

Presetting	
Shrinking	
Balancing	
Testing / measuring	
Accessories	
Service	

Maximum precision & productivity for your production

Tool presetting



Tool presetting Microvision software

Test and measurement equipment Service Floor plans / technical data



Competence

Precision and productivity in production.

Whether it is presetting, shrinking, balancing or testing and measuring – we offer you perfect solutions for all tool sizes and machine environments. Improve the quality and precision of your workpieces with our know-how and wide range of products.



Product overview

The right solution for every requirement.

Tailored solutions for maximum productivity – from the selection of suitable technologies to service including training, maintenance and updates.

Presetting



Universal solution: UNO

Shrinking / balancing



Power Clamp

Accessories



Adapters and spindles



Premium solution: VIO



VIO tool dynamic

Service



Equator 300

Maintenance, support, 24/7 Service Hotline and training

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→ UNO	
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Tool presetting

NEW // UNO – from manual to fully automatic.

Tool presetting at a high level at an attractive price. The UNO works exceptionally accurately and offers perfect results for tool dimensions with a diameter of up to 400 mm and measuring lengths of up to 400 mm (optional: 700 mm). This is ensured by a thermo-stable construction, high quality measuring systems and high-performance software.



UNO 20|40 manual

- + Intuitive menu navigation and control system
- + Diverse measurement functions for turn-mill and drilling tools
- + SK 50-HSK spindle, VDI, Capto and other adapters available

UNO 20|40 autofocus

Additional features compared to the UNO manual

- + Automatic focusing on the cutting edge to be measured
- + Best suited for tools with multiple cutting edges
- + SK 50 spindle with automatic focus
- + Can be operated manually



UNO 20|70 automatic drive

Additional features compared to the UNO autofocus

- + Automatic positioning and focusing on the cutting edges to be measured
- + Automatic measurement even of complex tools
- + No special user expertise required

Highlights

- + New design, improved ergonomics
- + FEM-optimised and thermally stable cast iron construction
- + Individual design through modular concept
- + Tool measurement based on the snap gauge principle for diameters of up to 100 mm
- + 47 cm (18.5") screen with 16:9 format with 45-fold magnification
- + Incident light for visual cutter inspection

Options

- + 22" / 23" multi-touch display
- + Pneumatic spindle indexing 4 x 90°
- + Pneumatic spindle brakes
- + Second camera for setting up the centre of rotation
- + Release-by-touch operation
- + Useful system cabinet
- + Adapter / tool tray
- + High-quality adapters
- + Thermal label printer
- + Tool identification with RFID data carrier
- + Post processors for all common control systems

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UNO series - new autofocus and automatic drive features

UNO autofocus and UNO automatic drive – efficient and precise.

The autofocus and automatic drive configurations of the UNO series provide decisive advantages for tool measurement at the highest level. Choose your machine – to meet your requirements.



autofocus

For automatically focusing the cutting edge. Motor-driven spindles. With useful system cabinet and 22" touch display as standard.



automatic drive

For fully automatic tool presetting and measurement independent of the operator (CNC-controlled, 3 axes). With useful system cabinet and 22" touch display as standard. UNO series - equipment and functionality

Maximum convenience and functionality for the operator.

In addition to precision, speed and reliability, the UNO series also boasts numerous features in terms of its equipment. The new design and improved ergonomics set new standards.



Тоо	presetting
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Tool presetting

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VIO – absolutely reliable and flexible.

The VIO series is compatible with the most specific requirements. This version with a manual operating concept is synonymous with high quality components and intuitive operation. The VIO boasts decisive advantages such as large traverses on the X- and Z-axes and powerful image processing.



VIO manual

Manual operation

- + Flexible control console
- + High quality components
- + Powerful Microvision software

VIO linear

Fully automatic with manual options

- + Intuitive input of automatic measurement cycles
- + Wear-free and maintenance-free linear motors
- + Flexible control console

VIO series - the premium solutions

- + Length and diameter up to 1,000 mm
- + From manual to fully automatic
- + FEM-optimised and thermally stable cast iron construction

linear



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I I DRIVE

VIO linear toolshrink

Combined solution for high-precision shrinking and measuring

- + Minimum footprint
- + Optimal shrinking results

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- + Rapid, more precise axial positioning
- + Automatic monitoring of shrinking parameters

Tool presetting	
▶ VIO linear	
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Tool presetting

VIO *linear* – the premium solution for highest precision and speed.

