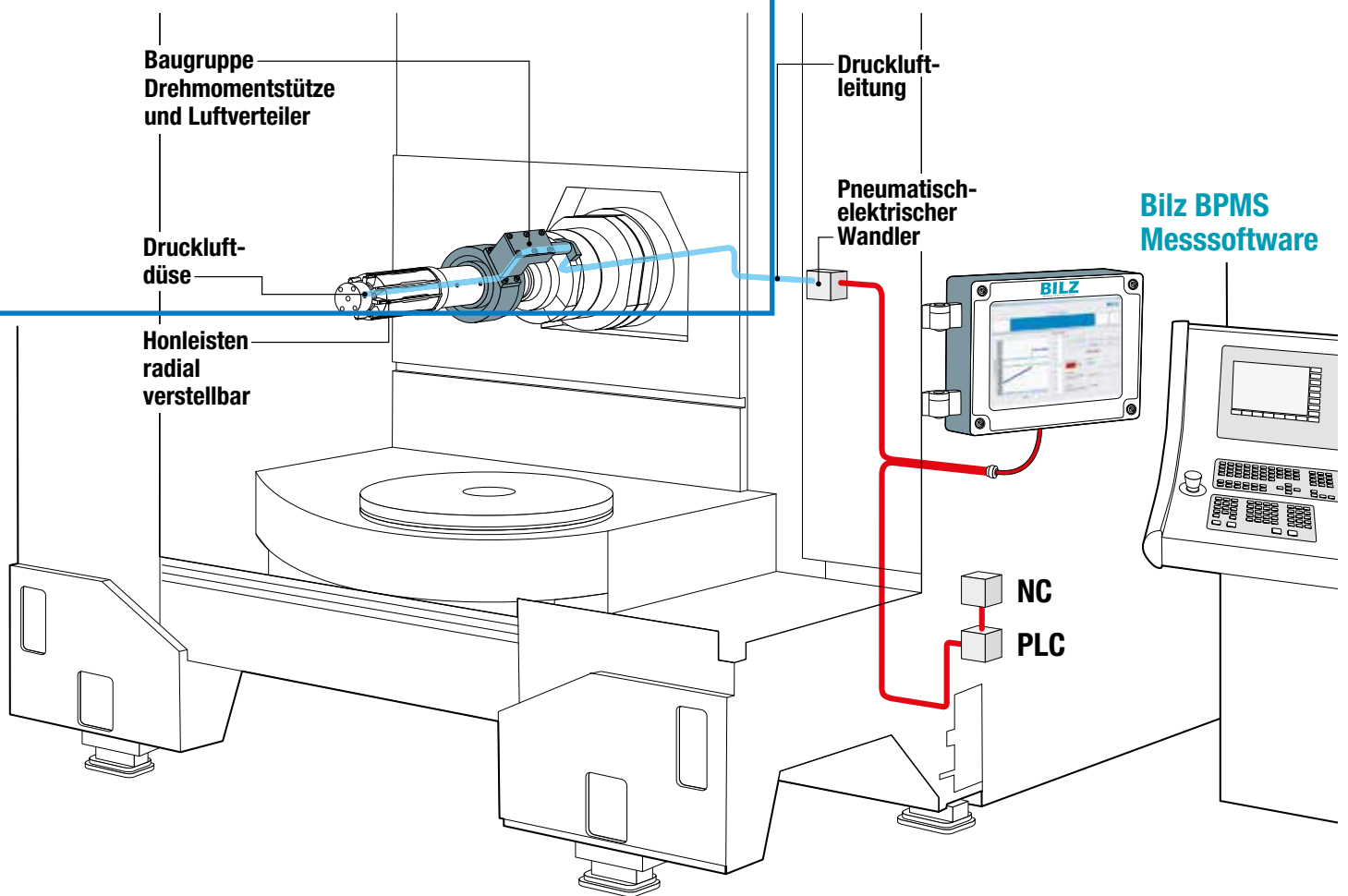


# BPMS

the pneumatic measurement system by Bilz



The Bilz measurement system enables process control for honing tools with integrated air pressure measurement.

The measuring air is transferred via spindle interface by a self-sealing torque arm.

Bilz measurement computer for in-process measuring.

