

Robotics

# Efficient robot-based automation for the wood industries

# The challenges of the wood industries

ABB is helping to automate wood processing, wooden furniture and construction material industries worldwide

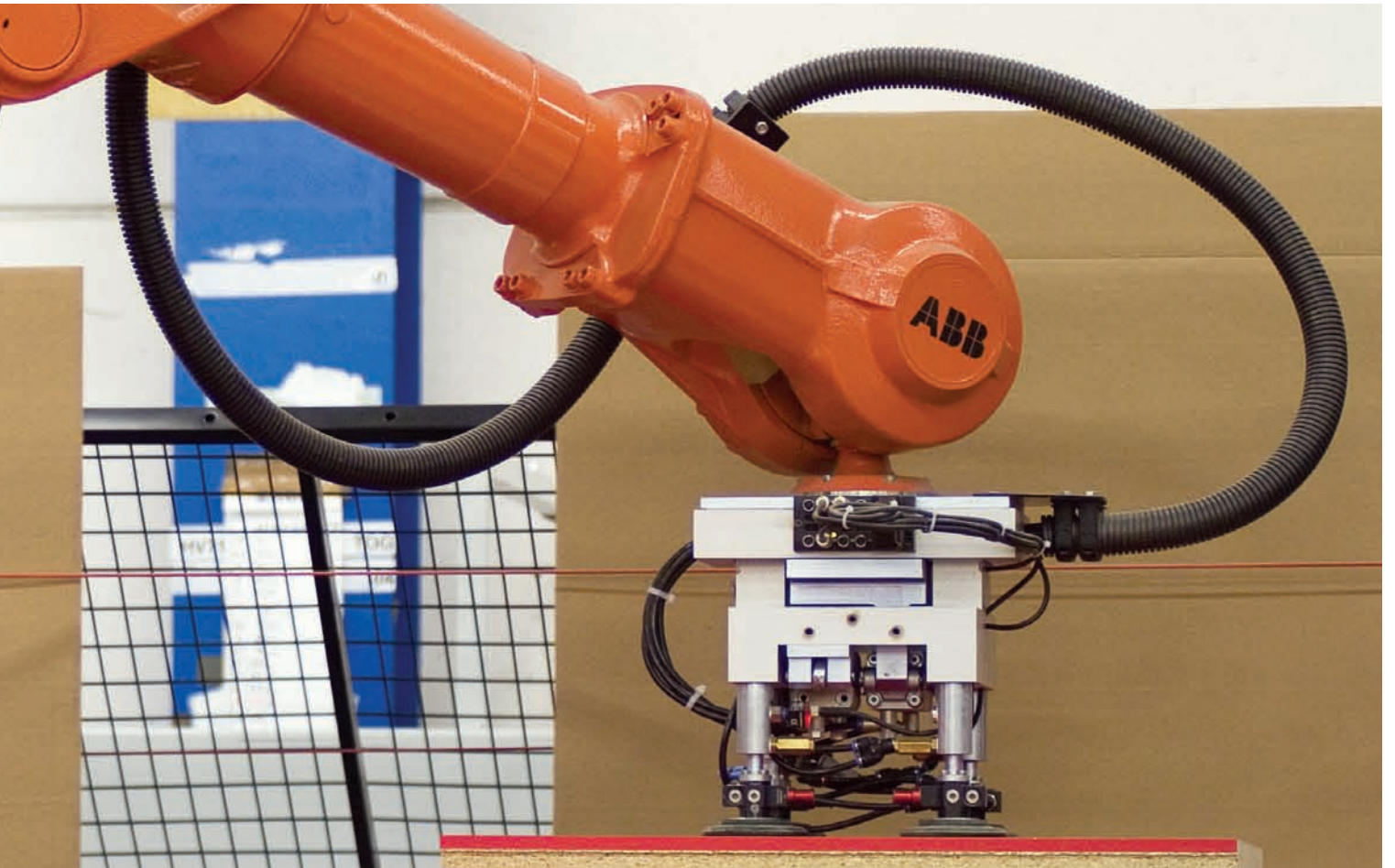


## Where wood counts

As one of the leading robot manufacturers serving the wood sector, ABB is well placed to meet the latest industry demands and developments.

Our know-how, our innovative approach and our total capability brings the highest level of quality that you'd expect from ABB, and which you can always trust. With our robots backed up by intelligent software, tailored training and exceptional field service, we can fully support your woodworking production needs.

