

ScanMax®.

**The Intelligent Gage for the
Workshop and Pre-production.**



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SIMPLY MEASURE

ScanMax®.

Compare for yourself.

▶ Point measurement	or	Scanning
▶ "Good/bad" assessment	or	Process control
▶ Individual testing	or	Complete inspection
▶ Complicated configurations	or	Simple operation
▶ Measuring lab investment	or	Shopfloor measurement
▶ Special skills	or	Intuitive operation
▶ Long waiting periods	or	Instant results
▶ Extensive final inspection	or	Fast progress monitoring
▶ Wear	or	Long-term stability
▶ Modification costs	or	Economical
▶ New investment for new models	or	Flexible metrology





ScanMax®. Right where the action is.

Many suppliers offer measuring stations as a replacement for gages. However, a measuring station can only be used economically like a gage if it can be set up where gages are needed, on the shopfloor. ScanMax® guarantees its accuracy at production environment temperatures.

For shopfloor use.

Quality results are normally obtained in the metrology lab. The price is loss of time, personnel training, and costly enclosures. It can also be obtained on the production floor by using inflexible fixtures with single-point evaluation, inadequate "good/bad" assessment and high follow-up costs. To eliminate the need to choose between these two options, we have developed ScanMax® for direct use on the shopfloor. It is easy to operate and supplies high-accuracy results even under very rough conditions.





The polymer concrete base offers excellent inherent stability and a passive anti-vibration system. As an option, ScanMax® can be equipped with wheels for easy transport.

High-tech components for rough environments.

ScanMax® is designed so that the environmental conditions on the shopfloor leave results unaffected. This means that ScanMax®, compared to other measuring instruments, guarantees absolute precision due to design quality and patented correction techniques.

High stability due to fully enclosed measuring systems.

All measuring systems are completely enclosed. This makes ScanMax® resistant to oil, dust, dirt, and other rough ambient conditions on your production floor.

Light-weight articulated-arm design for manual scanning.

The articulated arm is made of carbon fiber. Compared to metal, this material provides far better rigidity and thermal stability. Due to its low weight, the probe moves almost by itself, even when complex geometries are scanned manually.

Bearing technology for utmost precision.

The ultra-precise, integrated roller bearings guarantee running accuracies of well below 1 µm, minimum friction, absolute freedom from backlash and maximum rigidity. This design quality eliminates the possibility of random errors from the roller bearings which cannot be compensated for.

ScanMax®.

Scanning unlimited.

Is scanning required only for reverse engineering, or as an option when needed? In reality, all measuring tasks need scanning. Therefore, ScanMax® operates exclusively in the scanning mode.

Scanning technology from its inventor.

Today, almost all manufacturers offer a measuring machine with a scanning function. And they differ widely in their functionality. With ScanMax®, scanning is state of the art. The scanning technology consists of the original true scanning developed by Carl Zeiss – which we bring right into your production floor.

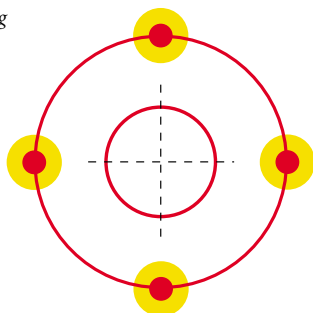
Scanning with Zeiss.

ScanMax® features the universal 3D probe system from our ultra-high-accuracy machines and therefore guarantees utmost precision and reliability in manual scanning. This is because ScanMax® monitors the probing force and compensates for stylus bending continuously. With this Carl Zeiss technology, you fully benefit from the advantages provided by scanning. Dynamic influences on the measurement result – inevitable in conventional systems with rigid probes – are eliminated entirely in ScanMax®.

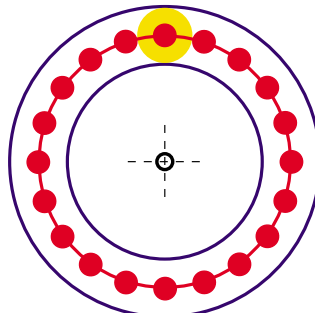
Reliable measurement with ScanMax®.

