Automated System for Tail Fiber Processing

Overview

Our Automated Fiber and Tape Placement machines are designed for flexibility, ease of use, and scale. Choose your configuration.

Key Takeaways

Automated control systems for tail fiber processing enable precise, efficient, and repeatable handling of fibers, whether in composite manufacturing or seafood processing, improving quality, throughput, and safety.Fiber Placement in Manufacturing

Automated Fiber Placement (AFP) and Automated Tape Laying (ATL) systems are widely used in industries like aerospace and composites to handle fibers with high precision. These systems can place multiple fiber tows simultaneously, each individually controlled for feeding, clamping, cutting, and restarting, allowing complex geometries and tight radii to be covered efficiently . Advanced AFP machines can integrate sensor-based heating, laser units, and multi-material capabilities to optimize structural performance and reduce material waste . Dual-head configurations allow simultaneous work on multiple molds, maximizing throughput while enabling manual inspection on one mold . These systems are supported by process simulation software for design validation and manufacturability assessments before production .

Automation in Seafood Tail Fiber Processing

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

In the seafood industry, automated control systems have been developed for humane and efficient tailing of crustaceans like nephrops. The integrated Stun and Tail System combines controlled electrical stunning with automated tailing in a continuous process, reducing manual labor, improving product quality, and enhancing animal welfare . The system allows faster processing onboard vessels, minimizes damage to the product, and improves crew working conditions by automating repetitive tasks that were previously performed manually .

Key Benefits of Automated Tail Fiber Processing

• Precision and Consistency: Automated systems ensure repeatable placement or cutting of fibers, whether in composite materials or biological tails .

• Efficiency and Throughput: Multi-tow or multi-head configurations increase production speed and reduce downtime .

• Material and Product Quality: Sensor integration and controlled processing reduce waste and improve structural or product integrity .

• Safety and Ergonomics: Automation reduces manual handling, protecting workers from repetitive strain or hazardous conditions .

• Flexibility: Systems can handle various materials, geometries, and production scales, from R&D to serial production .

Applications

• Aerospace and Composites: Wing skins, fuselage panels, and other large-scale composite structures benefit from AFP/ATL systems .

• Seafood Processing: Onboard vessels, automated tailing systems improve speed, hygiene, and animal welfare for crustaceans .

• Industrial Fiber Manufacturing: Carbon, nylon, polyester, and other fibers can be processed with custom automation solutions to optimize production lines . Automated control systems for tail fiber processing represent a convergence of robotics, sensor technology, and process engineering, enabling industries to achieve higher precision, efficiency, and safety while maintaining product quality.

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

Frequently Asked Questions

What is the difference between AFP and ATL?

AFP involves the precise placement of continuous fibers onto a mold surface in a predetermined pattern, often in complex shapes, while ATL uses pre...

What materials can be used in AFP/ATL?

Both AFP and ATL commonly work with materials like carbon fibers, fiberglass, aramid, and thermoplastic or thermoset matrices tailored to specific...

What are the advantages of AFP/ATL over traditional manufacturing methods?

These technologies offer enhanced precision, reduced material waste, improved structural integrity, and the ability to create complex parts with op...

Are there limitations to AFP/ATL?

Challenges can include high initial equipment costs, complexities in programming intricate designs, and the need for skilled operators to ensure pr...

Article Content

Automated Fiber Placement

Explore AEC''s precision Automated Fiber Placement for high volume, large-scale aerospace components

Automated fiber placement: A review of history, current technologies ...

Soon after its appearance, it became clear that the manufacturing process was extensive, and automation would be

Automated Tape Laying (ATP) / Automated Fiber Placement (AFP)

These robotic technologies precisely lay down continuous fibers or tape onto molds or mandrels to create intricate,

Automated Fiber Placement Machines | Composite

Mikrosam''s wide range of Automated Fiber and Automated Tape Placement machines are designed for

Automated Fiber and Tape Placement

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

Our Automated Fiber and Tape Placement machines are designed for flexibility, ease of use, and scale. Choose your configuration.

Automated Fiber Placement Systems in Aerospace Manufacturing

This paper reviews automated fiber placement systems, architectures, materials, and economics for aerospace

Automated Fiber Placement

Broetje-Automation specializes in designing and manufacturing advanced automated systems for fiber placement.

Fiber Processing Solutions | JR Automation

JR Automation specializes in process engineering for multiple fiber formation processes, including carbon fiber. Our engineers are

Automatic Fiberplacement Machine

TORRESFIBERLAYUP is an automated fiber laying machine designed to provide the highest productivity when it comes to

Top 10 Automated Fiber Placement Companies | Trends

In the 1990s, Ingersoll invented the automated fiber placement and automatic tape laying technologies for composite

Automated Fiber Placement (AFP) – Accudyne

The very rigid, overhead structure when combined with linear motors enables the fiber placement head to

Automated fiber placement: A review of history, current technologies ...

Automated fiber placement (AFP) is a composite manufacturing technique used to fabricate complex advanced air

Automated Fiber Manufacturing | JR Automation

Our process engineering team can help you design custom solutions for carbon fiber manufacturing and

Tail threading for board and paper making

Ropeless tail threading solutions for board and paper machines Compared to conventional carrier rope systems, the ropeless and

ANDRITZ PrimeFeeder tail threading systems

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

ANDRITZ offers a wide range of tail threading solutions tailor-made to our customers'' needs to improve

Automated Tape Laying (ATL) and Automated Fiber Placement (AFP ...

