MICROSET

Tool Presetters

100%
Made by HAIMER
Made in Germany

CONTENTS

HAIMER – Your system provider around the machine tool

HAIMER evolved to become a complete system provider for tool management centered around the machine tool. HAIMER Microset tool presetting technology complements the existing HAIMER portfolio, which consists of an extensive tool holding program, shrinking and balancing technology, tool management logistics as well as 3D measuring devices and solid carbide cutting tools. This allows us to offer you a perfectly complementary product portfolio – all under one roof.

Haimer USA, Villa Park, Illinois

Tool Management Logistics

Tooling Technology

Measuring Technology

Shrinking Technology

Presetting Technology

Balancing Technology

Top 10 Reasons to Use
HAIMER Microset Presetting Technology

1

Increased Machine Utilization
Reducing set-up time by as much as 50% or more translates to more machine "up-time".

2

Faster Set-ups
Even if set-ups are not being performed offline, using a tool presetter is significantly faster than setting tools in the machine manually or with a laser.

3

Reduced Scrap
Microset presetters use optical cameras for measurement, which provide higher degrees of accuracy versus manual setting methods. Options like automatic focusing and measuring further reduce deviations in measurement, regardless of the operator.

4

Longer Tool Life
Runout that is not often inspected for non-critical assemblies can be measured and accounted for easily with a presetter, thereby extending tool life by preventing inaccurate tools from ever entering the machine.

5

Fewer Collisions
With optional data transmission methods like RFID or post-processing, the manual entry of offsets into the machine can be eliminated. This reduces errors that occur from operators accidently mistyping offset values.

6

More Cost-Effective than Lasers
Machines make money when they are making chips and not being used as measuring devices.
Furthermore, one presetter can manage 10 – 30 machines which is more cost-effective than purchasing a laser for each machine.

7

Consistency
Confirmation that tools are set properly, within specified tolerances, every time.

8

Ease of Use
Simple software makes the process uncomplicated for all users. No software engineering degrees needed!

9

Universal
Easy to preset milling tools, adjustable boring heads, complicated multi-inserted face-mills, PCD form tools, step-drills, etc. from all makes and manufacturers.

10

Industry 4.0 Success
Industry 4.0 is all about using gathered data to automate changes on the fly that optimize the machining process. The future smart factory will require technologies that can receive and transmit such data. HAIMER Microset tool presetters are able to communicate (bi-directionally) with a variety of machine controls and CAD/CAM systems.

Precision and productivity in production

Whether presetting, shrinking, inspecting and correcting balance, or measuring – we offer the perfect solution for all tool sizes and work environments. Improve the quality and precision of your workpieces with our know-how and wide range of products.

UNO series – entry level tool presetters include high-tech options as standard

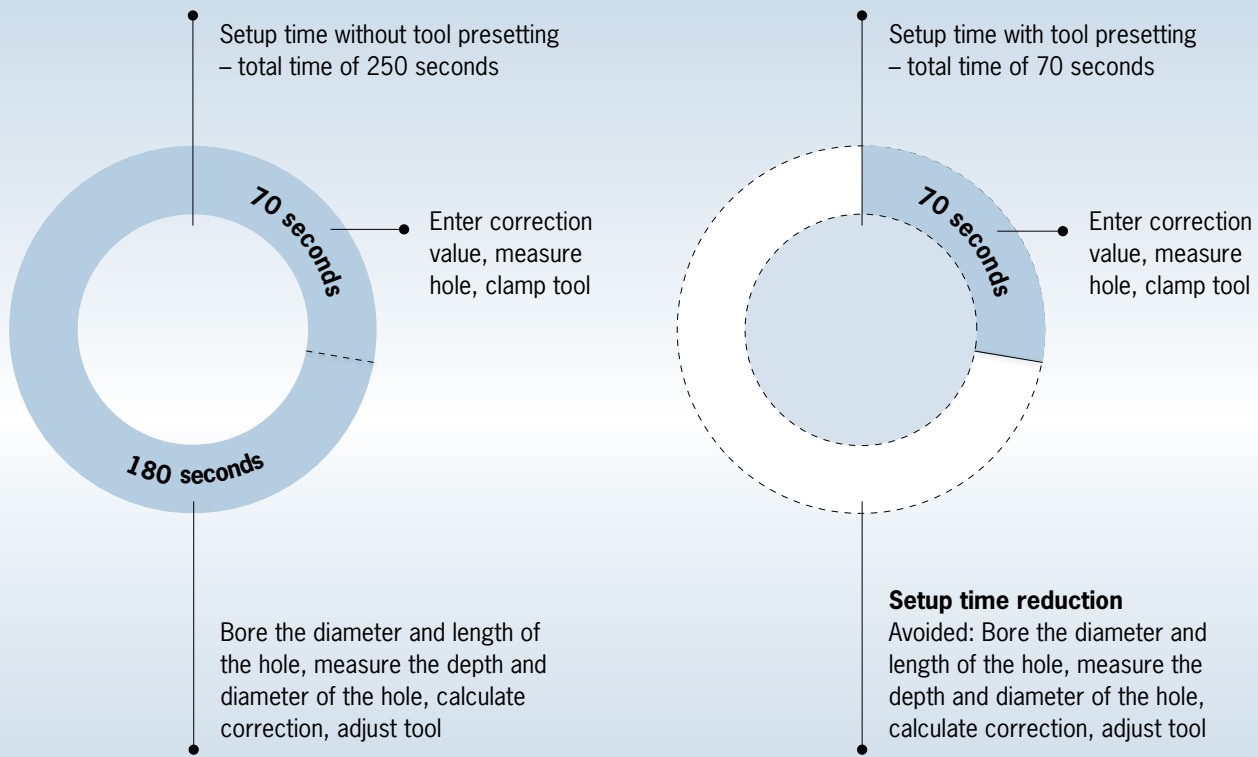*Technical data subject to change without prior notice*

Save time and money, improve workpiece quality

The efficient tool presetting equipment from HAIMER Microset optimizes your machining processes from the ground up. Improve your tool life, achieve better surface finishes and boost overall process reliability in your production.

– Minimize the idle time of your machines
– Reduce scrap and tooling costs
– Increase process reliability in your production
– Improve your tool life
– Generate consistent quality in your products

Reduce up to 70 % of your set up time!

