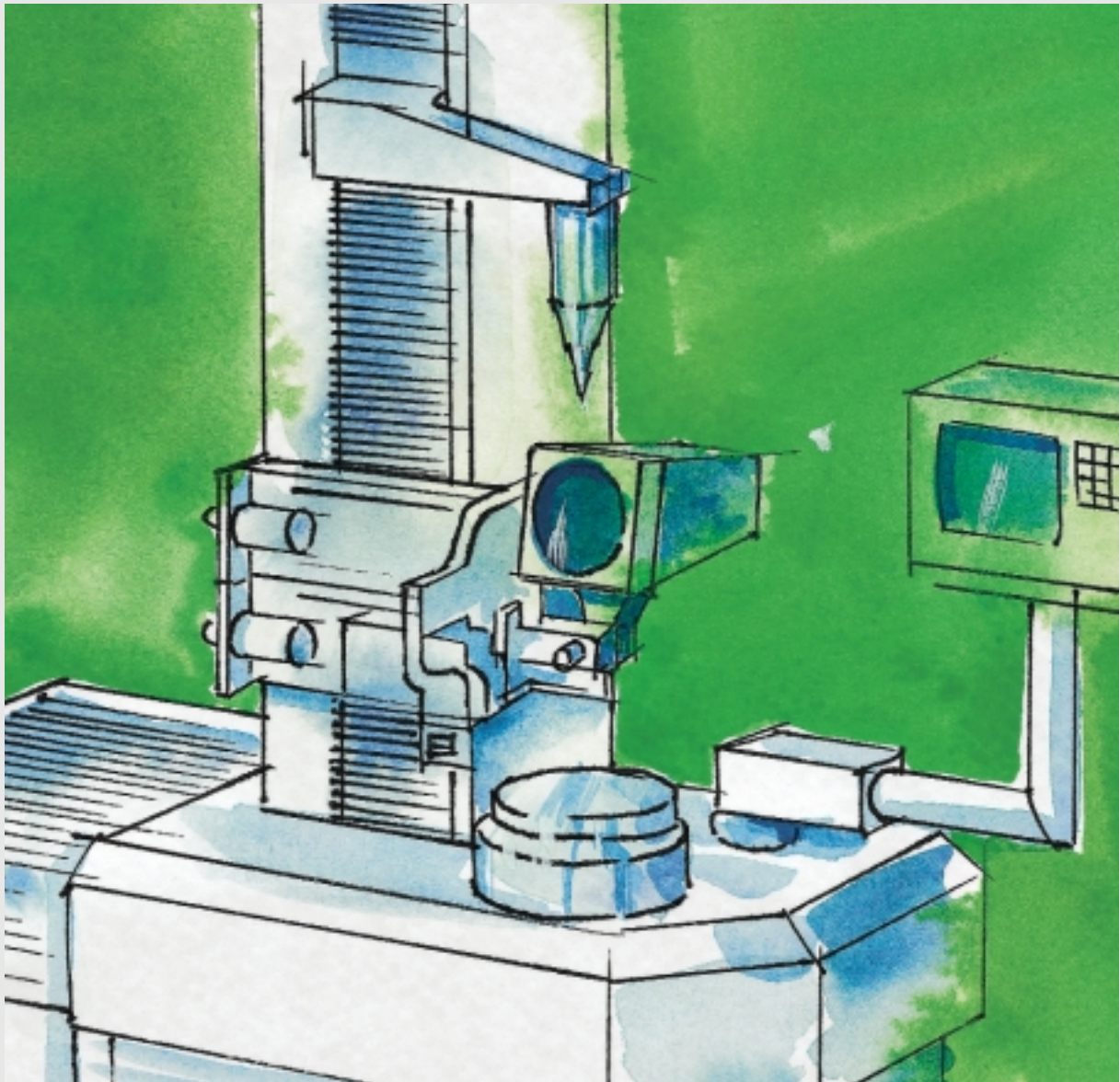


The New MAPAL Uniset-V

Reliability with μm accuracy



ABSOLUTE PRECISION

Highest precision tool setting now in a vertical position

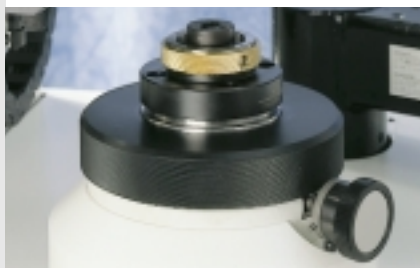
The effect of precisely adjusted tools on quality and production costs is well understood. However, there is more discussion about is the best way to achieve μm accuracy when setting tools.

