



Structural Additive Manufacturing Solutions





www.addcomposites.com

About Us

Addcomposites, based in Espoo, Finland, is on a mission to make automated fiber placement accessible to everyone. We turn any standard industrial robot into a production-ready AFP system, paired with our AddPath digital-twin software and built to handle every major composite material. From research labs to small and mid-scale production, our reliable systems deliver precise, repeatable results across aerospace, space, defense, marine, and automotive.



Capabilities & Expertise

- Robotic Cell Integration
- Automated Fiber Placement
- Automated Tape Laying
- Tape Winding
- Thermoset Processing
- Thermoplastic Processing
- In-Situ Consolidation
- Dry Fiber Placement
- Multi-Tow Placement
- Laser & Flash-Lamp Heating
- Path Planning & Simulation
- Digital Twin & Monitoring

Robotic cell · Turnkey integration

ADDCELL

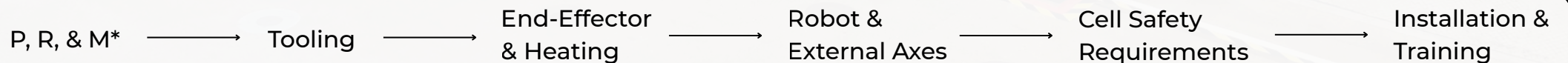
Tell us what part you want to automate.

Reap the rewards of a customized, turnkey solution.

Leverage Addcomposites' extensive robotic knowledge, in-house developed simulation software, and global partner network to configure and deliver solutions specific for your needs. The cell is designed around the component, not the other way around. Gain confidence in your process, and scale to meet growing demands.



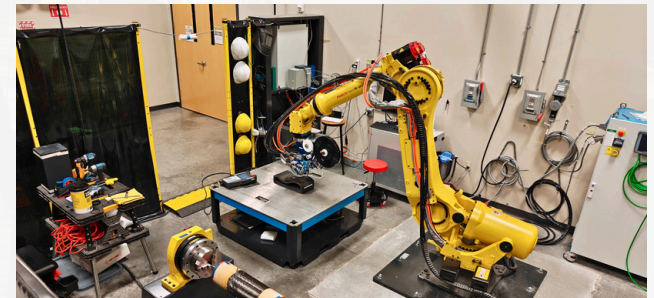
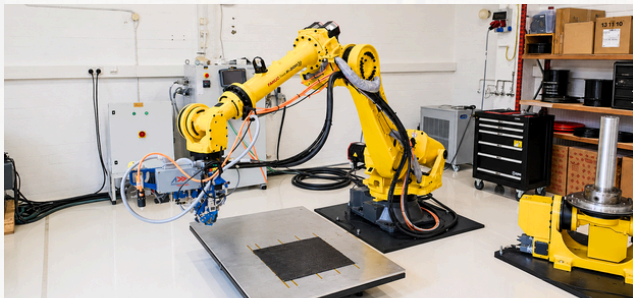
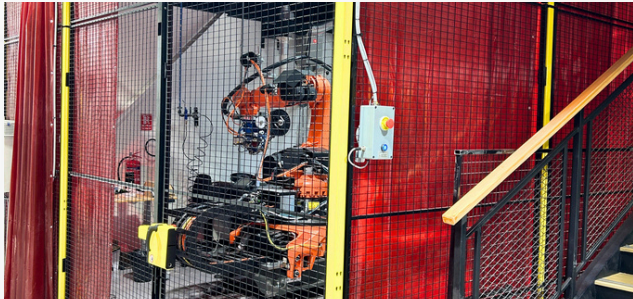
HOW WE DESIGN YOUR CELL



*Parts, Rates & Materials

AddController

Open architecture, zero lock-in. Cells are built on KUKA, ABB, FANUC, Kawasaki or Yaskawa robots via AddController, which reads the robot's native program and integrates third-party heaters. Compact heads also run on collaborative and tabletop robots. Includes the Secure Remote Maintenance System (SRMS).



