



ACT Robots, Inc.

Integrated Robotic Solutions

WELD BLENDING CELL



TIP HEIGHT GRIND



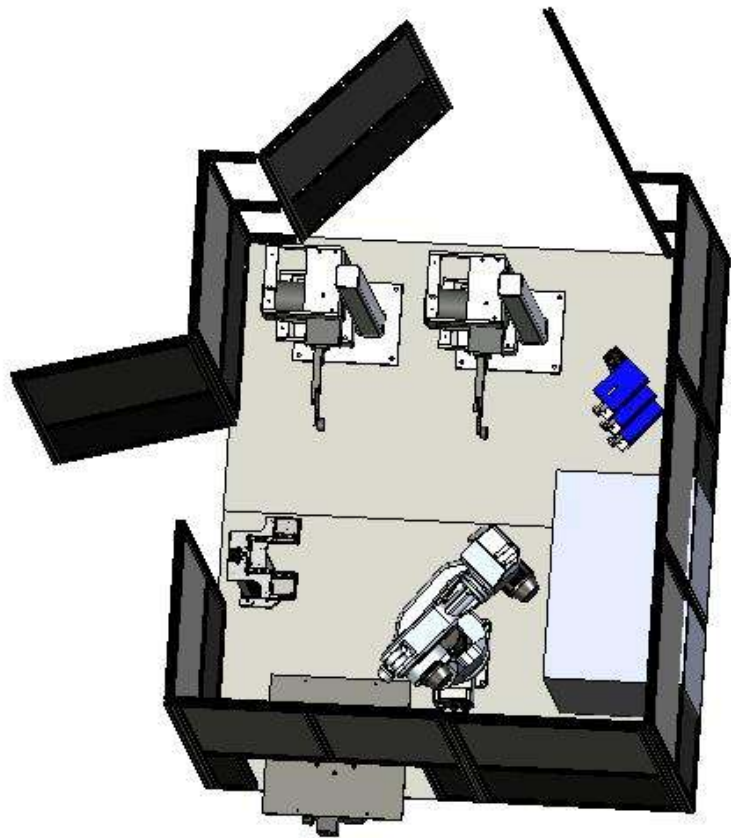
PART NESTS



AIRFOIL WELD BLENDING

Process Description

Raw parts are loaded into the part holding nests and proper part program is selected via ACTView™ operator interface. Full tray is indexed inside the cell and the blending process begins. Parts are picked up from the nests, scanned, geometry offsets are calculated, and blades are processed utilizing multi-step grinding and blending operations. Finished blades are dropped back in parts nests. A new batch of parts may be loaded while blades are being processed inside the cell.



ACT-WBR-20.3 is a precision weld blending machine that utilizes a 6-axis robotic articulated arm, blade scanner, and a finishing process that yields consistent and accurate airfoil shape, blade height, and chord width of tip weld repaired blades. Standard operations include:

- Weld preparation by grinding blade tip, LE, TE
- Convex and Concave airfoil side weld blending
- Chord Width Grinding
- Final Tip Height Grinding
- Optional Squealer Grinding Station

The **ACT-WBR-20.3** eliminates hand grinding of weld tip repaired blades, increases productivity, minimizes scrap rate, and produces consistent blade geometry at a very low cost of consumables. The tip welds are ground to within 0.001" from airfoil without cutting into the substrate material.

Standard Features and Specifications:

- 6-axes articulated robotic arm
- Indexer with part load and unload
- Gripper with interchangeable fingers
- Blade geometry scanner
- Rough, Fine, and Super-Fine grinding heads
- Automatic belt wear compensation
- ACTView software with over 20 process parameter adjustments for each blade



- Common base for easy machine re-location
- Tip height grind to +/- 0.004" from nominal
- Standard Airfoil weld blending accuracy to 0 to +0.001"
 - Optional 0 to +0.0005"
- Chord with no grind to +/- 0.002" from nominal
- Standard abrasive belts are used
- Blades up to 3" wide and 6" long can be processed



Options:

- Automatic final tip height measuring and reporting
- Squealer Grinding Station
- ACT-WBR-50.3 for processing larger tip weld blades
- ACT-LETEWBR-6.3 leading/ trailing edge weld blend robot
- ACT-LETEWBR-20.3 leading/ trailing edge weld blend robot
- ACT-LETEWBR-50.3 leading/ trailing edge weld blend robot

ACT-WBR-20.3 Layout