MAPAL is well known as a specialist in the precision-machining of bores with adjustable tools. Some 20 years ago, the company's know-how to do with cutting tools led to MAPAL entering the field of high-precision, electronic tool-setting devices.

In the Uniset range of equipment, for many years the horizontal devices has been in regular use, assuring tool setting tolerances - day in, day out - of $< 2 \mu\text{m}$.

MAPAL has now extended the Uniset range to include a vertical model, the MAPAL Uniset-V.

As with all MAPAL setting devices, a solid mechanical construction is combined



Precision spindle with possibilities for several holding systems

with an accurate and reliable controller to produce a precise tool setting system.

Further the tough environment of the workshop was an important factor taken into account by the developers.

A tried and proved measuring system guarantees an accuracy of $< 2 \mu\text{m}$. However, the greatest advantage of the measuring system is its robustness with regard to possible external influences.

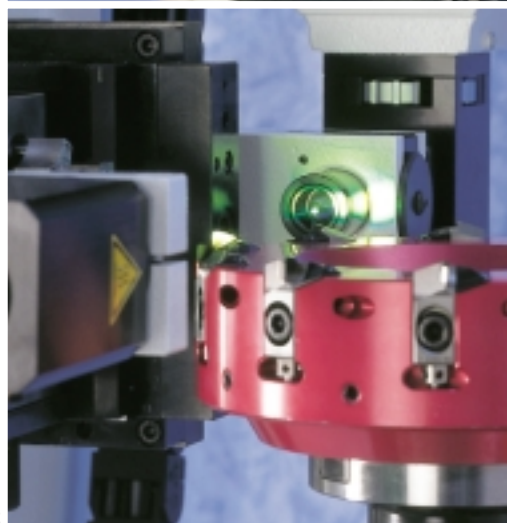
All the mechanical components are made to the highest precision and stability. The spindle's high-precision bearings and the related longitudinal positioning guarantees over an extended length of 300 mm an out-of-round value of $\leq 3 \mu\text{m}$. Decisive for the high accuracy is the fact that the measuring tower is stationary, thus excluding one possible negative influence on the measuring accuracy.

Through the typical set-up with two measuring positions, the adjustment of the blades to be set at an angle can be observed at two places. Thus very short setting times per tool can be achieved, practically eliminating the possibility of a setting error.

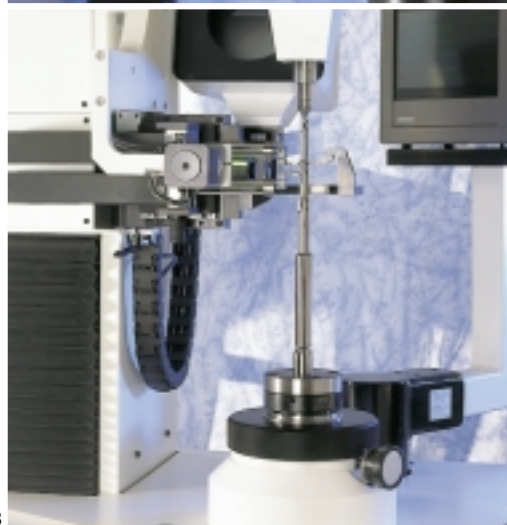
And the vertical position is not only advantageous for measuring MAPAL tools with guideways - because of better accessibility - it also makes it easier to handle large and heavy tools in general.



1



2

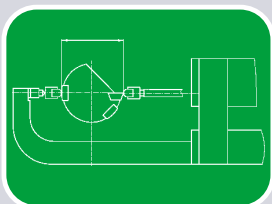


3

- 1 Dial sensor with minimum measuring force for micro-precise measuring results
- 2 Measuring projector with 20fold enlargement for the universal application
- 3 Stable tail center for exact holding between centers

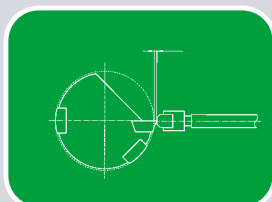


Depending to the individual tool setting task, a variety of measuring methods can be used with the MAPAL Uniset-V. These assure easy, reliable and fast handling as well as guaranteeing optimal setting results. The electronic display offers the possibility of programming different reference points. In this way, one can easily switch quickly between different measuring methods.



