



THE BENEFITS



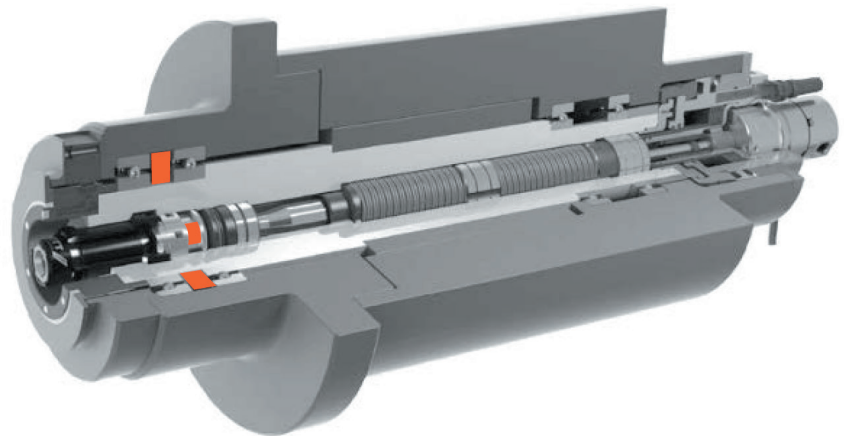
There are two main benefits of this solution:

- Tool misalignment detection prevents costly tool breakage and bad parts.
- Bearing failure detection supports machine maintenance and diagnoses the problem to avoid expensive guesswork.

INTEGRATED SPINDLE RUNOUT MEASUREMENT

Application

Using integrated eddy-current sensors to measure spindle runout and error motion of machine tools.



■ Three Embedded Precision Probes

Are used to simultaneously measure X,Y and Z error motions in a precision spindle.

THE SOLUTION



SPINDLES MUST TURN true in the x, y and z directions to make good parts. Too much rotational error motion in any of these directions could cause bad parts or expensive tool wear and breakage. Excessive runout could be caused by tool misalignment, and bearing failure can be detected by an increase in the asynchronous error motions in the rotational axis.

The last thing anyone wants is to have a broken tool or a unexpected machine down time due to spindle runout. Traditional methods of runout measurement, like a dial indicator, do not give as comprehensive a picture. Conversely, dynamic runout measurements take a real-time measurement and three axis at machine tool operating speeds while the tool is cutting parts. These measurements are far superior to a simple dial indicator.

THE LION PRECISION integrated solution is built into the spindle itself and simultaneously measures machine spindle runout in the x, y and z directions. The custom probes are designed to have a minimum footprint to save space and have a 90° cable exit to fit in the available area. These eddy-current sensors are unaffected by contaminants like oil and machine coolant. Lion Precision's sub-micron precision level means that even the smallest errors can be reliably detected. Like the probes, the custom three channel driver is designed to be as small as possible. Each channel has a digital EtherCat output, but can be configured with an analog output as well.

Ordering Information

Please contact Lion Precision for ordering information.

We can be reached via email at infolionprecision@carlisleit.com, or via telephone at (651)-484-6544.



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