

- 04 | 05 External tool presetting / DMG Microset Service
- 06 | 07 UNO 115 eco / VIO 210
- 08 | 10 VIO / VIO linear

VIO 20150

- 12 | 13 Options / VIO *linear* toolshrink
- 14 | 15 AIRMATRIX
- 16 | 17 Microvision II IT / Microvision III / Microvision IV
- 20 | 23 Adapter / Spindles / Floor Plans / Technical Data / Product Overview



# DMG Microset – Expertise in tool presetting.

With many years of experience in the market and unique expertise, DMG Microset has a versatile, flexible and broad range of solutions for tool measuring. Whether for vertical and horizontal devices or custom solutions, DMG Microset satisfies all application needs and offers the perfect solution for various tool sizes and machine environments. Detailed information is available online at www.dmg-microset.com.



With 38 Technical Centers and Distributor Locations, we always have someone close by to lend a hand.

# External tool presetting – Save time and money.

The highly efficient tool presetting devices from DMG Microset are the most productive and efficient. Presetting parallel to production time leads to significant time savings: Setup times are optimized and machine downtimes are significantly reduced.

Improved tooling with safe, early detection of damaged tools reduces the number of rejected parts and enhances quality. Cutting inspection guarantees the highest processing safety, starting with the first workpiece.





\* Define tools // Length and diameter marking // Enter diameter correction into the control \*\* Measuring of length and diameter on presetting device // Define controlspecific tool parameters // Transfer of tool data to the machine

# DMG Microset Service – Comprehensive consulting and support.

DMG Microset's precise tool presetting supports you in all required steps to help you achieve maximum profitability and processing quality. If desired, we analyze your production environment to optimize processes and put your DMG presetting device into professional operation. We also offer you individual financing packages, education and training possibilities, as well as tailored service and maintenance for your machine.

Support over the entire life cycle of your machine:



#### Consulting

Analysis of operational procedures, special measurement tasks, workflow optimization, live demonstrations and financing advice.

Maintenance and support

On-site service, DMG Original Spare Parts, maintenance packages, calibration, laser compensation and geometry measurement.

Inspection of measuring precision and geometry, and setup of data transfer. Training as needed.









# UNO 115 *eco* – Best price / performance ratio in its class.

For tool measurements up to ø 9.1 in. and measuring lengths up to 14.6 in. the UNO Series is optimally suited to be a stand-alone solution for entry-level machining. Proven components like the Edge-Finder for fast positioning of the tool cutter in the measuring window and the stable cast-iron tool bed are key features of the DMG Microset. Comprehensive measuring functions, including the cutting inspection capabilities of the Microvision II IT image processing software, are unparalleled in their class. The UNO 115 *eco* presetting device assures long-lasting, consistent processing quality at an unbeatable price.

II Edge-Finder for fast positioning of the tool edge in the standard version
II Microvision II IT with a 19" screen I3 Reflected light blade inspection with MV II IT software





#### Highlights

- \_Robust device with minimal space requirements \_Microvision II IT image processing with com-
- prehensive measuring functions
- \_Laser Edge-Finder for fast focusing of the tool edge
- \_Pneumatic axis clamping in both axes
- \_Free-moving linear guidance systems
- \_Incremental measuring system with glass scales
- \_CMOS digital camera with a telecentric lens

#### Options

- \_ Data transfer with a post processor
- \_Indexing device for turning tools
- \_Floor cabinet and tool / adapter storage
- \_Thermal printer
- \_Reflected light blade inspection

# VIO 210 – The universal presetting device.

For tool measurements of ø 16.5 in. and measuring lengths of 18.3/27.6 in., the proven VIO 210 Series is adapted to meet challenging requirements. The stable ribbed and warp-resistant cast-iron tool bed is of the highest quality. Cutting coverage precision is achieved with the blade using a high mega pixel camera, and Microvision II IT and Microvision III intelligent image processing software. With the ETT (easy tool data transfer) software, tool data can be quickly transferred, without errors, to the machine control.



