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**Producing quality and rendering it measurable**

**Quality Area at the METAV 2016 showcases production technology plus quality assurance**

**Frankfurt am Main, 15 July 2015.** – “Measuring and testing technology is at the heart of the ‘Made in Germany’ seal of quality,” is how Markus Heseding, Managing Director of the German Engineering Federation’s Measuring and Testing Technology Association, sums up the issue at stake in a nutshell. The association represents 160 manufacturers, and is a partner of the Quality Area at the METAV 2016 – International Exhibition for Metalworking Technologies, to be held in Düsseldorf from 23 to 27 February.

**Sophisticated metrology for demanding jobs**

“Out of the test lab and into the production hall” – that’s the watchword for new developments in the field of metrology. Always with the goal of shortened cycle times and increased productivity. At the same time, accuracy and maximised machining quality have to be assured with minimised manufacturing tolerances. Whether it’s down-to-the-last-micrometre length measurements, from large to small, three-dimensional optical inspection of surfaces, non-contact ultrasonic testing in conjunction with robot systems – quality assurance operates with a highly disparate spectrum of processes, depending on the requirements of the application involved. The automotive industry, aircraft manufacturing and mechanical engineering, medical technology, the sports industry, food and beverage processing, logistic centres, etc. – all of them depend on intelligent quality assurance systems for their production operations.

The field of measuring and testing technology is also being invigorated by an abundance of new materials: like engine blades made of titanium aluminide in aircraft construction. The blades are now only half as heavy, and nonetheless capable of withstanding enormous stress. Insights into how this material can actually be successfully machined in series production operations were provided by atom probes and high-resolution transmission electron microscopes – metrological high-tech.

The ever-increasing levels of automation in manufacturing operations and the networking of production facilities are also triggering innovations in the field of metrology. Thanks to sophisticated measuring and testing technology, quality tests are documented in their entirety. The millions of discrete data involved are being communicated progressively faster and more precisely to higher-order systems. They in their turn constitute the basis for modern-day process automation. Thus measuring and testing technology plays a key role in the intelligent factory under the aegis of Industry 4.0.

So how does one cope with this huge influx of data? For the manufacturers of measuring technology, this crucial question entails new tasks and new lines of business. “The customers are using our products to acquire multitudinous amounts of discrete data during and after machining, which enable conclusions to be drawn on the status of the production operation,” explains Rainer Lotz, Managing Director of Renishaw GmbH in Pliezhausen. “It facilitates predictive maintenance, in order to prevent standstills, for example. Wastage levels can also be reduced dramatically thanks to more detailed control of the process concerned. In addition, users from the automotive industry or its component suppliers store measured data, of a cylinder head, for instance, together with other data on the feedstock, the production process, the production conditions, the environmental conditions, and so on. This means that all the information to do with this cylinder head is available in a single database,” he goes on to explain. “The field of metrological software and its linkage to the customer’s production systems is gaining steadily in perceived importance,” adds Rainer Lotz.

**Quality Area showcases the interlinkage of production and quality assurance**

“In view of this intensive intermeshing, what could be more logical than to spotlight quality assurance on the same platform as the production technology for metalworking applications ?” asks Dr. Wilfried Schäfer, Executive Director of the METAV’s organiser VDW (German Machine Tool Builders’ Association), though this is more of a rhetorical question. The manufacturers of measuring and testing technology concur. At their explicit request, the METAV is offering, in the shape of the Quality Area, a platform in North Rhine-Westphalia and for neighbouring markets. “The Quality Area is ideal for spotlighting the synergies between manufacturing and quality testing,” says Michael Lücke, who at Carl Zeiss AG in Oberkochen is responsible for trade fairs and events. “The METAV offers customers an opportunity to obtain comprehensive information on a single platform about which metrological solution is best suited to their products, their machines and their processes.” The Quality Area is a vital constituent of the METAV, and showcases the entire bandwidth of measuring and testing technology, together with QM and analytical systems. The nomenclature for the Quality Area comes to around 200 items. A lecture forum will present examples of best practice from the industrial sector.

