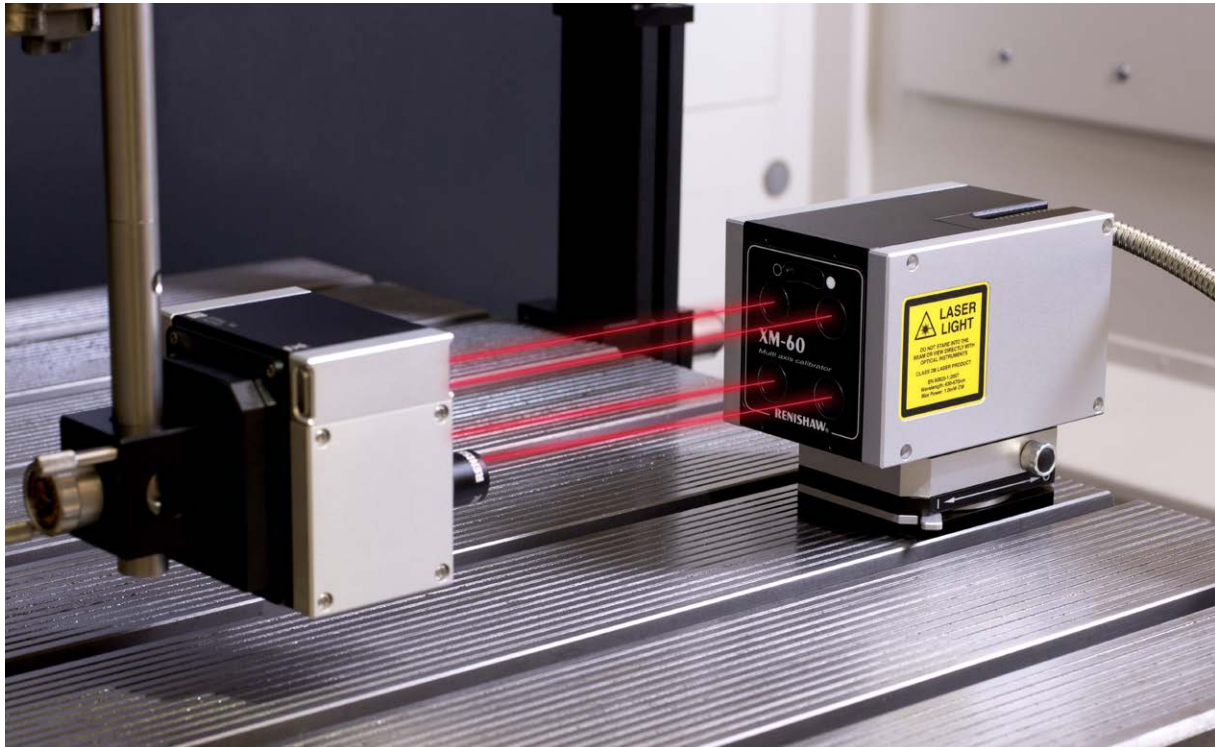


XM-60 multi-axis calibrator

Measure six degrees of freedom in any orientation from a single set-up



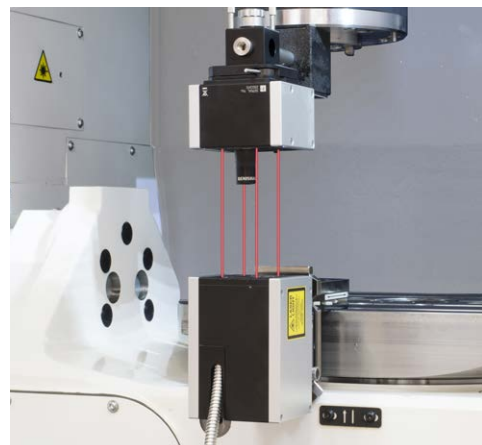
Unique technology, optical roll measurement and fibre optic launch

XM-60 is a laser measurement system capable of measuring errors in six degrees of freedom along a linear axis, simultaneously from a single set-up. It provides a powerful diagnostic tool to measure all geometric errors in the axis from a single capture.

For users of volumetric compensation XM-60 provides a quick and accurate method of data population. All measurements are made optically allowing use in any orientation.

Key features and benefits:

- **Quick** – linear, pitch, yaw, roll, horizontal and vertical straightness measurement in the same time as a single measurement with conventional laser techniques.
- **Simple** – easy set-up, familiar to users of other interferometric systems. Automatic sign detection and graphical alignment minimise human errors.
- **Reassuring** – measuring all errors directly allows the user to see results as the test is in progress.
- **Capable** – unique optical roll measurement system provides roll measurement in any orientation.

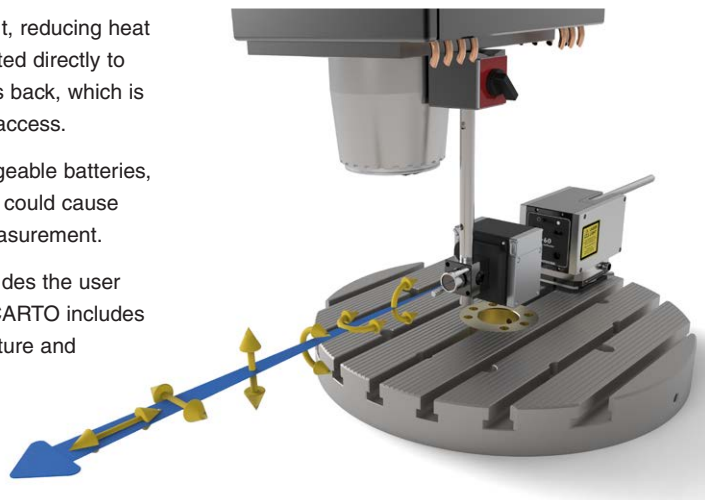


Overview

The compact launch unit is remote from the laser unit, reducing heat effects at the point of measurement. It can be mounted directly to the machine on its side, upside down and even on its back, which is particularly beneficial in areas with difficult machine access.

The receiver is fully wireless and powered by rechargeable batteries, avoiding trailing cables during machine moves which could cause inaccuracies or a break in the laser beam during measurement.

To accompany XM-60, CARTO 2.0 software suite guides the user through the workflow of the measurement process. CARTO includes Capture and Explore applications providing data capture and analysis to international standards.



Performance specification

Linear

| | |
|----------------------|--|
| Measurement accuracy | ±0.5 ppm (with environmental compensation) |
| Resolution | 1 nm |
| Measurement range | 0 m to 4 m |

Angular (pitch/yaw)

| | |
|-------------------|--|
| Accuracy | ±0.006A ±(0.5 μrad +0.1M μrad) (M = measured distance in metres) (A = displayed angular reading) |
| Resolution | 0.03 μrad |
| Measurement range | ±500 μrad |

Straightness

| | |
|----------------------|--|
| Measurement accuracy | ±0.01A ±2 μm (A = displayed straightness reading) |
| Resolution | 0.25 μm |
| Measurement range | 250 μm radius |

Roll

| | |
|-------------------|---|
| Accuracy | ±0.01A ±9.1 μrad (A = displayed angular reading) |
| Resolution | 0.5 μrad |
| Measurement range | ±500 μrad |

Note: Accuracy values are reported to a statistical confidence of 95% (k=2). They do not include the errors associated with the normalisation of the readings to a material temperature of 20 °C.

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