



TubeInspect HD

3D measurement of small tubes and wires

Tubes and wires shorter than 600 mm are hidden in nearly all common objects. Consequently, the quality control of these parts concerns almost all industrial sectors including the automotive, electronic, household appliance, construction, and furniture industry as well as medical engineering. For example, precise dental drills are made from bent wires. Equally, this concerns fuel injector rails in automotive engineering.

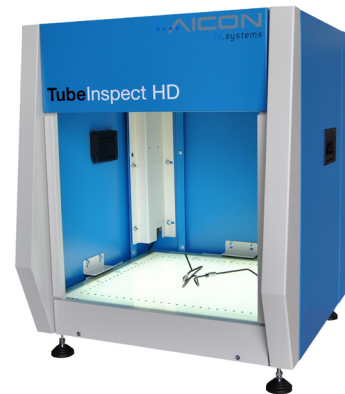


— Quality control at a glance

However, so far, it has hardly been possible to inspect the geometries of these very small, thin tubes and wires. The typically applied metrology is not able to acquire the elements of each individual small part, and even a common gauge check often proves to be unfeasible. The solution is AICON's TubeInspect HD.

TubeInspect HD is especially designed to suit the requirements arising in the production of bent tube and wire parts shorter than 600 mm. It is based on the software platform BendingStudio.

TubeInspect HD three-dimensionally inspects short, thin tubes and wires with diameters of 1 mm up to 20 mm. It checks various geometric features such as bends, length of the part, and end-to-end distance. The measuring field comprises a volume of 500 mm x 420 mm x 200 mm. TubeInspect HD is able to measure the geometries with a unique accuracy due to several decisive factors: It disposes of eight digital cameras positioned close to the work piece, each having a resolution of 2 megapixels. Moreover, it uses a glass reference that is stable



— TubeInspect HD

both with respect to shape and temperature. For the determination of the sheath tolerance, the measuring accuracy accounts for ± 0.025 mm. The measuring results are available within seconds and are displayed on the provided notebook computer. They are presented in a color-coded way following a gauge check. Thus the operator can quickly make a decision about the quality of the parts.

TubeInspect HD requires only little space. The measuring cell can easily be placed on a table and thus be integrated into an existing production environment with minimal effort.

Technical specifications

Measurement area: 500 mm x 420 mm x 200 mm

Cameras: 8 high resolution digital cameras at 2 megapixels

Tube diameter: 1 mm - 20 mm

Measured bending angle: 1° - 180°

Minimum push between two bends: bend in bend possible

Software: BendingStudio

Dimensions: 700 mm x 700 mm x 900 mm

Weight: ca. 87 kg

Accessory: controlling computer with pre-installed software

Accuracy

Sheath tolerance : ± 0.025 mm (25 μ m)