MICROSET

Tool Presetters

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HAIMER

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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 Chicago, Illinois

Tool Management Logistics

Tooling Technology

Measuring Technology

Shrinking Technology

Presetting Technology

Balancing Technology

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

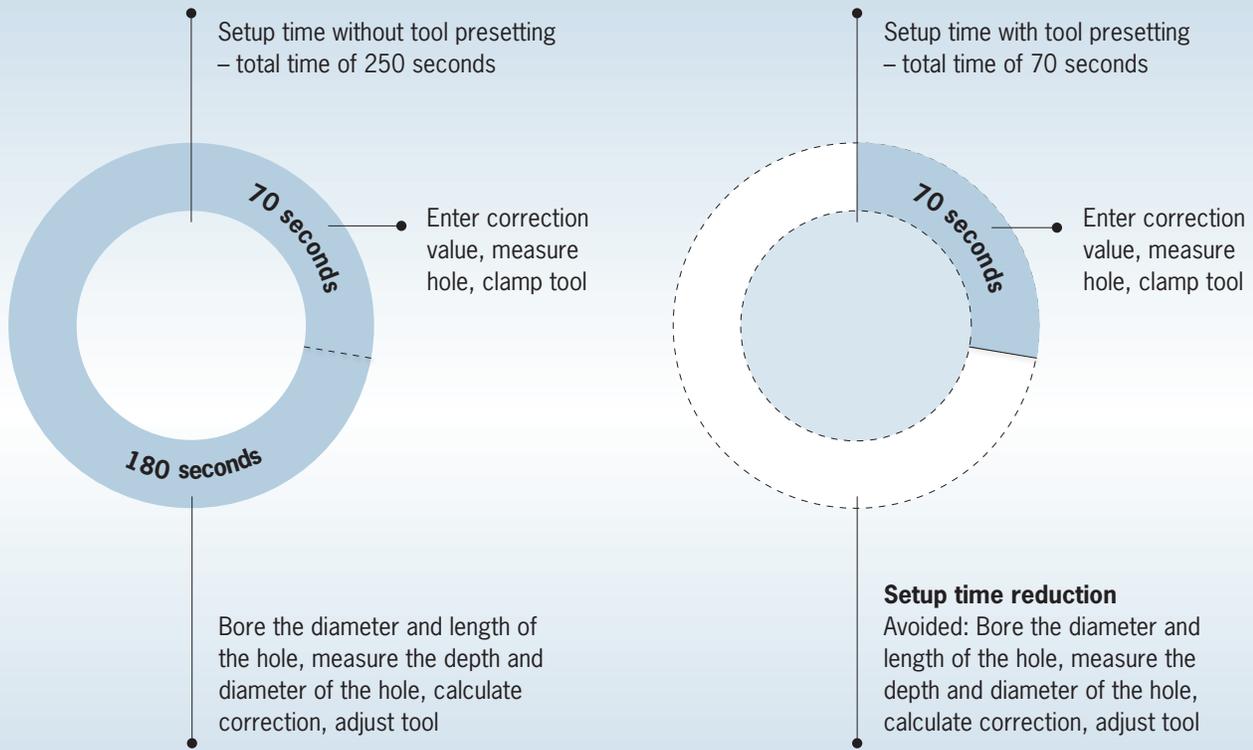*Technical data subject to change without prior notice*

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 SMC, Bosch, Heidenhain, and IDS.
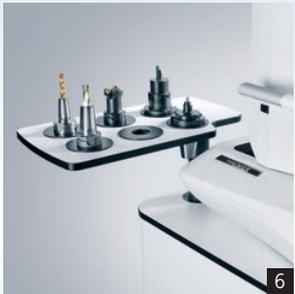