# PROCESS CONTROL WITH THE BILZ PNEUMATIC MEASUREMENT SYSTEM FOR HONING TOOLS WITH INTEGRATED AIR PRESSURE MEASUREMENT

- The **PNEUMATIC MEASUREMENT SYSTEM FROM BILZ** makes complex monitoring of processing unnecessary and enables unmanned shifts.
- Due to the sturdy design, it is suitable for use in a manufacturing environment.
- Pneumatic measuring is characterised by high accuracy and long-lasting stability.
- It is resistant to environmental influences and ensures excellent precision and repeatability of the measurement results.
- Contact measurement with air prevents damage to the work piece and is wear-free.
- The measurement values (for example the diameter) are recorded during the process and enable a permanent comparison to the limit value.
- When the limit value is reached, there is an automatic message via interface at the control system. The work process is stopped via the NC-programme by M-commands.
- The **PNEUMATIC MEASUREMENT SYSTEM FROM BILZ** can be refitted as a retrofit project for existing machining centres.
- It can be integrated into the switch cabinet in projects for new machines.

## Measurement computer (IPC)

incl. Windows 10 licence  
and integrated USV

External

**HMI Multitouch-Control-Panel IP 65**  
15-inch-display

**Supply unit**



Example Retrofit Project Doosan NHM 6300

## Further application examples



Example Retrofit Doosan NHM 6300



Example Retrofit DMG DMU 60 H, year of manufacture 2002

# SYSTEM DESIGN / MACHINE

## Transfer of measuring air

- The measuring air is transferred via spindle interface by a self-sealing torque arm.
- The measuring nozzles for the compressed air are self-cleaning.
- If set correctly, it is free of leakage also during automatic tool change and therefore guarantees reliable measurement.
- The tool can also be used as a test bar to carry out a 3D evaluation of the bore.

Measuring air transfer  
via torque arm,  
self-sealing

Measuring air nozzles

Rotary distributor  
at the tool



**The PE converter assembly** should be as near as possible to the spindle nose, in order to measure the air column as quickly as possible.



