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Highly Efficient Mechanical Interface for Small Machine Tool Modules

Focus Sectors
- Machine Tools
- Micro-Manufacturing
- Precision Engineering

Key Words
- Micro-Manufacturing
- Modular Machine Tools
- Desktop Machine Tools
- Reconfiguration
- Miniaturisation
- Table-Top Tools
- Production Scaling

Development Status
- Prototype II

Patent Procedure Status
- DE Patent filed
- EP Patent filed

Chances for Cooperation
- Licensing
- Patent Sale
- F&E Cooperation

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Innovation and Customer Benefit

The Technology enables a highly efficient modular adaptation for small machine tools using a high precision mechanical interface which also transmits energy and information. This interface gives the possibility to use miniaturization and tool-flexibility to their outmost advantages, building on the concept of table-top machine tools and their user-friendly handling, leading to best competitive production standards.
Possible Customer benefits are:
- Time Optimized Con- and Reconfiguration
- High-End Precision
- Competitive Micro-Manufacturing
- Table-Top Modular Production

Possible Applications

Due to its high flexibility, the Technology can be applied to a variety of uses, centred of the need for high-precision miniaturized production, such as;

- Machine Tools
- Precision Engineering
- Measurement Engineering
- Robotics

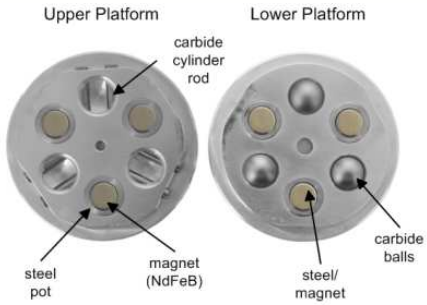

Fig 1: *State of the Art Working Principle*

Technical Description

The mechanical interface developed with this Technology shows a hybrid working principle and can be used according to different functions ranging from a module-to-module to a module-to-machine connection.
Also serial modular connections can be implemented integrating feeding and production processes.

The interface is composed of two parts, containing both a data and a power transfer unit communicating between each other.
The positioning medium ensures the exact constant repositioning of the two parts at any point in time according to the chosen constellation.

Fig 2: *Upper Interface Platform*

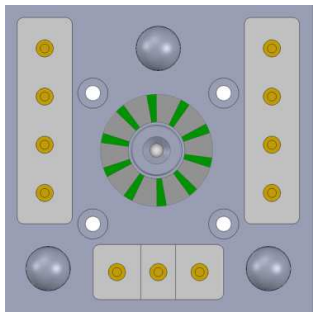

Fig 3: *Lower Interface Platform*

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