15+

Robotic cells
delivered

6+

Industrial
Installations

9+

Uni / Technical
Center Installations

End-effector · Single-tow AFP

AFP-XS

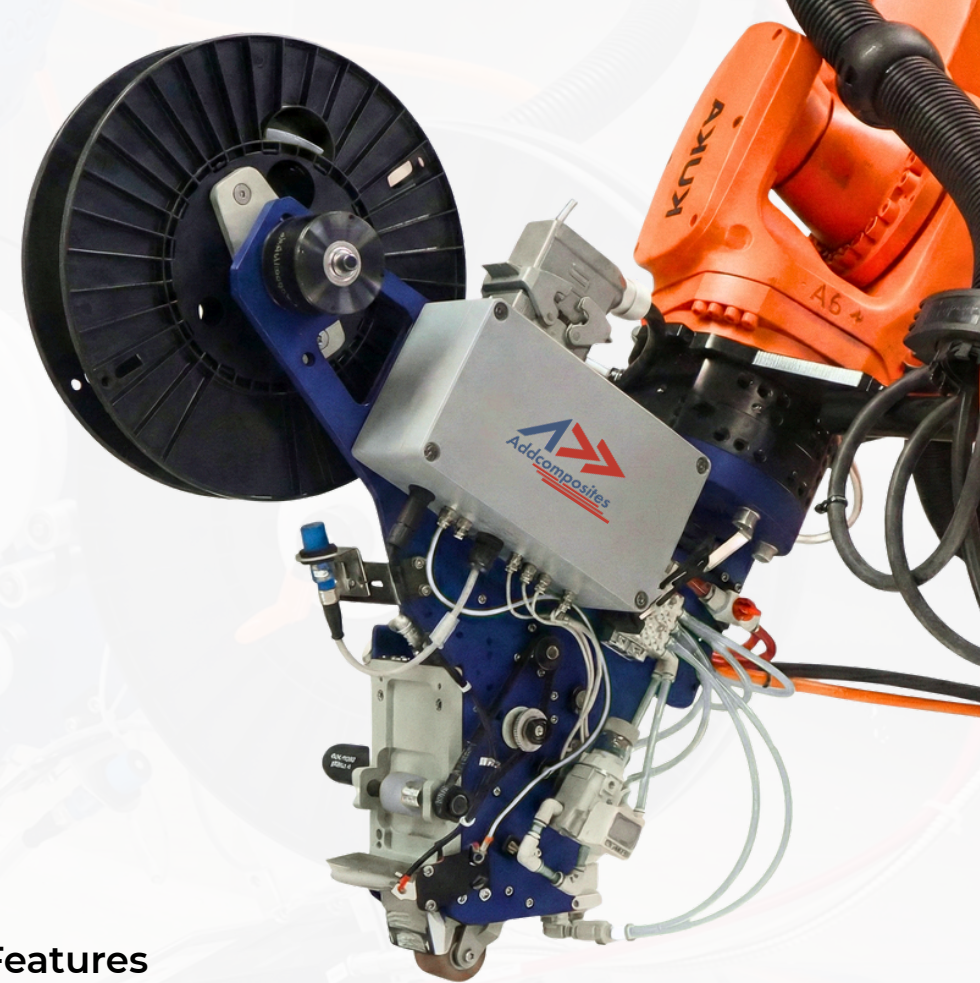
Our flagship end-effector. Designed for flexibility and modularity. Desired for its ease-of-use, capability, and simplicity.

One Business Unit, Different Constructions

- AFP-XS Core
 - The most modular and flexible AFP end-effector available
 - 16 kg mass without material
 - Toolless access for ease of cleaning
 - TRL 9
- AFP-XS Lite
 - Reconfigured from Core for 10 kg payload tabletop robots and cobots
 - 1/4" thermoset only
 - TRL 5-6
- AFP-XS Laser
 - Reconfigured from Core to make room for 2kW laser with optional Zoom Optics
 - Structurally reinforced for high compaction forces
 - TRL 7-8

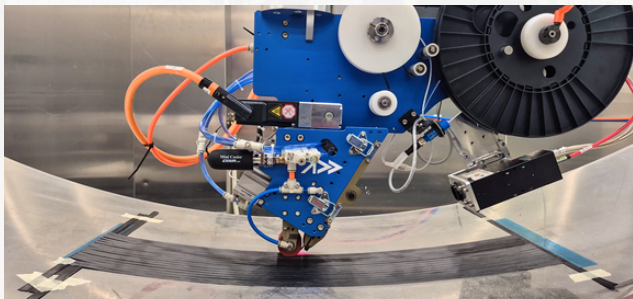
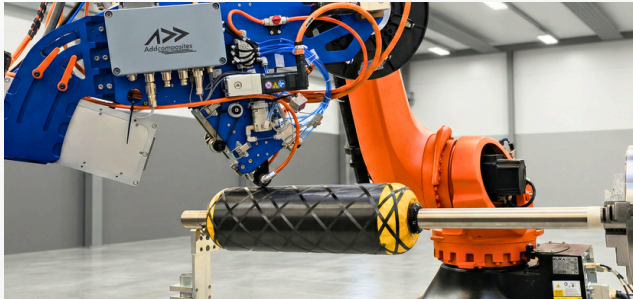
Key Features

- Single tow AFP
- Adjustable up to 1" wide course width
- Layup rates up to 1m/s (2360 inches/min)
- Thermoset slit tape and tow preg
- Engineering and technical thermoplastic polymer
- Natural, glass, and carbon reinforcements
- Compaction force up to 700N
- Cut and feed repeatability of +/- 0.5mm at 300 mm/s
- Heater modularity
- Includes AddController

