# There's a new DEA around the World

## New Orders, New Installations

### Xian Aircraft Company: quality in China's skies.

By installing a unique coordinate measuring machine, Xian Aircraft Company (XAC) has reduced inspection time and added a new level of flexibility to its metrology operations.

XAC, located in Xian, China, is a large, high technology manufacturer of large and medium sized military and civilian aircraft for the Chinese market, luxury coaches, building materials, and electronic components. In addition, the company produces 14 upright empennages for Boeing 737, and is also a sub-contractor to many international aircraft manufacturers, including companies in Europe and Canada. In order to ensure the dimensional accuracy of structural components, the XAC Metrology Department uses a variety of coordinate measuring machines in support of its manufacturing operations. For example, the company operates a Leitz PMM in the department's Precision Measurement Station. A DEA DELTA gantry-style CMM is installed in the assembly and manufacturing workshop. A DEA OMEGA 3307 CMM and two Brown & Sharpe Qianshao CMMs are set up for process control applications in the Machining Center.

Coordinate measuring machines have become an increasingly important means of inspection at XAC due to the wide use of numerical control machining equipment, the adoption of CIMS network technology and the use of CATIA software to create CAD/CAM/CAI data files.

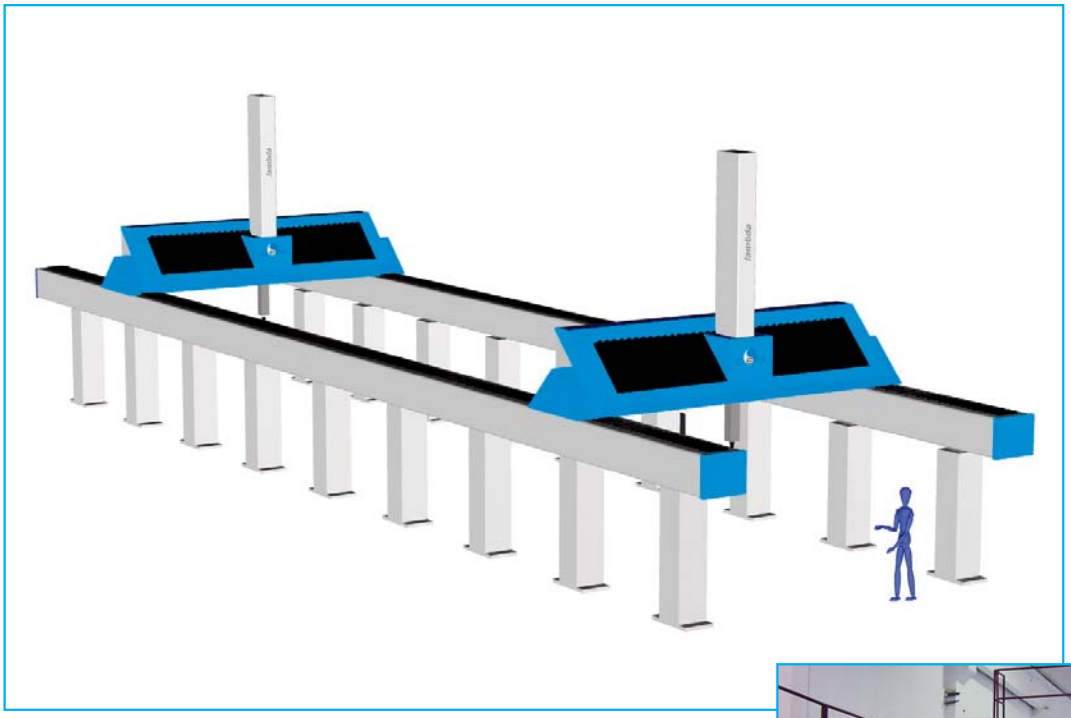
To improve inspection throughput, XAC installed a DEA DELTA HA 2510018 gantry CMM equipped with dual carriages and a 10-meter, nearly 33-foot, Y-axis. The result has not only been a reduction in inspection time for some particularly large workpieces, but added efficiency in inspection operations through increased equipment flexibility.

Prior to the installation of the DELTA HA CMM, the XAC's DELTA and OMEGA CMMs were operated for three eight-hour shifts per day, with each of two CMMs actually performing measurements more than 20 hours every day. The two Brown & Sharpe Qianshao CMMs operated for two eight-hour shifts per day, with each machine in use more than 16 hours every day. Even at this high utilization rate, inspection could not keep pace with production requirements.

One reason why inspection operations were so time consuming was that the seven-meter (23') leading edge of the Boeing 737 upright empennage required two alignments. In the past, it took three hours to measure this part, and now it can be easily finished within 40 minutes using the DELTA HA CMM.

While the large size of the DELTA HA effectively solves the problems associated with the inspection of large components, by far the majority of its operating time is spent inspecting smaller parts - those that

*XAC is a large manufacturer of military and civilian aircraft for the Chinese market.*



The new Lambda SP to be supplied to XAC in March 2004

are less than six meters in overall length. By incorporating two carriages, the DELTA HA can effectively measure two parts simultaneously when inspecting parts up to five meters in length. The DELTA HA at XAC is equipped with PC-DMIS™ measurement and inspection software, which can read CAD native files directly, eliminating translation. This not only improves part programming efficiency, but accuracy as well. Prior to the use of PC-DMIS software, the Inspection Department had to first request dimensional data from the Design Department.This procedure was time consuming and subject to error. With PC-DMIS, the Inspection Department can connect directly with a CATIA workstation through the network and import the original file into PC-DMIS software for the development of part programs. This is particularly valuable since the Boeing subcontract work is submitted as CATIA CAD files.

But XAC didn't stop here. No later than one year after putting the DELTA HA into operation, DEA has received an order for a new gantry machine of an even bigger size: a LAMBDA 200.30.20 with two carriages and a measurement volume of 20 x 3 x 2 m. This project has been started in March 2003 and will be completed in 12 months only. The final installation at the XAC works is scheduled in March next year. Due to its outstanding metrology performance, the machine will be employed for measuring simultaneously with the two carriages more high-precision components. At XAC, the use of CMMs, in conjunction with CAD/CAM/CAI technology, has eliminated the need for interim and inspection dies, inspection templates and production samples. With this technology, the company can synchronize process and assembly operations to shorten the product development cycle. CMMs from Hexagon Metrology have played an important role in the research programs and operation of XAC. ■ (01/32)

**Hexagon Metrology**

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