More accurate results are achieved with more points. In the scanning mode, the probe system picks up a sequence of closely adjacent points in one continuous measuring process. Acquiring information for the complete surface of a workpiece also allows the shape of the testpiece to be described with great accuracy. Only when form errors are known will you be certain of your quality assurance of complex, tightly tolerated parts.

Conventional measuring compared to scanning using ScanMax®. When determining the mid-point, the value recorded in scanning displays a clearly smaller uncertainty circle.



Conventional measuring method



Scanning with ScanMax®



Measure faster with ScanMax®.

When measuring a stepped bore, for example, the ball tip makes contact in two places. ScanMax® acquires about 1,000 measuring points within five seconds and uses these to determine all relevant drawing dimensions:

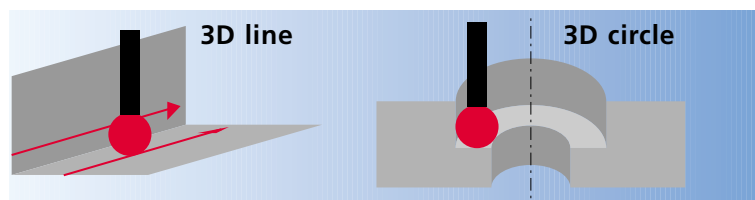
- ▶ the bore diameter
- ▶ the bore's position coordinates
- ▶ the step depth and
- ▶ the flatness of the step surface.

Easier measuring with ScanMax®.

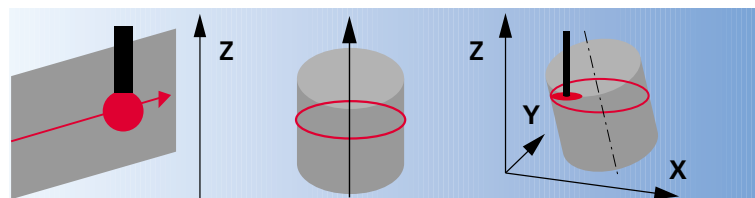
Whether you want to measure standard geometries or designed forms, complex workpieces or just a single bore, you simply position your part and follow the contour. ScanMax® will do the rest for you. And you can use the scanned contours displayed on screen to check your results.



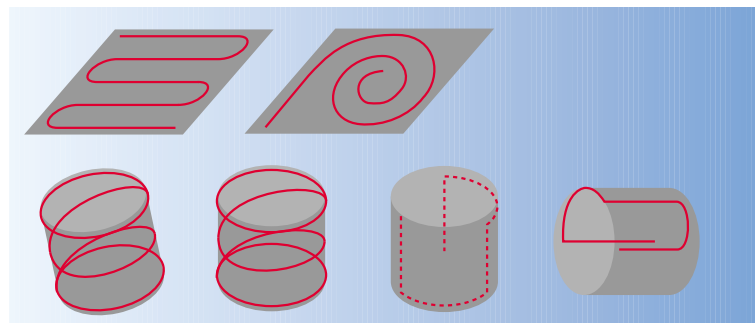
Fast, manually operated scanning for all measuring tasks



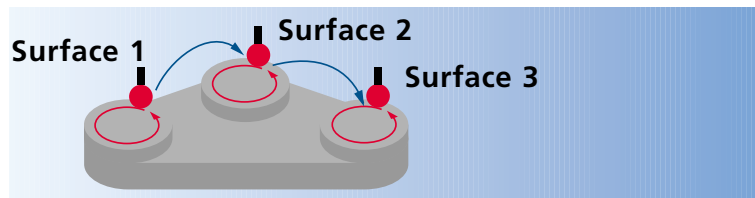
Measuring with stylus tip in dual contact (groove measurement).



Surface measurement along section line, with probe clamped in Z.



Surface and cylinder measurement, probe guided evenly over surface.



Measurement of interrupted surfaces.

ScanMax®.

Easy to operate.