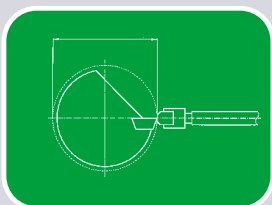
Calliper measurement

The calliper method is used when the tool to be set has a guide on the opposite side to the cutter.



Projection measurement

The projection method is used when there is no guide opposite the cutter blade, or when, for technical reasons, the distance of projection of the cutter beyond the tool is to be set.



Absolute measurement

Absolute measurement is normally used when the tool has no guide of its own.

The Uniset-V is a tool setting device which even in the basic model is fully equipped to set MAPAL reamers and boring bars.

However, several options are also available to cope with special setting tasks and adaptive systems.

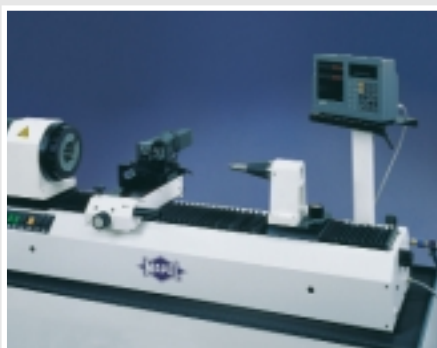
- 4 Measuring projector with 20 times magnification and Ø 150 mm
- 4 PC measurement electronics for statistical evaluation of the setting results
- 4 Printer for recording the results of the setting process
- 4 Additional measuring equipment for setting MAPAL external machining tools
- 4 Further auxiliary measuring equipment for special setting tasks such as face machining

The main advantages at a glance:

- 4 Ergonomic layout of the work area with optimal accessibility to the tool during setting
- 4 Clear layout of the operating controls on the front of the device
- 4 The vertical design eliminates radial forces on the spindle bearings and thus assures reliable roundness values, even with heavy tools
- 4 For precise and reproducible setting of the blades, the spindle can be clamped in any angular position
- 4 All axes are equipped with motor drives, A + B axes and projector can be moved by touch switches. Displacement of the Z-axis is by means of a joystick
 - 4 Rapid approach: for rough positioning
 - 4 Creep feed: for fine adjustment of the measuring projector or the measuring probe
- 4 Optional equipment with the measuring projector
 - 4 measuring projector mounted on a separate measuring slide
 - 4 Measuring probe displayed on the projector, for optimal approach to the highest point on the cutter in the axial direction
- 4 Swivel-mounted display, to facilitate reading of the results without glare
- 4 Controller installed in a separate, dust-proof cabinet mounted in the base of the device, for easy access when servicing the equipment
- 4 Printer compartment at the side with a roll-down door
- 4 Stable tailstock for use when mounting tools between centres



PC measuring electronics for additional possibilities in data administration



Other universal vertical and horizontal electronic setting devices are also available.

In addition to the electronic setting fixtures, mechanical setting devices can also be used for setting MAPAL precision tools. Various devices and measuring systems can be supplied to customer requirement.



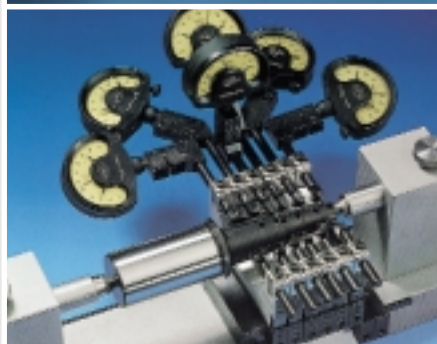
The MN 347 design is used for setting MAPAL precision tools which have a blade positioned opposite a guide pad - using a measuring arm.



The MN 348 design is used solely for setting MAPAL taper reamers.



The MN 349 design can be used for setting any MAPAL precision tools, particularly tools which do not have guide pads opposite the blade.



For setting a number of tools which vary in diameter and length, a universal setting fixture is used with interchangeable units. This means that several tools can be set on one basic system simply by fitting the various units.

We should be pleased to supply you with detailed brochures for any of these fixtures.



MAPAL

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