Boring Head Example:

Setup time without tool presetting
– total time of 250 seconds

70 seconds

Enter correction value, measure hole, clamp tool

180 seconds

Bore the diameter and length of the hole, measure the depth and diameter of the hole, calculate correction, adjust tool

Setup time with tool presetting
– total time of 70 seconds

70 seconds

Enter correction value, measure hole, clamp tool

Setup time reduction
Avoided: Bore the diameter and length of the hole, measure the depth and diameter of the hole, calculate correction, adjust tool

UNO series – entry level tool presetters include high-tech options as standard

In addition to its precision, speed and reliability, the UNO series also includes numerous features in hardware. The new design and improved ergonomics set the standard by using high-quality components from Festo/SMC, Bosch, Heidenhain, and IDS.
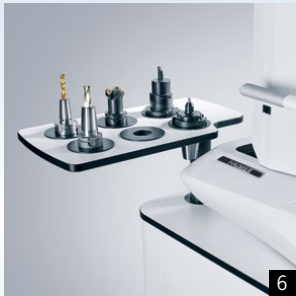

1: Camera system for setting the center of rotation
2: Tactile measurement of the center of rotation
3: Release-by-touch function, easy to operate without buttons
4: Useful system cabinet with 3 drawers, 1 door and internal oil tray.
　Also includes 3 maintenance doors (on all sides)
5: Keypad and µm-precise adjustments
6: 150° swiveling adapter storage
7–8: Measuring based on the snap gauge principle for diameters up to 100 mm

UNO autofocus & automatic drive – efficient and precise

The autofocus and automatic drive models of the UNO series provide unique advantages for tool measurement at the highest level. Choose the presetter that meets your needs.
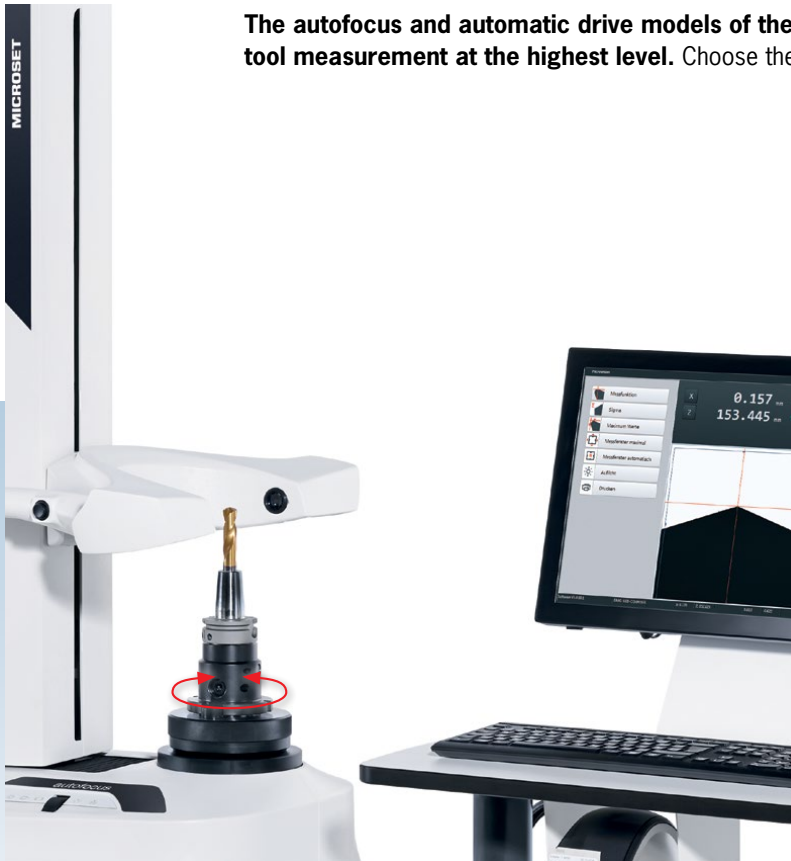
autofocus

Automatically focuses on the cutting edge. Motorized spindles with convenient system cabinet and 24", 10 point touchscreen as standard.

automatic drive

Fully automatic tool presetting and measurement independent of the operator (CNC-controlled, 3-axis), with convenient system cabinet and 24" touch display standard.

VIO linear – maximum ease of use and functionality

Optimize process reliability in your production with fully automatic measurement capabilities. The open device platform allows for the integration of both new and existing production processes.

Maximum stability and precision
The FEM-optimized, thermally stable cast iron construction of the VIO *linear* series ensures accurate measuring results and equipment longevity. Additionally, highly dynamic, wear-free linear drives ensure accurate long-term quality. The parallel drive and guidance system ensures optimal distribution of forces and guarantees ±2 µm measurement repeatability.

Highlights
– High rigidity ensures low distortion even at the maximum permissible load
– FEM-optimized and thermally stable cast iron construction
– Maximum tool weight 352 lbs (160 kg)
– Fast, silent and highly accurate cutting edge approach via unique linear drive

Leader in innovation:
– Fully automatic measuring cycles for maximum operating convenience
– High quality components from Heidenhain, Bosch Rexroth
– Maintenance free linear drives for higher speed, low noise and highly accurate positioning
– User-friendly operating panel ensures ultimate flexibility
– High power software Microvision VIO
– Release-by-touch
– Measure-by-touch (optional)

1: Second camera for measuring the center of rotation (optional)
2–3: Fully automatic axis drive via modern linear technology

Data exchange and transfer to the machine tool

Post-processor / Ethernet / USB
Post-processed data is transferred to the relevant data exchange drive either via USB, Ethernet LAN or RS232 interface.

Bidirectional interface
All presetting units can send and receive tool data to nearly all software (tool management, databases, CAD / CAM) via a bidirectional interface – regardless of whether it is a standard or a customized solution.
(Not available for UNO Smart)

Post processor and bidirectional interface*
HAIMER Microset tool presetting devices are compatible with machine tools from all manufacturers.
(Not available for UNO Smart)

* The measured data is quickly transferred direct to the machine tool. Control systems from Siemens, Heidenhain, FANUC, MAPPS and many others can be connected via USB data storage, Ethernet LAN or RS232.