Configurations Automated tape laying (ATL) and automated fiber placement (AFP) equipment are generally large systems and are

Advancements in Automated Fiber Placement Technology: The

Advancements in Automated Fiber Placement Technology: The Critical Role of the Laser-Based System Current State of Composite

Automated Tape Laying – Accudyne Systems, Inc

Automated Tape Laying (ATL) involves placing typically a single end of fiber tape or fabric either binder

Valmet Airborne Dryer

Automatic tail threading is an important advantage in Valmet''s new dryers. It is also common for tail threading in an

Processing of thermoplastic matrix composites through automated fiber ...

Together with automated techniques (such as automated fiber placement, and automated tape laying), a fast, clean,

Microsoft Word

Abstract Automated Fiber Placement (AFP) is highly automated manufacturing process which allows for varying fiber orientations

CN111123438A

The invention relates to the technical field of optical fiber processing, in particular to a tail fiber processing device and a tail fiber

Automated composites processing systems facilitate

Automated composites processing systems facilitate customization, productivity CAMX

ANDRITZ PrimeFeeder tail threading systems

The ANDRITZ PrimeFeeder is a ropeless tail threading system for reducing threading time and machine shutdown time in

Automated Tail Threading Systems Wet End & Dry End Applications,

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

Automated Tail Threading Systems Wet End & Dry End Applications, TAPPICon24 POWERPOINT ONLY TAPPI conference

Choosing the Right Automated Fiber Placement System for Your Needs

Choosing the Right Automated Fiber Placement System for Your Needs Dry Fiber: The heat source''s speed varies for dry fiber

Automated manufacturing and processing of fiber-reinforced polymer

High throughput automated techniques are nowadays playing a key role in polymer composite manufacturing in a

Automated Fiber Placement Systems in Aerospace Manufacturing

This paper reviews automated fiber placement systems, architectures, materials, and economics for aerospace

Tail Feeding System

This conveyor system features a dedicated internal vacuum zone that stabilizes the tail and precisely controls its movement,

Safe and reliable threading & cutting solution PrevoSystems

Increased safety and shorter threading times Voith has thus developed PrevoSystems, fully automated threading and cutting

Automated Fiber Placement (AFP) – Accudyne

The very rigid, overhead structure when combined with linear motors enables the fiber placement head to

Automated fiber placement: A review of history, current technologies ...

Automated fiber placement (AFP) is a composite manufacturing technique used to fabricate complex advanced air

Automated Fiber Manufacturing | JR Automation

Our process engineering team can help you design custom solutions for carbon fiber manufacturing and

Tail threading for board and paper making

Ropeless tail threading solutions for board and paper machines Compared to conventional carrier rope systems, the ropeless and

ANDRITZ PrimeFeeder tail threading systems

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

ANDRITZ offers a wide range of tail threading solutions tailor-made to our customers'' needs to improve

Automated Tape Laying (ATL) and Automated Fiber Placement (AFP ...

Configurations Automated tape laying (ATL) and automated fiber placement (AFP) equipment are generally large systems and are

Automated Fiber Placement

Explore AEC''s precision Automated Fiber Placement for high volume, large-scale aerospace components

Automated fiber placement: A review of history, current technologies ...

Soon after its appearance, it became clear that the manufacturing process was extensive, and automation would be

Automated Tape Laying (ATP) / Automated Fiber Placement (AFP)

These robotic technologies precisely lay down continuous fibers or tape onto molds or mandrels to create intricate,

Automated Fiber Placement Machines | Composite

Mikrosam''s wide range of Automated Fiber and Automated Tape Placement machines are designed for

Automated Fiber and Tape Placement

Our Automated Fiber and Tape Placement machines are designed for flexibility, ease of use, and scale. Choose your configuration.

Automated Fiber Placement Systems in Aerospace Manufacturing

This paper reviews automated fiber placement systems, architectures, materials, and economics for aerospace

Automated Fiber Placement

Broetje-Automation specializes in designing and manufacturing advanced automated systems for fiber placement.

Fiber Processing Solutions | JR Automation

JR Automation specializes in process engineering for multiple fiber formation processes, including carbon fiber. Our engineers are

Automatic Fiberplacement Machine

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

TORRESFIBERLAYUP is an automated fiber laying machine designed to provide the highest productivity when it comes to

Top 10 Automated Fiber Placement Companies | Trends

In the 1990s, Ingersoll invented the automated fiber placement and automatic tape laying technologies for composite

Automated Fiber Placement

Explore AEC''s precision Automated Fiber Placement for high volume, large-scale aerospace components

Automated fiber placement: A review of history, current technologies ...

Soon after its appearance, it became clear that the manufacturing process was extensive, and automation would be

Automated Tape Laying (ATP) / Automated Fiber Placement (AFP)

These robotic technologies precisely lay down continuous fibers or tape onto molds or mandrels to create intricate,

Automated Fiber Placement Machines | Composite

Mikrosam''s wide range of Automated Fiber and Automated Tape Placement machines are designed for

Automated Fiber and Tape Placement

Our Automated Fiber and Tape Placement machines are designed for flexibility, ease of use, and scale. Choose your configuration.

Automated Fiber Placement Systems in Aerospace Manufacturing

This paper reviews automated fiber placement systems, architectures, materials, and economics for aerospace

Automated Fiber Placement

Broetje-Automation specializes in designing and manufacturing advanced automated systems for fiber placement.

Fiber Processing Solutions | JR Automation

JR Automation specializes in process engineering for multiple fiber formation processes, including carbon fiber. Our engineers are

Automatic Fiberplacement Machine

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

TORRESFIBERLAYUP is an automated fiber laying machine designed to provide the highest productivity when it comes to

Top 10 Automated Fiber Placement Companies | Trends

In the 1990s, Ingersoll invented the automated fiber placement and automatic tape laying technologies for composite

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

Contact Us

Continue your research online:

Website: https://alfa-pro.co.za
Technical inquiry: https://alfa-pro.co.za/contact.html

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved