WENZEL - Journal

WENZEL® The company of µ

1-2003
Edition 3

2003 - Year of Innovations

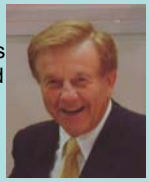
At WENZEL the year 2003 is marked by outstanding technical innovations. In the previous year our research and development capacities were largely expanded. In close cooperation with our customers we have consequently implemented the requirements of modern metrology in the areas of sensor technology, software and mechanics. With DesCAD3D WENZEL is the only manufacturer to offer an integrated solution for measuring, digitizing and milling in the area of styling. We will celebrate a world premiere at the Control in Sinsheim with two new, sensational products „Made by WENZEL“: PHOENIX, the new optical sensor, sets standards in fast, non-contact measuring.
With the „SMART CMM“ a measuring cell for unconditional use in a rough manufacturing environment has been designed. Decades of experience in the manufacturing of Coordinate Measuring Machines using the latest materials like carbon fiber make the „SMART CMM“ the measuring device for production control.
At the same time existing products have been further developed or respectively, new probe systems integrated.
WENZEL - always a step ahead - even in 2003! (FW)

Innovation Symposium for DESIGN

The Innovation Symposium for DESIGN, organized by WENZEL Präzision GmbH on February 5 and 6, was met with great interest by the German automotive industry. With participating renowned automobile manufacturers such as Audi, BMW, Ford, Opel and Volkswagen, Wenzel presented the latest state-of-the-art technology to about 50 invited guests. With its system DesCAD3D, WENZEL is the only manufacturer of Coordinate Measuring Machines to offer an integrated solution for „High-Speed-Scanning“ with optical sensors as well as for milling of plasticine.
During the previous year, WENZEL has made great investments in the development of new and efficient solutions for automotive design which eventually lead to the company's leading role in this sector. The first machines with the new technology are presently installed at the plant of pilot customer smart gmbh, a company of the DaimlerChrysler Group.
In the following months WENZEL is expecting more orders from the automotive design sector which should amortize the substantial investments in research and development within a short period of time. (AMo)


Practical demonstration

Dear Customers, dear employees and friends of Wenzel!



While the German economy is complaining and trying to solve its problems by reducing costs imprudently, we are moving into the opposite direction:
We look at the future with great optimism and are investing - in new machines, in the intensification of our service and in the qualification of our employees. We are striving for - this summer yet - the certification of our environmental management system according to ISO 14.001 and are expanding our service range. To be able to exist successfully even in the future.
Speaking of future - on April 01, the course for the future was also set in the management. You may find more about this issue in the special edition of the Wenzel Journal.

Yours sincerely,

Wenzel takes over Dutch metrology service provider

At the end of 2002, WENZEL Präzision GmbH, Wiesthal, took over the Dutch metrology service provider B.V. Technisches Handelsonderneming WKP.


Wenzel-WKP in the Netherlands

The new company operates under the name Wenzel-WKP B.V. and is now the seventh subsidiary within the globally active WENZEL Group. WKP has made a name for itself in the Netherlands with the sale of test control units, precision measuring tools and WENZEL coordinate measuring machines. In addition, they maintain an accredited test lab for lengths, roundness and roughness.


Wenzel-WKP calibration lab

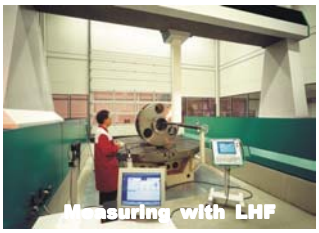
It is also accredited for Coordinate Measuring Machines. Wenzel-WKP will continue to sell complimentary products for metrology together with WENZEL measuring machines.

The sixteen employees of Wenzel-WKP, primarily metrology and software specialist will, apart from new installations, continue to provide service for more than 300 measuring machines installed by WKP in the Netherlands.
In 2002, Wenzel-WKP reached a turnover of approx. two million Euros from services, training and sales, for 2005 the target is at five million Euros. (AMo)

Biggest bridge machine by WENZEL secures wind energy

Wind energy is not only on the rise in Germany. PCA in Hallersleben delivers to leading companies in this market, among other things, gear boxes for wind energy plants. These components have a diameter of up to 2,5 m and weigh approx. 5 tons. To reach the highest degree of efficiency, the components are subject to a narrow tolerance range and do not only create a great challenge within the production process.