RFID – data carrier system

– Customer-specific data storage
– Measurement processes with integrated data retrieval and storage
– Integration of all popular RFID systems
– The read/write head can be positioned automatically and manually for all popular tool holder systems (e.g. Balluff, Euchner, Mazak, Pepperl & Fuchs, Turck)
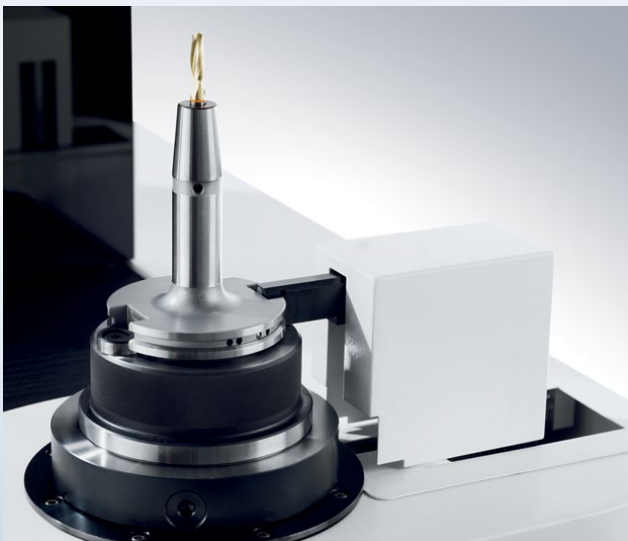
Automatic positioning of the read/write head

Manual positioning of the read/write head

HQR-Connect

With HQR-Connect tool data can be edited and printed as QR Code by the presetter, then be read by a scanner at the machine tool and directly sent to the machine control.

The tool presetter creates a QR code which contains all the necessary actual values and other features of the tool. Through HQR-Connect the data stored in the QR code is automatically transferred into the data fields of the machine tool. The HQR-Connect System is connected to the machine control via USB. At the machine control, the generated QR code is read with a scanner and the data is transmitted.

Your benefits:
– Network connectivity is not necessary
– Up to 45% time savings compared to manual entry
– Elimination of manual input errors or transposed digits
– Upgrades are possible at any time

(Not available for UNO smart)

HQR-Connect – Operating Principle

– The HQR-system works like an external (USB) keyboard
– The data is automatically sent to the control system, therefore reading or typing errors are eliminated
– The configuration of the HQR-system is done with a Windows based software
– The system consists of electronics and the QR code scanner
– Available for all control units with USB ports that allow data input via an external keyboard

After measuring the tool, a label with the QR code is printed
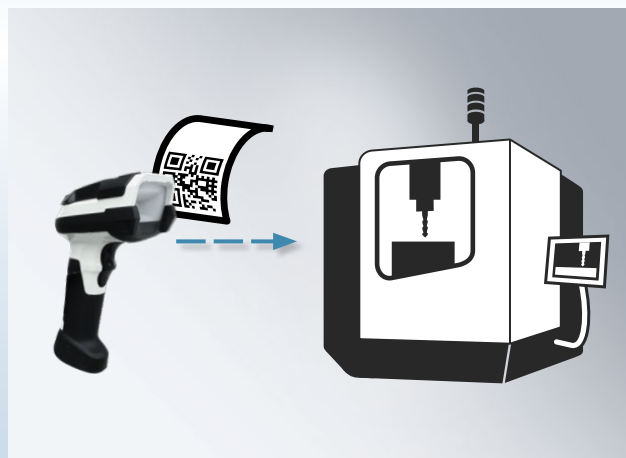
The HQR system is connected to the control system of the machine. It reads the QR code and transmits the tool data directly to the control system

HRFID-Connect

With HRFID-Connect tool data can be written on a RFID-data carrier by the presetter, then be read by a RFID reader at the machine tool and directly sent to the machine control.

The actual values measured on the tool presetter and other features of the tool are saved on the RFID data carrier.
The HRFID-Connect System is connected to the control system of the machine via USB.
The data stored on the data carrier is automatically entered into the data fields of the machine tool via HRFID-Connect transfer.

Your benefits:
– Network connectivity is not necessary
– Up to 45% time savings compared to manual entry
– Elimination of manual input errors or transposed digits
– Upgrades are possible at any time

(Not available for UNO smart)

HRFID-Connect – Operating Principle

– The HRFID-system works like an external (USB) keyboard
– The data is automatically sent to the control system, therefore reading or typing errors are eliminated
– The configuration of the HRFID-system is done with a Windows based software
– The system consists of an electronic and the RFID reader
– Available for all control units with USB ports that allow data input via an external keyboard
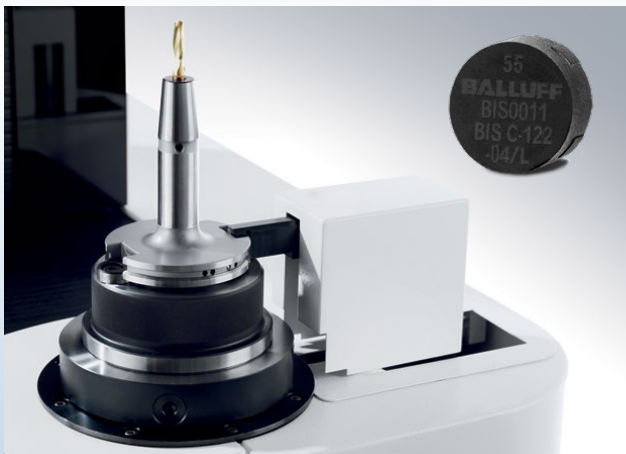
After measuring the tool, the data is transferred to the Balluff data carrier
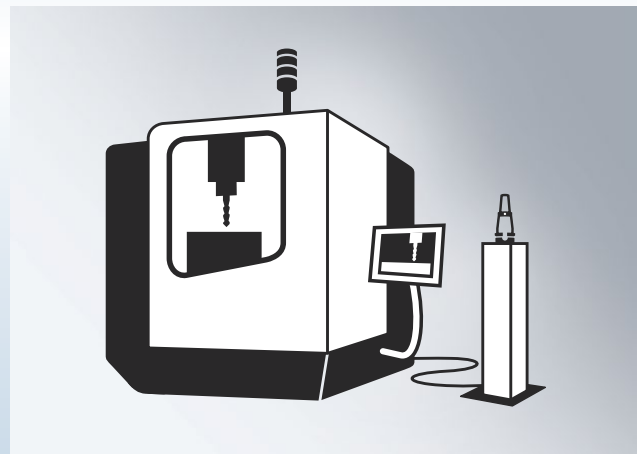
The RFID reader is connected to the machine control. It reads the Balluff data carrier and transmits the tool data directly into the control system of the machine