*Checking a diameter?
Place the part on the measuring surface and measure.
It only takes a few seconds.
You will receive high quality results. Faster and more accurate than with any other gage.*

ScanMax® is operated by shopfloor personnel. ScanWare supports the operator by visualizing measurements and interactively controlling the measuring process in the background.

User interfaces

Whatever the measuring task, ScanMax® always offers the optimum operational routine:

- ▶ "3D measuring slide" for fast measurements,
- ▶ "Repeat measurement" for a graphically pre-defined program run without the need for keyboard entry,
- ▶ "Learn programming" for defining the measuring strategy of repeat measurements.

You see what you measure.

Menus simplify your measuring task. On completion of the scanning process, the workpiece is displayed on screen as an easy-to-operate 3D graph, even with complex measurement tasks. An interactive help system is always available to assist you.

ScanMax® controls your production equipment.

Define the workpiece reference point from the production drawing and move the articulated arm to scan the contour of the workpiece. In addition to the display, you will receive a print-out similar to a CAD drawing. This permits direct comparison between the measured data and the drawing dimensions. The resulting corrective values are entered directly into the NC program of the machine tool. In this way, each machine operator is in control of production quality.

Reliable ScanMax® operation

In a manually operated system, the probing force ranges between false contacts and too heavily applied measuring forces. Both extremes falsify results. Therefore, ScanMax® automatically monitors the force which the operator applies during the scanning process. And it records only the points which were captured with the right measuring force.

This means that operator influences are eliminated, which is important when the system is used by several different operators.

Defining reference points with ScanMax®

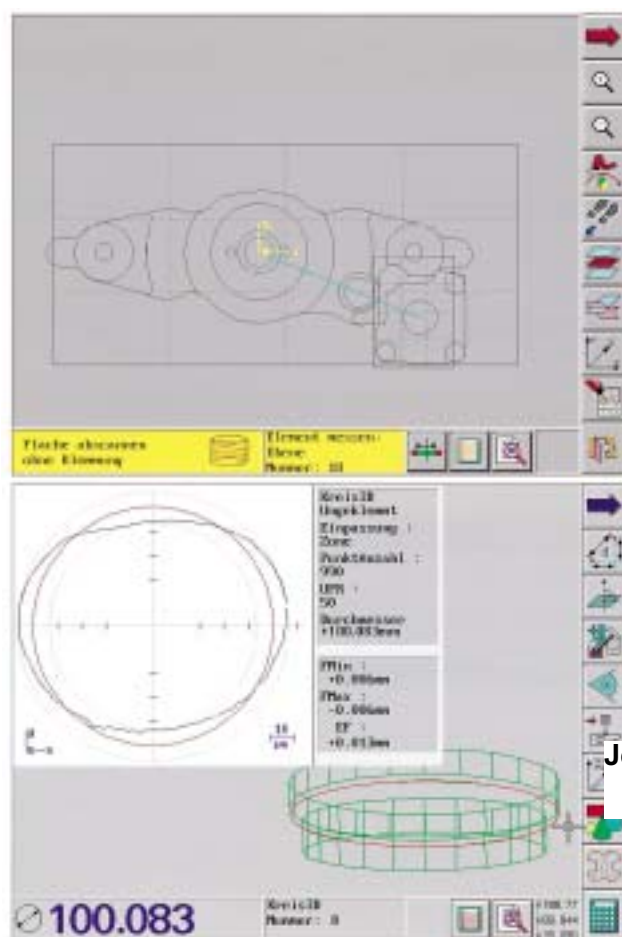
Software alignment is a relatively complex procedure in most systems. Not for ScanMax.



Just trace the workpiece contour, and the system automatically computes the required workpiece alignment.

Measuring with ScanMax®

No matter whether you want to scan bore holes, grooves, steps, surfaces, forms or free-form elements with interruptions, ScanMax automatically identifies the measuring task and supplies the results you need.