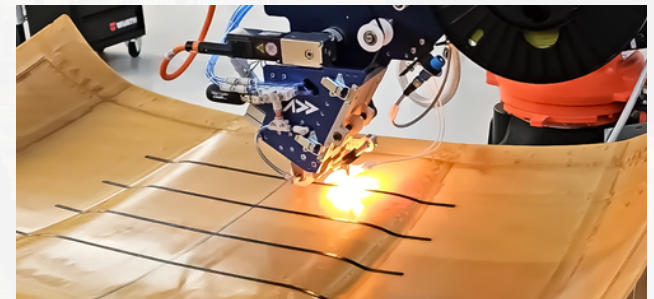
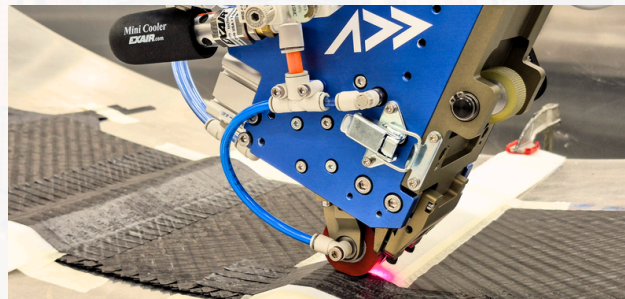
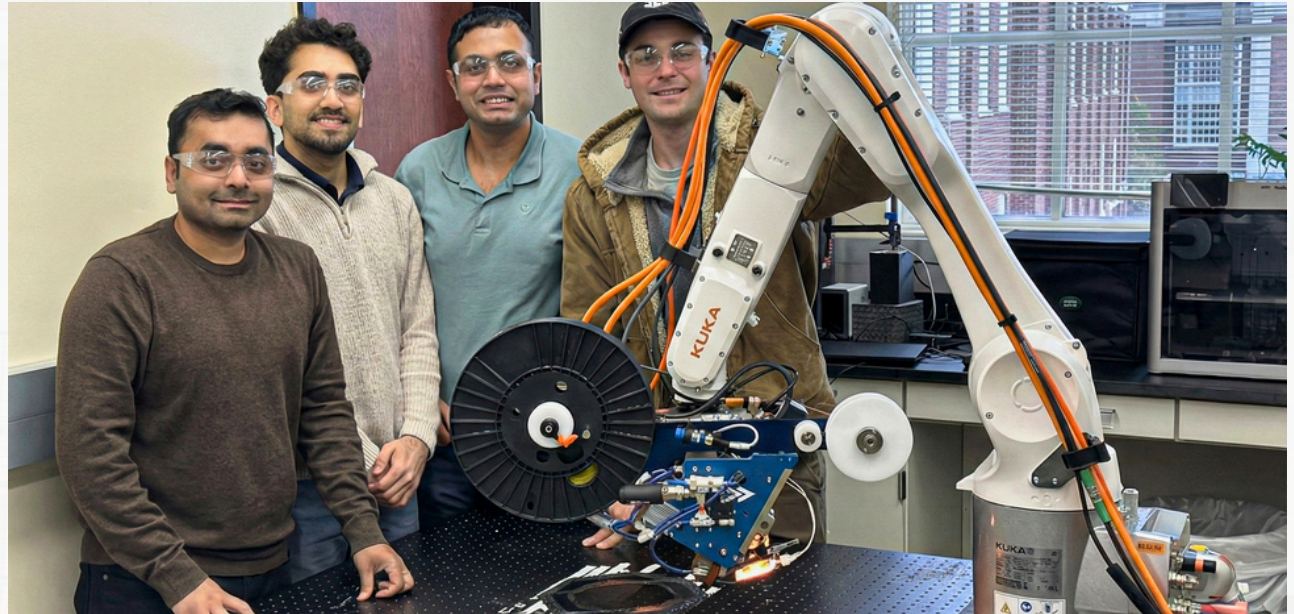


BEST FOR

UNIVERSITIES & EDUCATION



R&D LABS



TEAM PHOTO COURTESY OF THE UNIVERSITY OF ALABAMA

42+ AFP-XS
Installations

10+ Industrial
Installations

32+ Uni / Technical
Center Installations

End-effector · Multi-tow AFP

AFP-X

The industrial evolution of the AFP-XS. More material on board, more time placing, less time reloading. Optimizing complexity and efficiency.

Complex Components and High Rates

- AFP-X4
 - Four tows
 - Configurable for 1/4" or 1/2" slit tapes, for a 1" or 2" wide course
 - Up to 24kg of material storage
 - 150 kg mass without material
 - Toolless access for ease of cleaning
 - TRL 7
- AFP-X8
 - Eight tows
 - 1/4" slit tapes for a 2" wide course
 - Up to 48kg of material storage
 - 200+ kg mass without material
 - TRL 2-3

Key Features

- Multi-tow AFP
- Customizable configuration
- Layup rates up to 750mm/s (1770 inches/min)
- Thermoset slit tape
- Each tape individually controlled
- Engineering and technical thermoplastic polymer
- Natural, glass, and carbon reinforcements
- Compaction force up to 700N
- Cut and feed repeatability of +/- 0.5mm at 300 mm/s
- Heater modularity
- Includes AddController



