

ROBOTICS

OmniVance™ Sewing Cell

Flexible robotic sewing for automotive interior textile parts



The OmniVance Sewing Cell is a pre-engineered robotic solution that automates textile sewing in a compact cell, integrating handling, feeding, inspection, sewing, and unloading for consistent quality and productivity.

Designed for 2D-2D sewing of leather, fabric, and foam, it supports fast return on investment by reducing manual work while maintaining high process stability.

The OmniVance Sewing Cell addresses one of the most challenging areas in automotive manufacturing: the automation of non-rigid textile handling and sewing.

Combining an ABB's SCARA robot with a synchronized sewing process, the cell transforms traditionally manual, repetitive operations into a stable and repeatable automated workflow. Ready to deploy, it is optimized for automotive interior applications such as seat covers and trim components, where flexibility and quality are critical.

Key benefits:

- **Increased automation**
Automates destacking, handling, inspection, sewing machine synchronization, and unloading in one cell, reducing manual intervention in textile sewing operations by 40-50%.
- **Stable process and consistent quality**
Delivers repeatable stitching to automotive quality standards. Integrated vision ensures accurate material positioning and process control.
- **Faster implementation**
Standardized, pre-engineered solution reduces engineering effort, minimizes risk, and accelerates deployment.
- **Scalability and flexibility**
Modular design and configurable from single to multi-robot setups, enabling scalability based on production needs. Standardized feeding tray simplifies loading and supports different part sizes.



Key features:

- **Fully integrated process** – Combines handling, inspection, feeding, sewing, and unloading in one coordinated robotic solution.
- **Fast changeovers** – Enables quick switching between parts and materials, including simplified bobbin changes.
- **Flexible production in a compact footprint** - Handles non-rigid materials, including leather, fabric, and foam, and multi-layer combinations, with a compact design that fits existing factory layouts.
- **SCARA-based performance** – Built on ABB IRB 930 SCARA for fast, precise pick-and-place in sewing applications.
- **Sewing process synchronization** – Robot synchronizes with sewing machine, eliminating need for costly and complex cartesian systems.
- **Reduced set up time** - Modular platform design enables reuse and reduces setup time
- **Standardized tooling** - Configurable grippers adapt to specific materials.
- **Vision-enabled operation** - Vision provides a precise location of textile parts to secure the proper sewing process
- **Easy to program and use** - ABB's SewingWare enables a simple programming and operation for a great user experience

Applications:

• Automotive interiors

The OmniVance Sewing Cell is designed for textile components used in automotive interiors, including seat covers and trim modules.

• Extended textile applications

Can also be adapted to other textile and garment manufacturing environments where flexible material handling and sewing automation are required.



