

Automated inspection of springs is a known difficult problem. Ajile has developed a complete solution that allows for the capture of 360 degree views of springs from a random starting orientation.

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The system captures multiple 3D scans of the spring from different angles as it rotates, ensuring complete surface coverage.

Each individual point cloud is referenced by the absolute angular position of the turntable using the Ajile absolute magnetic encoder. The data is then processed and stitched together into a full 3D model using proprietary alignment algorithms.

This enables precise measurement of key GD&T features, even on complex or tightly wound spring geometries.



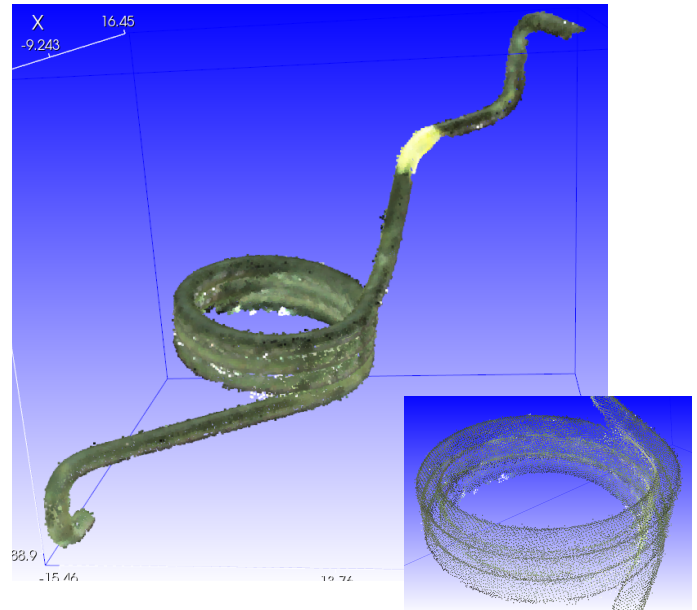


The system uses two Ajile DepthScan **3D Imagers** and is able to perform full 360° point cloud generation and surface meshing with 30 µm accuracy.

The turntable has an Angular Resolution of 0.006° using a capacitance absolute rotary encoder and has a load capacity of 2 kg.

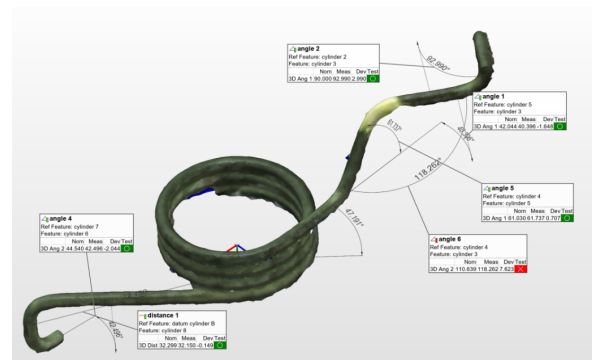
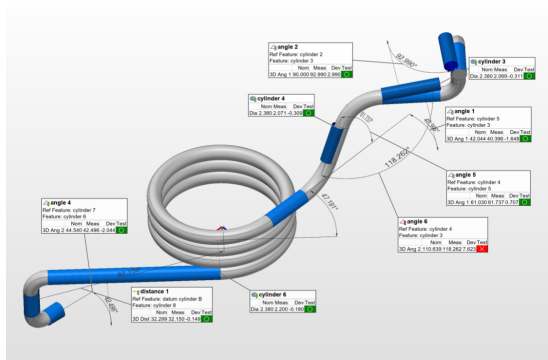
The fully automated inspection software manages the complete capture cycle, the stitching of individual point clouds into a single merged and filtered 3D model and the alignment to CAD as well as the comparison to the specified GD&T parameters.

Ajile uses Polyworks to handle the last part and to generate the reports.



Automated spring inspection can provide manufacturers with rapid feedback on problems developing on production machinery, leading to less wastage, better quality and consistency of quality as well as happier customers.

Close integration of the Ajile inspection system with Polyworks ensures accurate comparisons with GD&T specifications and long term statistical tracking of production processes.



Ajile provides complete inspection solutions including turntables and robotic part handling. The Ajile software manages capture, filtering, stitching, surfacing and analysis. We also integrate smoothly with 3rd party software such as Polyworks, providing seamless automated inspection solutions.