Fiber Leading the Future,
Intelligent control Intangible.

All-domain solution for optical
fiber communication traverse machines

OPTICAL FIBER SERIES PROMOTIONAL BROCHURE

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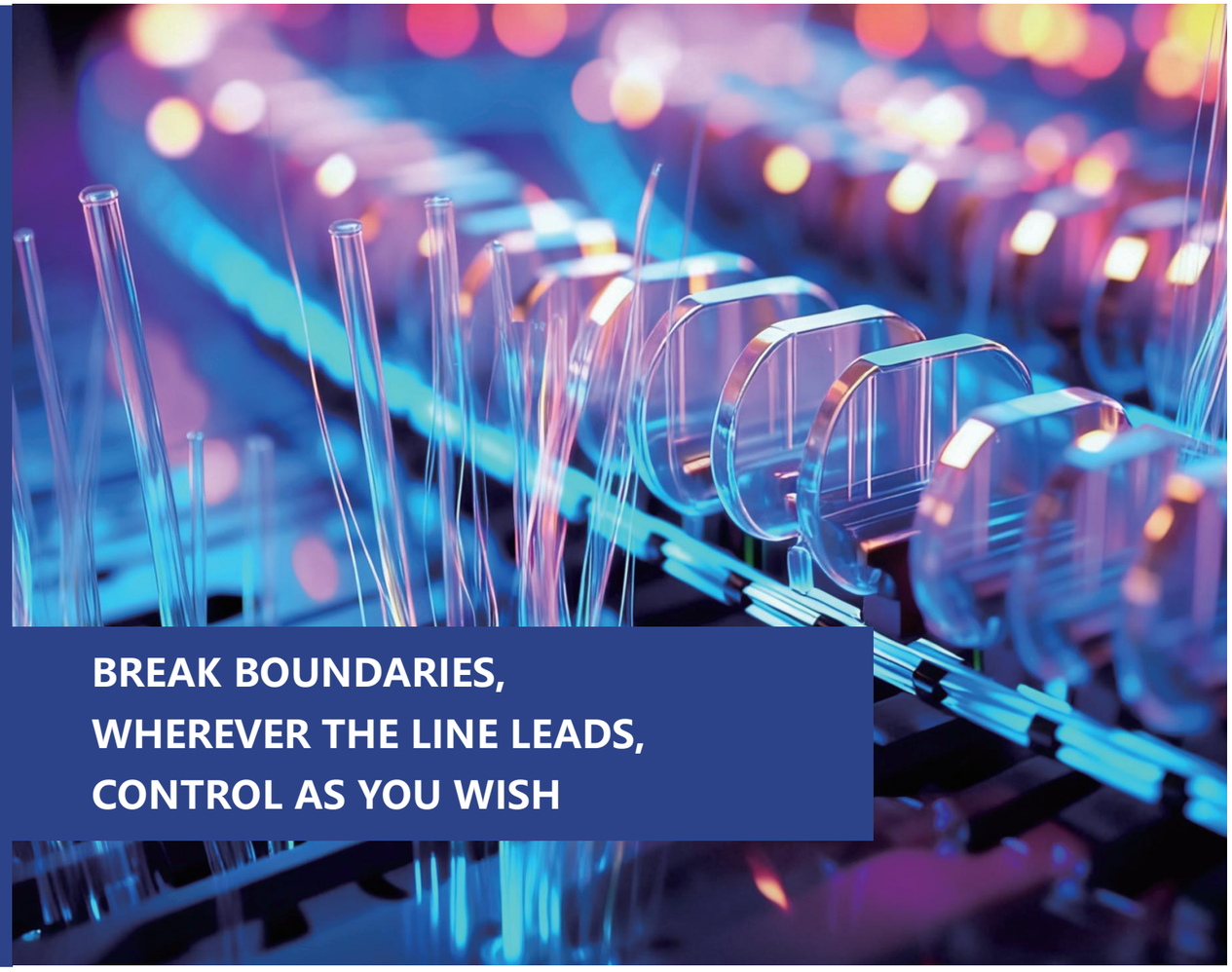
CATALOG



Company patent

After 12 years of dedicated research and development and technological accumulation, the company has obtained over 50 patents in total. It has achieved significant breakthroughs in multiple key areas of winding and solved a series of winding problems that have long plagued its peers. With its strong technological innovation capabilities and profound industry accumulation, We will continue to lead the development trend of the winding equipment industry, providing global customers with high-quality, high-performance, customized winding equipment and comprehensive technical support and services, and promoting the entire winding equipment industry to a higher level.

