Pinnacle Flex F300

The Assembly Cell That Adapts to Your Product

The Challenge

- Complex sub-system builds with high part variety
- Frequent product changeovers and SKU proliferation
- Variable or non-linear assembly sequences
- Multiple operator stations that don't justify fixed automation
- Existing automation becomes obsolete with new products
- Integration of multiple tools across different steps
- Need for human-robot collaboration in shared workspaces

The eBots Solution

- Software-driven workflows for variable build sequences
- Modular end-effector platform with in-cycle tool switching
- Integration with screw driving, dispensing, press-fit, and specialty tools
- Multi-step sub-assembly in a single adaptive cell
- Rapid changeover with no mechanical retooling
- Flexible system that scales across multiple products and SKUs
- Collaborative safety architecture for shared human-robot environments

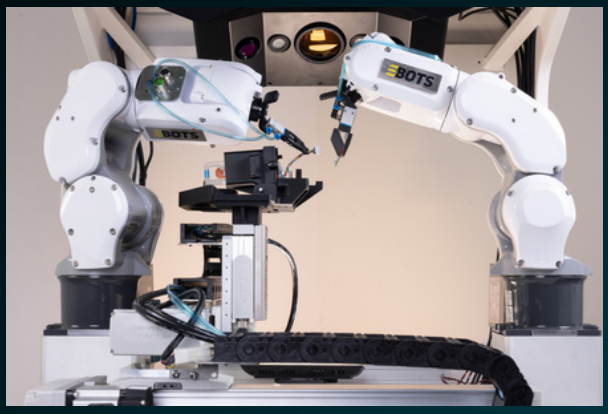
Smart Building / HVAC

Medical Devices

Industrial IoT

Power Electronics

Pinnacle Flex F300



High-Mix Sub-System Assembly Automation

The eBots Pinnacle Flex F300 is designed for high-mix sub-assembly environments where product variation and changing build sequences make traditional automation impractical. It combines flexible software-driven workflows with a modular end-effector platform to handle multi-step assemblies, including fastening, dispensing, press-fit, and specialized tool operations within a single adaptable cell.

Unlike fixed automation, the F300 allows manufacturers to switch between products and processes without mechanical retooling, making line changes a software event. Built for complex sub-systems across electronics, medical, and industrial applications, it enables manufacturers to scale production, reduce labor dependency, and maintain consistency while replacing 3–4 operators per station.

Visual Perception — Wide (Denali-S 1300)

Sensor Type	Binocular 3D Structured Light
Field of View	500 × 300 mm
Depth of Field	98 mm
Working Distance	1,300 mm
Point Cloud Resolution	160 µm
Frame Rate	207.1 fps (8-bit)
Projector Resolution	2716 × 1600
Camera Resolution	3208 × 2200

Visual Perception — Precision (Denali)

Maximum Load	Binocular 3D Structured Light
Degrees of Freedom	51.2 × 28.8 mm
XY Accuracy	8 mm
Z Accuracy	291 mm
Maximum XY Speed	40 µm
Maximum Z Speed	409.2 fps (8-bit)

Robotic Arm System

Configuration Options	Option A / B / C
Rated load	0.3 / 2.4 / 4.2 kg
Maximum Load	0.5 / 4 / 7 kg
Maximum Reach	350 / 550 / 927 mm
Degrees of Freedom	6-axis + 6-axis + 4-axis
Repeatability	±0.02 / ±0.01 / ±0.01 mm
Number of Arms	2 (coordinated)
End Effector	Modular — in-cycle tool change
Control Frequency	250 Hz

System Specifications

CPU	1.9 GHz, 8 cores / 20 cores
GPU	NVIDIA A5400
Operating System	Linux
Connectivity	Ethernet / EtherCAT / RS485
Protocols	Modbus / TCP-IP
MES Integration	Supported
Safety	Interlock Sensors (collaboration zones supported)
HMI	English & Chinese
Power	220V, 4.5 kW

Precision Solutions for high-mix assembly

eBots
48531 Warm Springs Blvd
Fremont, CA 94539
T: +1 (510) 771-0115
www.ebots.com