HAIMER i4.0 Tool & Data Management

HAIMER Data Analyzer & Controller
– System compatibility of each component – everything from the single source "HAIMER"
– Modular set-up – customer can start at each step
– HAIMER DAC connects all hardware components
– Data transfer through all interfaces to the machine tool
– Simplified tool management
– Reduction of manual data entry errors – high process-security

1 CAD/CAM–system

- Simple transfer of the generated job to the tool vending system for commissioning
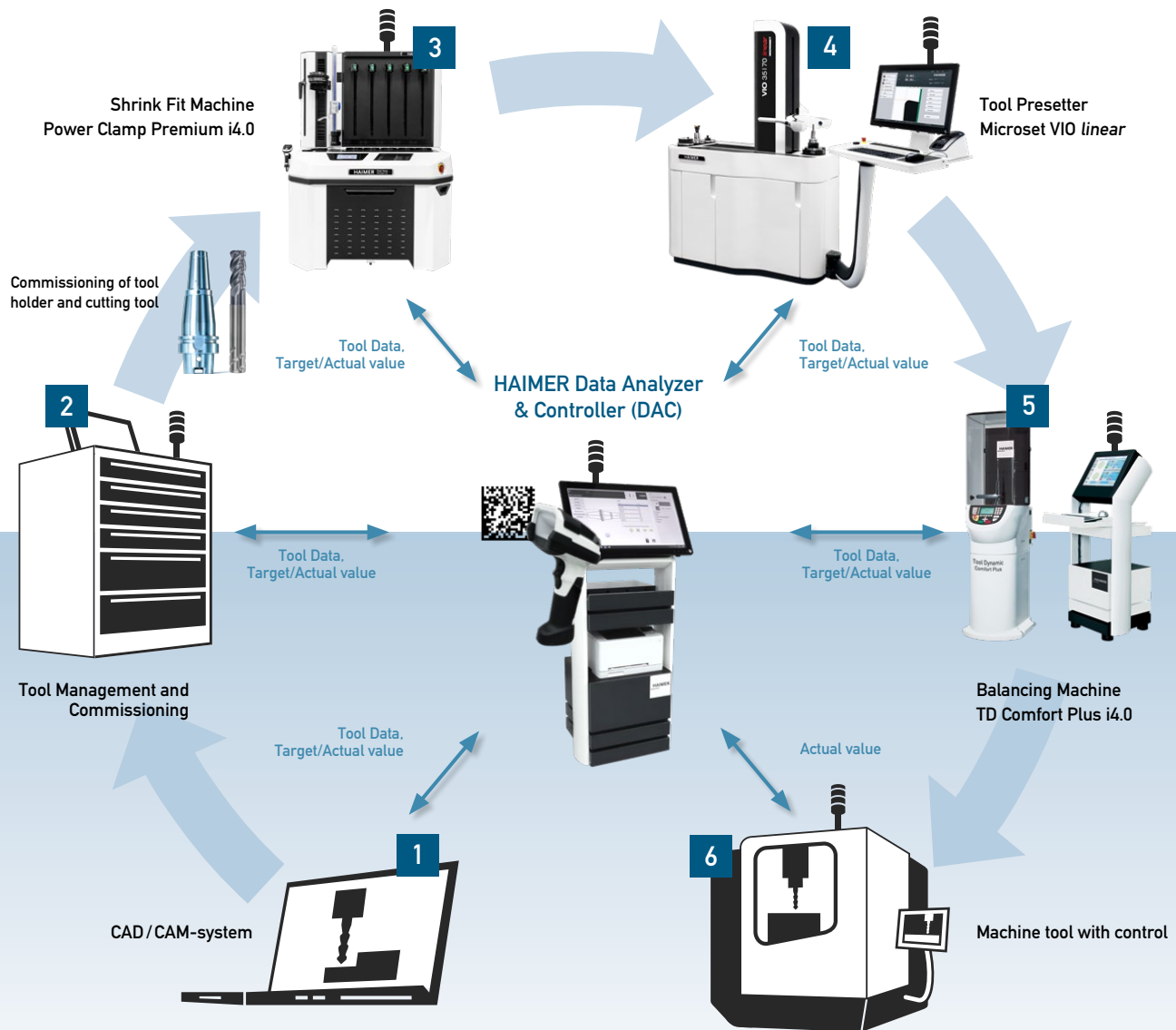
2 Tool Management & Commissioning

- Signal light indicates open job order
- Clearly arranged selection of the job that needs to be commissioned
- Simple commissioning through stock shelf indication of all components, through illustration of complete tool assembly and through showing exact position within the stock shelf
- Automatic output of needed components through on-screen selection
- Interactive step-by-step instruction for highest process security and low error rates
- Job transfer to the shrink fit machine through HAIMER DAC

3 Shrink Fit Machine
Power Clamp Premium i4.0

- Signal light at the right assembly station indicates the next work-step (shrinking in the cutting tool or assembly at the tool boy)
- Scanning the data-matrix code off the tool holder recalls the required assembly parameters from the database (shrinking parameters, length adjustment, torque etc.)
- Pictographic assembly instruction in the system helps for visual check
- Subsequent job transfer from HAIMER DAC to the tool presetter

4 Tool Presetter
Microset VIO linear

- Signal light indicates open measuring jobs
- Scanning the data matrix code recalls the open job from HAIMER DAC and starts the automatic measuring process
- Once the measuring job is successfully completed, the values will be stored. If the balancing grade of the tool is defined in the job, the data will be transferred from the HAIMER DAC to the balancing machine