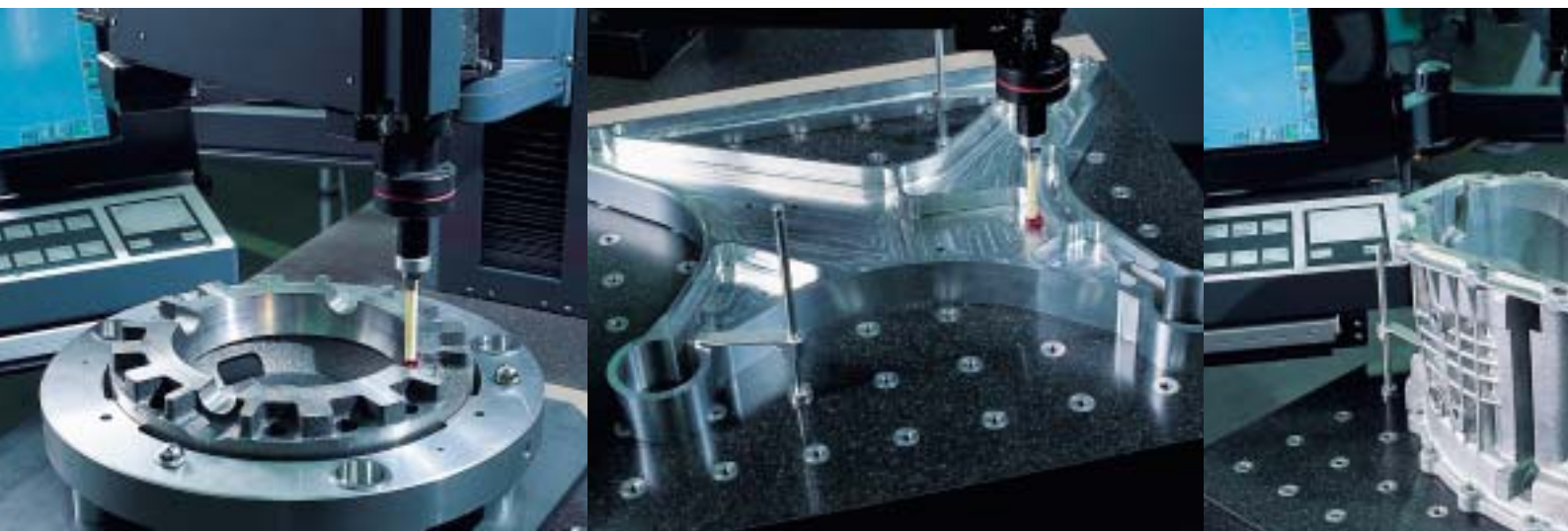


In the signal light mode, the summarized result is available at a glance.

Rapid measurement of dimension, form and position directly in the production area saves time and provides detailed information on the current manufacturing process.

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ScanMax® offers for Versatility.



Regardless of what you want to measure - design models, milled or turned standard geometries - the answer is ScanMax®.