No matter what the task, our robot-based automation technology can be tailored to fit your requirements precisely and efficiently. From our paint robots, to our large family of four and six axis robots, ideal for handling planks, sheets, panels and large parts for furniture production, we cover virtually every imaginable request. We build our robots with quality in mind, providing a strong foundation for excellent working relationships with you, our customer.



### Based on proven ABB technology

Our automation solutions for the wood industries contribute significantly to increasing productivity and the availability of products. The industry is particularly benefiting from the use of fully automated production lines, which brings unmatched precision and a rapid return on investment.

Robots have been proven to deliver a host of benefits for the wood industries, with higher levels of output, enhanced process and product quality, greater efficiency and flexibility amongst the many improvements being enjoyed by users worldwide.

With true 24-hour production, robotic technology offers increased productivity, lower costs and the ability to meet client order deadlines. The ability to take over jobs in dusty, hot or hazardous environments means robots can also take charge of unpleasant, arduous or health threatening tasks, which helps improve workplace health and safety.

With robots, you can also count on having more products finished first time to the standard required by your customers. Energy waste is also eliminated, with no need for products to be re-manufactured due to breakages, poor-quality or inconsistent finishing.

## Our market offer

Systems designed to increase uptime and improve productivity, enabling you to concentrate on your core activities



### Materials handling, machine tending and assembly

Our flexible, efficient and cost effective robot systems enable us to provide the right solution to handle every size, shape and weight of component. ABB's robot systems are ideal for the general handling of products, the loading and unloading of machinery, palletizing, de-palletizing and assembly.

With the technology to handle delicate products, our robots deliver exceptional position accuracy (0.05 – 0.08mm) whilst assuring maximum safety. Manufacturers can also use up to four robots with just one control module for significant space savings and an easily managed, clear work space.

### Picking, packing and palletizing

ABB has the market's most comprehensive offering for robot-based packaging automation, comprising of specialized robots for picking, packing and palletizing. Our extensive experience includes handling and packing of wood panels, handling flat pack furniture, doors and door frames, window frames, flooring and other wooden construction materials.

Our high-speed picking robot, FlexPicker, is ideal for picking a wide range of products; whilst our four-axis dedicated packer, or any of our standard six-axis robots, provide the ideal technology for packing any components. For palletizing applications, we also offer a dedicated four-axis palletizer with a reach of 3.15m and a 250kg payload.

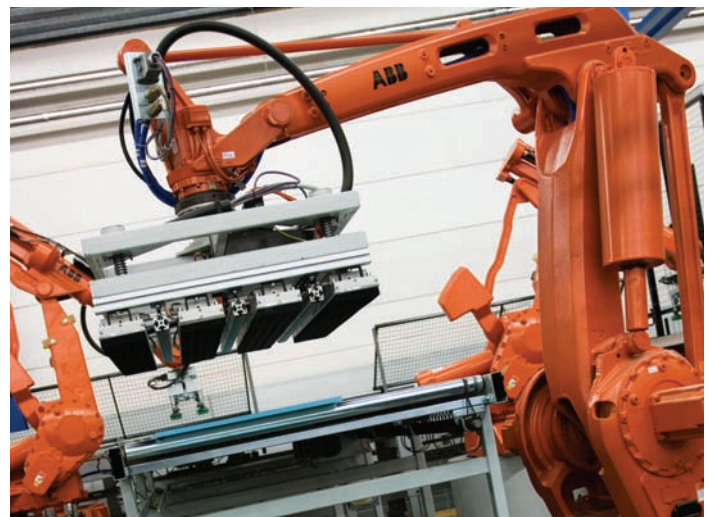
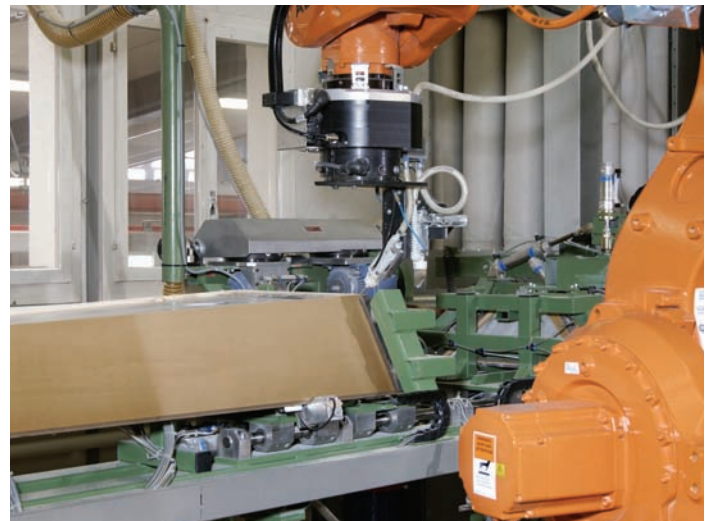
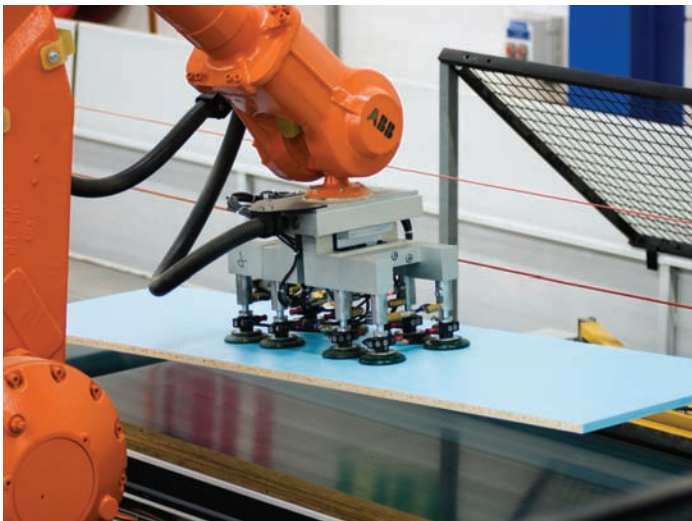
### Painting and coating