3 Shrink Fit Machine
Power Clamp Premium i4.0

4 Tool Presetter
Microset VIO *linear*

Commissioning of tool
holder and cutting tool

Tool Data,
Target/Actual value

Tool Data,
Target/Actual value

**HAIMER Data Analyzer
& Controller (DAC)**

2 Tool Management and
Commissioning

Tool Data,
Target/Actual value

Tool Data,
Target/Actual value

5 Balancing Machine
TD Comfort Plus i4.0

Tool Data,
Target/Actual value

Actual value

1 CAD / CAM–system

6 Machine tool with control

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5 **Balancing Machine
TD Comfort Plus i4.0**

- Signal light indicates open balancing jobs
- Identification of the tool via data-matrix code and hand scanner
- The requested balancing parameters are recalled from the data base
- After recalling the tool ID from the system, the balancing process can be started
- Once the balancing job is successfully completed, the data is transferred to the HAIMER DAC

6 **Machine tool with control**

- Selection of tool and balancing data via data-matrix code scan when loading the machine
- Automatically, the machine control takes over all previously transferred tool data
- Recall and transfer of tool life to the HAIMER DAC via data-matrix code scan when unloading the tool from the machine tool

UNO smart
Smart entry into tool presetting

TOOL PRESETTERS – MANUAL

The UNO smart is our entry-level machine featuring a small footprint, user-friendly operation and high precision. It is particularly well suited for measurements right on the shop floor and has all this at an unbeatable price-performance ratio.

Standard Equipment

– Microvision SMART image processing system

– SK50 high-precision spindle, manual

– Robust, long-life cast iron construction

– Thermally optimized material combination for improved repeatability

– Manual operation

– Manual fine adjustment

– Energy saving mode

– 7.0" multi-touchscreen

– Memory for 99 zero points

– ± 5 µm repeatability

– Label printer

Measurement Range

UNO smart

– Maximum tool diameter on X-axis	15.75 in (400 mm)
– Maximum tool length on Z-axis	15.75 / 27.56 in (400 / 700 mm)
– Maximum tool weight	44 lbs (20 kg)
– Weight	20|40: 210 lbs (95 kg) 20|70: 231 lbs (105 kg)

Options

– Technology package: Tool inspection light, edgefinder, release-by-touch
– Smart Pro package: Tool inspection light, edgefinder, release-by-touch, base cabinet smart with adapter tray for 3 tools or adapters
– 4 × 90° indexing and spindle brake
– Turning package: Dial gauge included with pneumatic indexing
– Alignment and calibration-set
– Sigma function

Picture shows UNO Smart with Smart Pro package (optional)

UNO premium

The bestseller with high-quality components that complement your machine tool

TOOL PRESETTERS – MANUAL

UNO Premium – The right solution for nearly every user – the highest standard of manual tool presetting.
Highly precise measuring results and direct data transfer.

Standard Equipment

- Microvision UNO image processing system
- SK50 ultra-high precision spindle, manual
- Robust, long-life cast iron construction
- Thermally optimized material combination for improved repeatability
- Manual operation
- Label printer

- 21.5" TFT screen
- Windows 10
- Sigma function
- Memory for 1,000 zero points and 1,000 tools
- USB / LAN data output
- ± 2 µm repeatability

Measurement Range

UNO premium

– Maximum tool diameter on X-axis	15.75 in (400 mm)
– Maximum snap gauge tool diameter on X-axis	3.93 in (100 mm)
– Maximum tool length on Z-axis	15.75 / 27.56 in (400 / 700 mm)
– Maximum tool weight	66 lbs (30 kg)
– Weight	20|40: 309 lbs (140 kg) 20|70: 342 lbs (155 kg)

Options

- Technology package: Inspection light, edgefinder, release-by-touch
- Premium Pro package: Tool inspection light, edgefinder, release-by-touch, system cabinet premium with adapter tray for 6 tools and adapters
- Turning package: 4 × 90° and 3 × 120° indexing, second camera
- Manual fine adjustment
- Label printer
- User management
- Manual RFID system (only combined with premium Pro package)
- Bidirectional interface
- Post-processor
- Manual ISS spindle
- HQR-Connect
- HRFID-Connect

Picture shows UNO Premium with premium Pro package (optional)

UNO autofocus
Ideal for multi-edge tools

TOOL PRESETTERS – SEMI-AUTOMATIC

UNO autofocus – The right presetter for demanding measurements.
Take advantage of semi-automatic spindle operation with multiple tool measurements on one plane.

Standard Equipment

- Microvision UNO image processing system
- SK50 ultra-high precision spindle, autofocus
- Robust, long-life cast iron construction
- Thermally optimized material combination for improved repeatability
- Motorized fine adjustment of the C-axis
- 24" touchscreen
- 4 × 90° and 3 × 120° motorized indexing
- Pneumatic spindle brake
- Vacuum clamping
- Premium base cabinet includes storage for six adapters

- Sigma function
- Memory for 1,000 zero points, tools and tool lists
- USB / LAN data output
- Release-by-touch
- Edgefinder
- Inspection light
- 2 µm spindle runout
- ± 2 µm repeatability
- Label printer
- Windows 10

Measurement Range

UNO autofocus

– Maximum tool diameter on X-axis	15.75 in (400 mm)
– Maximum snap gauge tool diameter on X-axis	3.93 in (100 mm)
– Maximum tool length on Z-axis	15.75 / 27.56 in (400 / 700 mm)
– Maximum tool weight	66 lbs (30 kg)
– Weight	20|40: 529 lbs (240 kg) 20|70: 562 lbs (255 kg)

Options

- ISS-U universal ultra-high precision spindle with automatic adapter identification
- Turning package: Second camera incl. indexing, 4 × 90° and 3 × 120° motor driven
- Bidirectional interface
- Manual RFID system
- Post-processor
- HQR-Connect
- HRFID-Connect

Automatic focus on the cutting edge

UNO automatic drive
Fully automatic measuring for unrivalled convenience

TOOL PRESETTERS – FULLY AUTOMATIC

With fully automated measurement capabilities, the UNO automatic drive is the high-end model of the UNO series. The UNO automatic drive is fully independent of the operator and can be used with minimal user expertise. This guarantees maximum quality and time savings, even with complex tools on multiple planes.