01

Electromagnetic interference, signal delay, data lag, weak confidentiality...
Are these still bothering your drone operations?
In high-demand fields such as high voltage, emergency response, and military operations, stable communication is the key to success.
We bring an innovative answer - the optical fiber communication traverse machine.

COMPANY PROFILE

As an outstanding enterprise in the winding equipment field, BOYAN TRADING CO., LTD., based in Suzhou (Anhui Province), has achieved remarkable results in R&D, production and sales. Relying on its outstanding technical strength and high-quality product services, the company has successfully established long-term and stable strategic cooperative relationships with 20 top scientific research institutions and well-known university laboratories, including China Aerospace Science and Industry Corporation, Military Supplies and Equipment Research Institute, Chinese Academy of Sciences, and Offshore Oil Research Institute. It is also honored to be designated as the sole supplier in the winding field. The company has a rich and diverse product line of winding equipment, which is widely used in various handmade fields such as non-folded feather hair extension, hand rope weaving, fishing line winding, knotless sub-line hook tying, twist sticks, cat chew stick pet toys, and clothing button loops. These applications have deeply penetrated into all aspects of people's life and production, greatly expanding the application boundaries and market space of winding equipment.

Optical fiber machine
Customized non-standard machinery
After-sales service
Sales of finished optical fibers

THREE CORE ADVANTAGES

Amid the rapid development of unmanned aerial vehicle (UAV) technology, optical fiber communication FPV drones, with their technological innovations, have broken through the application limitations of traditional FPV drones and become the "new favorite" in multiple fields. Its unique performance advantages make it demonstrate irreplaceable value in complex scenarios. The following is an analysis from three aspects: advantages, applicable occasions and core advantages.

03 Low-latency transmission, precise and error-free operation

For FPV drones, delay directly affects the control accuracy and mission safety. Due to the fact that the signal transmission path of traditional wireless FVS is prone to interference, there is a delay of milliseconds or even higher. When flying at high speed or crossing narrow obstacles, it is easy to cause control errors. The signal transmission speed of optical fiber communication is close to the speed of light, and the delay can be controlled at the microsecond level, almost achieving "command response". When the pilot is in operation, the instructions can be instantly transmitted to the fuselage, and the real-time feedback on the screen is provided. Whether it is precisely crossing obstacles in a racing competition or getting close to the equipment for detailed inspection in industrial testing, it can achieve "hitting exactly where you point", significantly enhancing the safety and accuracy of control.

01. The anti-interference ability is "impeccable."

Traditional wireless transceivers are greatly affected by the electromagnetic environment. In scenarios with strong electromagnetic interference such as high-voltage areas, substations, and military battlefields, signals are prone to interruption, lag, and even loss of control. The optical fiber communication traverse machine uses optical signals as the transmission carrier, does not radiate electromagnetic signals outward, and is not affected by external electromagnetic interference. Even beside dense high-voltage power lines, in complex industrial electromagnetic environments, or on battlefields where the enemy is implementing electromagnetic suppression, it can maintain stable signals and ensure uninterrupted data transmission, as if it were putting on "anti-interference armor" for the equipment.