ScanWare. For dimension, form and position

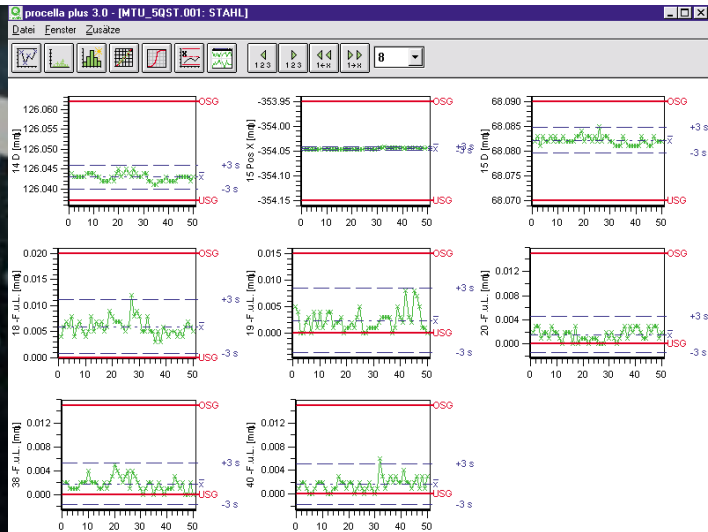
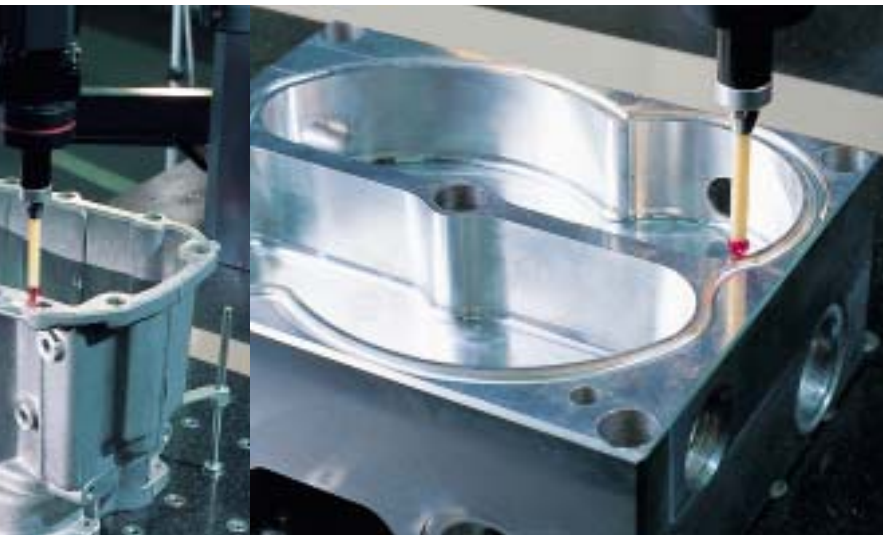
ScanWare automatically recognizes geometric elements on the basis of the scanned contour. In form inspection, all captured measuring points are automatically subjected to ISO digital filtering. The form and position deviations are also evaluated completely to ISO 9001.

Rotary tilting table for extra versatility

With the optional rotary tilting table you can measure all sides of your workpiece. The entire 3D evaluation of the workpiece geometry conforms to DIN 32880.

Statistical evaluation with ScanMax®

Statistical evaluation? No problem using ScanWare. Because the Statistics option features an integrated driver for the most frequently used



ScanMax® supplies vital information on statistical production deviations without additional work.

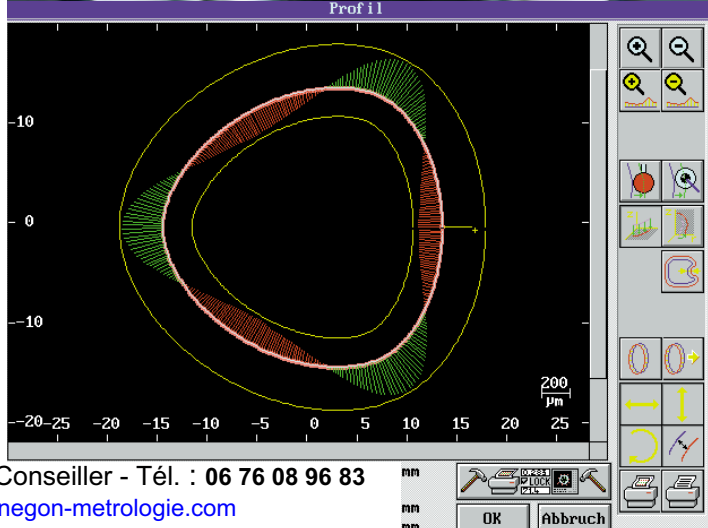
statistics package. Statistically evaluating deviations in production, gives you trend information at an early stage – long before tolerance limits have been reached. The early identification of process changes allows you to react before rejects are produced.

PROFILE - for evaluating two-dimensional geometries.

The PROFILE option is for the evaluation of two-dimensional geometries. All projected data is fitted with different degrees of freedom and displayed. With an external conversion tool, nominal values can be transferred directly from the CAD system as DXF or VDAFS data.

Free-form surfaces are measured quickly.

Use ScanMax® in conjunction with HOLOS and DIMENSION for your reverse engineering work.



*Maximum
result quality.*

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