Standard Equipment

- Microvision UNO image processing system
- Automatic tool measurement in 3 axes
- SK50 ultra-high precision spindle, autofocus
- Motorized fine adjustment of all axes
- 24" touchscreen
- 4 × 90° and 3 × 120° motor-driven indexing
- Pneumatic spindle brake
- Vacuum clamping
- Premium base cabinet includes storage for 6 adapters

- Sigma function
- Memory for 1,000 zero points, tools and tool lists
- USB / LAN data output
- Release-by-touch
- Edgefinder
- Inspection light
- 2 µm spindle runout
- ± 2 µm repeatability
- Label printer

Measurement Range
UNO automatic drive

– Maximum tool diameter on X-axis	15.75 in (400 mm)
– Maximum snap gauge tool diameter on X-axis	3.93 in (100 mm)
– Maximum tool length on Z-axis	15.75 / 27.56 in (400 / 700 mm)
– Maximum tool weight	66 lbs (30 kg)
– Weight	20|40: 529 lbs (240 kg) 20|70: 562 lbs (255 kg)

Fully automatic tool presetting and measurement - independent of the operator

Options

- ISS-U universal ultra-high precision spindle with automatic adapter identification
- Turning package: Second camera incl. indexing, 4 × 90° and 3 × 120° motor driven
- Bidirectional interface
- Manual RFID system
- Individual release of X/Y-axis
- Post-processor
- HQR-Connect
- HRFID-Connect

VIO basic
Suitable for large and heavy tools

TOOL PRESETTERS – SEMI-AUTOMATIC

The VIO basic, with optional semi-automatic (autofocus) or manual operation, is one of the most modern presetting devices in its class, with many features and an extensive set of standard equipment.

Standard Equipment

– Microvision VIO image processing system

– SK50 ultra-high precision spindle, manual

– Robust, long-life cast iron construction

– Thermally optimized material combination for improved repeatability

– Manual fine adjustment

– 24" multi-touchscreen

– Pneumatic spindle brake

– Vacuum clamping

– System VIO includes storage for up to 9 adapters

– Sigma function

– Memory for 1,000 zero points

– Unlimited tool memory

– User management

– Swiveling operating panel

– Edgefinder

– Inspection light

– 2 µm spindle runout

– ± 2 µm repeatability

Measurement Range

VIO basic

– Maximum tool diameter on X-axis	16.53 / 27.56 / 39.17 in (420 / 700 / 1000 mm)
– Maximum snap gauge tool diameter on X-axis	3.93 in (100 mm)
– Maximum tool length on Z-axis	19.69 / 27.56 / 39.37 in (500 / 700 / 1000 mm)
– Maximum tool weight	352 lbs (160 kg)
– Weight	881 lbs – 1,213 lbs (400 kg – 550 kg)

Options

– ISS-U universal ultra-high precision spindle with automatic adapter identification, mechanical tool clamping, spindle brake pneumatically and 4 × 90° or 3 × 120° indexing motorized

– 4 × 90° and 3 × 120° pneumatic indexing

– Turning package: Second camera incl. indexing, 4 × 90° and 3 × 120°

– Bidirectional interface

– Manual RFID system

– 27" multi-touchscreen

– Label printer

– Post-processor

– HQR-Connect

– HRFID-Connect

VIO *linear*
Perfect for rapid measurements, even on highly complex tools

TOOL PRESETTERS – FULLY AUTOMATIC

VIO *linear* – The complete solution: for fully automatic high-end tool presetting with customizable options.
The modular concept makes it possible to preset tools up to 39.37'' in length and diameter.

Standard Equipment

- Microvision VIO image processing system
- High-precision and fast axis-positioning via linear motion
- SK50 ultra-high precision spindle, autofocus
- 4 × 90° and 3 × 120° electronic indexing
- Pneumatic spindle brake
- Robust, long-life cast iron construction
- Thermally optimized material combination for improved repeatability
- Motorized fine adjustment of all axes
- 24" multi-touchscreen

- System VIO includes storage for 9 adapters
- Sigma function
- Memory for 1,000 zero points
- Unlimited tool memory
- User management
- Swiveling operating panel
- Edgefinder
- Inspection light
- 2 µm spindle runout
- ± 2 µm repeatability

Measurement Range

VIO linear

– Maximum tool diameter on X-axis	16.53 / 27.56 / 39.17 in (420 / 700 / 1000 mm)
– Maximum snap gauge tool diameter on X-axis	3.93 in (100 mm)
– Maximum tool length on Z-axis	19.69 / 27.56 / 39.37 in (500 / 700 / 1000 mm)
– Maximum tool weight	352 lbs (160 kg)
– Weight	881 lbs – 1,213 lbs (400 kg – 550 kg)

Options

- ISS-U universal ultra-high precision spindle with automatic adapter identification, mechanical tool clamping, pneumatic spindle brake and 4 × 90° and 3 × 120° motorized indexing
- Second camera for measuring the center of rotation
- Bidirectional interface
- Manual or automatic RFID system
- 27" multi-touchscreen
- Post-processor
- VIO Fit/Scan
- Angular head system, swiveling camera carrier, Y-axis offset for measuring multiple slewing gear witness
- HQR-Connect
- HRFID-Connect

VIO *linear* toolshrink
Shrinking and presetting combined

SHRINKING/PRESETTING

The combination of shrinking and presetting technology with precise length adjustment on the µm scale makes the VIO *linear* top of its class, which includes the toolshrink variant. The VIO *linear* toolshrink is the ideal choice, especially when using shrink fit holders, duplicate assemblies, or multi-spindle machines.

