



ENGINEERING TECHNOLOGY CORP.

 Toray Group



**GLOBAL
EXPERT IN
FILAMENT
WINDING &
COMPOSITE
SOLUTIONS**



MORE THAN MACHINES

 Toray Group



DESIGNED & MADE IN THE USA

ZOLTEK 
Toray Group



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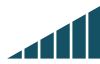
STANDARD FILAMENT WINDERS

Over sixty years of experience, decades of developing custom filament winders, tried and trusted design practices, and years of design optimization have led Engineering Technology Corporation to a competitive catalog of cost-effective and reliable standardized machinery. This standard line enables businesses of all sizes to quickly and affordably ramp up production capabilities.

Standard options range from laboratory-scale tabletop winders to multi-spindle automated production winders with industry-leading fiber payout. All standard filament winders are equally capable with glass and carbon fibers and built with ease of use, reliability, and serviceability in mind. Customers can also count on the same exceptional customer service Engineering Technology Corporation has been known for over the past sixty years.

In addition to standardized machinery, Engineering Technology Corporation provides custom manufacturing solutions and complete business services including production consulting, onsite machinery installation, process integration, training, and more to help our customers meet their manufacturing needs.

CATALOG OF STANDARD FILAMENT WINDERS

		SC	SC+	SM	SM+	CXG	SL
Maximum Mandrel Weight	lbs	50	50	750	1000	1000	20000
	kg	23	23	340	454	454	9072
Mandrel Diameter	inches	1-12	1-12	1-24	1-30	1-16	1-80
	mm	25-305	25-305	25-610	25-762	25-406	25-2032
Maximum Mandrel Length	inches	80	80	200	200	200	475
	mm	2023	2023	5080	5080	5080	12065
Number of Spindles		1-3	1	1	1-5	3-5	1
Number of Axes		2	3-4	2-5	2-5	4	2-5
Speed*							

* Variable characteristic based on wound part specifications

STANDARD FILAMENT WINDERS: DESIGNED WITH THE CUSTOMER IN MIND

SC Filament Winder



Lab-Scale Winding

- Small and lightweight desktop filament winder
- Ideal for R&D, lab, and educational use
- 2 accurate axes of motion with adjustable tailstock
- Multi-spindle design available for higher production volumes

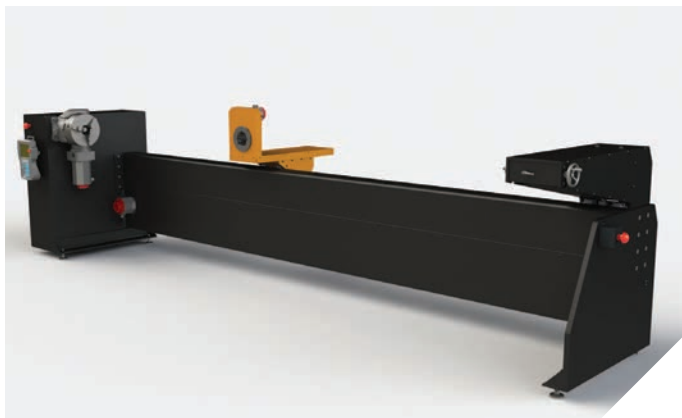
SC+ Filament Winder



Compact Performance

- Compact design with integrated table, control cabinet, and storage
- Ideal for small pressure vessels and other geometries requiring additional axes of motion
- 3 or 4 accurate axes of motion with adjustable tailstock

SM Filament Winder

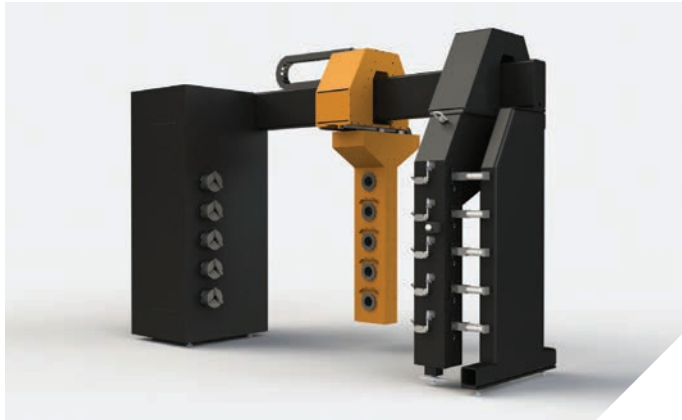


Medium-Scale Production

- Robust single-spindle winder for a wide range of applications
- Ideal for medium envelope part production
- Up to 5 axes of motion in a portable design

STANDARD FILAMENT WINDERS: DESIGNED WITH THE CUSTOMER IN MIND

SM+ Filament Winder



Full-Scale Production

- Fast and flexible production winder
- Ideal for high-rate production of medium envelope parts
- Up to 5 axes of motion in a compact platform with multiple beam lengths

CXG Filament Winder



High-Speed Winding

- Advanced filament winder capable of speeds up to 5 m/s
- Ideal for high-volume automotive applications, including CNG and CHG tanks
- 4 high-speed axes
- Lightweight dual-drive carriage

SL Filament Winder



Large-Scale Winding

- Large format workhorse designed to handle any large tank or tube
- Ideal for Aerospace, Oil & Gas, and Utility applications
- Up to 5 axes of motion

COMPLETE SERVICE FOR COMPOSITE PARTS MANUFACTURERS

Production Lines & Custom Machinery

As a worldwide expert in filament winding, Engineering Technology Corp. strives to create solutions beyond the standards, built to suit unique customer needs. We are a leading designer and manufacturer of complete production lines that include filament winders, creels, tensioners, resin baths, extractors, and more with any desired level of automation.