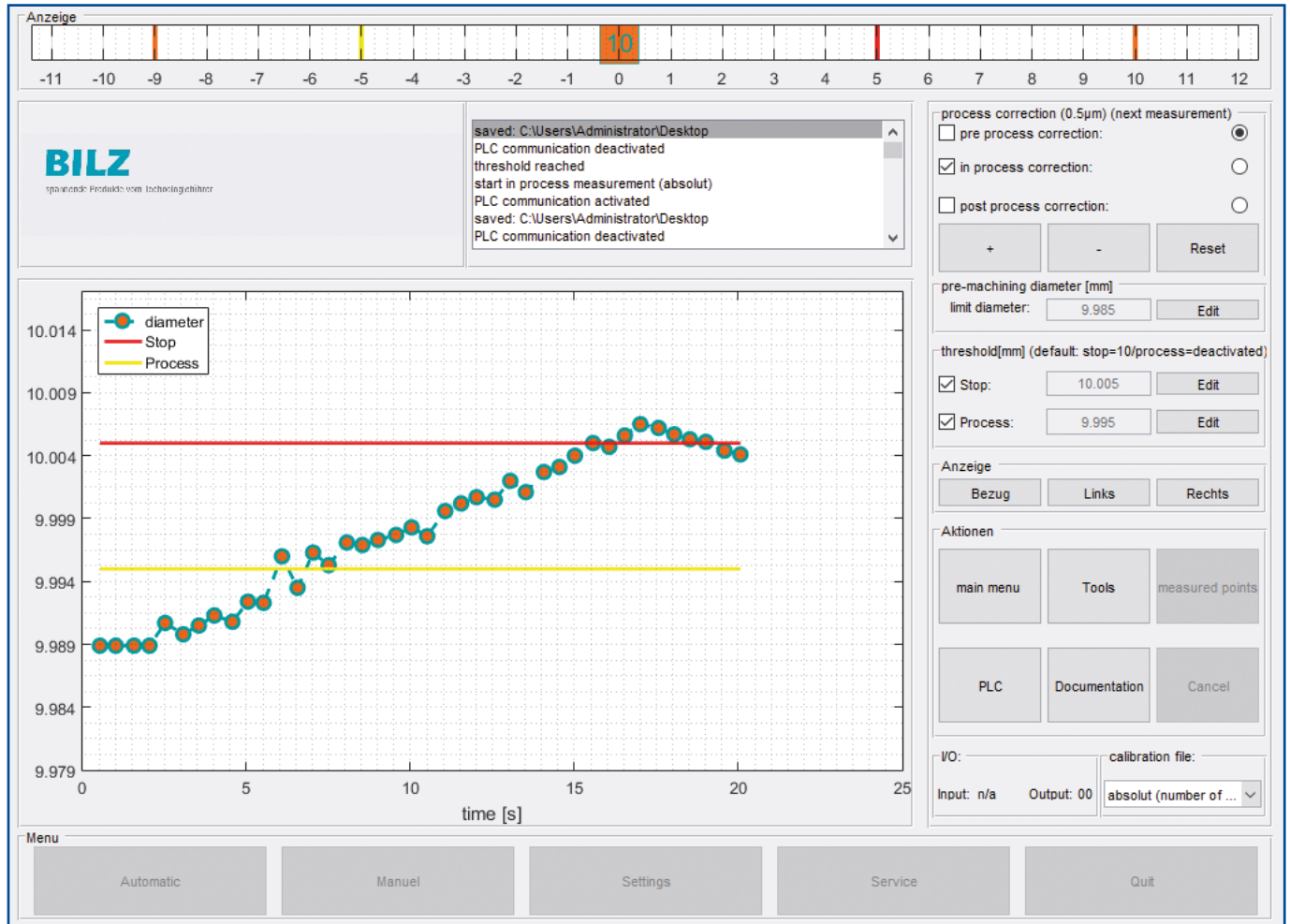
PE Converter



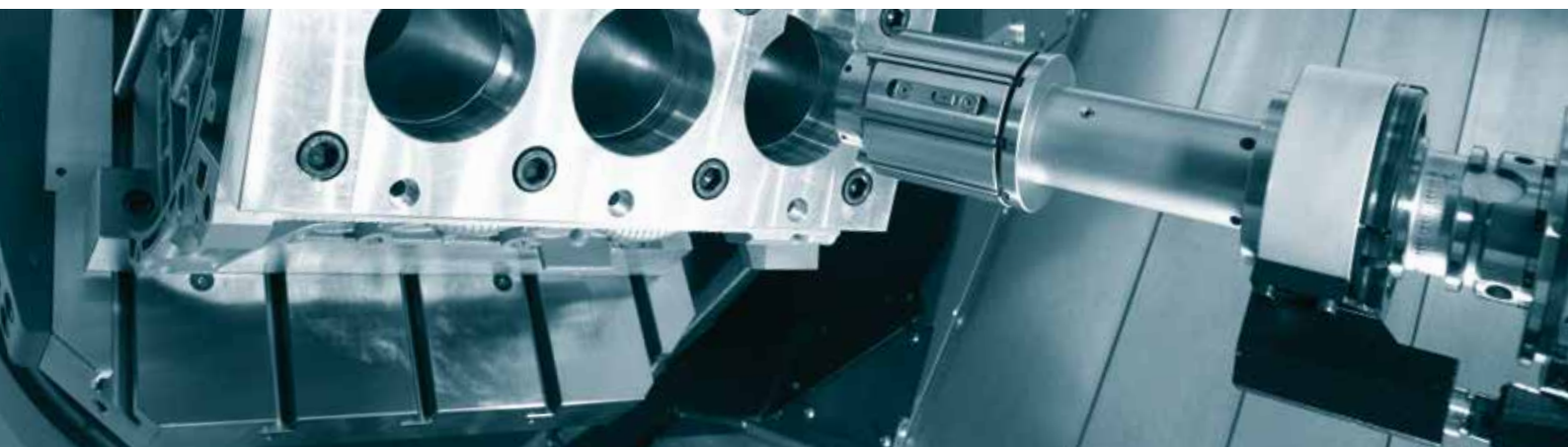
Example Retrofit Project  
DMG DMU 60 H, year of manufacture 2002

# SOFTWARE OPTIONS

- The software can be used flexibly – the effective dimension can be displayed with a bar or you can make individual measurements and compare them to each other.
- The operating functions are clearly displayed via touch screen.
- The BPMS software can be either used as a manual display system or as measurement feedback which is largely integrated into the control system.