02 "High Speed and Large Capacity" Data Transmission

High-definition picture quality and real-time data transmission back are the core demands of many professional scenarios, and optical fiber communication precisely meets this pain point. Its transmission rate far exceeds that of wireless communication, and it can easily support the real-time transmission of 4K and even 8K high-definition videos. At the same time, it can synchronously transmit a large amount of information such as flight parameters and environmental sensor data. For instance, in industrial inspection, it can synchronously transmit high-definition images of equipment details, temperature, humidity and other data back to the control center. During film and television shooting, 8K RAW format video transmission can retain more picture details, providing high-quality materials for post-production and solving the problems of "slow transmission and poor picture quality" of traditional wireless video cameras.

PRECISELY MATCH THE FOUR CORE APPLICABLE SCENARIOS

(1) Military and Security fields: Hidden "Battlefield Scouts"

1.In military operations, concealment and communication stability are of vital importance. The optical fiber communication traverse machine has no electromagnetic radiation and is difficult to be detected by enemy radio detection equipment. It can conduct reconnaissance deep into enemy positions and transmit high-definition battlefield images in real time, providing key intelligence for combat decisions. For instance, in the Russia-Ukraine conflict, both sides have employed fiber-optic guided FPV drones to penetrate enemy positions. These drones can fly close to the ground, avoiding radar detection. In complex electromagnetic environments, they can stably transmit signals, break through enemy air defense networks, and conduct precise reconnaissance and strikes on targets such as armored vehicles and fortifications.

2. Counter-terrorism operations: In complex environments such as urban counter-terrorism, strong electromagnetic interference often exists, and traditional wireless communication devices often fail to function properly. The optical fiber communication traverse machine can stably transmit high-definition images in such an environment, helping counter-terrorism forces to grasp the on-site situation in real time, formulate precise combat strategies, and effectively improve combat efficiency and security.

(2) Industrial inspection field: Efficient "Unmanned Inspectors"

1.High-voltage electricity inspection: There is strong electromagnetic interference in high-voltage electricity areas such as substations, and the anti-interference ability of inspection equipment is required to be extremely high. The optical fiber communication traverse machine, with its outstanding anti-interference performance and high-definition shooting capability, can fly safely and stably in high-voltage electrical environments, conduct detailed inspections of power equipment, promptly identify equipment failures and potential safety hazards, and ensure the stable operation of the power system.

2. Oil pipeline inspection: Oil pipelines are usually laid in remote and complex terrain areas, and their lengths can reach tens or even hundreds of kilometers. The optical fiber communication traverse machine supports long-distance flight and can conduct full-process inspections along oil pipelines, transmitting 4K high-definition video in real time. It can precisely detect conditions such as corrosion and leakage in the pipelines, significantly enhancing the efficiency and accuracy of pipeline inspections.

(3) Post-disaster investigation: Racing against time to save lives

When disasters strike, such as earthquakes causing houses to collapse and roads to break, or floods submerging large areas, communication base stations in disaster-stricken areas may be unable to function due to power outages and equipment damage, and satellite communications may also be disrupted by factors such as bad weather and terrain obstructions. However, optical fiber communication traverse machines can step forward in complex and harsh environments. It can take off quickly and, with the help of various sensors it is equipped with, such as high-definition cameras, infrared sensors, and life detectors, shuttle through the broken walls and waterlogged areas of the disaster-stricken region, collecting real-time images and data of the disaster area.

(4) In the field of film and television creation: Flexible "high-definition follow Camera"

1. No-delay racing: In the racing competition of the FVS, even millisecond-level delays can affect the outcome of the race. The low latency feature of the optical fiber communication FPV drone ensures that the images seen by the riders in the FPV glasses are completely synchronized with the real movements of the drone. With an ultimate control experience, riders can precisely pass through various obstacles during high-speed flight and enjoy unparalleled racing fun.

2. Film and television follow-up shooting: For film and television shooting, high-quality picture transmission and stable signals are the keys to ensuring the shooting effect. The optical fiber communication camera can ensure the stable transmission of 8K RAW video, providing photographers with clear and smooth shooting images, enabling them to capture every wonderful moment. Whether it is shooting natural landscapes, urban street scenes, or large-scale events, optical fiber communication transceivers can replace traditional wireless video transmission devices, bringing more possibilities to film and television creation.

