

# Quality Controlled

German Gear Company installs first Klingelnberg P 152 measuring center

Matthew Jaster, Senior Editor



*A large internal gear in production at Zahnradfertigung OTT GmbH & Co. KG.*

Zahnradfertigung OTT GmbH & Co. KG was the first company to install the new fully automatic CNC-controlled P 152 precision measuring center from Klingenberg in its ultra-modern machine park.

“With our broad spectrum, we must be extremely flexible. Especially in contract gear manufacturing, we simply must be able to measure everything on our machines—from internal gears and cylindrical gears to worm wheels and worm shafts, as well as pinion-type cutters and special gears. Since we already have a Klingenberg P 350 W Precision Measuring Center for wind power applications, compatibility was also important to us,” said Jens Haag, managing director Zahnradfertigung OTT.

“The P 152 is also very compact and therefore an accurate measuring instrument for its size. That also appealed to us. The positive experience we had with our P 350 W meant that there was no question of looking for another manufacturer. It is important to us that components come from a single source—in this case Klingenberg—to ensure seamless processes,” Haag added.

### Entrepreneurial Spirit

Zahnradfertigung OTT, located in Bodelshausen, Germany, has evolved over the course of its company history from a contract gear manufacturer to a complete supplier of drive elements. Its international customers come from machine tools, large gearbox manufacturers, wind power plants, special machine construction, mining, and wherever drive elements are required.

Zahnradfertigung OTT manufactures drive elements and gear parts for a host of applications. The portfolio range is very broad: In the worm gear pair sector, it extends from standard and duplex geometry to OTT’s own patented high precision worm gears. Cylindrical gears from 100 mm to 3,700 mm in diameter are manufactured in the contract manufacturing area—everything from running gears and splines to special profiles. This is done using various manufacturing processes, depending on the quality requirements. The company is also a supplier of complete gear components for transmissions. This includes turning

and boring work in the diameter range from 500 mm to 3,500 mm.

“We are an owner-managed family business that is now run by the third generation. Our customers value our modern production facilities, our reliability, and our flexibility, which is geared very closely to the customer. Our defining factor, however, is the quality of our manufactured products,” Haag said.

### Modern Challenges

After coronavirus, the energy crisis, inflation, and now the threat of recession, Haag stated that the company is primarily hoping for calmer waters again.

“We are simply living in very turbulent times. As a supplier to gearbox manufacturers, we have also been facing competitors from Asia and India for a few years now, most of whom have completely



**Figure 1—Inherently rigid design, energy-efficient, and highly flexible: The new P 152 precision measuring center now also applies proven principles for high-volume and mass production of smaller components to large components.**



**Figure 2—Jens Haag, Managing Director Zahnradfertigung OTT GmbH & Co. KG (left), and Patrick Henes, Head of Quality Assurance, in front of the loaded P 152 precision measuring center.**

different production options than we do in terms of price. This makes it all the more important for us to manufacture high-quality products, achieve fast and reliable delivery times and also offer projects and components that not everyone can produce. Standing out from the crowd in certain areas is important—by delivering on traditional German virtues such as inventiveness and innovation,” Haag said.

“With the successor model to the P 150, we wanted to apply the principle

of smaller measuring instruments to medium and large precision measuring centers: an inherently rigid construction that no longer requires a foundation. The challenge was to achieve the same accuracy. We did this by developing new correction procedures. The P 152 is a 100 percent in-house development that incorporates all our Klingelberg know-how. And we are proud of the fact that we have succeeded in achieving all the technical goals we set for ourselves,” said



**Figure 3—Kai Bartel, Head of Product Line Precision Measuring Centers Klingelberg (left), and Stefan Finkbeiner, Sales Director Klingelberg, were delighted to present the P 152, the latest member of the Klingelberg Precision Measuring Centers family (P-Series), at EMO.**

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Kai Bartel, head of product line precision measuring centers at Klingelberg.”

Bartel further discussed the performance features that characterize the P 152.

“Full software compatibility and high accuracy, and the various z-axes of 1,200 mm/1,500 mm and chucking lengths of up to 2 m. We have also improved operability and ergonomics. Thanks to its high efficiency, the precision measuring center is characterized by low power consumption during operation and a small footprint. With the P 152, we were able to create a modern measuring center with an efficient layout and a very harmonious appearance.”

### Application Benefits

Internally, the new P 152 is thought to close the gap in the Klingelberg measuring center portfolio.

“The fact the P 152 no longer requires a foundation significantly reduces the workload for our customers. In addition to lower costs, this also offers very flexible installation options,” said Stefan Finkbeiner, sales director at Klingelberg.

The measuring center will be of particular interest to all gear manufacturers who need to cover a wide range of components—from small to 1,520 mm component diameters and weighing up to 8 tons—as well as a wide variety of measuring tasks.

“The P 152 enables measurements to be performed regarding dimensions, geometry, position, tools, roughness, worms, worm wheels, and much

more. The P 152 is the ideal addition, especially for customers who have a machine park in the range of, for example, the Höfler Rapid 800/1250/1600 cylindrical gear grinding machine. This is because the maximum workpiece weight of eight tons is suitable for the parts that are manufactured on these machines,” said Finkbeiner.

### High Demand

Finkbeiner believes Klingelberg has launched exactly the right product at the right time. The launch went extremely well and demand is currently very high.

“The P 152 precisely meets the requirements of our customers, such as Zahnradfertigung OTT, with whom we have a long-standing, trusting, and open working relationship. Zahnradfertigung OTT has a very wide range of components to deliver.”

“Our initial experiences with our new precision measuring center have been very positive. We have been able to significantly reduce measuring times compared to our Höfler EMZ 2602 gear measuring machine, which has now been decommissioned. Various measurements can now be carried out in a single clamping operation, including of course the gear geometry, shape, and position as well as the surface roughness of the tooth flanks,” said Patrick Henes, head of quality assurance at Zahnradfertigung OTT.

Since Zahnradfertigung OTT received the first delivered P 152, there were small suggestions for improvement here and there, which were quickly implemented by Klingelberg.

“Our wide range of parts in particular means that we have many individual requirements in terms of how gears must be tested and evaluated. Klingelberg always provided us with reliable and highly professional support to make various adjustments to the software,” Henes said.

“It was an important pilot project for us too,” added Bartel. “So, we were very pleased with the positive feedback from Zahnradfertigung OTT—both during the acceptance process and afterward.”

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Figure 4—Klingelberg Precision Measuring Centers (P-Series) handle most measuring tasks in a wide range of industries. For example, the P 350 W is designed for workpieces up to 3,800 mm in diameter and 20,000 kg in weight, making it ideal for components for wind power plants.

