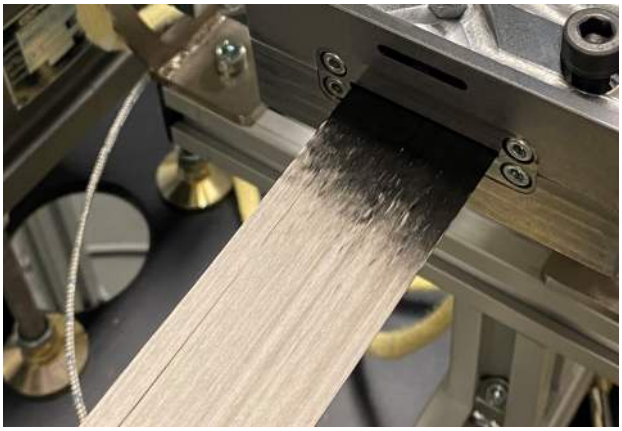
TPTX-LB CF Reinforced Thermoplastic Tape Extrusion Line

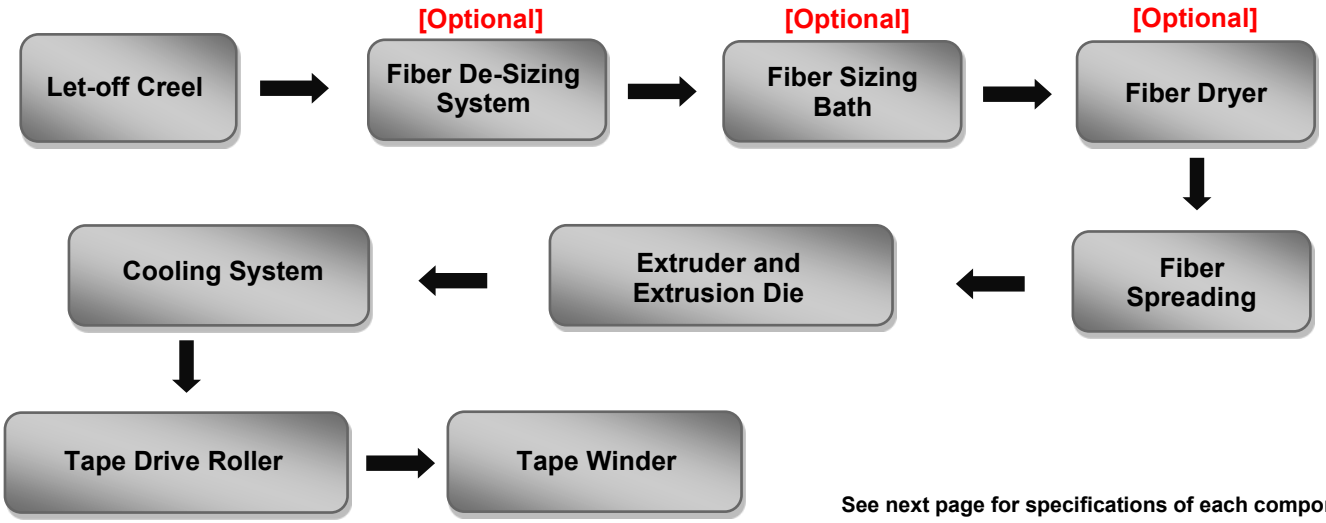
Features



- Lab scale carbon fiber reinforced thermoplastic tape extrusion lines.
- Carbon fiber, glass fiber, aramid fiber, and other high performance fibers can be used.
- For use with a variety of thermoplastic. Systems are versatile and work with a wide range of matrix materials.
- A wide range of parameters on the machine are adjustable, making the unit versatile for laboratory use and making samples with different materials.
- Available in compact table-top systems as well as floor standing systems.
- Optional equipment available for de-sizing and sizing prior to extrusion.

Configurable Process Components

Systems are customizable with modular components.
Select from components below and arrange to build desired system.



See next page for specifications of each component.

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Specifications

Basic specifications	Configuration: Tabletop system or floor standing system Tape widths: Up to 200mm wide tape Input bobbins: Flexible depending on fiber used and tape specifications
Enclosure / Exhaust	Full polycarbonate enclosures can be provided to keep carbon fiber fly contained or to keep exhaust gasses contained. Exhaust vacuum systems available upon request.
Let off creel	Select from mechanical or electrical creels depending on fiber type and resin requirements. Number of positions can be determined by customer tape requirements. Handles a variety of fibers: compatible with carbon fibers, glass fibers, aramid fibers. Compatible with 3K to 50K carbon fibers.
Fiber de-sizing and fiber sizing systems	Optional fiber de-sizing systems for use when sizing on the fiber is not required. Fiber sizing systems prior to entry of extrusion die when applying specific sizing compatible with thermoplastic resins. The sizing systems are equipped with drying system after sizing is applied.
Spreading	Spreading system to spread fibers before entering the extrusion die. Choose from static spreading bars, free rolling spreading bars, high speed rotating spreader bars depending on fiber type, FAW, tape thickness requirements.
Extruder	Tabletop extruder with AC vector controlled drive. Equipped with multi-zone heater with individual temperature control. Stainless steel feed hopper for resin pellets. Water cooling circuit equipped with flow sensors.
Extrusion die	Fiber entry comb to regulate fiber band width at entry of die. Fiber spreader and resin impregnation features are built into the internal pathway of the die to maximize thermoplastic impregnation of the fiber. Incorporates adjustable exit die jaws to adjust exit thickness of tape. Die temperature control by dedicated temperature controllers.
Cooling	Air cooling or water cooling systems can be provided based on line speed requirements and tape requirements.
Tape drive roller	Multi-roller friction drive roller system to pull tape at constant speed. AC motor or servo motor depending on required speed accuracy.
Winder	Take up winder collects tape as fed by tape drive roller. Reel winders as well as bobbin traverse winders can be provided.
Other	Please contact Izumi International, Inc. for custom requirements or other special features required.

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