Quality assurance plays an important role - this is what PCA's customers put great emphasis on. To check the components PCA uses a WENZEL 3D-Coordinate Measuring Machine type LHF. And it is not just any measuring machine but the biggest bridge machine ever built by WENZEL with a measuring volume of 3.800 x 6.000 x 2.000 mm. To obtain the required measuring uncertainties with great immersion depths was a great


Measuring with LHF

challenge for the WENZEL engineers.
With a special extention of carbon fibre and an immersion depth of 890 mm, they finally reached a respectable measuring uncertainty of only 5 µm. (FW)

New software for gear measurement

To meet the growing demand in the area of gear measurement WENZEL has decided to integrate a software package specially designed for this market. The software, introduced on Control 2003 for the first time, has been developed according to the requirements of the gear measuring industry and covers all standard applications in the area of straight and bevel gears.
The software may be used in addition to the standard


Gear Measurement

software Metrosoft CM on a WENZEL Coordinate Measuring Machine. Special focus has been put on user friendliness: a data base serves as basis for all measurements which saves all work pieces and measuring data automatically. The input of work piece data is done via comfortable masks which allow an intuitional data input with the graphic support and division into logical blocks.
Evaluation can be done according to DIN, AGMA, ISO or free tolerances.
W-Gear: Measuring of spur as well as helical gears with internal or external toothing.
W-Bevel: Measuring of straight and spiral bevel gears. (BBu)

SMART CMM – A new concept in coordinate metrology


SMART CMM

Innovative design can not only be seen when looking at the newly developed „SMART CMM". The market had a demand for a compact, shop-floor suitable and ergonomical 3D measuring device to measure small and medium-sized work pieces. Therefore, well-proven components from the area of guiding and drive technology inclusive of CNC drive have been combined consequentially in an optimized structure with regards to dynamic stiffness and thermal stability. Pre-stressed, precision linear guideways protected by folding bellows, function-orientated choice of material (granite, steel, composite materials made of carbon fibre, new distance measuring units with a thermical expansion coefficient close to zero, maintenance-free servo drive) guarantee high mea-suring accuracy even under „shop-floor conditions". The measuring volume of 500 x 450 x 400 mm is freely accessible from three sides so that setting up and clamping activities may take place quick and comfortable - simply „smart". Of course all Renishaw system components are being supported: triggering and scanning compact probes, automated probe heads, probe changers - in this respect the „compact class" plays in the same league as its bigger brothers. (CPu)

+++Ticker+++

In December 2002, Adam Opel AG places a bulk order for Coordinate Measuring Machines for a total value of approx. two mio. •

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On December 1,2002, WENZEL delivers its 3500th Coordinate Measuring Machine to MAN Munich

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Large order by PSA Peugeot Citroën for its locations in Caen, Vigo, Mulhouse, Charleville. This makes WENZEL the main supplier for CMMs at PSA

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Order from China in January 2003 for 3-column special measuring machines with combined air and roller bearing

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Optical sensor „PHOENIX“

Technical data:

Size 120 x 80 x 50 mm

Weight 200 g

Measuring field 40 x 30 mm

Measuring cycle < 1 sec per frame

Edge measuring accuracy ± 25 µm

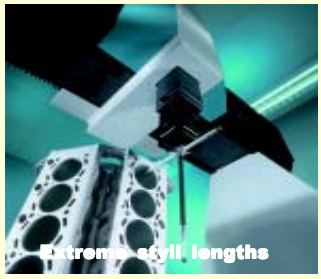
At the Control 2003 Wenzel presents its Optical Sensor System PHOENIX for the first time. After extensive market research and customer interviews, Wenzel had to realize that existing technologies do not entirely meet the requests and metrological needs of the users.
Result: We need our own system !
In cooperation with university experts in the field of optical sensor technology and image processing a completely new working principle has been developed. It perfectly suits the application of “non-contact measuring of points and geometries”.
After months of intensive development of functional models and testing, the Wenzel product “PHOENIX” was created. The sensor is mounted directly on the PH10 indexing head via autojoint adapter and presents itself as a compact body of 120 x 80 x 50 mm.
Behind it one can find a hybrid system with a high-resolution CCD camera for image processing in X-Y direction and multiple laser triangulation for measuring the Z distance. With an LED ring laser the measuring field is homogeneously illuminated.
An extremely narrow-band holographic filter prevents parasite light on both systems efficiently and therefore increases the stability of the meauring results. (EHo)

SP80 - Passive scanning technology for highest accuracies

The SP80 is a measuring probe for CNC-driven Coordinate Measuring Machines which is directly mounted onto the quill. Because of its direct mounting in connection with the passive scanning technology the SP80 reaches highest accuracies. To immerse deep into work pieces, the SP80 allows the use of very long styli. Mounted onto a suitable CNC Coordinate Measuring Machine, it supports styli and extensions of up to 500 mm in length with excellent metrological characteristics.

These styli combinations weigh up to 500 grams. Because of its large measuring range of +- 2,5 mm in all axes and a resolution of 0,00002 mm, highest measuring results may be reached in connection with Wenzel precision machines. To use the suitable styli combination at a time, a styli change rack is required. For this purpose the styli are mounted on a changeable styli holder which is magnetically attached to the SP80. This attachment simultaneously provides a suitable collision protection in the X-Y level. In the Z direction the body of the probe is built in such a manner that damages can be avoided (dead stop). The individual styli holders are automatically placed into the change rack SPC80 by the Coordinate Measuring machine and, from another change rack, switched out again. (SWi)

Direct mounting on quill



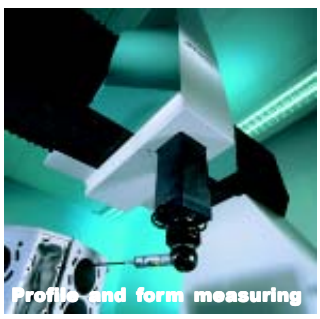
Extreme styli lengths

SP25 - the world’s smallest probe system for scanning

SP25 with work piece

The SP25M has a diameter of about 25 mm and is so light that it can be mounted directly onto probe heads and even onto extensions of up to 100 mm. This leads to an unrivalled flexibility when using the SP25.

By using three different scanning modules optimized to the respective styli lengths, one may use styli from 20 mm to 200 mm. Another module allows the use of all TP20® probes. Therefore this probe system may be used for scanning and trigger measuring („two in one“). By doing without drives in the sensor, heat sources may be avoided which leads to greater stability in the results. Some active systems require up to six motors inside the system causing warming and requiring higher efforts to compensate. In this case the styli are also mounted onto the magnetic styli holder. This way of mounting serves as effective collision protection and allows to change the styli quick and easy.
To change the probes the FCR25 (Flexible Change Rack) is available. With the help of the FCR 25 the scan module, the styli holder or the TP20 module may be changed according to requirement.
Through the robust design of the SP25 system the probe is suitable for quick and flexible profile and form measuring as well as for general measuring tasks. (SWi)



Profile and form measuring

Metrosoft CM 3.50 with GRIPS

Wenzel proudly presents its new Software Version CM 3.50 at the Control 2003. Besides the well known general performance level - efficient measuring of geometry, comprehensive free form surface functions, superb graphic protocols - the new version will particularly emphasize the offline programming of measuring sequences. It's easy: just click on the element to measure.