Optimise process reliability in your production with fully automatic measurement processes. The holistic device concept allows for integration in all production processes, including existing ones.

Worldwide leaders through:

Fully automatic measuring cycles for maximum operating convenience

High quality components Heidenhain, Bosch Rexroth

Linear drives for speed and highly accurate positioning

Operating panel flexible and user-friendly

High power software Microvision



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

Maximum stability and precision

The FEM-optimised, thermally stable cast iron construction of the VIO *linear* series ensures accurate measuring results and equipment longevity. In addition, highly dynamic, wear-free linear drives ensure accurate long-term quality. The parallel drive and guidance system ensures optimal distribution of forces and guarantees measurement repeatability of $\pm 2 \ \mu m$.

Highlights

- + Low distortion even under the maximum permissible load thanks to its high installed weight
- + FEM-optimised and thermally stable cast iron construction
- + Maximum tool weight 160 kg

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

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Tool presetting

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VIO *linear* toolshrink – measurement presetting and shrinking of tools.

The VIO *linear* toolshrink also ticks all the boxes when it comes to using sister tools and multi-spindle machines. The VIO *linear* toolshrink also saves time over conventional equipment with its built-in shrinking unit. Tools are shrunk and then measured in a single process. The linear drives ensure extremely fast, precise positioning of the measurement and shrinking axes. The latest inductor technology guarantees improved process reliability.







Fully automatic inductor unit as standard

- Motorised adjustable diameter even with multiple diameters in one process
- + Motorised inductor axis, precise positioning with high-quality length measurement systems





1: Easy access to all components 2: Optimal process – shrinking and presetting in one operation

Highlights

- + New design for enhanced operating convenience
- + Optimal shrinking results regardless of the tool holder manufacturer
- + Rapid and precise axial positioning with the linear drives
- + Protection of the inductor unit with motorised positioning for the measurement systems
- + Accessory selection is easier than ever before using optical display and selection
- + Energy saving: Automatic activation and deactivation of the fume extraction system and coolant unit
- + Automatic monitoring of shrinking parameters
- + Automated and self-teaching parameter adjustment

Technical data

- + Maximum tool length: 700 mm
- + Shrink chuck temperature: maximum 350 °C
- + Heat-up time: approx. 4 seconds
- + Tools: HM and HSS of ø 3-32 mm
- + Induction shrinking power: 13 / 20 kVA
- + Cool-down times: 30-90 seconds

Shrinking: Dynamic with presetting adapter or counterbored

Whether it is the automotive industry or tool making, almost every production environment benefits from tools which can be shrunk to length exactly. The VIO *linear* toolshrink offers a unique solution for higher precision in production.

Your benefits

- + Better concentricity and less imbalance
- + Optimal for series production with sister tools
- + Fully automatic coil as standard
- + Exact shrinking to the specified length (tolerance <10 μm)

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Tool presetting / accessories

Adapters and spindles for all requirements and applications.

Precise, high-quality adapters and spindles are important elements for precise tool presetting. We have an extraordinarily wide range in order that you can generate the results you want quickly and easily. We will gladly provide consultation regarding your individual requirements and applications.

Adapter // examples

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 HSK 63 adapter with integrated clamping 2: VDI 40 adapter with manual clamping
 Capto adapter with integrated manual clamping system

We offer you the solution for every situation, from a standard tool holder to customerspecific special tool holders. You benefit from our experience over many years in the area of special tool design.

Spindles // examples



Our offer: Universal clamping system, which clamps the tools precisely and reliably independent of the tool holders geometry. Also attachment holder for all common tool holder systems on the market.

Universal clamping system 1: ISS spindle 2: Attachment holder (SK, HSK, Capto, VDI) 3: Complete system

Tool presetting / software

Microvision – easy and intuitive.

Microvision software very quickly allows users to generate lots of time-saving potential during job preparation. It does so by quickly, precisely and independently measuring and setting tools. 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 the shortest period of time with the most modern measuring techniques.