PRECISELY MATCH THE FOUR CORE APPLICABLE SCENARIOS

Compared with traditional wireless transceivers, optical fiber communication transceivers have significant advantages: strong resistance to electromagnetic interference and terrain influence, and stable signals; It features high data transmission rate, large bandwidth and low latency, capable of stably transmitting high-definition videos with precise control. The optical signal is only transmitted in the core area, providing better confidentiality.

It has great application potential in military, industrial, racing, film and television and other fields. With technological progress and cost reduction, it will be more widely used in the future, bringing more convenience and innovation.

Business Introduction

In-depth technical consultation and customized design: Our team of engineers will thoroughly understand your specific application scenarios and the characteristics of the unmanned aerial vehicle platform, and provide you with the best integrated solution for the optical fiber winding system. Whether it's the capacity of the spool, the damping of the cable release or the body fit, we can offer professional advice and customized design to ensure a perfect match.

Business Introduction

Comprehensive training and knowledge transfer: We offer our clients comprehensive operation and maintenance training, covering equipment principles, daily operation norms, common fault detection and maintenance skills. Empower your team and fully leverage the potential of your equipment.

Business Introduction

Integrated debugging and on-site guidance: We not only deliver equipment, but also provide "plug-and-play" solutions. If assistance is required, our engineers can provide remote or on-site integration and commissioning support to ensure that the optical fiber winding system works perfectly with your flight control system and achieves the best performance state.

Business Introduction

Rapid response and after-sales guarantee: We have established an efficient after-sales response mechanism. Once you encounter any problems, you will receive a prompt response from a professional technical support team. We promise to provide long-term spare parts supply and maintenance services to minimize your downtime to the greatest extent.

We offer comprehensive technical support to ensure the safety of every flight of yours. We are well aware that top-notch equipment requires top-notch service. Therefore, we offer technical support throughout the entire project cycle to ensure that every step from integration to application goes smoothly for you.

EMPOWERMENT THROUGHOUT THE PROCESS AND WIN-WIN COOPERATION

OUTSTANDING PERFORMANCE STEMS FROM CORE TECHNOLOGY

All outstanding flights rely on a stable and reliable optical fiber connection. In the harsh environment of high-speed mobility and complex electromagnetic interference, optical fibers are the absolute lifeline for ensuring real-time high-definition data transmission and precise control. Behind this lies the crucial technology of optical fiber winding and management - it determines whether the optical fiber can remain intact during rapid release and recovery, and whether the signal can remain unobstructed.

Boyan has been deeply engaged in the field of optical fiber winding equipment, p roviding high-performance and highly reliable optical fiber winding systems and o verall solutions for top drone manufacturers and system integrators. We are well a ware that the smooth retraction and extension of every meter of optical fiber is direct-

ly related to the success or failure of the mission. Therefore, our independently de vel-oped precision winding system features constant tension control, anti-winding str uc-ture and lightweight design, ensuring "zero signal interruption" and "zero transmissi on loss" during the kilometer-level wire laying process.

As the core enabler of optical fiber communication traverse machine technology, our winding equipment has become an indispensable basic module in high-end unmanned aerial vehicle systems. It is precisely this technology that supports the ultimate performance of optical fiber communication traverse machines in fields such as military reconnaissance, industrial inspection, and emergency communication - achieving the core advantages of strong anti-interference, ultra-low latency, and real-time transmission of massive data.

"Precisely wound, as stable as a rock

"We provide the most reliable 'lifeline' for flight."

Internal cable optical fiber communication Practical application cases

The field of military operations

Reconnaissance and strike on the Russia-Ukraine battlefield: In the late summer of 2024, the Russian army deployed fiber-optic guided drones on the front line. This type of unmanned aerial vehicle (UAV) connects to the ground control station via optical fibers through internal cable laying, completely avoiding electromagnetic interference. In urban street battles in the Donbas region, Russian fiber-optic drones, relying on their internal line-laying optical communication, transmit in real time high-definition and stable images of the internal structures of buildings and details of enemy fire points collected by the high-definition electro-optical pods they carry. In conjunction with the AI image recognition system, it can complete target classification within 3 seconds, providing key intelligence for the artillery's precise strikes and successfully guiding and destroying the targets.

