**Controls and measuring technology from HEIDENHAIN:**

**Reliable processes for exact, dynamic, and efficient production**

*Having command of highly complex procedures is a clear competitive advantage when it comes to milling and turning. Machine tools that are equipped with controls, encoders, and drive technology from HEIDENHAIN provide the best technical prerequisites. This will be impressively shown in the live demonstrations and presentations at the HEIDENHAIN booth and the “industrie 4.0 area” at EMO 2019. With the stated goal of highly qualified TNC users working with such machines, HEIDENHAIN is active in the TNC Club and the Young Talent Foundation for Mechanical Engineering for advanced and apprentice-level skilled training.*

In order to manufacture products that satisfy the highest demands regarding accuracy and quality in a reliable, economic, and efficient process, many different building blocks all around the machine tool must fit and interact perfectly. At EMO 2019, HEIDENHAIN will use presentations and live demonstrations to show very different combinations and possible solutions for process optimization.

**New options, features, and hardware for TNC controls**

Even starting with a lot size of just one piece, HEIDENHAIN controls convince you of their process reliability, accuracy, and productivity. Furthermore, they facilitate the simple and reliable digital integration of the machine into the process chain. Packages of functions including Dynamic Precision, Dynamic Efficiency, and Connected Machining as well as numerous additional options ensure this.

Thanks to its split screen, the new TNC 640 with a 24-inch widescreen and Extended Workspace Compact can offer two work areas: the user can have other applications be displayed alongside the control screen. This way he has an especially user-friendly workstation in order to organize jobs completely digitally directly on the control.

HEIDENHAIN will also present the new Component Monitoring option for TNC controls. Its focused observance protects processes and machines from equipment failure due to wear or overload:

* Continuous monitoring of the spindle bearing load prevents defined limit values from being exceeded, thus preventing damage to the spindle.
* Cyclic monitoring of the feed axes permits conclusions about the wear of the ball screw and any expected failure.

This increases the process reliability, productivity, and lifetime of the machine, while at the same time reducing unplanned machine downtimes and their associated significant costs.

With live demonstrations in the “mav industrie 4.0 area,” the companies HEIDENHAIN, OPS-Ingersoll, and Haimer will show that the intelligent data management of an automated manufacturing environment, including predictive job planning, works reliably and efficiently. The TNC 640 control, Batch Process Manager, and the StateMonitor software from HEIDENHAIN make perfectly organized and fully digital processes possible.

**An encoder solution for every rotary axis**

HEIDENHAIN encoders for determining the position of linear and rotary axes are the industrial standard for Closed Loop control, where the dimensionally accurate production of contours is not affected by thermally induced changes to the feed mechanism. At EMO 2019, HEIDENHAIN will particularly focus on angle encoders, and together with AMO will present solutions for every rotary axis:

* The RCN 2001 optical angle encoders with integral bearing and integrated stator coupling have been fundamentally redesigned. The system accuracy is now even better and the maximum speed higher. Enhanced capabilities for monitoring the temperature increase the process reliability. The RCN 2001 angle encoders accomplish this by transmitting not only the temperature values of the integrated temperature sensor over a digital interface, but also other sensor data, particularly the temperature of the torque motor.
* The new generation of modular, optical ERA angle encoders is now also equipped with the HEIDENHAIN HSP 1.0 signal processing ASIC. Until now the HSP 1.0 has been used only in exposed linear encoders. It almost entirely compensates for fluctuations in signal amplitude caused by interference.
* At the EMO trade show, AMO will present its WMKA modular scale-tape solution for especially large diameters. These encoders feature EnDat and DRIVE CLiQ interfaces and are suited for safety-related applications.

A demonstration unit with four different angle encoders will illustrate the influence of the scanning principle on the dynamics and accuracy of rotary axes. It will also show the system architecture for digital temperature monitoring of an ETEL torque motor.

**Innovative setup and measuring**

HEIDENHAIN touch probes and the numerous probing cycles of HEIDENHAIN controls increase the dimensional accuracy of finished workpieces. Setup and measurement of workpieces and tools, as well as calibration of the machine kinematics, are all performed quickly and easily before machining or during operation. The touch probes are optimally tuned to the TNC cycles. Above and beyond this, the wear-free sensor technology of the touch probes, flushers/blowers for cleaning the measuring point, battery monitoring, and effective collision protection ensure results measured with process reliability.

**Greater performance and process reliability through new generations of drive systems**

Motors and control technology from ETEL and HEIDENHAIN significantly contribute to the dynamic and highly accurate motion control of machine tools.

* The new GEN 3 generation of drives from HEIDENHAIN, which will debut at EMO, ensures maximum performance and offers intelligent transmission technology, powerful diagnostics, and simple mounting and connection technology.
* ETEL will present its TMB and TMK series of torque motors, which are high-torque systems for machine tools. Their particular strengths are a cogging-free design, optimum speed stability, and exceptionally high control quality. Together with measuring technology from HEIDENHAIN, they form a perfect combination for high-end rotary axes. Their excellent dynamic accuracy, high rotational speeds and torques, and perfectly coordinated diagnostics are convincing.

**TNC Club: the meeting point for experts, now with new training offers**

While once again being a meeting point for experts, the HEIDENHAIN TNC Club booth at EMO is open to all TNC users. Here the focus is on the advanced training of experienced specialists as well as on the apprentice training of qualified junior employees. At EMO, the TNC Club will present a new training program for career jumpers: a training program to become a TNC specialist. HEIDENHAIN would like to thus support the premium members of the TNC Club in coping with the shortage of skilled workers.

**HEIDENHAIN is a partner of umati**

Digital networking and the concomitant possibilities for machine data acquisition as well as for monitoring of equipment and processes require universal and standardized interfaces. Only if standardized information can be exchanged between participants across systems is it easy to connect solutions like the StateMonitor software, which can then develop their full potential. That is why HEIDENHAIN supports the umati interface project from VDW (the German Machine Tool Builders’ Association). Dr. Jan Braasch, Director of Marketing at DR. JOHANNES HEIDENHAIN GmbH says, “As a manufacturer of controls and encoders, HEIDENHAIN welcomes the VDW initiative and supports the umati project. At EMO we will give a live demonstration of how umati is used to connect machine tools to the StateMonitor software from HEIDENHAIN.”

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|  | *Processes and jobs never out of sight: thanks to its split screen, the new TNC 640 with a 24-inch widescreen and Extended Workspace Compact offers two work areas—one for the control screen and one for other applications.* |
|  | *Control technology that moves intelligently: the new GEN 3 generation of drives from HEIDENHAIN offers maximum performance through innovative transmission technology and powerful diagnostics.* |

**Where to find HEIDENHAIN, AMO, and ETEL at EMO 2019:**

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| Controls and encoders | Hall 9, booth I32 |
| TNC Club | Hall 9, booth K32 |
| Live demonstration of “Intelligent data management in automated manufacturing” with OPS-Ingersoll and Haimer | Hall 9, industrie 4.0 area |
| Young Talent Foundation for Mechanical Engineering | Hall 25 |

***For more information, visit:***

[www.heidenhain.de](http://www.heidenhain.de)

[www.klartext-portal.com](http://www.klartext-portal.com)

***Contact person for the trade press:***

Frank Muthmann

DR. JOHANNES HEIDENHAIN GmbH

83292 Traunreut, GERMANY

Tel.: +49 8669 31-2188

[muthmann@heidenhain.de](mailto:muthmann@heidenhain.de)