#### Highlights

- \_Easy handling with intelligent image processing
- \_Single-handed operation with infinite fine adjustment in the X- and Z-axis
- \_Laser Edge-Finder for fast focusing on the tool edge
- \_Highest repeat measuring accuracy
- \_Free moving linear guidance systems
- $\_\,{\rm CMOS}$  digital camera with a telecentric lens
- \_Stable cast-iron construction

#### Options

- \_Touch screen for easy operation
- \_Second camera for fulcrum measurement
- \_Vacuum clamping
- \_ISS spindle
- \_Pneumatic spindle brake
- \_Pneumatic indexing for turning tools
- \_Data transfer (Balluff, postprocessor or ETT)

#### Available image processing

\_Microvision II IT / III



# VIO – The modular series with superior performance.

The new VIO Series will captivate you with high-tech features that come standard. As a modular concept with an ergonomic design, the VIO Series was awarded the 2010 iF product design award, beating every other tool presetting device design in productivity and flexibility. Freely selectable measuring lengths in X- and Z-axis, numerous automation solutions and additional options can meet the most unique client demands. Whether as a basic VIO version or premium VIO *linear* version, this series will captivate you with efficiency and flexibility at an attractive price.



# VIO basic version – Absolute flexibility and reliability.

The VIO Series is adapted to measure all tools. It is compatible with the machine tools of every manufacturer, and covers even the most unique requirements with numerous options. The basic version, with a manual operating concept, comes standard with glass scales, linear guidance systems and the MV III high performance software. Unique features of this design include the flexible retrofitting possibilities.

[1] Single handed operation for servo manual procedures
[2] Optional: Second camera for rotation center positioning
[3] Control console pivoting range

## Highest stability and precision

The thermo-optimized, cast-iron construction of the VIO Series enables long-term measuring precision. Highly dynamic linear drives and laser measuring of the tool geometry assure highly precise, long-term quality. The parallel drive and guide systems ensure optimal force distribution and guarantee a repeat measuring accuracy of  $\pm 0.00004$  in.



## Excellent Ergonomics

The VIO Series also sets new standards for ergonomics. The highly advanced design features a pivoting control console, free access to the spindle as well as intuitive and easy handling.

#### Highlights

- Warping no greater than 0.0001 in 0.0001 in. with maximum loading Vibration damping material
- \_Robust, durable basic construction
- \_Thermo-optimized material combination
- \_High dead weight

#### Highlights

- \_Pivoting control console
- \_Servo manual operation
- \_Central control unit
- \_Integrated tool storage
- $\_Vibration\mbox{-free operator console}$



## VIO *linear* – Highest precision and speed.

Maximum  $\pm 0.00004$  in. repeat measuring accuracy and up to 25% faster measuring cycles, which are unmatched in the market. This impressive performance is possible for the first time as a result of tool presetting in the linear drives. The series sets additional standards for image processing – and also for the most unique customer requests. The design was awarded the coveted 2010 iF product design award.



## I1 Precision spindle with the HSK 63 tool holder I2 Perfectly adjusted drive and guide design I3 Function principle of the synchronous linear motor

## Precision spindle

High precision spindles stand for precise and reproducible measuring results. In order to satisfy the highest demands for rotation precision and fast exchange of the inserts, the VIO *linear* has been equipped with an innovative, high quality precision spindle.

## Performance and pure dynamics

Precise tool presetting with the VIO *linear* Series enhances productivity and precision in machine tool operations, thus opening new dimensions. Maximum speed of more than 7.1 in. / sec. and an axis positioning accuracy of  $\pm$  0.00004 in.

#### Highlights

- \_High precision with the direct measuring system
- \_Indexing with 0.001° resolution
- \_Universal direct clamping system
- \_Quality bearing with high basic load rating (1,214.0 lbf.)
- \_High torque for heavy tools
- \_Mechanical clamping force of 1,124.0 lbf.