Highlights

- + Quick and precise measuring results thanks to intuitive operation
- + Accurate measurement values for 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
- + One design for the software of all equipment classes
- + Windows 7 Professional or Ultimate, whatever you need









Tool presetting	
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External tool presetting – your benefits

Save time and money, improve workpiece quality.

The efficient tool presetting equipment from DMG MORI Microset optimises your machining processes from the ground up. Improve your tool service lives, generate better surface finishes and boost overall process reliability in your production.

- + Minimise rejects and tool costs
- + Minimise the idle time of your machines
- + Improve your tool service lives

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- + Increase process reliability in your production
- + Generate consistent quality in your products

Save up to 70 % time!





Data exchange

Post-processor / Ethernet / USB

Post-processed data is transferred to the relevant data exchange drive either via the network or via USB.

Bidirectional interface

All equipment can provide tool data to almost any software (tool management, databases, CAD / CAM) via a bidirectional interface – irrespective of whether it is a standard solution or a customised solution.



Tool management

Modern data formats (XML and others) allow smooth transfer of your CAD / CAM data.



Data transfer to the machine – for absolute process safety.

Post processor and bidirectional interface

DMG MORI Microset tool presetting devices are compatible with machine tools from all manufacturers. The measured tool data are quickly transferred straight to the machine tool. Control systems from SIEMENS, Heidenhain, MAPPS and many others can be connected by USB data storage, Ethernet LAN or RS232.

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Shrinking and balancing equipment

Ideal auxiliary equipment for tool presetting.

As a fitting supplement to tool presetting we can provide high-quality shrinking and balancing equipment. Both the VIO tool *dynamic* and the Power Clamp boast innovation, ease of operation and quality.



Power Clamp – shrinking equipment

- + High precision tool clamping for all applications including drilling, finishing or roughing
- + Process-safe shrink grip and shrink release of TCT and HSS tools from 3 to 32 mm in diameter in record times of less than 1 minute
- + Fast, precise and efficient tool change at the push of a button
- + Highest rotational accuracy with simplest operation

Equipment and technical data

- + With standard inductor or innovative next-generation coil
- + Turntable with 3 stations
- + Integrated contact cooling
- + Output: 13 kW
- + Connection: 3 × 400-480 V, 16 A
- + Tools: HM and HSS from 3 to 32 mm



VIO tool *dynamic* – Balancing equipment

- + Protection of the machine tool from undue vibration and forces
- + Prolongs the service life of spindle and tools
- + Higher surface quality of the workpiece
- + Guarantees safe processes without downtime of your machine tool

Measuring ranges

- + Maximum tool length: 700 mm
- + Maximum tool diameter 380 / 425 mm



Highlights

- + Process-oriented inspection of all workpieces in the production environment
- + Can be used individually as a flexible (programmable) gauge
- + Temperature fluctuations are compensated
- + Processes can be logged and archived
- + Comparison uncertainty of 4 µm
- + Scanning SP25M measuring probe system including 6-position changer
- + Maintenance-free test equipment including hardware and software
- + Optional: Test plan converter, calibration data converter, qs-STAT output module

Test and measuring equipment – Equator 300

Perfect inspection of your workpieces.

This intelligent test equipment can be programmed individually and used for inspecting parts up to a maximum of X = 300 mm, Y = 300 mm, Z = 150 mm. Components from production can be tested immediately and directly by the operator under temperaturecontrolled conditions. With the Equator system you can guarantee your customers 100 % inspection including a test report!



The Equator 300 compares finished parts to a master which was previously qualified on coordinate measuring equipment. Parallel kinematics offers a high degree of repeatability and operates without backlash.

1: The automatic stylus changer system allows automatic changing of styli without compromising repeatability.

2: Simple operation of the software through a graphical user interface.

Equator 300

The following tolerances can be inspected with the Equator 300 in accordance with DIN EN ISO 1101:

- Straightness tolerance
- Flatness tolerance
- O Roundness tolerance
- Cylindricity tolerance
- Parallelism tolerance*
- ⊥ Perpendicularity tolerance*
- ∠ Gradient tolerance*
- Position tolerance, e.g. of a point
- Coaxial tolerance of an axis
- Concentricity tolerance
- Axial run-out tolerance

* e.g. in relation to a reference plane

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Service

Your all-round service over the entire life cycle.