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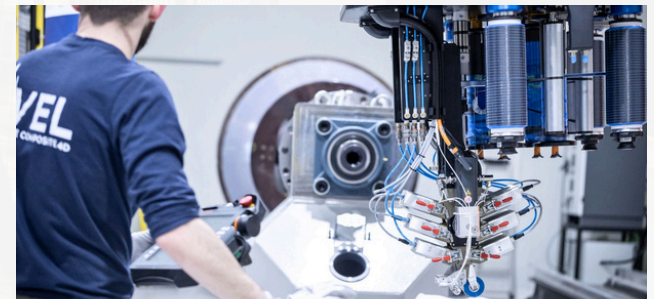
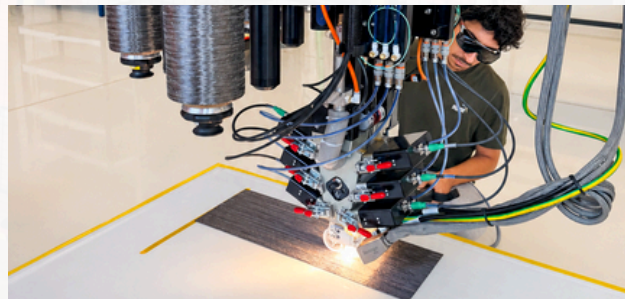
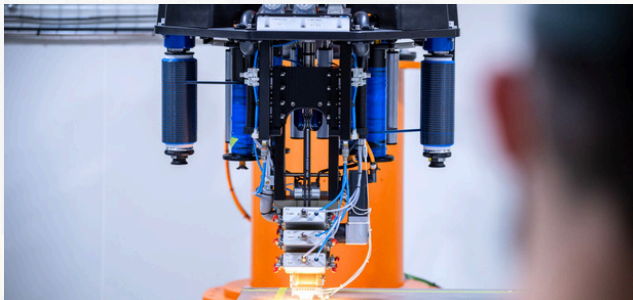
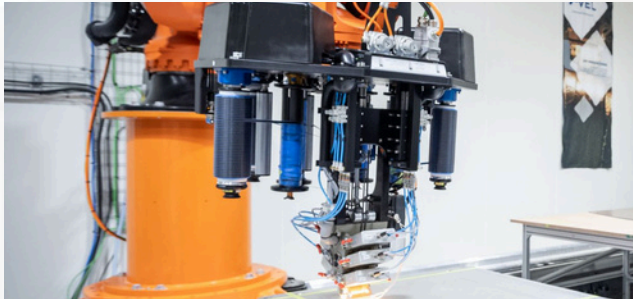
AEROSTRUCTURES

INDUSTRIAL / SERIAL PRODUCTION

LARGE LAMINATES

SPACE & LAUNCH

MARINE



4+

AFP-X
Installations

2+

Industrial
Installations

2+

Uni / Technical
Center Installations

End-effector · Continuous-fiber LFAM

ADDX

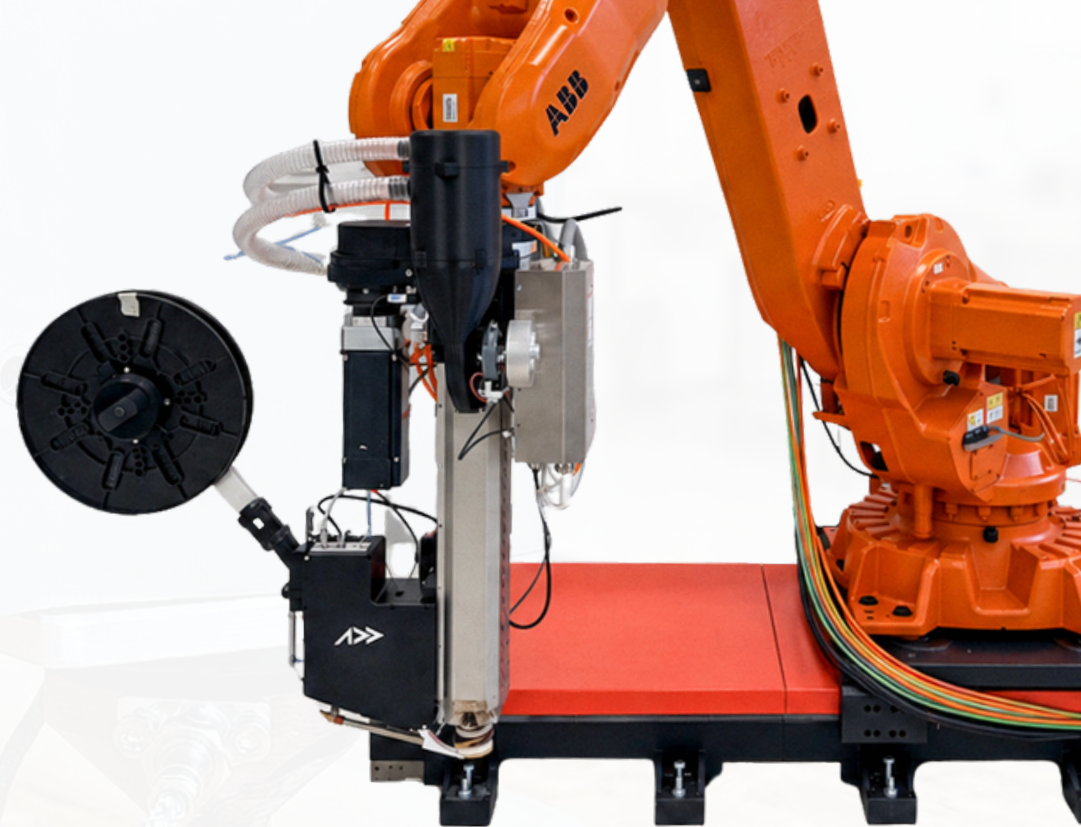
Unifying continuous fiber and traditional LFAM into a single end-effector. Print thermally stable, production ready tooling or full scale, structural prototypes on the same platform.

