

Catamaran Scanner



Catamaran scanner being installed on the fuselage of a C-17 aircraft.

Scanner Specifications

- Scanner length: 53 inches with 4 foot X-axis vacuum tracks
- Scanner width: 90 inches with 6 foot Y-axis track
- Scanner height: 19 inches with 6 inch Z-axis thruster
- Weight of each X-axis track/tractor unit: 12 pounds
- Weight of Y-axis track/tractor unit: 15 pounds
- Weight of Z-axis thruster unit: 3 pounds
- X-axis stroke: Up to 48 inches per vacuum track
- Y-axis stroke: Up to 72 inches
- Position accuracy: Accurate to within 0.060 inch over 48 inches of travel
- Minimum increment: Less than 0.001 inch
- Maximum speed: 6 inches/second

Scanner Features

- Four piece scanner design permits easy installation by a single operator. The subassemblies are sequentially installed on the inspection surface one subassembly at a time.
- X-axis tracks can conform to flat, curved, cylindrical, and conical surfaces. Minimum surface radius of curvature is 20 inches with standard track plates.
- X-axis tracks can conform to twisting surfaces. Maximum track twist is $\pm 30^\circ$ from a neutral position.
- X-axis tracks are vacuum coupled to the inspection surface.
- X axis tracks do not have to be mounted in a parallel orientation. Multi-axis joints on the master and slave tractors permit unrestricted movement of the scanner.
- Rack and pinion drive system ensures slip free operation on all motorized axes.
- Gas spring thruster provides Z-axis compliance. Design requires no external air supply.
- Scanner motors are certified to be explosion proof in accordance with MIL-M-8609.
- Motor cans are sealed to protect against damage from dirt or water.
- Scanner can be safely mounted to horizontal, vertical, and inverted surfaces.

Scanner Options

- Thin plate X-axis vacuum tracks can be furnished for applications involving extreme surface curvatures. The minimum surface radius of curvature can be as small as 6 inches if the system is equipped with thin plate vacuum tracks.
- X-axis frame tracks which vacuum couple to the underside of wings and stabilizers can be furnished for applications requiring scanning up to the part edge.
- The length of the X-axis and Y-axis tracks can be custom tailored to specific customer applications.
- X-axis vacuum tracks can be equipped with a track coupling mechanism which allows two or more tracks to be joined end to end. With this option, the X-axis stroke can be extended indefinitely by employing a track leap frogging procedure.



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