1: Camera system for setting the center of rotation
2: Tactile measurement of the center of rotation
3: Release-by-touch function, easy to operate without buttons
4: Useful system cabinet with 3 drawers, 1 door and internal oil tray.
   Also includes 3 maintenance doors (on all sides)
5: Keypad and µm-precise 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.
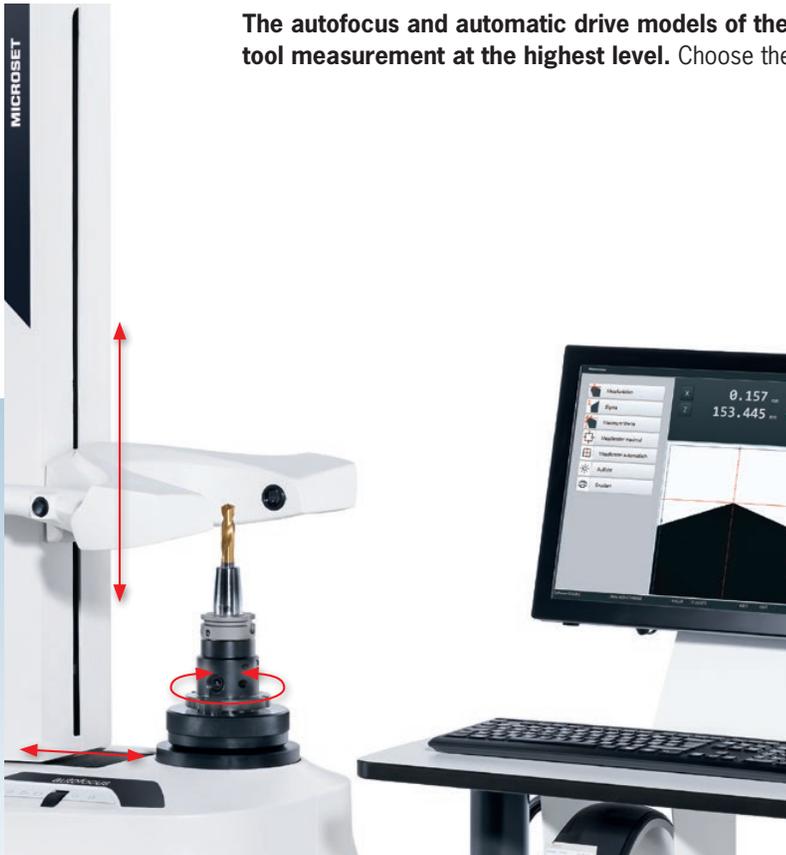
autofocus

Automatically focuses on the cutting edge. Motorized spindles with convenient system cabinet and 23", 10 point touch screen as standard.

automatic drive

Fully automatic tool presetting and measurement independent of the operator (CNC-controlled, 3-axis), with convenient system cabinet and 23" 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
– **Fast linear drive technology** and highly accurate positioning
– **User-friendly operating panel** ensures ultimate flexibility
– **High power software** Microvision VIO
– **Release-by-touch**
– **Measure-by-touch**

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

Technical data subject to change without prior notice

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, network or RS232 interface. (Not available for UNO Smart)

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
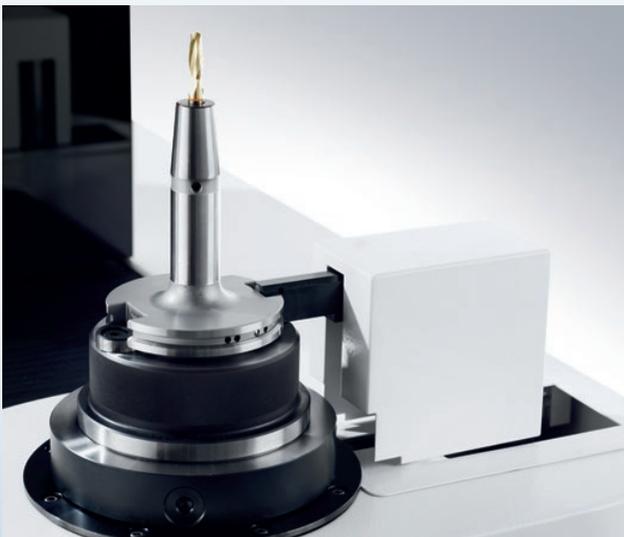
Automatic positioning of the read / write head

Manual positioning of the read / write head

UNO smart
Smart entry into tool presetting

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
- Spindle brake
- Manual fine adjustment

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

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: Incident light, edgefinder, release-by-touch
- Premium Pro package: Tool inspection light, edgefinder, release-by-touch, premium system cabinet with adapter tray for 6 tools and adapters
- Turning package: 4 × 90° and 3 × 120° indexing, second camera
- User management
- Manual RFID system (only combined with premium Pro package)
- Bidirectional interface
- Post-processor