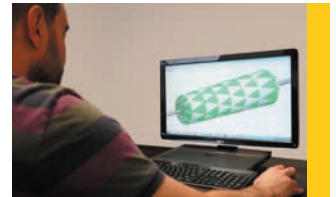
Auxiliary Equipment

Beyond machinery for filament winding, Engineering Technology Corp. develops and supplies unique and innovative solutions for the composite industry such as tape wrappers, ring winders, pipe curing ovens, pressure testers, and more. Additional safety and monitoring features can be added to any of our products to meet customer requirements.



Winding Software

Engineering Technology Corp. is the developer and sole supplier of the best-in-class filament winding software FiberGrafIX®. The software is used to create, organize, analyze, and optimize composite winding projects. Simplify your manufacturing process by using FiberGrafIX® simulation and visualization tools as well as its advanced motion editor and optional FEA mesh generator.



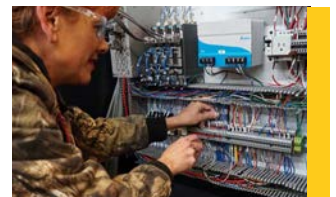
Automation

As a FANUC Authorized Systems Integrator, Engineering Technology Corp. offers process automation ranging from simple barcode reading to full-scale automated work cells. A large variety of robotic technologies are available to improve manufacturing safety, efficiency, and accuracy. All work cell devices can be integrated into a single controller for a robust, easy-to-use system.



Retrofit & Service

Engineering Technology Corp. services, upgrades, and retrofits aging or new filament winders of any brand. The company provides standard and custom controls upgrades with FWC10, an in-house Microsoft Windows based winding control system. Industry leading control systems such as FANUC, Siemens, and Allen Bradley are also available.



R&D Services

Broad expertise in filament winding, with unique capabilities from Zoltek and Toray Group, makes Engineering Technology Corp. a worldwide leader in product development services. Services include composite part design, composite pressure vessel design, finite element analysis (FEA), feasibility studies, prototyping, testing and more.

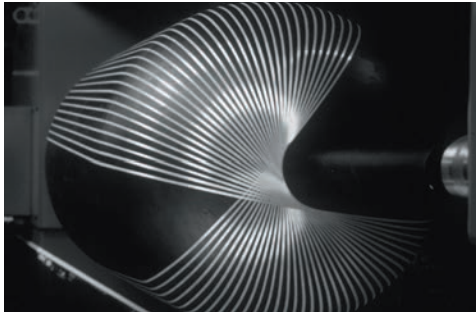
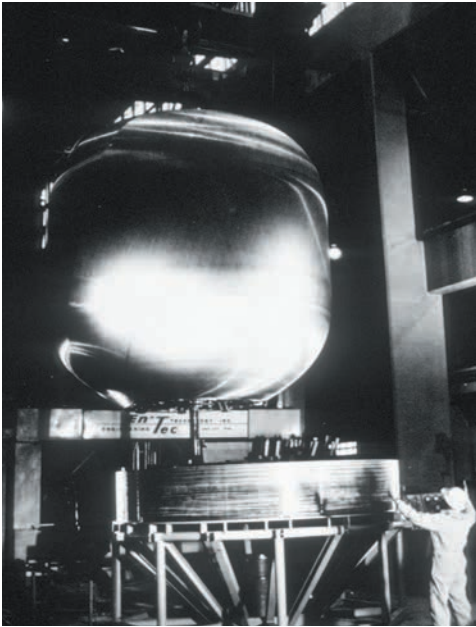


Customer Support

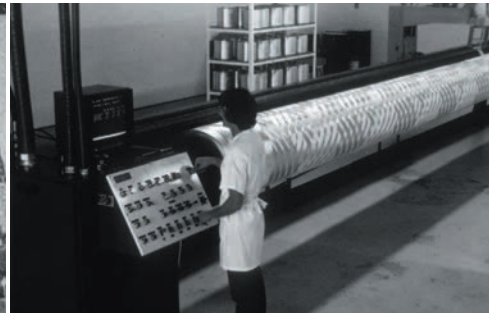
Engineering Technology Corp. provides more than machines. Our goal is to maintain customer satisfaction and long-term partnerships by achieving the best outcome for each composite project. Our staff is available to solve your technical and production challenges across the globe.



ABOUT ENGINEERING TECHNOLOGY CORPORATION A Member of Zoltek & Toray Group



**OVER 60 YEARS
OF TRUSTED
SERVICE**



ABOUT ENGINEERING TECHNOLOGY CORPORATION

Engineering Technology Corporation has been a worldwide leader in the filament winding and composite manufacturing industry since its founding in 1962. We developed the first CNC filament winder and pattern generating software, FiberGrafiX®, and have installed over 900 filament winders globally. The majority of these winders are still in operation today.

Engineering Technology Corporation was acquired by Zoltek Companies, Inc. in 1999 and became part of the Toray Group in 2014. The company is now vertically diversified and combines over 60 years of leading expertise in the filament winding industry with the carbon fiber manufacturing capabilities of both Zoltek Companies, Inc. and Toray Group. This partnership allows Engineering Technology Corp. to provide customers with comprehensive solutions for manufacturing composite parts.

The evolutionary spirit that began in the '60s continues today with innovations to stay ahead of industry needs.

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