Covert reconnaissance by special forces: In the 2024 Mariupol Offensive and Defensive Battle, Russian special forces employed internal line-laying fiber-optic communication drones to carry out the mission of probing underground fortifications. The physical isolation feature of optical fiber communication makes it difficult for signals to be intercepted, ensuring the confidentiality of reconnaissance operations. The Ukrainian army has never been able to detect the control signals of the drones, allowing the Russian army to smoothly obtain key information and assist in the combat deployment.

Tactical breakthroughs and precise strikes: Fiber-optic drones (Kamikaze drones) have emerged as a force to be reckoned with in the Russia-Ukraine war. By connecting ground operators in real time through internal optical fibers, stable command and control can still be maintained in complex electromagnetic interference environments, enabling precise strike tasks. Operators can receive high-resolution real-time images from the drone's sensors and cameras via optical fiber cables, and control the drone for precise maneuvering and aiming with almost no delay, effectively striking high-value targets such as underground facilities and armored vehicles.

Power inspection scene

Efficient inspection by State Grid Shangcai County Power Supply Company: State Grid Shangcai County Power Supply Company uses drones equipped with internal line-laying optical fiber communication equipment to carry out precise inspection of ADSS power optical cables. Drones can precisely hover over various parts of the poles and towers, taking pictures of key areas such as pole numbers, pole bodies, hardware, and joint boxes from the best shooting angles. Through internal optical fiber communication, high-definition photos are transmitted back to the ground control center in real time and stably, ensuring that data is not lost or lagging. By applying this technology, the average inspection time for one pole tower has been significantly reduced from at least 30 minutes in traditional pole climbing inspections to 5 minutes, greatly enhancing the quality and efficiency of inspections and promptly identifying and rectifying a large number of potential hazards.

In Wuwei, Gansu Province, "Power + Beidou" unmanned aerial vehicles (UAVs) are used for power communication inspections. The UAVs are equipped with built-in optical fiber communication systems. With the support of the high-precision Beidou service, the drone accurately reaches the inspection point. By using the high-definition camera, infrared thermal imager and other equipment it is equipped with, it captures subtle abnormalities such as damaged fiber fusion boxes and loose optical cable bolts, and transmits the data in real time and stably to the monitoring center through the internal laying optical fiber. Optical cable lines that previously took several days to complete through manual inspection can now be finished in just a few hours with this technology. Moreover, it can effectively cover remote areas, significantly enhancing inspection efficiency and fault prediction capabilities.

Emergency communication support

1. Binzhou Mobile Flood Control Drill Simulating the interruption of optical cables on the east bank of Cuidao Lake due to floods, a solution of "drone cross-river cable laying (internal cable laying type optical fiber communication) + emergency communication vehicle matrix" was adopted. The drone carried a 6mm wind-resistant optical cable and crossed a 200-meter river at a height of 50 meters. The fiber was removed in 30 seconds with a loss of no more than 0.02dB, and the service was restored in 18 minutes. The efficiency was four times higher than that of traditional manual labor. Achieve "zero interruption" in communication.

2. Liuzhou Mobile's cross-river repair: Heavy rainfall in Rongshui County washed away the cross-river optical cable. An industrial-grade drone (with a load capacity of 40 kilograms) carrying an internal optical fiber device crossed a 120-meter flood at a height of 30 meters. With the help of 5G video transmission monitoring, it cooperated with the fiber melting team to complete the repair of the 12-core optical cable in 4 hours, reducing the time by 60% and restoring communication in four towns.