**DGQ communicates specialised knowledge for operative quality assurance**

Quality assurance is becoming progressively more sophisticated. Quality, however, is a crucial foundation for lasting customer satisfaction, and is accordingly a must. This is why the demand for intensive basic and advanced training is all the greater, so that the latest specialised knowledge and comprehensive methodological competence for operative quality assurance are taken on board by the companies concerned. Therefore, the DGQ, the German Quality Society in Frankfurt am Main, is another partner of the Quality Area at the METAV 2016.

More than 60 years of expertise, around 800 training events every year, cross-sectoral advanced-training capabilities, plus training and personal certification harmonised for the whole of Europe in line with the EOQ standard (European Organization for Quality) constitute an essential foundation for profound knowledge of the quality markets. At the METAV, the DGQ will be offering workshops and presentations for exhibitors and visitors from the classical mechanical engineering sector and the automotive industry. “The METAV shows how closely production processes and quality assurance are technically interlinked. Our expertise complements the METAV’s capabilities in terms of advanced training in quality management,” says Claudia Welker, from the training provider DGQ Weiterbildung GmbH. Issues addressed include the amendment of ISO 14000 and its effects on the companies concerned, Quality 4.0 or the current standards for geometrical product specification. “Our corporate capabilities are geared to ensuring that small and mid-tier companies, too, are fully up to date on these issues, and to getting them fit for zero-defects production,” adds Claudia Welker.

Number of characters incl. blanks: 6,992

**Background METAV 2016 in Düsseldorf**

The METAV 2016 – the 19th International Exhibition for Metalworking Technologies – will be held in Düsseldorf from 23 to 27 February. It showcases the entire spectrum of production technology. The principal focuses are machine tools, production systems, high-precision tools, automated material flows, computer technology, industrial electronics, and accessories, complemented by the new themes of Moulding, Medical, Additive Manufacturing and Quality, which are now permanently anchored in what are called “areas” with their own nomenclature in the METAV’s exhibition programme. The METAV’s target group for visitors includes all branches of industry that work metal, particularly machinery and plant manufacturers, the automotive industry and its component suppliers, aerospace, the electrical engineering industry, energy and medical technologies, tool and mould-making, plus metalworking and the craft sector.

**Portrait of the Association for Measuring and Testing Technology in the German Engineering Federation (VDMA), Frankfurt am Main**

The VDMA’s Association for Measuring and Testing Technology brings together about 160 manufacturers, joining forces in order to spotlight the sector’s importance. It employs a good 25,000 people in Germany, and in 2014 achieved a total turnover of about 5.05 bn euros. VDMA Measuring and Testing Technology currently represents around 80 per cent of the sector’s entire turnover.

**Portrait of the German Quality Society (Deutsche Gesellschaft für Qualität e.V. or DGQ), Frankfurt am Main**

The DGQ, with a staff of 100, around 6,500 members and 200 trainers, nowadays constitutes one of Germany’s biggest quality management networks. It sees its role as a forum for exchanging empirical feedback and for developing new quality management approaches. The DGQ has developed a quality mission statement, for example, and the job profile of a quality manager. It cooperates with the European Organization for Quality (EOQ), the European Foundation for Quality Management (EFQM) and the American Society for Quality (ASQ) as part of a global network.

**Picture captions**

Fig.: **360° panoramic view in cylinder bores**

Source: Jenoptik Industrielle Messtechnik, Villingen-Schwenningen

Fig.: **Automatic part recognition, part labelling and robot handling are new metrological options in present and future production systems.**

Source: Mahr GmbH, Göttingen

Fig**.: Horizontal Arm CMMs provide optimal accessibility from all sides e. g. when measuring car bodies.**

Source: Wenzel Group GmbH & Co. KG, Wiesthal

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