# SCAN3D™

COMPOSITE FAN CASE INSPECTION SOLUTION

SCAN3D™ from TecScan, a non-destructive testing solution designed to inspect composite fan engine cases using interactive software tools, 3D motion control and a part entry module. This innovative 3D Ultrasonic Testing (UT) solution allows the user to perform advanced inspection for disbonds and/or fiber damage using 3D contour following motions on the curved sections and flanges of the case.
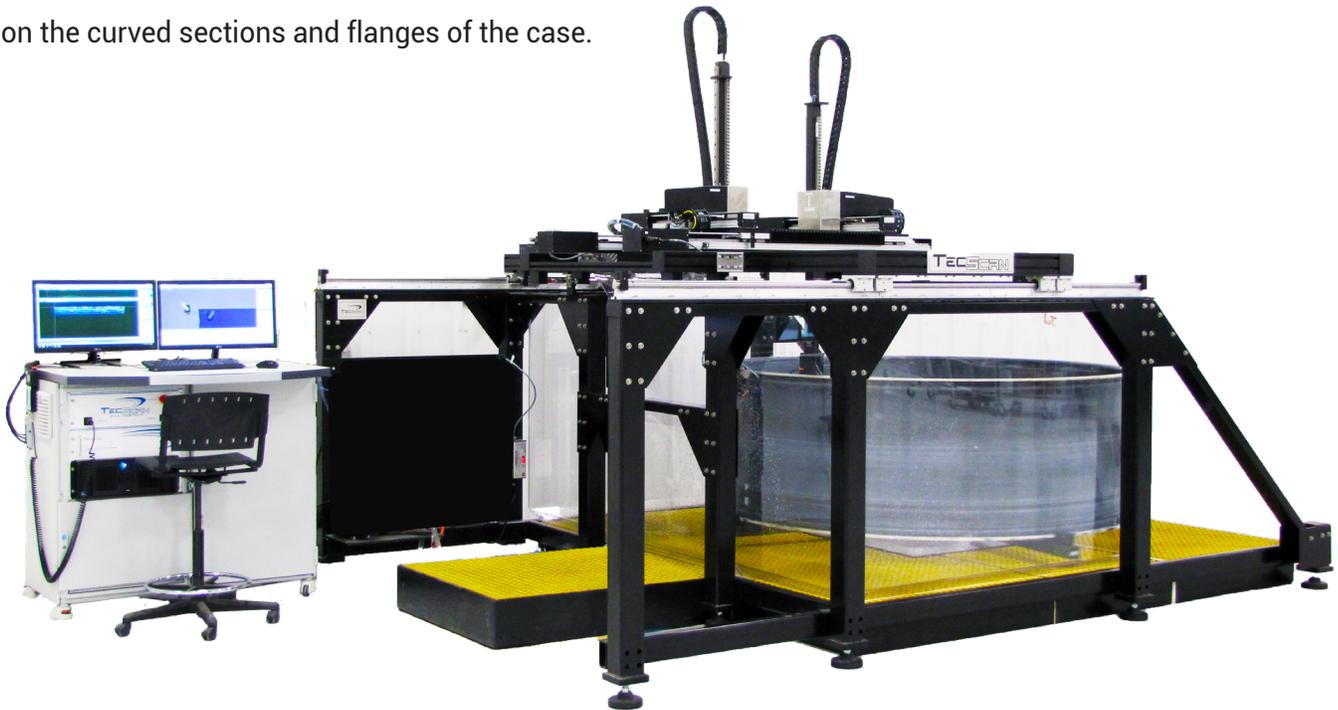
INNOVATIVE NDT SCANNER SOLUTION

The innovative Scan3D™ solution includes a high-precision custom 11-axis waterjet scanning solution with complete 3D surface following capabilities for accurate inspection and full UT waveform capture of the inspected Fan Case. The scanner consists of an 11-axis squiter system with two independently controlled X and Y carriages, two Z axes, two fully automated Gimbal/Gimbal manipulators and a high precision large diameter turntable. The system is fully controlled via a centralized system control station that included 3D data acquisition, data reporting and data analysis modules.

