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## **The Construction and the Quality Assurance-Quality Control of the 112 MDT-Barrel Inner Small precision chambers of the ATLAS Muon Spectrometer**

The construction of the 112 BIS drift-tube chambers (MDT) for the ATLAS muon spectrometer is described, with emphasis on the quality assurance/quality control procedures. The required mechanical precision of 20  $\mu\text{m}$  on the location of the individual wires has been achieved and maintained during the entire production period (five years) of the chambers at the University of Thessaloniki. The chamber assembly facility, including the special precision tooling, and the methods and techniques used to ensure the quality in the construction and the reproducibility of the chambers are presented. A sample of 12% of the chambers, randomly selected to cover the entire production period, has been scanned at the X-ray tomograph facility at CERN. The agreement between the quality assurance/quality control measurements during the assembly and the X-ray tomograph results is also presented.

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