3. Maiyouwei tethered drone operation: After a landslide, the FC30M tethered drone (with cables including optical fibers and an internal cable layout design) was deployed within 15 minutes to establish a temporary communication network, stably transmitting the rescue situation and ensuring smooth command.。

Desktop high-speed cable winding and unwinding integrated machine

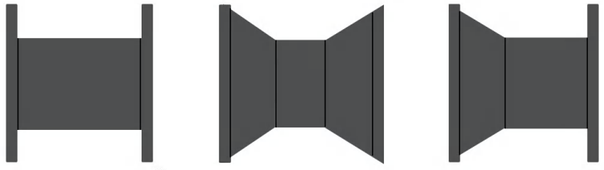
ITC - PLC - 80

The desktop integrated retractable design saves space and is easy to operate. It can reach a maximum speed of 400 meters per minute, effectively enhancing the winding capacity of fine wires and electronic coils. Active wire placement + adjustable tension module, suitable for different materials and wire diameters, with stable tension for fine wire winding. Ceramic large wire wheel for wire passing, full contact part wire protection, reducing wire wear. With the support of an intelligent system, parameter adjustment and monitoring are intuitive, easy to use, and export is worry-free. It can match foreign voltages and supports language customization.

Desktop high-speed cable winding and unwinding integrated machine structure:

- Servo motor
- Precision Slider Module
- Self-developed intelligent winding system
- Precision fixture
- line protection system
- Tension control system

It is suitable for various types of spool



Cylindrical wire shaft | Bilateral conical line shaft | Single-sided conical line shaft

Technical data	
Details	
Size (length x width x height)	1070 x 800 x 820mm
Dimensions of the carton (length x width x height)	1220 x 930 x 1030mm
Device net weight	115kg
Weight including packaging box	172kg
Permissible operating temperature	60°CWithin
Permissible operating temperature	0-50°C
Wire products	Optical fibers, nylon wires, metal wires, etc
Electrical parameters	
working voltage	220V-60HZ
Rated voltage	200V-240V
Maximum output public ratio	1000w
Fiberoptic machine and tailstock	
Winding speed	400m/min
Shaft diameter	300mm
Maximum spool width	350mm
Maximum load capacity of spool	20kg
Maximum diameter of fixture	300mm
Tension regulating device	
Tension control mode	Equipped with a tension regulating system for fine-tuning the winding tension
Electronic wire-laying unit	
Maximum pitch line distance	350mm
Standard pitch of stranded wire	Minimum0.025mm
Maximum pitch of the conductor	Maximum2mm
Control panel	
Software	Independently develop an intelligent control system

Vertical high-speed winding and unwinding machine

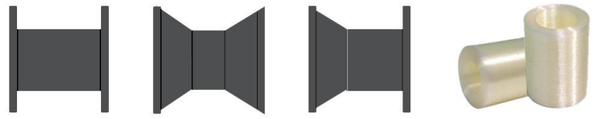
ITC - PLC - 100

The three-dimensional high-speed winding andunwinding machine is a fiber optic winding machine for drones, with full ceramic contact wire protection,intelligent, S-shaped acceleration and deceleration control,precise speed control, up to 50 kilometers of winding, andhigh-speed stability.The fastest speed can reach 400m/min. The machine is equipped with an active pay-out system and a tension regulation system, which can take account thewinding of both inner and outer pay-out lines, with low optical fiber loss, good communication signals, stable image transmission, and smooth line pay-out.

Structure of a three-dimensional high-speedwinding and unwinding machine:

- Servo motor
- Precision Slider Module
- Self-developed intelligent winding system
- Precision fixture
- line protection system
- Tension control system

Suitable for a variety of types of rolled tubes;



Cylindrical wire shaft | Bilateral conical line shaft | Single-sided conical line shaft | Fiber optic drum with inner feed line

