

**Innovative machine designs**  
through technological know-how



- > Intelligent custom solutions
- > Flexibility and reliability
- > Top quality



 Roth Composite Machinery  
**Filament Winding & Prepreg**

# Roth Composite Machinery Filament Winding & Prepreg

global market leadership thanks to decades of experience and high customer satisfaction



## ■ Innovative solutions tailored to the application, all based on the most extensive know-

Our industry-leading design engineers are experts in both design and detail work, and will develop exactly the machine you need for your production task. Our engineering services also extend to complex equipment with maximum automation, even going beyond the cutting edge. Experienced fitters and application engineers will quickly get your machines and equipment running, and help you during startup right through to successful production operations.

Your direct contact in our service team will be at your disposal even more than we can promise.



## ■ Professional process technology with efficient solutions at the highest technical standard

Bolenz & Schäfer (BSD) began developing filament winding machines more than 50 years ago. After EHA pursued the product area within the Roth Group in the late 1990s, this technology is now the mainstay of our Filament Winding & Prepreg division.

Our global technological leadership is underpinned by the constant development of technology and continuous efforts to expand the automation of functions. We are trusted by market-dominating customers from all industries, and now have more than 500 machines on the market – making us an outstanding, global market leader.







### ■ A history of prepreg machine construction for the semi-finished products of the future

Roth Composite Machinery has been supplying production equipment for prepreg semi-finished fiber composites for more than 25 years (formerly as Bolenz & Schäfer or EHA). Thanks to systematic development, there is a comprehensive portfolio of possible machine variants available which can meet any customer requirement regarding process control and the materials to be converted. In addition to traditional duromer prepreg matrix materials, Roth Composite Machinery equipment can also convert high-performance thermoplastics in high-temperature ranges of up to around 400 °C. Modular design allows for great flexibility in selecting material- and process-specific components.



### Prepreg equipment

- > Matrices can be applied with a hot-melt or solvent system
- > Choice of coating system as required, e.g. (chambered) doctor blade, RRC...
- > All common matrix feed mechanisms available (baths, rollers, spreader boxes...)
- > High-temperature equipment for high-performance thermoplastics such as PEEK

### The filament winding product range

- > Filament winding machines in a wide variety of designs
- > Peripheral units for upstream and downstream steps in the filament winding process, e.g. ovens, extractors, handling systems...
- > Filament winding production cells
- > Complete turnkey production lines integrated in empty production halls



# Filament Winding machine range

## ■ Compact machine

- › Product development and small-scale production
- › Space-saving design
- › Good accessibility
- › Allows process parameters to be transferred directly to volume production equipment



## ■ Gantry machine

- › Single- or multi-spindle versions
- › Configuration specifically tailored to customer preferences and process requirements
- › Choice of automation level
- › Can be integrated into production lines to automate manufacturing



## ■ Bed-type machine

- › Free choice of weight, length and height dimensions
- › Robust construction for even heavy component weights
- › Adjustable counter-bearing for all product lengths
- › Single- or double-spindle versions
- › Delivery carriage can be moved with maximum precision
- › Multiple delivery carriages can be included to deposit additional materials



## Values and philosophy

- › Precision through custom-designed mechanics and dynamics
- › Versatility in action: solutions for different impregnating methods
- › Maximum flexibility in machine capabilities thanks to solutions for different impregnating methods, as well as all fiber and matrix types
- › Quality through process expertise in working with fibers and matrices

**Maximum accuracy as a result of quality, precision, flexibility and versatility**

### ■ Automated production line

We combine machines and units (e.g. blow molders, robots, winding machines, curing ovens, assembly devices and test stations) into turnkey production lines.



### ■ Technological leadership in detail

- > Unattended loading and unloading with automatic chucks
- > Product changeover automation thanks to our patented “RCA”
- > Precision impregnating bath, especially for demanding fibers
- > Process-specific delivery devices
- > Patented, fully automatic extractor for demolding laminate from the mandrel



### Tried-and-tested performance

- > 500 machines on the market worldwide
- > 100 t component weight
- > 30 m component length
- > 10 million composite parts reliably produced on one line
- > 12 CNC axes in one winding machine
- > Maximum automation successfully implemented in large-scale production operations



# Prepreg machine range



## ■ Production equipment for prepregs and organo-sheet thermoplastics

- > Flexibility in process control thanks to modular design
- > Converting duromers or thermoplastics
- > Low- and high-temperature range up to 400 °C
- > Continuous rovings, woven and non-woven fabrics
- > Hot-melt, powder, film, suspension or multi-component reactive resin matrix feed
- > Working widths up to 1,300 mm on request

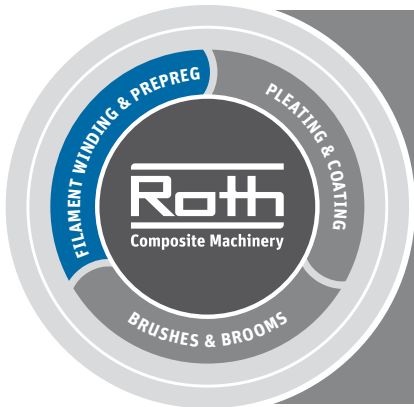




**Particular characteristics of Roth Composite Machinery equipment designs:**

- > Solutions tailored specifically to customer preferences and process requirements
- > Flexibility thanks to modular construction for variable operating modes
- > Quality through precision, control technology and experience
- > Warp-resistant applicator units for precise matrix feeding
- > Automatic unwinders and rewinders allow continuous operation
- > Calender systems with minimal runout tolerances and polished surfaces for top product quality
- > 25 years of experience in constructing production equipment for prepregs and organo-sheet thermoplastics





## Roth Composite Machinery

### Divisions

- > Filament Winding & Prepreg
- > Pleating & Coating
- > Brushes & Brooms

### Technical expertise

- > Sophisticated and innovative technology
- > Custom solutions
- > Stable, process-robust equipment
- > Durable, easy-to-maintain machines

### Consultation and service capabilities

- > Dependable contacts
- > Experience and application know-how
- > Global service
- > High availability of spare parts

## Roth Composite Machinery a reliable partner worldwide

### ■ Customer satisfaction is our touchstone – trust needs to be earned

A partnership-based approach, comprehensive industry knowledge and many years of experience with solutions to demanding tasks; all of these provide the basis for the trust that customers have placed in Roth Composite Machinery Filament Winding & Prepreg for decades.

The know-how possessed by our mechanical engineering experts consists of being able to listen, think analytically and develop complete, customer-specific solutions with new technology. This not only generates trust, but also satisfaction...

Choosing a machine from Roth Composite Machinery means choosing the best quality. If a problem does ever occur, however, you can rely on the global service offered by Roth Composite Machinery Filament Winding & Prepreg – no matter where you are. .

### Roth Composite Machinery Filament Winding & Prepreg

- > High flexibility
- > Sophisticated and innovative technology
- > Identification with own products
- > Tailored, custom solutions
- > Solid technology and high reliability
- > Stable and durable machines
- > Fast and un-bureaucratic service
- > In-depth, customized consultation

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