

### **Integrated Rotating/Indexing Spindle Offers New Processing Capabilities**

#### **Friedrich Erodierservice GmbH expands existing system with a HIRSCHMANN rotating and indexing spindle and clamping system**

Highly-precise processing with complex geometries is one of the core competencies of Friedrich Erodierservice GmbH in Mainhausen (Hessen). To consistently offer this premium service, the company continuously invests in the latest technology. Recently they added a HIRSCHMANN H80R.MNCY001 rotating and indexing spindle, which is integrated into the machine control system as simultaneous axis, to an existing SODICK AG600L wire EDM machine. This addition not only expands their capabilities overall, but also increases accuracy.

In 2004, Jürgen Müller founded Friedrich Erodierservice GmbH, with only one wire EDM machine. As an EDM contract manufacturer, his objective was to stand out in the market by providing highly-precise customized products – and he was successful. Today, the company has three employees and produces on six wire EDM machines and a start-hole drilling machine. His son, Boris Müller, has run the business since 2013.

Friedrich Erodierservice GmbH's production range includes classic parts for tool and mold making such as ejectors, clipping punches, and fine blanking tools with a clearance of 5 µm and a height of 100 mm. The company also manufactures measuring equipment, templates, checking gauges, samples, beam lancets, and molds.

“Maximum flexibility and efficiency are the foundation for further expansion of our business and the acquisition of new customers,” underlines Boris Müller. His expertise is especially valued by his customers, including renowned companies from the automotive industry, engineering, tool and mold making, as well as medical technology and research companies. “We are focused on successfully fulfilling our customers’ needs with reliable processes and modern manufacturing possibilities and aim to expand our customer base by further advancing our technologies,” says Boris Müller. Innovative

processes, modern machinery, and highly-skilled specialists are also necessary to meet the demands of the future with precision, reliability, and competence.

## **Optimizing Existing Equipment is Essential**

For this reason, Friedrich further optimized a SODICK AG600L wire EDM with an 8-axes control system. A HIRSCHMANN H80R.MNCY001 rotating and indexing spindle was integrated into the machine control system as simultaneous axis. It was an investment in a new technology even though there was not a concrete customer order at that time. Boris Müller states, "We decided on HIRSCHMANN because of the personal advice and support on their site. The individual support, from order placement to instructions in technology, was perfect. We immediately recognized that we could extend the capabilities of our machines exponentially." In addition to the HIRSCHMANN rotating and indexing spindle, Friedrich Erodierservice GmbH also ordered a HIRSCHMANN 4000 clamping system, suitable for their applications.

With the enhanced processing capabilities, the company now can dress and profile metal-bonded CBN and diamond grinding tools with EDM. This process has the advantage of absolute shape retention with thermic or mechanic influence on the structure and a true running accuracy of <0.002 mm can be realized. EDM machining is done only on the metallic binding agent, so abrasives remain unhurt, and the resulting grain protrusion prolongates life. Finally, possible shapes of the inside radius are only restricted by wire diameter. The outside radius and edges are limited only by grain size.

## **Machining of complicated geometries**

Due to the simultaneous processing and the HIRSCHMANN axis, various components with complicated geometries can be machined - for example, screw conveyors. Programmed by a DCAM programming system in which HIRSCHMANN spindle is integrated as fixed module, machining can be checked in advance in a simulation. With maximum speeds of up to 1000 min<sup>-1</sup>, work pieces can be machined by EDM turning or EDM grinding. As no machining forces occur in this process, even the smallest contours can be cut at the highest precision. Larger work pieces can also be manufactured with the highest possible precision because there is no wear of wire tool.

The entrepreneurial courage that lead to Friedrich Erodierservice GmbH's investment in new technology was worth the risk: their machine is utilized to order capacity of 80% where the application of the HIRSCHMANN H80R.MNCY001 rotating and indexing spindle is required. As a next step, a JS

