping device without alignment.

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

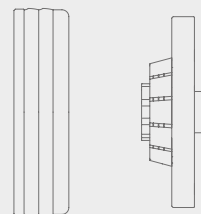
- Changing fixtures
- TESTit clamping force gauge
- vario part / vario quick / vario flex end-stop systems
- End-stop / front end-stop blanks
- Drawtube adapters
- Grease and torque wrenches

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

THE MODULAR SYSTEM FOR **MANDRELS**

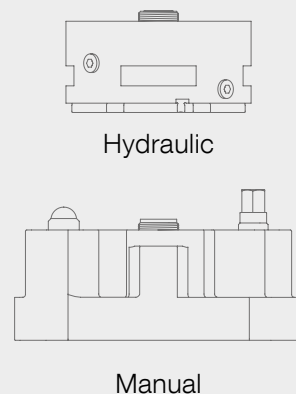
A system that offers everything »upstream« and »downstream« of the clamping device.

Quick change-over interfaces or



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

Actuating units or

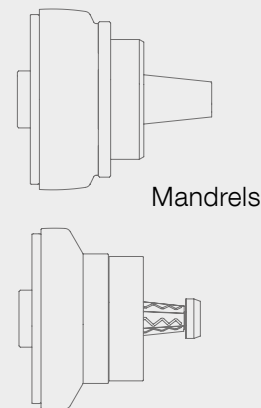


For connection on the machine:
For hydraulic or manual actuation
of the clamping device.

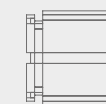
Flanges



Clamping devices



Clamping elements



Segmented clamping
bushings



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

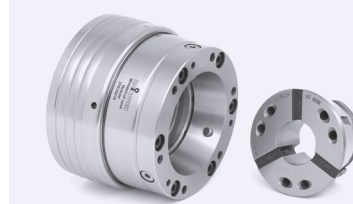
Variants

- 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
- Unrivalled 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 ≤ 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 ≤ 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

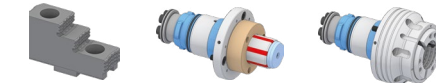
CHUCKS

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 ≤ 0.01 mm or Premium ≤ 0.007 mm

Clamping elements



Changeable to different clamping diameters



Advantages

- High transferable torque and holding force
- Unrivalled 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 ≤ 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 ≤ 0.005 mm / repeatability ≤ 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

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



ADAPTATIONS

Magnet module

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





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 ≤ 0.002 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 ≤ 0.002 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