Achieving an even film build using manual spraying is difficult and often results in an uneven finish. Introducing an ABB robotic coating solution into your production process ensures your parts are produced with a constant, high finish quality. Our paint solutions help reduce overspray, which reduces material consumption and waste.

ABB's dedicated painting robots offer painting and coating solutions in a compact size, with a large working envelope. The technology is flexible and versatile, whilst its high speed and accuracy offers reduced cycle times. Our paint robots also include our unique Integrated Paint System (IPS), which guarantees high quality finishes and paint savings.

### Sanding, polishing and finishing

We can now also offer improved automated sanding, polishing and finishing of wooden parts with software that enables the robots to sense their environment. Ideal for assembling a wooden window frame, polishing the edges of a wooden tabletop or routing designs in wood panels, the software enables us to provide flexible technology that can quickly and accurately adapt to varying surfaces and consistency of materials.



## Celebrating success with the wood industries

The flat-pack furniture and construction material industries are entering a new era of flexible manufacturing. ABB is helping world leaders like IKEA, VELUX and Svedplan to create new fully automated production lines delivering a rapid return on investment. The following examples demonstrate how two leading companies from the wood industries are enjoying the benefits of robotic technology

### Case Study 1:



#### Assembling the perfect flat pack: Svedplan, Sweden

Svedplan, part of the Licentia Group, is a fast emerging producer of flat pack furniture that has deployed a team of nine ABB robots, four for de-palletizing and five for packing, to improve competitiveness and reduce risk to manual handlers.

As a result, production has increased by 45 per cent from a line that will return the investment in less than three years.

Worker attitudes towards automation have also changed. Preben Ritter, Managing Director of Svedplan, commented, "At first, workers were extremely wary of this new technology, but now they feel proud of it!". Svedplan assured workers that, far from threatening their jobs, it was the best way of preserving employment in the face of global competition and significantly there have been no job losses as a result.

### Case Study 2:



#### Efficient low cost production: Swedwood International

ABB has already supplied Swedwood International, a wholly owned subsidiary of the leading home furnishings brand, IKEA, with robotic solutions and a variety of power and automation products and systems for its 35 factories. From complete factory electrification solutions to distributed control systems and factory automation platforms, Swedwood is equipped with the technology to produce flat pack furniture efficiently at low cost.

Swedwood's new framework agreement with ABB covers a broad range of robotics products for painting, packaging and palletizing applications, as well as IRC5 controllers, PickMaster software and advanced vision guided technologies.

### Going against the grain

Unlike other materials such as plastics and metals, wood often features natural flaws that require advanced software technologies. Characteristics of wood include knots, wormholes, bark pockets and other inconsistencies, which can often render a product as waste. To successfully control and monitor these variations, many manufacturers turn to vision systems to support their robot cells.

### Vision systems

ABB's vision systems can cope with changing environments, such as lighting, reflections and objects touching, and are easy to integrate and program.

Our technology uses a robust vision system based on a single camera, capable of precisely locating parts in 2D, 2.5D and 3D space. Vision Guided Robotics (VGR) enables automation of operations that previously required human intervention and eliminates the need for expensive fixturing, pre-arranging or placing of parts.

