

Automated Kitting

Airborne automated solutions | 2020

- Reduced production cost
- Automated programming: quick and easy setup
- Enables higher nesting mix: less waste
- Full digital control: flexible, no sorting mistakes, 100% data trace

Airborne

Automating Kitting of composites plies

Kitting of the composites plies is a complex process. The operators have to manually keep track of the many plies that are cut from multiple materials, and collate and order them to make the kits. This requires companies to commit significant human resources to this critical step of the production process, or to limit nesting of the plies to simplify the job, but accept significant waste of raw material. Airborne automated solution enables you to reduce both labour and material waste, while ensuring that the process is easy to manage and error free.

Why automate

Automation ensures that quality products are produced efficiently and with minimum waste. By automating the process of sorting and sequencing the plies into kits ready for layup, Airborne's Automated Kitting solution ensures that error-free, composites plies kits are delivered to the lamination stations.

It also enables a significant reduction of the labour associated with this critical step of the production process. Also, it enables more efficient but complex nesting which reduces material waste without the burden of increased production complexity. This is a chance to increase your competitiveness and capture new business opportunities.

- Reduce manual labour
- Redeploy skilled workers
- Reduce engineering effort
- Improve material utilisation
- Reduce waste material disposal cost
- Reduce cost of quality control
- Reduce footprint
- Capture new business opportunities

How it works

Airborne has developed a plug-and-play, Automated Kitting solution for composite plies. Plies are loaded on a conveyor, or automatically fed from the ply cutter. The machine then picks the plies from the conveyor and sorts them into groups on trays in a buffer system. The pre-grouped plies are then automatically sequenced in the order required for layup. Airborne's proprietary buffer design ensures fast operation and a small footprint.



Specifications

Airborne's Automated Kitting solution is designed around a core module having the following capabilities and performance parameters:

Rate Up to 220 plies kitted per hour, depending on the average number of plies per kit and the number of kits kitted per production run

Capacity Up to 1200 plies kitted per production run
Ply size up to 2.5 x 2.17 m (98 x 50 in)

Materials Thermoset prepreg
Thermoplastic prepreg
Dry fabrics
Consumables

Benefits Digital traveler for full traceability
Lightweight design for quick installation
Intuitive interface for ease of use

Automated Kitting portfolio



standalone **solution**

Airborne's standalone Automated Kitting solution enhances automated cutting by automating the kitting process. By working independently from the cutter, it is an ideal fit for an up and running facility with one or more cutters that is looking to increase its productivity and material utilization.



integrated **solution**

Airborne's integrated Automated Kitting solution delivers all the advantages of the standalone solution, with the additional benefit of further reducing the manual labor content associated with the cutting and kitting process through integration of the cutter. As an end-to-end, material roll to ply kits process it is the ultimate kitting solution.

Airborne's Digital Automation Portfolio

Production volumes in the composites industry are increasing, while unit prices are reducing and cycle times are shrinking. Companies therefore look for ways to radically reduce touch labour and takt time, minimise footprint, improve material utilisation and reduce time to market of new, complex, engineered composites products. To meet these needs, Airborne developed a suite of digital manufacturing solutions for composites manufacturing. Automated Kitting is one of the building blocks in Airborne's digital offering.



Automated Honeycomb Potting

Our Honeycomb Potting solution enables easy manufacturing of locally reinforced honeycomb sandwich panels, while reducing work preparation, material waste and the cost of quality.



Automated Laminating

Our Laminating solution makes the layup of tailored thermoset prepreg preforms effortless, by combining tape laying, cutting, and pick & place in a single cell.



Automated Preforming

Our Preforming solution is the solution to manufacture tailored blanks or preforms, 100% net-shape, and for all composite materials: thermoset prepreg, dry fibre or thermoplastic composites.

About Airborne

At Airborne we know that innovation in manufacturing through automation, digitalisation and advanced analytics is the catalyst for the significant increase in productivity that companies need to stay competitive. We understand the complexity and cost involved in producing composite products for demanding applications in highly regulated industries. Our legacy in advanced composites manufacturing makes us experts in developing and delivering automated solutions that enable our customers to achieve high production rates and radically low conversion costs.

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