The Next Evolution in Additive Manufacturing

- Polymer Extrusion
 - Up to 9 kg/hr deposition rates
 - 5 mm and 8 mm bead sizes for precise deposition
 - 35 kg mass without material
 - Best for composite tooling
 - TRL 5-6
- Hybrid Extrusion
 - Embed continuous fiber into the print
 - Selectively reinforce areas that need it most
 - Fiber diameter 1.1 mm
 - Produce large scale, structural prototypes
 - TRL 3-4

Key Features

- Multi-material printing capability
- Swappable nozzles for various bead sizes
- Continuous fiber for added strength where it's needed
- Engineering and technical thermoplastic polymer
- Natural, glass, and carbon reinforcements
- Three heat bands, plus heated nozzle
- Includes pellet storage cabinet with drying and feeding
- Includes AddController



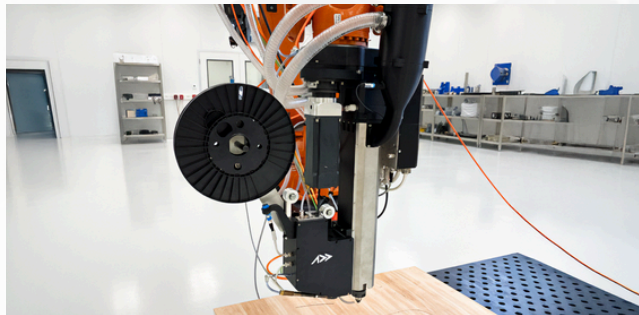
BEST FOR

PRINTED TOOLING & MOLDS

RAPID TOOLING CYCLES

LARGE SCALE PROTOTYPES

MARINE



TEAM PHOTO COURTESY OF AIMEN

6+ Uni / Technical
Center Installations

20x Stronger
Prints*

450°C Heating
Capacity

* Than standard FGF printing processes

Software · CAM & path planning

ADDPATH 2.0

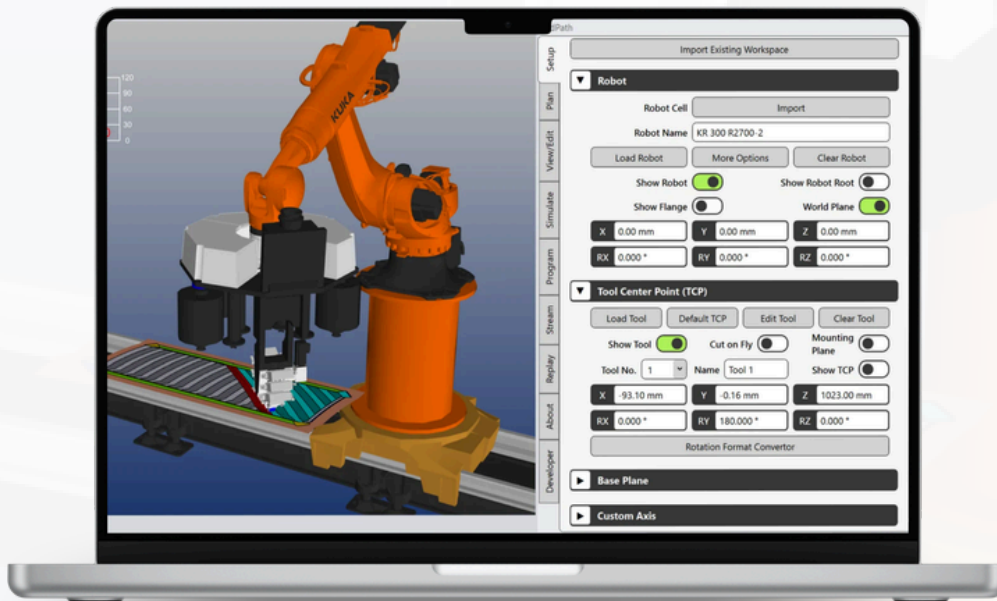
One platform for printing, milling, tape/fiber placement, trimming, and winding. Design the process in the native software from nothing to the finished component, including online inspection.