#### Highlights

- \_67x magnification
- \_Repeat measuring accuracy of  $\pm 0.00004$  in.
- \_µm accurate positioning
- \_Closed loop bearing control in all axes
- \_Auto focus with 20% faster visualization
- \_Pivoting second camera





11 Original DXF contour drawing 21 Special tool from the automotive industry

## Optional VIO *scan* – Simple target-performance comparison of the tool contours

The new VIO *scan* for the VIO *linear* Series guarantees the highest quality. The contour of all tools and workpieces can be measured precisely. A targetperformance comparison with the original DXF contour drawing can be printed as a report to confirm quality. This option is available for all VIO *linear* Series devices.



DARCO





I1 Reference contour
and scanned contour
I2 Contours are
automatically fitted
I3 Contour deviations
are automatically marked

#### Optional tailstock

The VIO Series devices can be immediately equipped with a tailstock. This option assures absolute parallelism and rotation precision for the measuring of larger turning tools.

# VIO *linear* toolshrink – Measure, position and shrink tools.

In comparison with other conventional devices, the VIO *linear* leads to time savings with the toolshrink design and the integrated shrink unit. The linear drives allow an extremely fast and  $\mu$ -accurate positioning of the axes, while also protecting the tool and shrink coil. The exchange of spool elements is no longer necessary. Neither is the automatic unshrinking of tools with larger shafts as a cutter diameter. Consequently, you are offered the easiest handling in this class. The intuitive operator guide also ensures fast integration in the plant and long-term advantages for the user. The tool presetting devices of the VIO *linear* can be retroactively equipped with "toolshrink".

#### Highlights

- \_Optimal shrink results independent of the mount brand
- \_Excellent handling
- \_Faster / more precise axis positioning with the linear drive
- \_ Protection of the inductor unit (does not have dead weight)
- \_Access to the service flap without disassembling a unit

#### Technical Data

- \_Traverse path of slide unit / inductor including linear drives: 22.4 in.
- \_Shrink chuck temperature: max 350° C
- \_Warming time: Approx. 4 seconds
- \_Tool diameter: 0.2 1.3 in.
- $\_$  Material shrink chucks: Hard metals and HSS
- \_Induction shrink capacity: 13 / 20 KVA
- $\_$ Cooling times: 30-60 seconds
- \_Automatic control of the shrink parameters



Pick by Light for correct selection of exchange parts



# AIRMATRIX – Absolute precision for universal tool measurements.

AIRMATRIX offers an entirely new dimension in tool presetting. The new Airdrive Technology assures unique precision in tool presetting. The advanced procedure allows unlimited measuring of diverse tools and erases differentiation in horizontal and vertical presetting devices. The recording unit can be freely positioned over an air lubricated bearing on the precision glass plate and driven up from every side to the horizontally insertable tool.



#### Precision in new dimensions

Precise positioning is achieved with a data matrix code. Furthermore, the construction relies on minimal software compensation with little tolerance compensation to produce the most exact measuring values.

#### Highlights

Coded glass plate as a reference for the X- and Z-axis for maximum dynamics and positioning precision Minimal processing tolerances



Data matrix coding for exact positioning



Precise sensor technology for flexible handling

#### Easy and flexible handling

The freely movable recording unit is equipped with two CMOS cameras and can measure almost all turning and milling tools. When combined with automatic edge identification, the concept leads to fast and accurate presetting.

#### Highlights

- \_Fastest measuring results
- \_Easy manual operation of the camera holder with an air storage system \_Universal application: Measuring of turning and milling tools

#### No wear

AIRMATRIX is suitable for applications in almost all climates due to its temperature-resistant components. When compared to conventional designs, minimal mechanical components makes the device almost maintenance free.

#### Highlights

- \_Robust construction for all climates
- \_Minimal maintenance required
- \_Spindle with mechanical clamping (5,000 N)
- \_Reference disc instead of glass scales in the X and Z direction



Measuring system and coordinate classification in one component

# Microvision – The highest measuring precision and efficient data handling.

The Microvision image processing system gives users a high cost savings potential in job preparation with fast and precise measuring, independent of the operator and tool setup. High effeciency imaging assures maximum quality in the manufacturing process. Tool edge detection is performed with an advanced CMOS camera, and the setup and measuring is done on a user-friendly screen. Advanced measuring procedures allow complex tool measuring in no time.





- **|1**| Analog setup bars for simpli-
- fied precision tool setup
- |2| Cutter head program
- [3] Special measuring
- program "Reamer"











I1 Measuring program for over-sized tools
I2 Cutter inspection for surface inspection of the tool cutter
I3 Measuring of the Z coordinates with the default X values

The MV III software, developed by DMG, offers intuitive operations with an advanced user interface.

#### Microvision III

- \_CMOS digital camera with a telecentric lens
- \_19" screen
- \_33x magnification
- \_Edge inspection with live image display
- \_Automatic edge recording with contour analysis
- Large standard modules for all important measuring tasks
- \_Sigma functions for the measuring of moulding tools
- \_Measuring window at approx. 0.2 x 0.2 in.
- \_Unlimited tool data and zero-point memory
- \_Multi-user capable user management
- \_Data backup, remote maintenance
- \_Available for: VIO 210, VIO

#### Options

- \_19" touch screen
- \_Post processor for transfer
- \_ETT // Easy tool data transfer for bidirectional transfer of tool data
- \_Modules for tool identification systems (e.g. Balluff)
- \_Connection to external tool management
- \_CAD / CAM interfaces

Fully automatic measuring with multiple options. Includes two 19" screens and up to 67x magnification.

#### Microvision IV

- \_2x 19" screens CMOS digital camera with a telecentric lens and 67x enlargement
- \_Fully automatic measurement of tools
- \_Edge inspection with live image display
- \_Measuring window approx. 0.2 in.
- \_Intuitive user interfaces for the shortest measuring cycles
- \_Multi-user capable operator management
- \_Process safety with automatic
- adapter detection
- \_Available for: VIO linear

#### Options

\_Bidirectional data transfer

- \_ETT // Easy tool data transfer for simple data transfer to the machine tool
- \_Integration of tool management systems
- \_Support for tool identification systems
- \_2x 19" touch screen
- \_VIO *scan* contour recording (for VIO *linear* with MV IV)

## Data transfer to the machine – For absolute process safety.

DMG offers the possibility of data transfer to the machine for each of your tool presetting devices. Machines can be connected with Fanuc, Siemens or Heidenhain controls via a post processor. Heidenhain controls can be connected with the practical Easy Tool Transfer (ETT) for Microvision III / IV.

Optimal data transfer for machines of all manufacturers and model years.



Tool presetting

## ETT / DNC protocol

With a DNC protocal, bidirectional access to the CNC control is possible. Tool offsets will be stored in the memory of the machine with the touch of a button.





Workpiece processing

## Post processor / Ethernet

Both programs are transferred via the network to the CNC control. Simple import to the controls, tool offsets and additional automatic inputs are available.

# Serial

### interfaces

Generally, process safety is not dependent on the model year of the machine. DMG Microset can support almost every control with tool data via a serial interface, such as the V 24.

# DMG Microset Partnerships – We cooperate, you profit.

Through strong partnerships, DMG Microset can offer you an unrivalled, broad product range for tool presetting and measuring. Efficiently personalized for your specific production requirements. Take advantage of the benefits that come with having a single contact partner for all your needs.

#### Tebis ToolControl - Complete process safety

Tools selected by NC programming are not always available 1:1 in presetting. Alternative, similar tools increase the danger for collision. DMG Microset tool presetting devices scan the tools automatically and transfer the data to TebisControl software. With this, real data simulation and collision examination are conducted. This eliminates costly repairs and machine downtimes while increasing unsupervised run time.

#### Highlights

#### \_Collision safety

- \_Increases machine running time
- \_Fast cycle times
- \_Reduced personnel needs





## Walter Maschinenbau – Precision in new dimensions

The cooperation between DMG Microset and Walter Maschinenbau GmbH enables both manufacturers to offer the entire spectrum of tool measuring from one source for the first time ever. WALTER is among the leading producers of high quality measuring machines and perfectly complements the range of presetting tools from DMG Microset. Your advantage - Leading technologies for a competitive advantage.