GRIPS – Graphically interactive measuring and programming – offline and online

All relevant parameters such as the number and distribution of inspection points, circle or cylinder section, probing depth, safety distance etc. may be selected. Metrosoft CM displays the distribution of inspection points together with probe paths and intermediate positions. This way you may generate the complete inspection program offline by using the available CAD data of the work piece. The advantages are evident: To unburden the CMM you can generate, display, change and execute inspection programs offline without an additional and expensive CAD work station! This function is enhanced by the update of the ISO 1101 / ASME Standard for form & position tolerances. It now includes the processing and graphic display of multiple relations, limit elements, MMC & LMC (maximum & least material condition). Further highlights of Metrosoft CM 3.50: DME Server for connecting CMMs and peripheral units via the CMM-OS interface, incl. multi-machine mode. Scanning modules for Renishaw SP25 and SP80 scanning probes with associated probe changer, to include comprehensive calibration and processing functions. Various detailled improvements in the area of DMIS programming, extended statistical functions, reading of q-DAS data/ monitoring plans, complex temperature compensation at large measuring devices and much more ... (EHo)

Exhibitions with Wenzel participation until 12/2003

March 25 - 27
Ferramentaria e Modelacao
Joinville, Brasil
April 14 - 17
Quality 2003, Chicago, Ill., USA
April 16 - 22
CIMT, Peking, China
May 06 - 09
Control, Sinsheim, Germany
May 12 - 17
Feimaf, Sao Paolo,
Brasil
May 13 - 15
Engineering, Stoneleigh, UK
May 20 - 22
Qualitek, Jönköping, Sweden
May 27 - 30
Nitra, Slowakia
July 01 - 05
International Auto Fair
Tehran, Iran
July 16 - 19
TAIMOLD, Taipei, Taiwan
July 22 - 24
CMSC, Greenville, S.C., USA
September 01 - 02
Precisie Beurse
Eindhoven, Netherlands
September 15 - 19
MSV, Brno, Czech Republic
September 25 - 28
Cairo Exhibition, Cairo, Egypt
October 02 - 06
International Industrial Fair
Tehran, Iran
November 11 - 13
Inspex, Birmingham, UK
November 13 - 16
Thai Metalex
Bangkok, Thailand
December 03 - 06
Euromold, Frankfurt, Germany

WENZEL en route to ISO 14001

They don't seem to be getting enough ! After DIN ISO 9001 and VDA 6.4 WENZEL wants to certify for the international norm ISO 14001 for environmental management systems this summer. Well, certifications can obviously really make you addicted ... But what does the enviromental certificate do for us ?

- All activities related to the environment are recorded systematically and the environmental risks are reduced
- The environmental services and quality of the products is improved
- The trust of customers, the public, authorities, banks and insurance companies in the environmental benefits is strengthened
- Cost savings may be realized through systematic and precautionary thinking and acting

At present a survey of environment-related activities is taking place. WENZEL claims to have meet most of the requirements of the norm already, however, this still has to be documented adequately.

It is our goal to establish an integrated management system for quality and environment. WENZEL is not far from reaching this goal now, as a number of actions have already been realized, e.g. the employees are being trained, a new concept for garbage separation is implemented or mugs given out to all employees and at the same time all plastic cups banned - because very often it's the little things that are the most efficient. (HWD)

New training in the area of machine technology

Wenzel now offers First Aid training for L- and R-machines.
The measuring machine operator is able to help himself upon machine malfunction. This reduces downtime, saves labor time and therefore costs.

For further information about these seminars please contact:

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World sales conference marked by innovations

From March 20 to 21, this year's international sales conference was held at the production facilities of Wenzel Präzision GmbH in Wiesthal and in the Conference Center of the hotel Villa Marburg in Heigenbrücken. More than 50 invited guests informed themselves about the innovations by WENZEL in theoretic lectures and practical demonstrations.

- the new, worldwide unique, shop-floor machine „SMART CMM"
- the optical sensor „PHOENIX"
- the probe systems SP25 and SP80
- the evaluation software CM 3.50 with GRIPS
- a new software for gear measurement

WENZEL will also present and demonstrate these innovations at the Control in Sinsheim this year which will take place from May 6 to 9, 2003. Therefore the aim of WENZEL is clearly defined: Contrary to the general economic situation and the trend in the industry, continuous growth is the aim for 2003. (AMo)


World Sales Conference 2003