

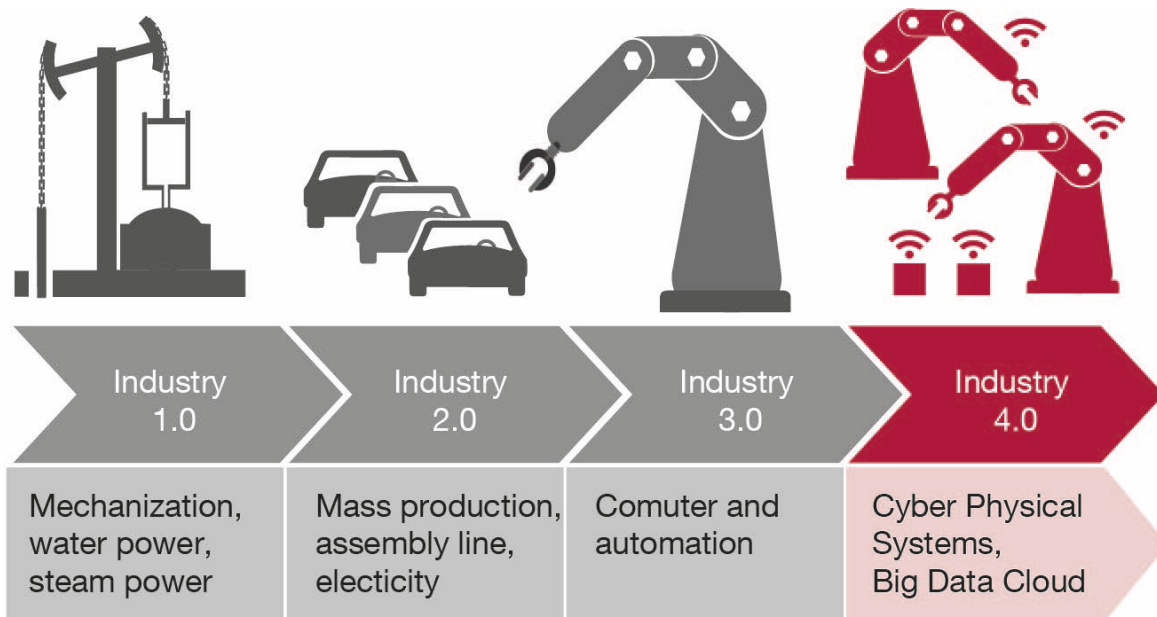
Press release: Digitalization of machine tools at SCHNEEBERGER Mineralgusstechnik Industry 4.0

Since the introduction of mineral casts as a material for structural components in machine tools and other precision applications, the market share of such casts has steadily increased at the expense of traditional solutions such as gray cast iron and welded steel structures. While the effective damping properties and thermal stability of mineral casts were initially considered to be key criteria, many other aspects now play an important role as well. With additional technologies for final accuracy, we are now offering our customers greater design freedom and better component integration. In addition, we deliver not just a mineral cast (bed), but *a complete assembly* directly to production lines – and on a just-in-time basis.

(We thus achieve maximum efficiency, which benefits both our customers and their customers.) (In this manner, we help to ensure maximum efficiency, which benefits our customers' customers.) Without a doubt, flexibility generates the added value that will safeguard the future of our machine tool production stronghold in Europe. This is not just the case with regard to manufacturing and delivery, as we increasingly view flexibility as a challenge in terms of development as well. At SCHNEEBERGER, we need to be able to respond more quickly to individual customer requirements, and we have to do so in cooperation with our highly valued customers/business partners.

As the market leader for mineral casting technology, we know that customers are inspired by the complex integration of components such as hydraulic systems, cooling and supply lines and special parts, as well as by high-precision forming technology and the integration of linear bearings. Still, we want to do even more...

Digitalization, which is closely linked with the concept of Industry 4.0 in German-speaking countries, has been a major feature of machine tools for years now. Every CNC machine tool is equipped with a range of sensors for monitoring and controlling, and the data generated by these devices is continuously used to further improve processes.



We have set ourselves the goal of being able to support our customers with the **"development of an optimal design for the machine bed"** for every specific requirement and/or application.

To this end, we need to understand what processes occur **on** a machine bed during operation under diverse load conditions and in various configurations. In other words, we need a **"machine bed that gives us feedback."** **SCHNEEBERGER Mineralgusstechnik has now developed a digital "MESS-KIT" (measurement kit)** that can be custom-integrated into a mineral casting bed and measure various physical parameters as required – either point by point or continuously. This will allow us to collect data on loads and factors that have an effect on the bed from within the complex machine tool as a whole, whether during installation (assembly) or in operation. It is also possible to customize SCHNEEBERGER's MESS-KIT in line with specific situations and applications and use it to measure temperature, stress, pressure, expansion, damping, etc. from within the bed.



The MESS-KIT is embedded in the mineral casting bed, and its sensors are both optimally positioned and fully protected against the harsh working environment that is created when a workpiece or tool is processed.

Our expertise is based on the design of the sensors, our own measurements, the analysis of data and the interpretation of influencing factors, the analysis of behavior, and the recommendations for the design of the "optimal machine bed" for the machine as a whole.

It is clear that the next logical step will involve exerting influence on, and reacting to events in, the machine bed itself in a proactive manner.

This will enable us to support our customers with their ever more complex development activities and help them to maintain their technological edge. **After two years of development, we are now pleased to announce that SCHNEEBERGER Mineralgusstechnik will present its new MESS-KIT measurement technology at EMO 2019 in Hanover – not only as a demonstration exhibit, but as a practical machine tool application.**

SCHNEEBERGER group

SCHNEEBERGER® serves original equipment manufacturers operating (OEM) in various industries worldwide – from machine tool, solar technology and semiconductor technology to electrical engineering and medical engineering and others. Linear bearings, profiled linear guideways, measuring systems, gear racks, slides, positioning systems and mineral casting are all part of SCHNEEBERGER's product and manufacturing range. A.MANNESMANN has been part of the SCHNEEBERGER Group since October 2017. A.MANNESMANN is a leading supplier for the production of ballscrew drives, telescopic actuators and drill spindles. A further expansion of the SCHNEEBERGER Group, an additional site was founded in Poland. The new company SCHNEEBERGER Components Poland (SPO) officially started on November 19, 2020 and has already commenced operations, producing precision parts for the entire Group. The core competence lies in the production of rolling bearing rollers. Also as part of its strategic development, the Business Unit Systems has established the company "SCHNEEBERGER Precision Motion Systems (Shenzhen)". With the establishment of the new technology center for systems in Shenzhen with development, production, sales and service, SCHNEEBERGER will be closer to its Asian customers and thus be able to serve them even better with high-precision single and multi-axis systems.