## Highlights

- \_Leading producer of top class measuring machines
- \_Contact-free and fully automatic, complete measuring
- $\_Most$  precise measuring performances with impressive E1 values
- \_Temperature resistance for optimum measuring performance with a massive granite base

# Adapter / Spindles – Reliable solutions for any situation.

High quality adapters and spindles are important for precise tool presetting. DMG Microset offers an extremely broad range of choices, ensuring that handling of these parts is easy and efficient. We advise you on your individual requirements and application needs.



I1 HSK 63 adapter
with manual clamping
I2 VDI 40 adapter
with manual clamping
I3 Capto adapter with integrated manual
clamping systems

#### Adapter

From the standard tool holder to the customer-specific special tool holder, DMG Microset offers a solution for every situation. You benefit from our many years of experience in special tool construction.

[1] Universal clamping system
 [2] Head bolt independent
 clamping system for SK tools
 [3] Pneumatic HSK-clamping system



#### Spindles

DMG Microset offers universal clamping systems, independent of head bolt geometry, that clamp precisely and reliably. You can also obtain attachment holders for all customary tool pickup systems from DMG Microset.

## Floor Plans

UNO 115 eco

VIO 210





VIO linear



VIO linear toolshrink



AIRMATRIX





# Technical Data

	UNO 115 eco	VIO 210	VIO/VIO linear	AIRMATRIX
Maximum tool diameter	9.1	16.5	39.4	15.7
Precision spindle Steep taper ISO 50	•	•	°*	•
Spindle break	٥	o	•	0
4 x 90° indexing for turning tools (e.g. VDI)	0	0	•	0
Vacuum clamping	-	0	0	
ISS spindle (mechanical clamping)		0	0	
Turret table for adapter				
uptake (diameter in in.)	_	_	_	_
Operation	Manual	Manual	Manual / Motorized	Manual
Linear drives in X and Z	-	-	0	-
Second camera				•
Movable Y-axis				
Rotation precision on the spindle nose	.000008 in.	.000008 in.	.000008 in.	.000008 in.
Repetition precision	0.0002 in.	.000008 in.	.000008 in.	±.000004 in.
				±.000004111. MV V
Available software – image processing	MV II IT	MV II IT / MV III	MV III / MV IV	
Weight Ibs.	143.3	540.1	992.1 / 1,157.4 / 1,322.8	859.8
Software characteristics				
Image processing - Microvision (MV)		MV II IT	MV III	MV IV
Screen size		19"	19"	19"
Camera system (CMOS) with a telecentric lens		•	•	•
Touch screen		-	0	0
Display precision		0.001	0.001	0.001
Live image cutter inspection (enlargement)		33x	33x	67x
Measuring functions				
Maximum function		•	•	•
Cross line stable / movable (automatic measuring)		•	•	•
Sigma function (contour analysis)		•	•	•
Multi-cutter tools		-	•	•
Rotation		•	•	•
Reamer program		-	0	•
Radius / Angle		•	•	•
Distances		•	•	•
Retaining function		•	•	•
Absolute / Difference / Chain dimensions				
(Display in inches)		•	•	•
Template functions - templates		•	•	•
VIO scan				•
RFID systems (e.g. Balluff)		_	0	
Measuring window freely definable		•	•	•
Zero-point control		•	•	•
Storage for adapter / machine zero-points		Unlimited	Unlimited	Unlimited
Tool storage		-	Unlimited	Unlimited
Graphics library for tools		······ <u>-</u> ·	oninited	onninted
Tooling sheet - tool kits User rights			•	•
		•	•	•
Data display				
Label printer		0	0	0
Control rights display via RS-232		-	0	0
Control rights display via USB		0	0	o
Control rights display via Ethernet		0	0	0
Control rights display via WLAN		-	0	0

 $^{\star}$  Optional CAT 50 precision spindle or ISS spindle

• = Standard,  $\circ$  = Optional, - = Not available

# DMG Microset product overview – Tool presetting for every requirements.

A tool presetting device has a number of advantages for every user, such as timesaving setup procedures. In this context, an adequate price / performance ratio is as important as satisfying the customer's demands. Whether single products, vertical, horizontal or universal devices - DMG Microset offers the right solution for all application areas and all tool sizes: Presetting devices from DMG Microset are superior in their quality, stability, precision and functionality.