Key Features

- In-house designed and built software
- Open ecosystem on the Rhino3D v8 platform
- Control robot speed, acceleration, and heater settings
- Remote live status with Live Mode
- Switch from extrusion to fiber placement seamlessly
- 1:1 digital twin of the physical cell
- Program and control up to 12 axes
- Flag collisions, singularities, and motion errors
- Estimate time and material needs upfront
- Custom post-processor for your robot

Offline Programming Made Simple

- Fiber Placement / Tape Laying
 - Determine number of tapes/tows
 - Input tape/tow width
 - Tape winding module (geodesic/non-geodesic, continuous/discontinuous)
 - COPV optimization
- Printing
 - Embed continuous fiber into the print
 - Planar, angled, conformal, and adaptive slicing
 - Selectively reinforce areas with directional fiber control



BEST FOR

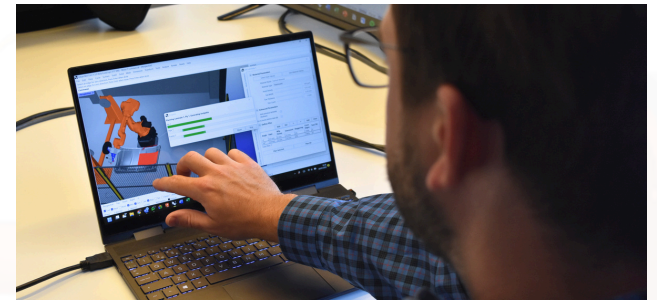
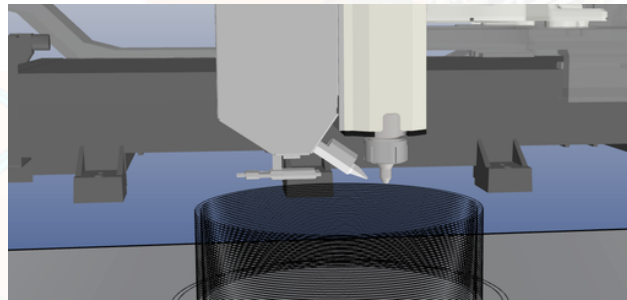
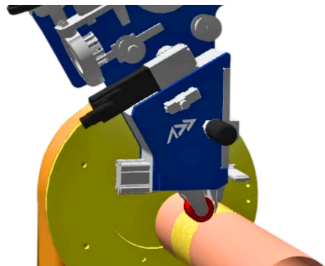
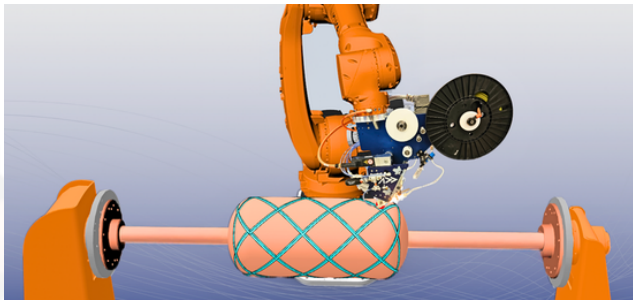
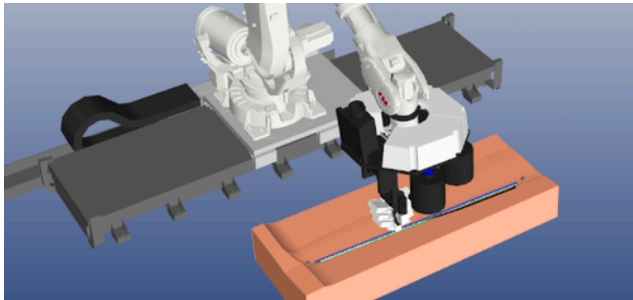
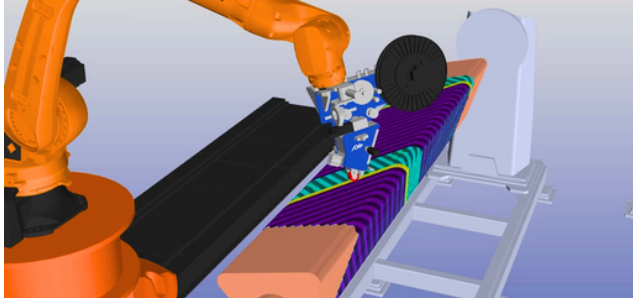
PROCESS
ENGINEERS

ALL ADDCOMPOSITES
HEADS

MULTI-PROCESS
CELLS

DOUBLE-
CURVATURE PARTS

DIGITAL-THREAD
WORKFLOWS



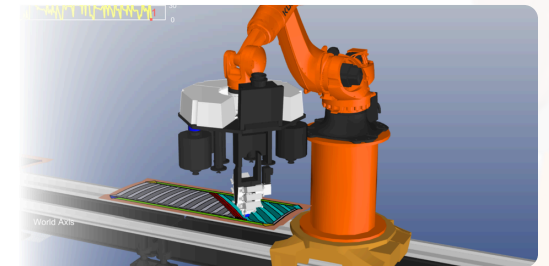
IDEATE



INNOVATE



AUTOMATE



Process · Robotic tape winding

ATW

Automated Tape Winding escapes the surface of revolution while combining different modes. Rapid thermoset pipes, highly engineered Type V tanks, and high tension thermoplastic rotor sleeves all from the same machine.

