

High-precision optical cable winding tube



AI Overview

High-precision optical cable winding tubes are designed for exact spooling of optical fibers, ensuring uniform tension, layer accuracy, and minimal fiber stress. Overview High-precision winding tubes are used in conjunction with automatic winding machines to spool optical fibers, fine wires, or delicate filaments with extreme accuracy. These systems are essential for applications where fiber integrity and signal quality are critical, such as UAVs, FPV drones, sensing systems, and high-speed communication networks. Key Features

1. Precision Tension Control: Modern winding machines employ closed-loop tension control with real-time feedback, maintaining consistent tension to prevent micro-bends or fiber damage. Some systems achieve tension accuracy from 1 mN to 6 N, suitable for ultra-fine fibers.
2. Layer-Accurate Placement: Electronic traverse units and high-resolution drives allow layer placement with up to 1 μm resolution, ensuring uniform winding patterns and optimal coil density.
3. High-Speed and Long-Length Capability: Machines can handle winding speeds up to 180 m/min and spool lengths from 1 km to 50 km, depending on the model. High-speed rewinders also support industrial-scale production without compromising precision.
4. Modular and Automated Systems: Winding solutions are often modular, allowing integration with existing production lines. Features include automatic bobbin clamping, spool changes, and linear or shaftless winding, controlled via HMI touch panels and software like SUMMI for real-time monitoring and parameter storage.
5. Quality Monitoring: Advanced systems include 3D coil scanners and spool scanners to measure coil geometry and detect winding irregularities in real time, ensuring reproducible and traceable results.

Applications

- Optical Fiber Production: For telecom, sensing, and UAV fiber spools.
- FPV and Tactical UAV Systems: Ensures stable optical communication and high-density packing for drone fiber links.
- Laboratory and Industrial Research: For precise handling of delicate fibers, foils, or filaments.

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Article Content

High-Precision Winding Machines for Fine Wire & Optical Fibers

The professional solution for unwinding, winding and rewinding spools for round and flat wires, foils and optical fibers. Automatically traversing coil for laying precise winding.

Optical Fiber Cable Making Machine

Discover automatic optical fiber cable making machines for fiber optic cable production. Explore CE-certified Fiber-optic cable equipment with PLC control and high productivity.

Precision Fiber Winding, Spooling and Metrology

With precision coil metrology, comes the ability to measure and spool fiber and cable in general, a capability that supports all of Berkshire's fiber and cable products.

Precision winding of fiber optic filament. I. Winding characteristics

Some unique aspects and characteristics for precision winding of optical fiber are described. The characteristics of optical fiber and the manner of winding chosen give rise to unique challenges. The

Supertek WLT

WINDING AND SPOOLING MACHINES Supertek WLT is a manufacturer and supplier of high-quality machines and precision-engineered products for the gentle unwinding, winding, rewinding and

Showmark Home

Showmark has produced custom winding machines for many unusual applications in the medical, telecom, sensing, aerospace, solar, defense, and fishing industries.

100 % automatic precision winders | Roblon

100 % automatic precision winding Roblon Precision Coiling Unit (PCU) eliminates the need for manual guiding of the cable in the take-up process. The cable is

Fully Automatic Fiber Winding Machine | Optical Fiber

NovaLynx fully automatic fiber winding machine is designed for high-speed and precision winding of optical fibers and ultra-fine wires. It provides stable tension

REWINDING MACHINE

Developed for the fast and accurate rewinding of optical fibers, fiber optic cables and delicate filaments, these systems achieve winding speeds of up to 1000 m/min, all while ensuring exceptional tension

Spiral Wrapping 2m Black Plastic PE Wire Winding

Main products are cable ties, cable glands, cable clips, wall plugs, PVC tapes, heat shrink tube, solder wire, etc. The company is located in Yueqing of China, near

High Precision Optical Fiber Rewinding Machine for Fiber Cable ...

It ensures stable tension control, accurate length measurement, and smooth winding performance — making it an ideal choice for optical fiber cable production and laboratory use.

Precision Fiber Winding, Spooling and Metrology

SoluTIONS CONTACT US Precision winding, spooling and metrology, together have become one of Berkshire's strongest core competencies. As a very early entrant, Berkshire has ratcheted up their

Winding Technology :: Supertek

With our world-leading technology for winding fine wires, fibers, and other sensitive materials, we set new standards in winding technology. Thanks to standardized components, our winding solutions

100 % automatic precision winders | Roblon

Roblon Precision Coiling Unit (PCU) eliminates the need for manual guiding of the cable in the take-up process. The cable is positioned perfectly side by side without major gaps or cable crossings,

Cost-effective High-Speed Precision Fiber Optic Coil Winding Machines

High-Speed Precision Winding: Designed for automated, high-precision winding of fiber optic cables, ensuring consistent coil formation and minimal material damage. Material Handling & Automation:

High-Speed Precision Fiber Optic Coil Winding

Custom Workstation for rapid, precise fiber optic coil winding for gyroscopes Fiber Optic Gyroscope Coil Winding: A custom-designed automated machine for rapid fiber optic coil winding for strategic,

Fiber Optic Spooling Machines | Supertek

Supertek's fiber optic spooling machines offer the perfect solution for efficient and precise processing of fiber optic cables. With their unique technology, precise control, and high speed, these machines

WRK-50 Loose Tube Extrusion Line | High-Speed Optical Fiber Cable ...

Key Features & Advantages: High-Speed Extrusion Process – The WRK-50 adopts an advanced high-speed extruder for PBT or PE materials, ensuring uniform and smooth loose tube production. Precision ...

High-Speed Precision Winding of Fiber Optic Coils

Newton developed a camera, custom lens and illuminator system on a high-speed, three-axis motion stage to control complex windings of optical fiber coils.

Precision winding machine

Find your precision winding machine easily amongst the 55 products from the leading brands (Hosokawa, FADIS, RIUS, ...) on DirectIndustry, the industry

High-Precision Winding Machines for Fine Wire & Optical Fibers

The best coil winding machines for ultra-fine wire and optical fibers Realize your machine and production with the best winders, spoolers and components of winding technology. For ultra-fine wire, flat wire,

High-precision positioning and winding | WIRE

Supertek sets new standards in winding technology for the production and processing of fine wire or optical fibres.

WINDING TECHNOLOGY

Fiber cable production and flat wire handling Custom winding applications and high-speed production lines Built with German engineering expertise and designed for industrial versatility, Supertek

Precision winding machine

Tubes secured by means of tailstocks with axial spring to compensate for small or even large differences in tube quality, for constantly uniform winding. High- precision meter-counter ...

High density fiber optic cable offering wrapping tube | AFL Global

Wrapping Tube Cable (WTC) with SpiderWeb Ribbon® (SWR®) is an ultra-high density outside plant cable designed specifically for Fiber-to-the-Home (FTTH), access markets and data center network

Precision Fiber Coil Winding Machines

These machines are essential for fiber optic cable manufacturers and allow for efficient, high-quality production. Fiber coil winding machines use a variety of techniques to ensure precise winding,

Winding Machines | Products and Machines by Supertek

Winding machines with the best winding technology Supertek - the most high precision winding machines for fine wire or optical fiber! Perfect machines for coil

REWINDING MACHINE

When speed meets precision, Supertek's high-speed rewinding systems deliver performance without compromise. Developed for the fast and accurate rewinding of optical fibers, fiber optic cables and

High Speed Rewinding Machines

For fast and precise rewinding of fiber optic cables or optical fibers, our high-speed rewinding machines offer the ideal solution. With winding speeds of up to 1000

Contact Us

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