#### The right tool presetting device for your requirements.

The selection of the right tool presetting device greatly depends on the maximum measurements of the applied tools. Even the desired level of measurement automation is critical. Is a data transfer to the machine controls necessary? Will certain measuring procedures, such as the practical Sigma function or VIO scan, be necessary? Do you prefer comfortable operation of your machine? DMG Microset has the right solution for configuration needs.



**UNO115** eco // MV II IT Measuring lengths: X-axis 4.5 in., Z-axis 14.6 in.



VIO 210 // MV II IT / III Measuring lengths: X-axis 8.3 in., Z-axis 18.3 / 27.6 in.



VIO // MV III VIO linear // MV IV Measuring lengths: X-axis 8.3 / 13.8 / 19.7 in., Z-axis 19.7 / 27.6 / 39.4 in.



AIRMATRIX Measuring lengths: X-axis 7.9 in., Z-axis 19.7 in.

Series / Sizes (measurements in inches): 20: 8.3 /19.7, 8.3/27.6, 8.3/39.4 35: 13.8/19.7, 13.8/27.6, 13.8/39.4 50: 19.7/19.7, 19.7/27.6, 19.7/39.4

Configure your DMG Microset tool presetting device online! http://configurator.dmgmicroset.com/en

## DMG / MORI SEIKI USA

#### DMG / MORI SEIKI LOS ANGELES

5740 Warland Dr. Cypress, CA 90630 Tel.: (562) 430-3800 Fax: (562) 430-5570

#### DMG / MORI SEIKI SAN FRANCISCO

2629 7th St., Ste. C Berkeley, CA 94710 Tel.: (866) 814-7238 Fax: (510) 845-4924

#### DMG / MORI SEIKI CHICAGO

2400 Huntington Blvd. Hoffman Estates, IL 60192 Tel.: (847) 593-5400 Fax: (847) 593-5433

#### DMG / MORI SEIKI BOSTON

753 Forest St., Ste. 200 Marlborough, MA 01752 Tel.: (508) 481-2500 Fax: (508) 481-2520

DMG / MORI SEIKI USA 2400 Huntington Blvd. Hoffman Estates, IL 60192

info@dmgmoriseiki.com

Tel.: (847) 593-5400, Fax: (847) 593-5433

#### DMG / MORI SEIKI DETROIT 29050 Cabot Dr. Novi, MI 48377

Tel.: (248) 324-1928 Fax: (248) 324-0710

#### DMG / MORI SEIKI CHARLOTTE

4345 Morris Park Dr. Charlotte, NC 28227 Tel.: (704) 940-3380 Fax: (704) 840-1101

#### DMG / MORI SEIKI CINCINNATI

5333 Mulhauser Rd. Hamilton, OH 45011 Tel.: (513) 874-2736 Fax: (513) 874-3254

#### DMG / MORI SEIKI DALLAS

9001 Currency St. Irving, TX 75063 Tel.: (972) 929-8321 Fax: (972) 929-8226

#### DMG / MORI SEIKI HOUSTON

1251 Lumpkin Rd. Houston, TX 77043 Tel.: (713) 365-9500 Fax: (713) 365-9515

#### DMG / MORI SEIKI SEATTLE

19625 62nd Ave. South, Ste. A109 Kent, WA 98032 Tel.: (253) 872-1661 Fax: (253) 872-2188

MONTFORT 🎘 AD VERTISING

natives

equipment and CNC alter

options,

some

include

may i