Support with all process steps to achieve maximum economic efficiency and quality in production through precise tool presetting. At your request we will analyse your individual production environment in order to optimise processes and will professionally commission your tool presetting equipment. In addition we offer you individual financing packages, courses, training options as well as service and maintenance after commissioning, tailored exactly to your requirements.





Consultation

1: Analysis of workflows, special measuring tasks. Live presentation and consultation regarding financing.

Presetting

2: Testing of measuring accuracy and geometry, set-up of data transfer. Training as required.

After-sales

3: On-site service, original spare parts, maintenance, calibration, maintenance packages, laser calibration, geometry measurement.

Maintenance and service

Optimal care of your presetting equipment by booking a maintenance call or via one of our maintenance packages guarantees you maximum availability in your production process, cost effectively preventing the risk of disruption.

Your benefits

- + Optimal timing and cost planning
- + Preventive avoidance of repair costs
- + Longer service life of equipment
- + Optimally coordinated inspection
- + Price advantage for spare parts





24/7 Service Hotline

Available to you around the clock. Our service experts are available by phone 24 hours a day, 7 days a week. If problems arise, call us!

Training

Increased efficiency through targeted learning of proper operation of our presetting equipment. We offer a multitude of training packages on various topics by qualified technical staff on our premises.

Your benefits

- + Practical courses on specific presetting equipment
- + Flexible course structure for your individual requirements
- + High degree of learning success due to small groups

Repair service

Our qualified technicians are available for service or repair assignments, quickly and without fuss. You can also send your equipment directly to our factory in order to avoid downtime. We will immediately provide you with an exchange unit.

Your benefits

- + Fast response times
- + Economical
- + Original, top quality spare parts (also for older equipment)

Floor plans / technical data	
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Floor plans / technical data

 Working area UNO as bench-top equipment
 Working area UNO with useful system cabinet



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		UNO	VIO	VIO linear	VIO <i>linear</i> toolshrink
Measurement range					
Maximum tool diameter	mm	400	420 / 700 / 1,000	420 / 700 / 1,000	420 / 700 / 1,000
Max. tool diameter for measuring according to snap gauge principle	mm	100	100	100	100
Maximum tool length in Z axis	mm	400 / 700	500 / 700 / 1,000	500 / 700 / 1,000	500 / 700 / 1,000
Max. tool length shrinking	mm	-	-	-	700
Operation					
Manual		•	•	•	•
Auto focus (motorised C axis)		0	0		
Automatic drive (motorised X, Z and C axis)		0		•	•
Manual fine adjustment		•	•	-	-
Motorised fine adjustment		-	-	•	•
Accuracy					
Concentricity at the spindle nose	μm	2	2	2	2
Repeatability	μm	±2	±2	±2	±2
Spindle					
SK 50 high-precision spindle		•	•	•	-
ISS universal spindle		0	0	•	•
Vacuum clamping		0	•	_	
Mechanical tool clamping		0	0	•	•
Spindle brake		0	•	•	
Turning tool indexing (e.g. VDI) 4 x 90°		0	0	•	
Centre of rotation measurement equipment					
Dial gauge		0	-	-	-
camera		0	0	0	
RFID chip system					
Manual		0	0	0	c
Automatic				0	c
Other options					
Incident light / cutter inspection		•	•	•	
Useful system cabinet		0	•	•	
Adapter shelf		0	0	0	
Label printer		0	0	0	
47 cm (18.5") screen		•			
54 cm (22") screen		0	•		
56 cm (23") screen		0	0	•	
68.5 cm (27") screen		_	0	0	
Touch screen		0	•	•	
Release-by-touch		0			
Individual release and clamping of X / Z axis		0			
Linear drives				•	
Magnetic board		0			
Software					
Available software – image processing		Microvision	Microvision	Microvision	Microvision
Standard, optional, – not available					141101 0413101

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 \bullet Standard, \circ optional, – not available

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