

**Dynamic  
In-Process-Measurement (IPM)  
by DIATEST**



# 100% safety

- Increased good parts
- Full process control



## DIATEST IPM - Dynamic and static measurement in the process

- Consistently high quality is an invaluable competitive advantage!
- Measuring directly in the machining centre combines the manufacturing process and quality assurance.
- This strengthens the partnership and trust between manufacturer and customer.

# Dynamic In-Process-Measurement (IPM)

**The high flexibility of the machining centre must not be lost due to the measuring technology! The flexible DIATEST IPM measuring system (in-process measuring system) exploits the full capability of such a machining centre.**

## What does the DIATEST IPM do?

The IPM measures high-precision, critical and safety-relevant bores directly in the manufacturing process within the machining centre. It transmits measured values by radio to a PC.

## What is the DIATEST IPM?

The IPM is a measuring system with radio for use in machining centres. The system consists of a DIATEST bore gauge (BMD) and a radio module, which are permanently installed in a tool holder (e.g. HSK).

**The bore gauge fulfils all requirements for the high accuracies demanded in modern machining centres:**

- Ideally suited for automatic measurement.
- Static and dynamic measurements, e.g. max, min, ...
- Optionally with collision protection and blowing air cone for cleaning
- Regular calibration by a setting master integrated in the machining centre

The central unit is a precision measuring probe with a radio module for sending the measured value to a measuring computer with radio receiver.

**Depending on the application, various options and holders for tool magazines are available:**

- **With floating holder to compensate for positioning errors.**
- **With overrun protection, optimised with electronic signal to stop the machine and with immersion free blowing**

## The IPM sits in the tool magazine

**Easy integration with standardised tool holder:**

The IPM is exchanged for measuring and then automatically stowed back in the machine's tool magazine. The workpiece does not have to be unclamped. In general, the integration is independent of the machine manufacturer.

## "Set up and move on": once set up, the IPM works autonomously

The management and control of the measuring device is carried out by the production machine itself. Feedback messages are shown on the machine display. Quality data can be stored in the local network.



## What are the benefits of the DIATEST IPM?

Scrap reduction of up to 50 % compared to conventional in-process checks

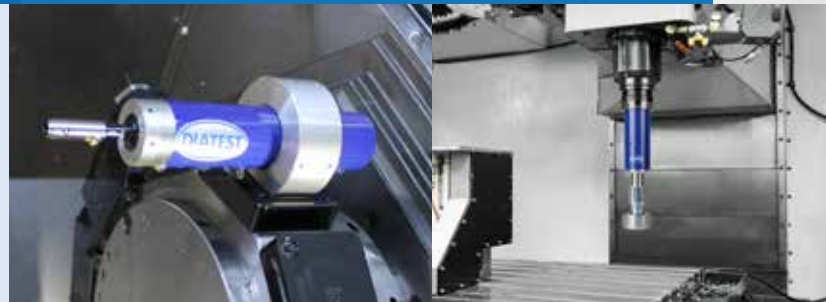
### The measurement

- takes place automatically directly in the machine after the critical and safety-relevant bores have been produced
- is highly accurate and takes place under the identical conditions as production.
- is guaranteed to be carried out with the correct measuring equipment without external influences.

### More positive advantages

- No additional measuring effort:  
Based on the measurement result, an immediate assessment is possible as to whether reworking can take place.
- No additional installation space:  
If the workpiece is NOK, it can be immediately reworked in the machine without unclamping or removal
- Costly additional machining steps are avoided.

Depending on the process, a 100% or a random sample inspection can be carried out.



### The system can be used in different ways

- for characteristics that are subject to documentation,
- for classification of bearing seats,
- to dynamic random sample measurement of quality data or
- for triggering a tool change of a replacement tool before rejects occur.

# DIATEST IPM Complete system for automatic in-process measuring



## What happens to the measured values?

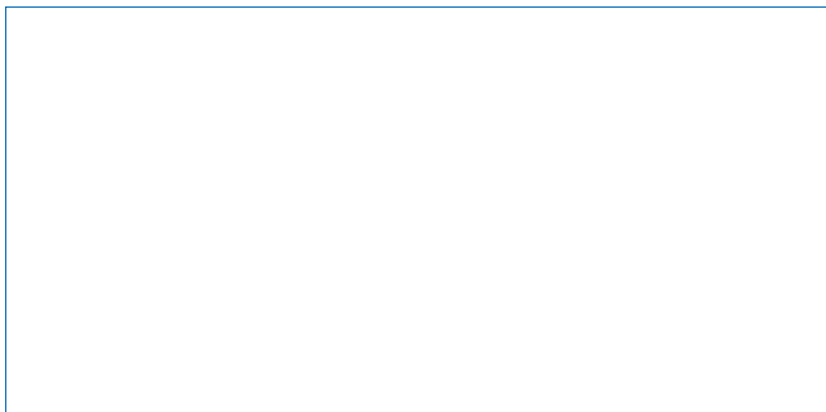
Measured values are sent to a measuring computer via industrial radio DIAWIRELESS.

The important advantage is that the measured data is obtained in real time exactly where production is taking place. This means that there are no deviations due to external influences.

**Measurement data can be used for a variety of evaluations and process improvements. For example for**

- tool correction via Profinet at the machining centre or
- for statistical evaluation of the measured data via the network of higher-level systems, such as statistics programs (e.g. Q-DAS) or process control programs.

The measuring computer is connected to the machine's PLC via Profinet and can communicate with the local network at the same time.



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DIATEST  
Hermann Körtgen GmbH

Schottener Weg 6  
D-64289 Darmstadt  
Germany

+49 61519790  
info@diatest.com  
www.diatest.com



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