

# TubeInspect HS

New conceptual design delivers improved measuring accuracy of up to 50µm

MEASURE THE ADVANTAGE



Nowadays, the production of tubes is shaped by narrowing tolerances. As a consequence, very precise inspection equipment with high measuring repeatability is required for quality assurance in order to control the production in a reliable way. AICON reacts to this demand and launches the new camera-based 3D tube measuring system TubeInspect HS.

At first glance, the new measuring system seamlessly fits into AICON's TubeInspect product line. Basic elements of the system have been redesigned though. For measuring the tubes, TubeInspect HS uses ten digital cameras with higher resolutions. Moreover a spatial reference point field made from glass, being especially stable with respect to shape and temperature, is located in the measuring cell. Thus the measuring system can resort to reference points in different spatial planes, which leads to a more precise measurement of the tube geometries. Also in terms of the software, basic changes have been implemented. TubeInspect HS makes use of AICON's new software version 4.5 that contributes to a higher measuring accuracy thanks to an improved algorithm.



• Tube measurement

The added value of the new TubeInspect system becomes apparent by an example from the automotive industry: In order to guarantee a smooth assembly, an injection pipe must fit exactly into the available installation space - and this space becomes more and more confined.

Technical specifications	
Measurement area	1,080mm x 980mm x 500mm
Cameras	10 digital cameras at 2 megapixels
Tube diameter	2mm - 100mm
Measured bending angle	1° - 180°
Minimum push between two bends	Bend in bend possible
Software	TubeInspect Version 4.5
Dimensions	1,850mm x 1,520mm x 2,350mm
Weight	ca. 1.300kg
Accessory	Controlling computer with pre-installed software
Accuracy	
Sheath tolerance	± 0.050mm (50µm)



• TubeInspect HS

Furthermore, the connectors of the tubes have to be very accurate because it is not possible to compensate any deviation from the target geometry during assembly in case of such an inflexible and short pipe. This is the reason why the tolerances for injection pipes are getting smaller. With TubeInspect HS it is possible to inspect the geometric features of these pipes with the required precision and in a reliable way. This is impossible with traditional measuring methods such as coordinate measuring machines.

TubeInspect HS not only reaches a high precision of up to 50µm (1 sigma). In comparison to conventional tube measuring technology, it additionally scores with an unprecedented measuring repeatability. The measuring results can be documented in a clear way with the help of graphical reports.



AICON 3D Systems GmbH  
Biberweg 30 C  
D-38114 Braunschweig  
tel. +49 (0)531-58 000 58  
fax +49 (0)531-58 000 60  
info@aicon.de  
www.aicon3d.com