

# **High-precision Profile Projection System for On-machine Measurement of Workpiece Dimension**

## **Abstract**

In this research, a high-precision profile projection system for an On-machine measurement of workpiece dimension is proposed and investigated. Two methods, an APM and a parts projection method, are shown. The APM is used by spatial filtering and minimizes the effects of the image processing. The parts projection method measures the object size or workpiece dimension unaffected by their size. After the description of their principles, an optical design process for measurement system is shown and evaluation of this system is carried out. Finally, this is applied to measurement for rotation error of square end mill.