OmniVance™ Sewing Cell: components

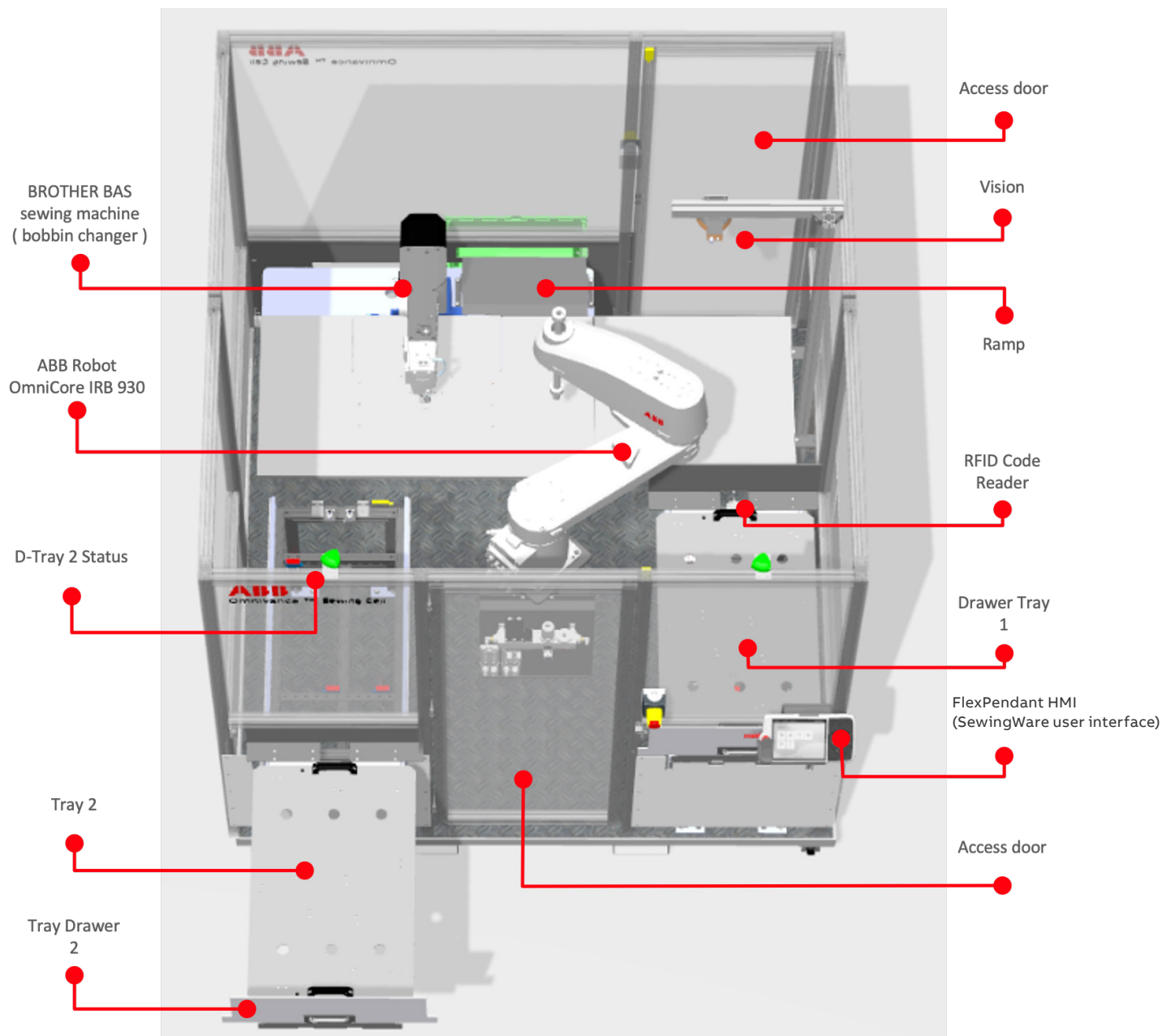


ABB Robot

The ABB IRB 930 is a high-performance SCARA robot designed for fast, precise, and repeatable operations in assembly, material handling and manufacturing applications.

Key Specification:

Payload capacity: Up to 12 kg
Reach: 1050 mm
Repeatability: ±0.02 mm for exceptional precision
Compact footprint: Optimized for space-constrained environments

Main Advantages

- High-speed performance ideal for pick-and-place, assembly and inspection tasks
- Excellent repeatability ensures consistent quality in demanding applications
- Easy integration with ABB’s ecosystem and third-party equipment
- Low maintenance and high reliability for continuous operation

OMNIVANCE SEWING CELL SPECIFICATIONS	
Dimensions	2,100mm x 2,100mm
Weight	800 Kg
Max part size	750 mm x 500mm
Sewing	2D-2D
Trays supplied	2 Units
Bobin Changer	7 Bobbins
CE Marking and Safety Assessment	

Brother Sewing Machine

The Brother BAS-311HX-50A is a high-performance programmable electronic pattern sewing machine featuring:

- World-class sewing speed: up to 2,800 stitches/min
- Direct drive motor with cylinder bed design
- Digital tension control and thread breakage detector as standard
- Great needle penetration for thick and multi-layer materials
- Easy pattern programming for complex sewing operations
- Ideal for automated robotic cells, the BAS-311HX-50A delivers reliable, high-speed, and precise sewing for automotive, textile, leather, and footwear applications.

Exclusions (parts related scope)
Part stacks separator
Feeding & Sewing gripper
Parts Tray
Part programming
End-Product box
Transportation to customer plant