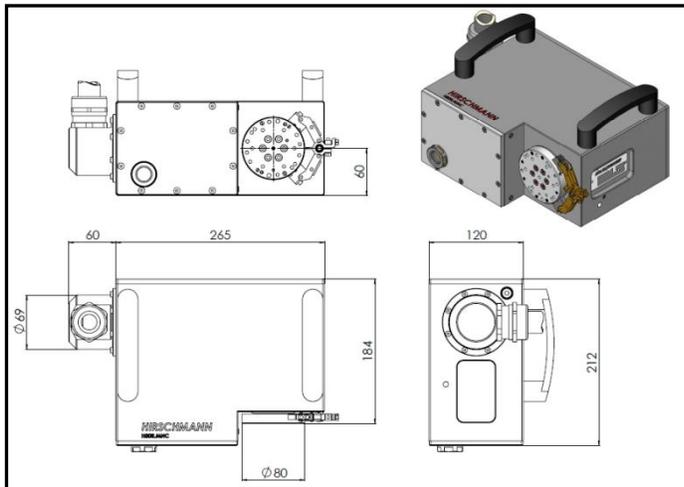
FJRT126RSD 2-axial rotary indexing table (picture 5) was mounted and processing capabilities were expanded once more.

“We will consequently implement our plan to specialize in micro and high-precision processing in the near future,” assures Managing Director Boris Müller. Another 8-axis wire EDM with a HIRSCHMANN H42R.MRS002 mini-rotating spindle and the thin wire (diameter 0.05 mm) option is already ordered.

## **Data sheet for Rotating/Indexing Spindle H80R.MNC..**

- Direct measuring system
- Version with stainless steel housing
- Dimensions (BxTxH) approximately 265 x 212 x 120 mm
- Applicable horizontal and vertical
- Face plate Ø80 mm prepared for common clamping systems
- Center height approximately 60 mm
- Smallest indexing step 0.001°
- Positioning accuracy +/- 5, or +/- 10 sec (depending on measuring system)
- Repetitive accuracy +/- 3, or +/- 5 sec (depending on measuring system)
- True running accuracy <0.003 mm
- Speed max. 1500 rpm
- Weight of work piece (horizontal) max. 15 kg
- Weight of work piece (vertical) max. 25 kg
- Weight approx. 31 kg
- Protection class IP68

For more information, see [www.hirschmanngmbh.com](http://www.hirschmanngmbh.com)



Picture 1: By mounting a HIRSCHMANN H80R.MNCY001 rotating and indexing spindle, Friedrich Erodierservice GmbH considerably expanded their processing capabilities.

Photo: HIRSCHMANN GmbH



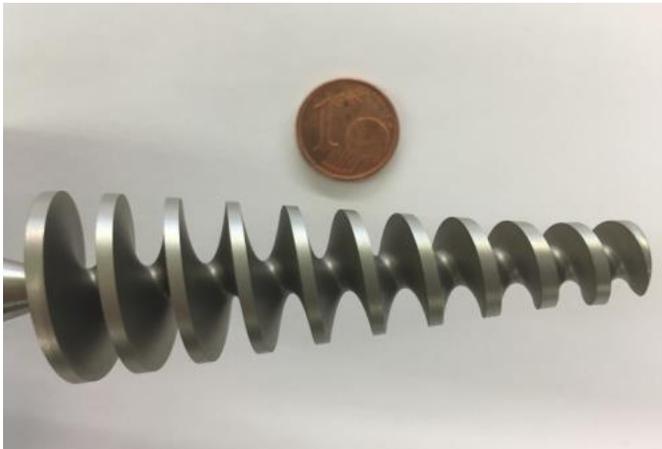
Picture 2: Machinery of Friedrich Erodierservice GmbH in Mainhausen (Hessen). The company continuously invests in new technologies.

Photo: Friedrich Erodierservice GmbH



Picture 3: Due to continuous training and development, Boris Müller (Managing Director), Alexander Müller, and Christoph Pöschl (from left to right) are always up to date with the latest technological advances.

Photo: Friedrich Erodierservice GmbH



Picture 4: This screw conveyor is one example of using highly-precise, simultaneous machining of work pieces with wire EDM.

Photo: Friedrich Erodierservice GmbH



Picture 5: A JS FJRT126RSD 2-axial rotary indexing table was integrated to further increase the processing capabilities.

Photo: HIRSCHMANN GmbH

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#### **About HIRSCHMANN**

For more than 60 years, HIRSCHMANN has stood for technology that inspires through unparalleled reliability and precision. Our innovations and developments set new standards in quality and performance for automotive vehicle construction, motor sport, railed vehicles, mechanical engineering, naval architecture, wind power plants, medical technology, and the aerospace industry. We offer a comprehensive selection of standard products and customizable solutions across three categories: Rod Ends and Spherical Bearings, Rotary Indexing Tables, and Reference Systems. HIRSCHMANN has about 200 employees and is headquartered in the Baden-Württemberg region of Germany, with sales offices in the US and China.