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" touch screen

– 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 and 1,000 tool data

– User management

– Release-by-touch

– Edgefinder

– Incident light

– 2 μm spindle runout

– ± 2 μm repeatability

– Manual fine adjustment of the X/Y-axis

– 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 mechanical pull system and automatic adapter identification
– Turning package: Second camera incl. indexing, 4 × 90° and 3 × 120° motor driven
– Bidirectional interface
– USB / LAN data output
– Manual RFID system
– Post-processor

Automatic focus on the cutting edge

UNO automatic drive
Fully automatic measuring for unrivalled convenience

HAIMER®

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" touch screen
- 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 and 1,000 tool data
- User management
- USB / LAN data output
- Release-by-touch
- Edgefinder
- Incident 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

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-touch screen

– Vacuum clamping

– Pneumatic spindle brake

– Integrated base cabinet Premium includes storage for up to 9 adapters

– Sigma function

– Memory for 1,000 zero points

– Swiveling operating panel

– Edgefinder

– Incident light

– 2 µm spindle runout

– ± 2 µm repeatability

– Label printer

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	20|50: 849 lbs (385 kg) 20|70: 1,058 lbs (480 kg)

Options

– SK50 ultra-high precision spindle, autofocus
– 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° pneumatic indexing
– Turning package: Second camera incl. indexing, 4 × 90° and 3 × 120°
– Bidirectional interface
– Unlimited tool data storage
– User management
– Manual RFID system
– 27" multi-touch screen
– Post-processor

Technical data subject to change without prior notice

VIO *linear*
Fast measuring, even for 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-touch screen

– 4 × 90° motorized indexing

– Premium base cabinet includes storage for 9 adapters

– Label printer

– Sigma function

– Memory for 1,000 zero points

– Unlimited tool memory

– User management

– Swiveling operating panel

– Edgefinder

– Incident 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	20|50: 904 lbs (410 kg) 20|70: 1,113 lbs (505 kg)

Options

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

Technical data subject to change without prior notice

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
– Highly accurate axial positioning with the linear drive
– Fully automatic HAIMER induction unit 13 kw coil
– Automatic detection of shrinking parameters

– Automatic length adjustment within ± 10 µm
– HAIMER contact cooling
– Label printer
– 24" touch screen
– 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	17.72 / 25.59 in (450 / 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 Scan
– Manual RFID system
– Automatic RFID system
– Extractor with HEPA filter
– List printer
– TME cooling system with actice temperatur monitoring
– 27" multi-touch screen

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 of tool design.

1: HSK 63 adapter with integrated clamping
2: VDI 40 adapter with manual clamping
3: Capto 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, Capto, VDI)
3: Complete system

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 with same tools
– Creation of customized master measuring cycles possible
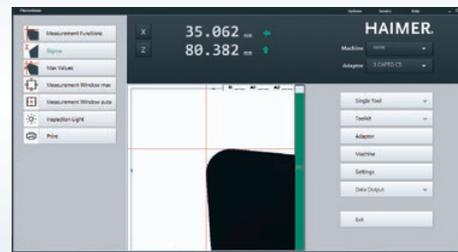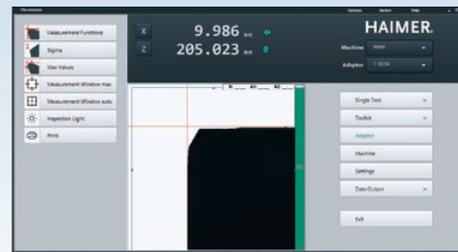
Technical data

		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
Operation			
Manual		●	●
Autofocus		–	–
Fully automatic		–	–
Shrinking		–	–
Base cabinet			
Standard base cabinet including storage for three adapters		○	○
Premium system base cabinet including storage for six 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[1]		–	–
Automatic adapter recognition		–	–
Mechanical clamping		–	–
Vacuum clamping		–	●
Spindle brake		–	●
4 × 90° or 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			
Incident light		○	○
Edgefinder		○	○
Magnet board		–	○
5.7" touch screen		●	–
21" TFT		–	●
24" touch screen		–	○
27" touch screen		–	–
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		–	–

● Standard   ○ Optional   – Not available
[1] ISS-U spindle featuring mechanical clamping, automatic adapter identification and autofocus

Technical data subject to change without prior notice

UNO autofocus	UNO automatic drive	VIO basic	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	450 / 650
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•	•	○	•	•
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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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–	–	–	○	○

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HAIMER®
Quality Wins.

Tool Management Logistics

Tooling Technology

Measuring Technology

Shrinking Technology

Presetting Technology

Balancing Technology