



AIT's drilling unit rides along a track system, ensuring accurate positioning throughout the drilling process.

Flex Track Drilling Machine

THE DRILLING UNIT

The lightweight drilling unit from Advanced Integration Technology (AIT) sits on a dual set of flexible vacuum tracks affixed directly to the plane's fuselage and conforms to the shape of the airplane. During the drilling, the unit rides along the track system, which also stabilizes the drilling unit and ensures accurate positioning throughout the drilling process.

The carriage assembly accurately positions the drilling head in the X and Y axis using servo control closed loop feedback. The drilling head consists of a spindle with an HSK-32C tool holder interface pendant touchscreen computer. The intuitive touchscreen computer is inherently easy to use and simplifies the drilling process. By organizing similar control functions onto similar screens, this grouping feature reduces human error and speeds the overall drilling process. Plus,

it makes the ramp-up to train others in its use a much shorter process. Operators don't even need to be familiar with CNC programs or machines to operate the drilling machine.

FEATURES

- Machine vision system for scan-and-correct algorithm
- Drillers use standard CNC code with AIT-developed controls
- Multi-material stacks up to 1.125"
- Linear encoder for precision counter-sink control (0.003" depth)
- Drill spindle load cell to detect broken or dull bits
- Onboard control system
- Dual track drive system
- Titanium drilling capability
- HSK-32C spindle interface
- Hole diameter capacity – $\frac{5}{32}$ " to $\frac{7}{16}$ " for composite, aluminum and tita-

nium stacks

- Simple, easy-to-use graphical user interface with pendant controls
- Circumferential drilling stand that houses auto-drilling system and allows access to 100% plane circumference
- Vacuum system collects chips and coolant

TECHNOLOGY OVERVIEW

Advantages of the Flex Track include a lightweight unit for portability, a smaller footprint, and a cleaner factory environment. The Flex Track is scalable for any size aircraft, and contains an intuitive GUI for ease-of-use, fewer human errors, and faster ramp-up. **A**

Advanced Integration Technology
Plano, TX
aint.com