Two Winding Modes, One Machine

- Compaction-based Winding
 - Unlock thermoplastic based energy storage
 - Finite fiber control
 - Non-axisymmetric shapes
 - COPV optimization
 - TRL 6-7
- Tension-based Winding
 - Higher throughput
 - Axisymmetric shapes
 - Up to 1000N of pretension
 - Pretension fiber for higher pressures
 - Best for classic winding applications: tanks, pipes, and tubes
 - TRL 6-7

Key Features

- Uses same base platform as AFP-XS, and integrated into AddPath
- Multi-mode operation: compaction based or tension based winding
- High tension applications
- Stop and restart tapes for selective reinforcement
- Isogrid structures increase strength without adding significant weight
- Precise fiber orientation control
- Non-axisymmetric shapes unleash novel tank geometries



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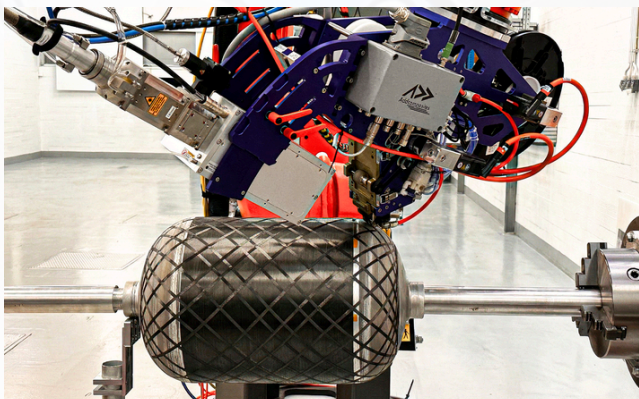
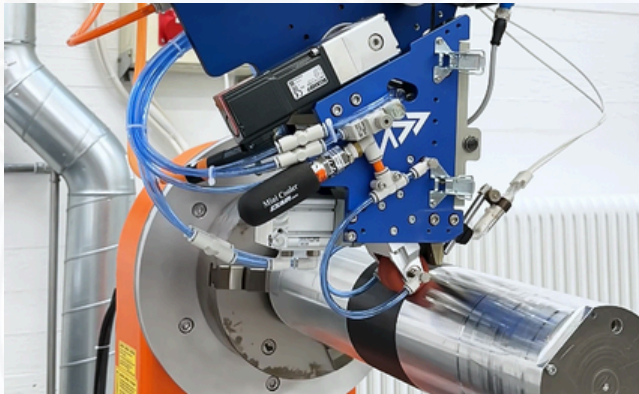
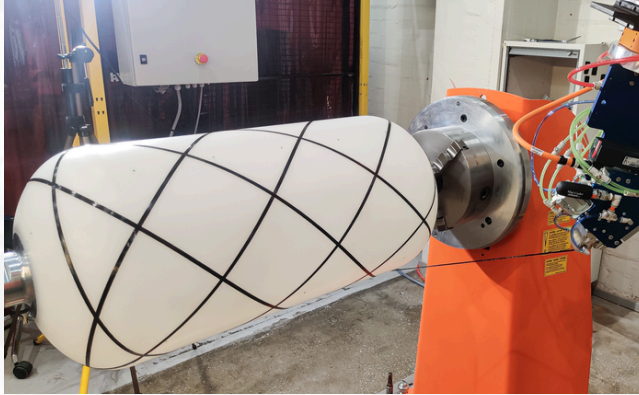
**HYDROGEN PRESSURE
VESSELS**

**TANKS &
TUBES**

**EV MOTOR
SLEEVES**

**ISOGRID
STRUCTURES**

**ENERGY &
MOBILITY**



End-effector · Automated Tape Laying · COMING SOON

ATL

A wider end-effector for large surface coverage.
Built for efficient material deposition on gentler
and less complex surfaces.