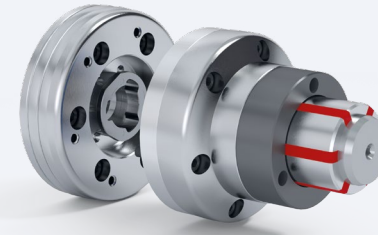


Advantages

- 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



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

Advantages

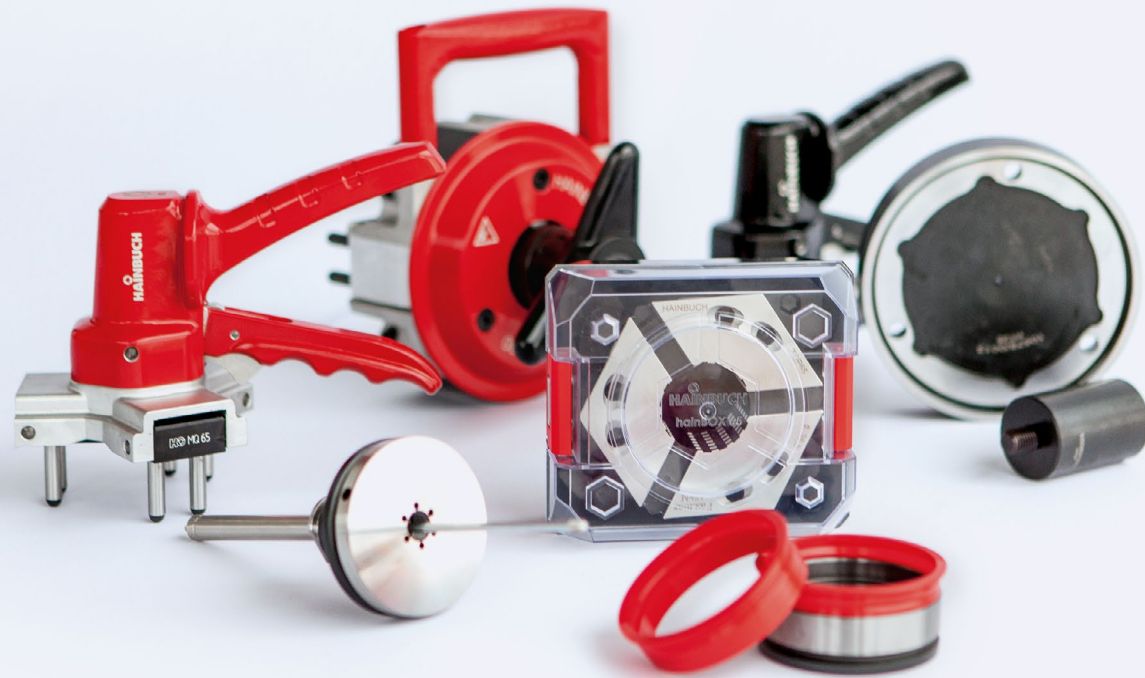
- Extremely fast set-up time for MAXXOS and MANDO mandrels
- < 1 min set-up time – three locking screws
- Machine-overlapping utilization of mandrels

Applications

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

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 ≤ 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

IT module



TEST module

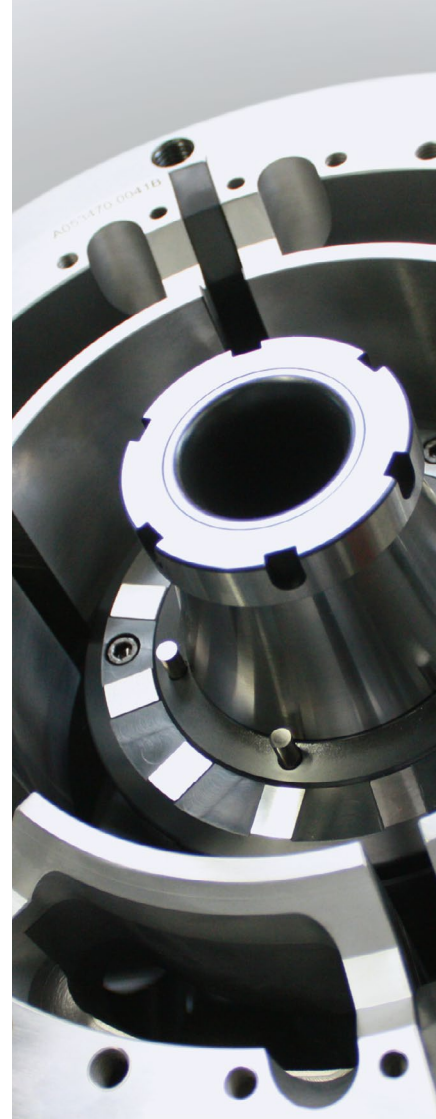


Advantages

- 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

PRODUCT OVERVIEW

CHUCKS



TOPlus Page 18



TOPlus mini Page 18



SPANNTOP nova Page 19



SPANNTOP mini Page 19



TOROK Page 20



B-Top3 jaw chuck Page 21

MANDRELS



MAXXOS T211 Page 24



MANDO T212 Page 25



MANDO G Page 26



MANDO T211 Page 25



MANDO T812 Page 25



Micro mandrel Page 27

STATIONARY CHUCKS



MANOK Page 30



HYDROK Page 32



MANOK plus Page 31



ms dock/hs dock Page 33

ADAPTATIONS



MANDO Adapt Page 36



Face driver / morse taper Page 38



Jaw module Page 37



Magnet module Page 39

QUICK CHANGE-OVER SYSTEMS



centroteX Page 42



mandoteX Page 43

MEASUREMENT TECHNOLOGY



TESTit Page 48

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