The photo shows a screen shot during an in-process measurement in the automatic mode. This is one of the basic modes, where the honing process is controlled and adjusted via the NC machining program.



# SOFTWARE OPTIONS

The following software options are available:

## BPMS – basic software

### Pre – Process Measurement

- Testing of the dimensional accuracy of the pre-process
- Delivery of the measurement value via OK/NOK signal to the machine
- Possible application: resetting of a pre-processing tool
- The reset value is stored in the NC control system or can be delivered via 15 triggers from the measurement control system.

### In – Process Measurement

- Measurement mode used in the honing process
- In this mode, the communication with the NC control system is set up (activation via a selected M-command)
- According to the stored commands, various functions can be selected and various graphic limit value definitions activated:
  - ▶ Honing shut-down threshold
  - ▶ Reduced pressure level for the honing tool or feed reduction
- Scaling of the measurement bar in order to highlight different areas visually or to gain an overview of the processing.

### Post – Process Measurement

- Final check of the dimensional accuracy by collecting manual individual values.
- Presentation as a diagram, in order to identify trends or special individual values.

## Further options

### Measurement protocol

(CSV – Export)

Export by USB interface/Export by connection to the local network

### Manual Measuring

(hand operation)

Use of the BPMS for manual measurement tasks

### Transfer of measurement value

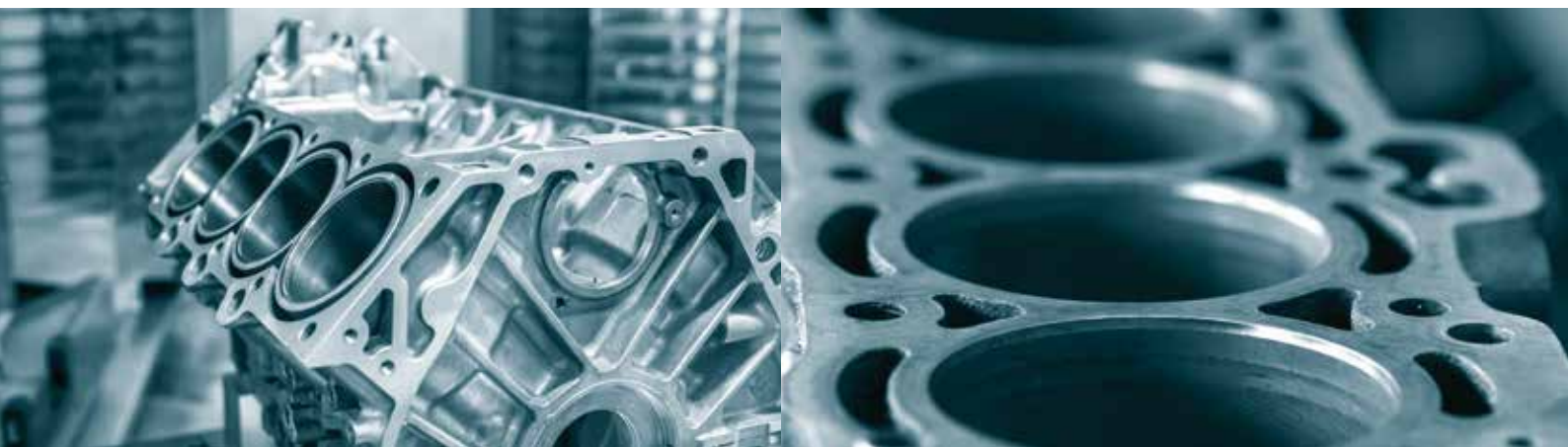
Transfer of the absolute measurement value to a serial display unit or to the SPS (PLC)

### Fully automatic management

of the calibration files via Bilz data carrier TDSc

### Software package double spindle machine

(Prerequisite is a second PE converter)





*Produktions- und Vertriebsstandorte der LEITZ-Group*

- Bilz
- Boehlerit
- Leitz



Adapted for honing tools of the company DIAHON, [www.diahon.de](http://www.diahon.de)