Standard Equipment

– Microvision VIO image processing system
– ISS-U universal ultra-high precision spindle with automatic adapter identification, mechanical clamping and 4 × 90° and 3 × 120° motorized indexing
– Best shrinking results, regardless of the holder brand
– High precision and fast axis-positioning through linear motion
– Fully automatic HAIMER induction unit 13 kW coil
– Automatic detection of shrinking parameters

– Automatic length adjustment within ± 10 µm
– Extractor with filter
– HAIMER contact cooling
– 24" touchscreen
– Ideally used with HAIMER shrink fit holders for best results
– Dynamic shrinking for short process times

Measurement Range
VIO linear toolshrink

– Maximum tool diameter on X-axis	16.53 in (420 mm)
– Maximum snap gauge tool diameter on X-axis	3.93 in (100 mm)
– Maximum tool length on Z-axis shrinking	2.36 – 25.59 in (60 – 650 mm)
– Maximum tool length on Z-axis measuring	19.69 / 27.56 / 39.37 in (500 / 700 / 1000 mm)
– Maximum tool weight	352 lbs (160 kg)
– Weight	1,587 – 1,764 lbs (720 – 800 kg)

Options

– Second camera for measuring the center of rotation
– Post-processor
– Bidirectional interface
– VIO Fit
– VIO Scan
– Manual RFID system
– Automatic RFID system
– Label printer
– TME cooling system with temperature monitoring
– 27" multi-touchscreen
– HQR-Connect
– HRFID-Connect

Microvision – easy and intuitive

Microvision software enables fast and easy inspection of complex shapes and features, creating even more time savings potential during setup.

These savings are achieved due to the machine's ability to quickly and precisely measure and set tools, independent from the operator. Modern image processing ensures that the tools are quickly and accurately measured and in turn guarantees the highest quality in your production processes. Complex tools can be measured within an incredibly short period of time with the latest measuring techniques.

Highlights

– Intuitive operation ensures quick and precise measurement results

– Accurate measurement of complex and helical cutters with the precise focus window

– User administration and access privileges

– Display currently in 16:9 format

– Cross hair fixed / floating with automatic measurement lines and automatic contour evaluation

– Identical software design for all Microset models

– Windows based

– Measuring macros for fast creation of automatic measuring sequences

– Template-System, for fast and easy creation of measuring cycles for similar tool geometries

– Creation of customized master measuring cycles possible
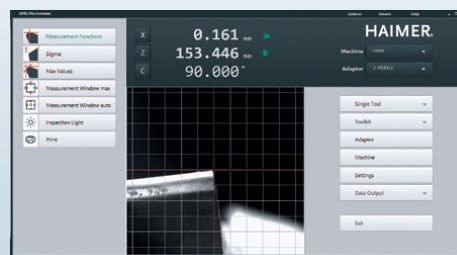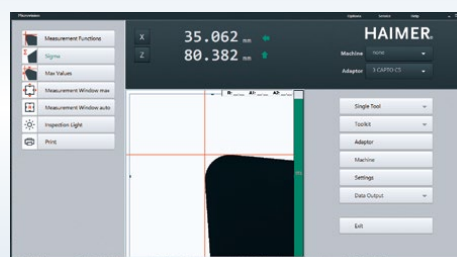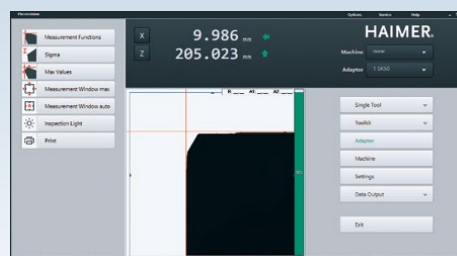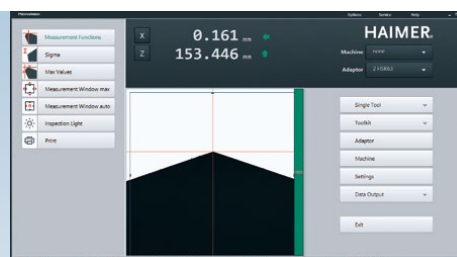
Adapters and spindles for every taper

High-quality, precise adapters and spindles are important elements for precise tool presetting.

We offer an extraordinarily wide range of adapters and spindles so that you can quickly and easily get the results you need. We will gladly provide consultation regarding your individual requirements and applications.

The ISS-U universal ultra-high precision spindle enables incredibly high-precision direct clamping. The ISS-U spindle utilizes the highest clamping forces with runout accuracy < 0.002 mm, all without need for adapters.

Examples of Adapters

We offer solutions for all requirements, from standard tool holders to customer-specific special tool holders. You benefit from our many years of experience in tool design.

SK50 Ultra precision adapter
1: HSK 63 adapter with integrated clamping
2: VDI 40 adapter with manual clamping
3: PSC adapter with integrated manual clamping system

Examples of spindles

Our offer: the Universal clamping system clamps tools precisely and reliably, regardless of the tool holder's geometry. This also applies to the Attachment holder (2), which was designed for all common tool holder systems on the market.

Universal clamping system
1: ISS-U universal ultra-high precision spindle
2: Attachment holder (SK, HSK, PSC, VDI)
3: Complete system

Adapter with integrated clamping.

Available in taper sizes
HSK ACET 32 / BDF 40 – HSK ACET 100 / BDF 125,
HSK-F80 Makino, PSC 32 – PSC 80, KM 32 – KM 80,
VDI 16 – VDI 60, VDI 25 with Trifix – VDI 50 with Trifix,
BMT 40 – BMT 75

Reduction sleeves from SK50 to SK/BT/CAT/BBT/PSC/KM/VDI/ANSI adapter with clamping system

For taper size	Height H	Order No.
– HSK ACET 32 / BDF 40	50 mm	M-R1034
– HSK ACET 40 / BDF 50	60 mm	M-R1035
– HSK ACET 50 / BDF 63	70 mm	M-R1036
– HSK ACET 63 / BDF 80	80 mm	M-R1037
– HSK ACET 80 / BDF 100	90 mm	M-R1038
– HSK ACET 100 / BDF 125	110 mm	M-R1039
– HSK-F80 Makino	80 mm	M-R4071
– PSC 32	70 mm	M-R1040
– PSC 40	80 mm	M-R1046
– PSC 50	90 mm	M-R1047
– PSC 63	120 mm	M-R1048
– PSC 80	140 mm	M-R1049
– KM 32	40 mm	M-R3200
– KM 40	40 mm	M-R3210
– KM 50	60 mm	M-R3220
– KM 63	60 mm	M-R3230
– KM 80	80 mm	M-R3240
– VDI 16	70 mm	M-R1027
– VDI 20	70 mm	M-R1028
– VDI 25	70 mm	M-R1029
– VDI 30	80 mm	M-R1030
– VDI 40	80 mm	M-R1031
– VDI 50	110 mm	M-R1032
– VDI 60	115 mm	M-R1033
– VDI 25 with Trifix	70 mm	M-R1200
– VDI 30 with Trifix	80 mm	M-R1210
– VDI 40 with Trifix	80 mm	M-R1220
– VDI 50 with Trifix	110 mm	M-R1230
– BMT 40	95 mm	M-R3100
– BMT 45	95 mm	M-R3104
– BMT 50	95 mm	M-R3107
– BMT 55	95 mm	M-R3103
– BMT 60	95 mm	M-R3101
– BMT 65	95 mm	M-R3105
– BMT 75	95 mm	M-R3106

Adapter with manual clamping.