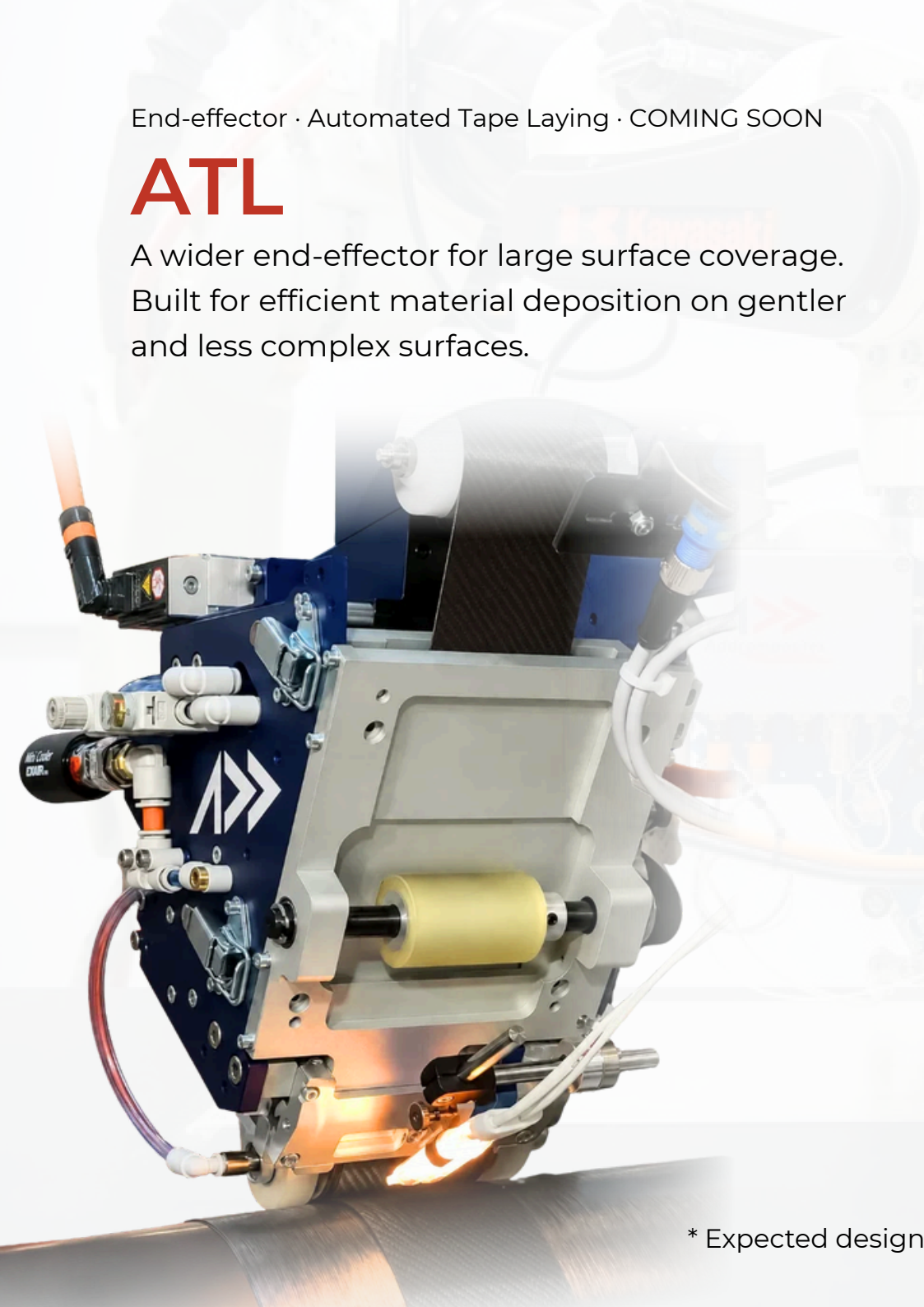
Lowest Complexity and Highest Rates

- ATL50
 - 50mm/2" tape width
 - Up to 450m of material storage*
 - 80kg mass without material*
 - Toolless access for ease of cleaning
 - Design phase
- ATL100
 - 100mm/4" tape width
 - Up to 450m of material storage*
 - 120kg mass without material*
 - Toolless access for ease of cleaning
 - Design phase

Key Features

- Single tape ATL
- Layup rates up to 750mm/s (1770 inches/min)*
- Thermoset slit tape
- Engineering and technical thermoplastic polymer*
- Natural, glass, and carbon reinforcements
- Compaction force up to 700N*
- Cut and feed repeatability of +/- 0.5mm at 300 mm/s*
- Heater modularity*
- Includes AddController

* Expected design outcomes. Currently working with clients on their requirements.



WHAT OUR CUSTOMERS SAY



Pedro, PIEP

"The AFP-XS is a very versatile machine that enables us to manufacture composite parts relatively quickly while generating minimal waste. Overall, working with Addcomposites has been rewarding, and we are excited to explore more applications in the future."



Françis Sedeilhan, COMPOSITADOUR

"The AFP-XS is a high quality, easy to use, repeatable system that quickly swaps over from a standard thermoset system to handle dry fibers and thermoplastics, seamlessly integrating with the humm3. This will enable us to further develop the fiber placement research and local SME activity at Compositadour. We are excited to collaborate with Addcomposites."



Rik Tonnaer, SAM XL

"Addcomposites has successfully and efficiently integrated their tool into an existing robot cell with a complex layout, and with much legacy equipment already integrated. We look forward to working with Addcomposites, continuously sharing knowledge at TU Delft."



Jussi Valtonen, EXEL COMPOSITES

"Addcomposites was given the goal of improving employee safety by process automation. With their innovative approach, technical know-how, and professional communication, they have delivered the project successfully and in a timely manner."

GLOBAL DISTRIBUTION NETWORK



サンワトレーディング株式会社
Sunwa Trading Corporation

zedfex



YUNS 云尚智造



CUSTOMERS



Rensselaer



OUR FUNDED PROJECTS



Co-funded by EUREKA member countries and the European Union
Horizon 2020 Framework Programme



European
Commission

HORIZON EUROPE
2021-2027



BUSINESS
FINLAND



Biological transformation of additive manufacturing processes for the sustainable manufacturing of bio-inspired products

Consortium



Manufacturing processes and digital tools for more Sustainable Composite Aerostructures

Consortium



Disruptive structural radar absorbing and EMI shielding composite Technologies

Consortium



COORDINATOR

Advanced Composite Materials for Aerospace Applications

Consortium



ROBOT BOX

ADAPTIVE CONTROL

Plug and Play Box for Automatic Adaptation of Arm Robot Programs

Consortium



Interoperable simulation ecosystem with supercomputer-powered digital twins and machine-learning flaw detection

Consortium





CONTACT US

Let's talk composites. Whether you're scaling up production, exploring a new application, or looking for the right additive manufacturing system for your team, we're here to help you engineer what's next.



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