



A unique automatic metrological device for hole geometric tolerances

F4E and Axist have developed an innovative portable metrology device able to measure automatically all characteristics of threaded hole in less than 5 minutes. A breakthrough in the field of Industrial Dimensional Metrology tools that could find promising applications in quality control field for any type of industrial companies.



The technology

ITER vacuum vessel assembly requires an exceptional precision and each of its components must fulfil drastic specifications. This includes threaded holes used to realize connection with various modules. F4E and Axist have developed an original metrological tool able to measure automatically and with high accuracy threaded hole characteristics. Using an innovative clamping system, spot laser sensors, linear encoders and a dedicated algorithm, the absolute position of the Housing Inspection Tool (HIT) is known at any time, generating precise data on hole geometry and potential defects.

High accuracy measurement of threaded hole characteristics in a matter of minutes...

Measuring hole characteristics (diameter, axis perpendicularity, thread step, angle, length) is challenging in many industrial applications. Indeed, hole surface is not necessarily perpendicular to the axis and no existing technology can efficiently handle this. HIT is designed to be easily operated and fixed on any holes, and its preprogrammed metrological procedure provides characteristics and tolerances in a few minutes via automated reporting.

...already tested and certified, ready to use in the industry

This game changing metrological tool can be easily adapted to any type of shapes different from threaded holes, is CE marked and its metrological properties have already been certified. It can drastically reduce measurement operation duration and thus induce economy savings for any kind of industry. Moreover, HIT is ready for Industry 4.0 and can be used to perform comparisons with nominal CAD models, the results being shown in real time to the operator.

Collaboration opportunities

The technology is available for direct use, technical adaptation for new applications and any kind of geometry, or partial transfer (specific hardware or software components).

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