Available in taper sizes
SK/BT/CAT/ANSI 20 – SK/BT/CAT/ANSI 45,
HSK ACET 25 / BDF 32 – HSK ACET 100 / BDF 125,
PSC 32 – PSC 80, VDI 16 – VDI 60

Reduction sleeves from SK50 to SK/BT/CAT/BBT/PSC/KM adapter without clamping system

For taper size	Height H	Order No.
– SK/BT/CAT/ANSI 20	45 mm	M-R1004
– SK/BT/CAT/ANSI 25	45 mm	M-R1003
– SK/BT/CAT/ANSI/BBT 30	25 mm	M-R1001
– SK/BT/CAT/ANSI/BBT 40	20 mm	M-R1000
– SK/BT/CAT/ANSI 45	25 mm	M-R1002
– HSK ACET 25 / 32 BDF	50 mm	M-R1070
– HSK ACET 32 / 40 BDF	40 mm	M-R1010
– HSK ACET 40 / 50 BDF	40 mm	M-R1011
– HSK ACET 50 / 63 BDF	40 mm	M-R1012
– HSK ACET 63 / 80 BDF	55 mm	M-R1013
– HSK ACET 80 / 100 BDF	60 mm	M-R1014
– HSK ACET 100 / 125 BDF	90 mm	M-R1015
– PSC 32	30 mm	M-R1063
– PSC 40	30 mm	M-R1064
– PSC 50	30 mm	M-R1065
– PSC 63	30 mm	M-R1066
– PSC 80	70 mm	M-R1067
– VDI 16	60 mm	M-R1020
– VDI 20	60 mm	M-R1021
– VDI 25	40 mm	M-R1022
– VDI 30	40 mm	M-R1023
– VDI 40	40 mm	M-R1024
– VDI 50	50 mm	M-R1025
– VDI 60	130 mm	M-R1026

Technical data

		UNO smart	UNO premium
Measurement range			
Maximum tool diameter	mm	400	400
Max. tool diameter for measuring using the snap gauge principle	mm	–	100
Maximum tool length on Z-axis	mm	400 / 700	400 / 700
Maximum tool length shrinking	mm	–	–
Operation			
Manual		●	●
Autofocus		–	–
Fully automatic		–	–
Shrinking		–	–
Base cabinet			
System base cabinet smart including storage for 3 adapters		○	–
System base cabinet premium including storage for 6 adapters		–	○
System VIO[1] including storage for up to 9 adapters		–	–
Spindle			
SK50 high precision spindle, manual		●	–
SK50 ultra-high precision spindle, manual		–	●
SK50 ultra-high precision spindle, autofocus		–	–
ISS-U universal ultra-high precision spindle, manual		–	○
ISS-U universal ultra-high precision spindle, autofocus		–	–
Automatic adapter recognition		–	–
Mechanical clamping		–	–
Vacuum clamping		–	●
Spindle brake		○	●
4 × 90° and 3 × 120° indexing		○	○
Accuracy			
Spindle runout	µm	3	2
Repeatability	µm	± 5	± 2
Turning center measurement			
Dial gauge with 4 × 90° indexing		○	–
Camera with 4 × 90° indexing		–	○
Miscellaneous			
Inspection light		○	○
Edgefinder		○	○
Magnet board		–	○
7" touchscreen		●	–
21.5" TFT		–	●
24" touchscreen		–	○
27" touchscreen		–	–
Measure-by-touch		–	–
Release-by-touch		○	○
Individual release and clamping of X/Z-axis		–	●
Joystick		–	–
Software			
Image processing		Microvision SMART	Microvision UNO
Zero points		99	1000
Tool storage unit		–	1000
Sigma function		○	●
User management		–	○
Data output			
Label printing		○	○
USB		–	●
LAN/network		–	●
Post-processor		–	○
Bidirectional interface		–	○
Manual RFID system		–	○
Automatic RFID system		–	–
HQR-Connect		–	○
HRFID-Connect		–	○

● Standard   ○ Optional   – Not available

[1] System base cabinet VIO linear toolshrink including storage for 3 adapters

UNO autofocus	UNO automatic drive	VIO	VIO *linear*	VIO *linear* toolshrink
400	400	420 / 700 / 1000	420 / 700 / 1000	420
100	100	100	100	100
400 / 700	400 / 700	500 / 700 / 1000	500 / 700 / 1000	650
–	–	–	–	650
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•	•	○	•	•
–	•	–	•	•
–	–	–	–	•
–	–	•	•	•
•	•	–	–	–
–	–	•	•	•
–	–	–	–	–
–	–	•	–	–
–	–	○	•	–
–	–	○	–	–
○	○	–	○	•
○	○	○	○	○
○	○	○	○	•
•	•	•	•	–
•	•	•	•	•
○	○	○	•	•
2	2	2	2	2
± 2	± 2	± 2	± 2	± 2
–	–	–	–	–
○	○	○	○	○
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•	•	•	•	•
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•	•	•	•	•
–	–	○	○	○
–	–	–	○	○
•	•	•	•	•
○	○	•	•	•
–	–	–	•	•
Microvision UNO	Microvision UNO	Microvision VIO	Microvision VIO	Microvision VIO
1000	1000	1000	1000	1000
1000	1000	unlimited	unlimited	unlimited
•	•	•	•	•
•	•	○	•	•
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○	○	○	○	○
○	○	○	○	○
○	○	○	○	○
–	–	○	○	○
○	○	○	○	○
○	○	○	○	○

Tool Management Logistics

Tooling Technology

Measuring Technology

Shrinking Technology

Presetting Technology

Balancing Technology