

# APPLICATION REPORT

## MIDDEX // PROCESS MONITORING

### Customer: Erwin Junker Maschinenfabrik GmbH

#### Task: Workpiece position monitoring in grinding machines

#### Data

##### Middex Product

Monitoring system:  
WK10

Function:  
Workpiece positioning  
monitoring

##### Grinding machine

Manufacturer: Erwin Junker  
Maschinenfabrik GmbH

Model:  
JUCRANK 6L 10-10

Erwin Junker Maschinenfabrik GmbH, based in Nordrach, Baden-Württemberg, has been one of the world's leading manufacturers of high-precision grinding machines for over 60 years. With in-depth expertise in mechanical engineering and grinding technology, Junker supplies innovative metalworking solutions to customers in the automotive, tool and machine manufacturing sectors.

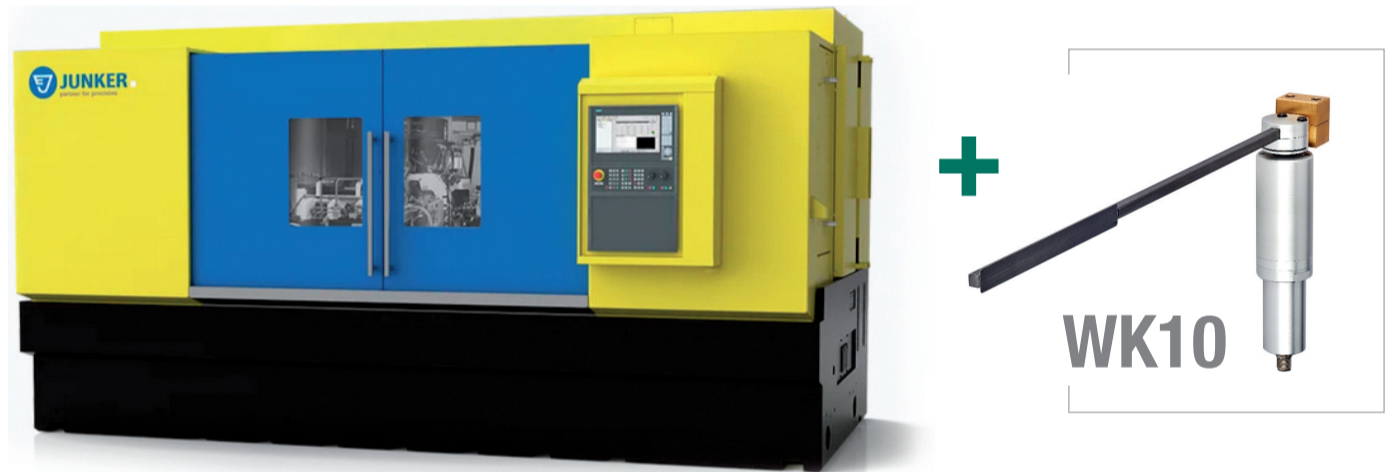
As part of a customer project, Junker was looking for a way to further enhance operator safety and process quality. The aim was to verify that inserted workpieces were correctly positioned and thus prevent operator errors in line with the poka-yoke principle.

#### The challenge:

The workpiece to be machined is held in centring holes on both sides and could accidentally be inserted the wrong way round by the operator. This would result in damage to the workpiece and the machine.

#### The solution: Integration of the WK10 from Middex

Junker contacted Middex to check whether their measuring systems were suitable for this type of monitoring. The WK10 model was chosen – a high-precision, robust probe that was specially developed for use under extreme conditions.



Initial tests were extremely successful. The WK10 system was fully integrated and brought into productive use in two projects. The workpiece position monitoring functioned reliably and precisely – even under harsh conditions in the grinding machine. User feedback was consistently positive: The machine operators experienced a reduced workload, the source of error was eliminated, and process reliability was significantly improved.

#### Conclusion:

The use of the WK10 in Junker grinding machines is an example of successful industrial collaboration and illustrates how targeted integration of Middex monitoring technologies can prevent operator errors and deliver lasting process improvements.

#### Future partnership:

The successful collaboration between Junker and Middex has shown that the WK10 is far more than just a probe – it is an intelligent monitoring system that actively contributes to process optimisation.

The companies are now exploring further application possibilities, such as in tool measurement, machine calibration or automated quality control.

#### Technical features of the WK10

- **Absolute measurement accuracy:** 0,04 mm per 100 mm stylus length
- **Stylus length:** up to 660 mm
- **Stylus diameter:** 43 mm
- **Scanning:** both sides (right and left)
- **Protection class:** IP68 - completely sealed against coolant and particles
- **Communication:** PROFIBUS or PROFINET
- **Gentle probing:** controlled drive for position, speed and torque
- **Reference tool measurement:** reduces setup time during changeovers
- **Absolute encoder:** for precise feedback and control