TecScan
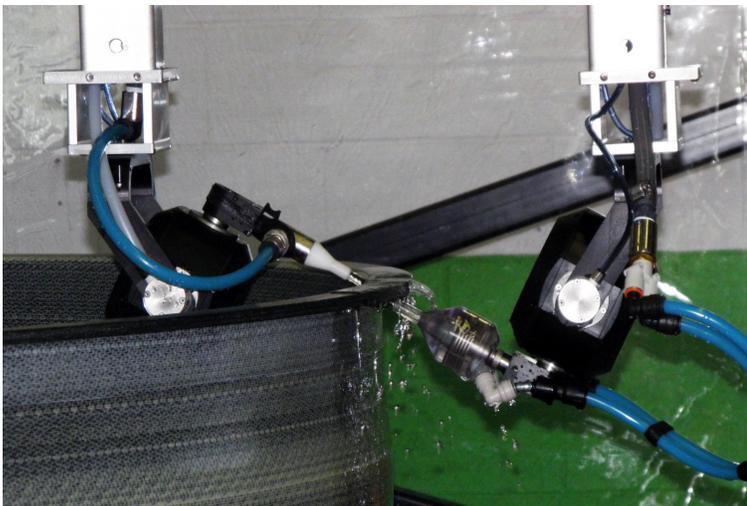
TecView™ 3D

ADVANCED 3D NDT SOFTWARE

TECVIEW™ 3D is an advanced NDT data acquisition and control software. It generates a scan plan using a CAD drawing of inspected parts enabling complex 3D contour following to be performed.

TecView™ 3D requires a .stp file in order to import the part geometry which is a common file type of all major CAD software packages.

AEROSPACE APPLICATIONS

Fan Case Inspection

Turbofan engines are normally equipped with a fan case that will contain the fan blades. These fan cases, metallic on older generation engines and composite on newer generation, are intended to enclose the fan and shield the passengers and aircraft in case of blade out accident. Because of safety and reliability requirements, these fan cases must be inspected for any manufacturing anomalies/defects.

Once the fan case is placed in the Scan3D™ scanner the CAD module is loaded to auto-calibrate the scanner and to confirm the fan case position. Using the interactive tools provided by TecView™ 3D for part entry, the user can define the scan surfaces and performs a complete 3D scan of the case.

During the scan, the 3D trajectories are displayed on inspection screen with the animated Gimbal manipulators and the fan case model. Through-Transmission and Pulse-Echo C-Scan results are displayed in real-time during data acquisition.
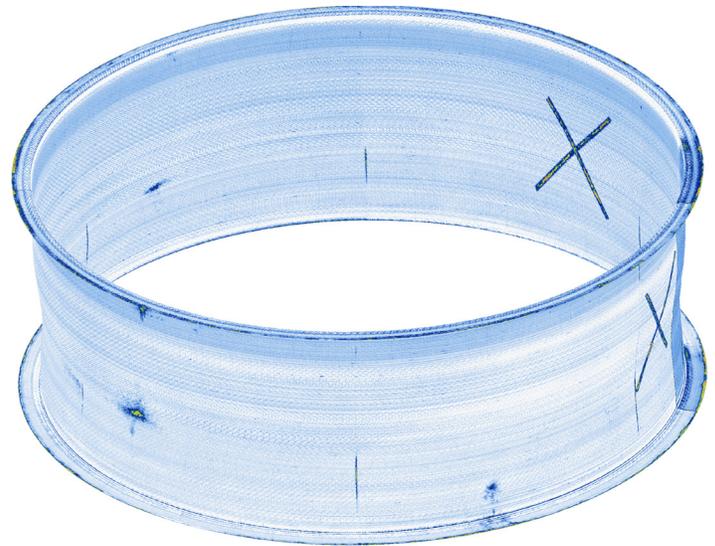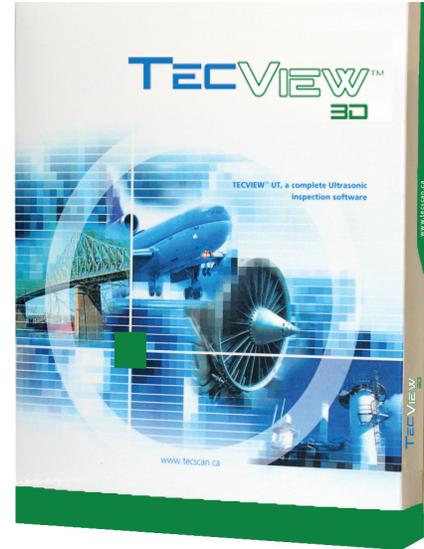
Software Features

- **Easy manual Teach & Learn with remote control pendant and remote monitor**
- **Part geometry extraction from CAD drawings**
- **Probe movement animation along part and interference check**
- **Automatic generation of the motor path at a given distance and angle from part**
- **Advanced and automated calculations for smooth multi-axis motion**
- **Sound path calculations for through transmission inspections**
- **Automatic positioning of imported scan plans**
- **Interactive tools for part entry**
- **3D display of results**

www.tecscan.ca