### Force Control for machining applications

ABB's Machining Force Control (FC) function provides our robots with the ability to accurately adapt to the consistency and surface contour of the materials to be processed. Three new functions, FC Graphical Programming Interface, FC

Pressure and FC SpeedChange, add a new dimension to the use of robots in wood industries, providing improved process results and product quality, higher productivity, reduced programming time, shorter cycle times and lower costs.

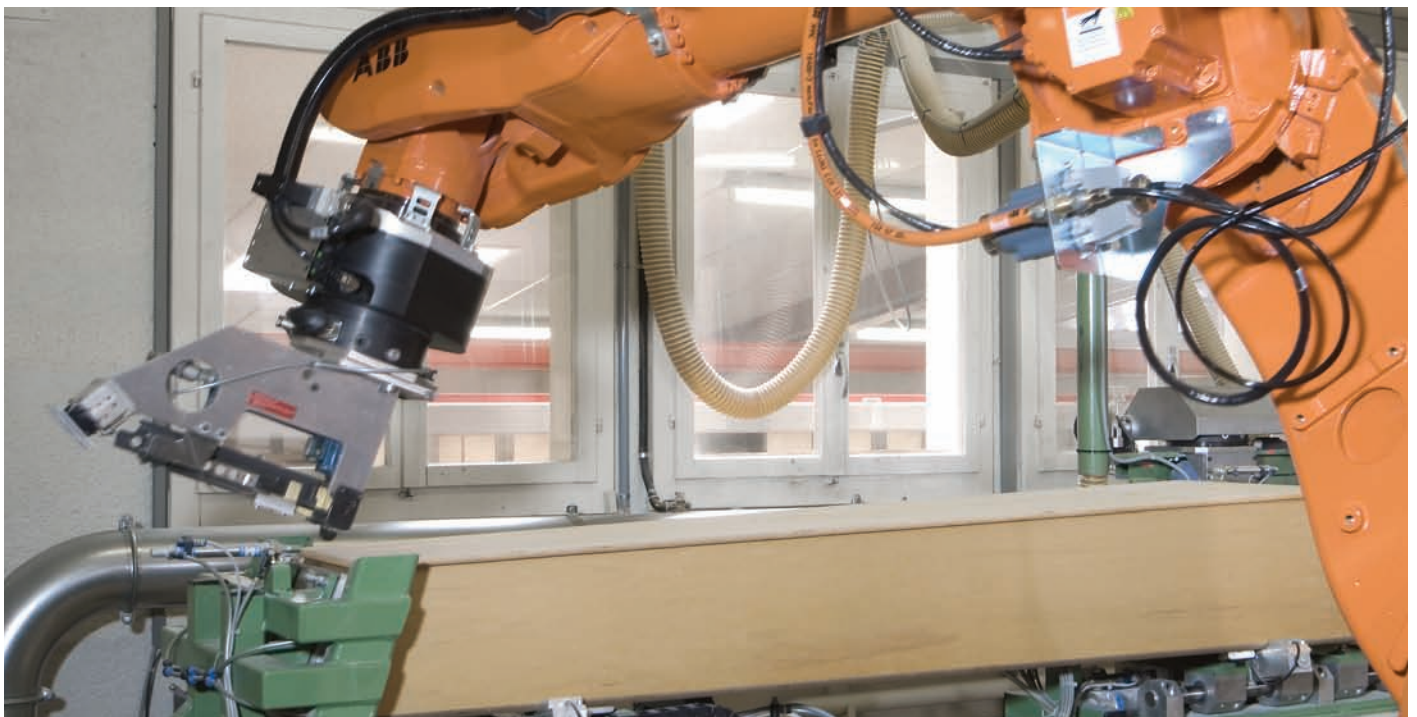
### Lifecycle services

ABB's global customer service organization offers a complete portfolio of services designed to increase productivity and performance.

We understand well that business profitability is often built on the back of demanding production schedules. We now have over 1,500 fully trained service engineers and process experts in 45 countries in over 100 locations, ready to provide service and support for your robots and robot systems.

ABB's service agreements ensure that you're provided with the right package to meet your exact needs. Our Response, Maintenance and Warranty service packages are designed to deliver increased uptime, faster Mean Time To Repair (MTTR) and quick error recovery, enabling businesses to minimize the impact of unplanned downtime.

We can also offer remote monitoring of your robots to identify when problems are likely to occur and ensure you achieve optimum uptime.



# Contact us

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