Technical data	
Details	
Size (length x width x height)	970 x1100 x 1180mm
Dimensions of the carton (length x width x height)	1150 x 1200 x 1350mm
Device net weight	300kg
Weight including packaging box	370kg
Permissible operating temperature	60°C以内
Permissible operating temperature	0-50°C
Wire products	Optical fiber
Electrical parameters	
working voltage	220V-60HZ
Rated voltage	100V-240V
Maximum output public ratio	3000w
Fiberoptic machine and tailstock	
Winding speed	400m/min
Shaft diameter	300mm
Maximum spool width	400mm
Maximum load capacity of spool	20kg
Maximum diameter of fixture	150mm
Tension regulating device	
Tension control mode	Equipped with a tension regulating system for fine-tuning the winding tension
Electronic wire-laying unit	
Maximum pitch line distance	390mm
Standard pitch of stranded wire	Minimum0.025mm
Maximum pitch of the conductor	Maximum2mm
Control panel	
Software	Autonomous research and development of fiber optic dedicated intelligent control system

Vertical high-speed winding and unwinding machine

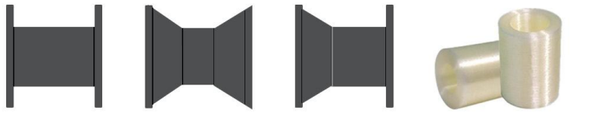
ITC - PLC - 100

The three-dimensional high-speed winding and unwinding integrated machine is a fiber optic winding device for FPV drones, with a maximum speed of 400m/min. The machine is equipped with an active unwinding system and a tension adjustment system, which can handle both internal and external unwinding. It has low fiber loss, good communication signals for drones, stable image transmission, and smooth unwinding. It features all-ceramic contact protection and an intelligent system. The S-shaped acceleration and deceleration control is precise, with a maximum speed of 50 kilometers and

Structure of a three-dimensional high-speedwinding and unwinding machine:

- Servo motor
- Precision Slider Module
- Self-developed intelligent winding system
- Precision fixture
- line protection system
- Tension control system

Suitable for a variety of types of rolled tubes;



Cylindrical wire shaft | Bilateral conical line shaft | Single-sided conical line shaft | Fiber optic drum with inner feed line

Technical data	
Details	
Size (L x Wx H)	970 x 1100 x 1200mm
Dimensions of the carton(L x W x H)	1220x1170x1360mm
Device net weight	305kg
Weight including packaging box	374kg
Permissible operating temperature	60°C以内
Permissible operating temperature	0-50°C
Wire products	Optical fiber
Electrical parameters	
working voltage	220V-50HZ
Rated voltage	220V
Maximum output public ratio	3000w
Fiberoptic machine and tailstock	
Winding speed	400m/min
Shaft diameter	300mm
Maximum spool width	300mm
Maximum load capacity of spool	20kg
Tension regulating device	
Tension control mode	Equipped with a tension regulating system for fine-tuning the winding tension
Electronic wire-laying unit	
Maximum pitch line distance	390mm
Standard pitch of stranded wire	Minimum0.025mm
Maximum pitch of the conductor	Maximum2mm
Control panel	
Software	Autonomous research and development of FPVfiber optic dedicated intelligent control system

Fiber Optic High-Speed Rewinding and Unwinding Machine

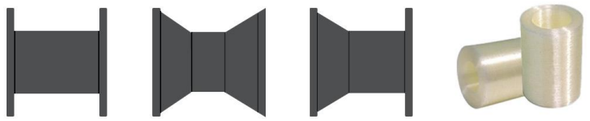
ITC - PLC - 120

The core advantages of this optical fiber winding machine are: intelligent touch screen PLC control (multi-language, easy to operate), compatible with special-shaped spools such as flared and conical (up to 500m/min). Dual-station manual tension fine-tuning + dual servo active wire feeding, ensuring smooth and stable winding and wire protection to prevent damage. Supports parameter adjustment during operation, fixed line speed and reel movement for cable arrangement, covering various winding methods such as honeycomb/layer increase and layer decrease (customizable). The contact optical fiber material is a dedicated guide wheel, featuring intelligent detection, S-shaped acceleration and deceleration, precise meter measurement, a maximum winding distance of 80 kilometers, high-speed stability, and is suitable for batch production.

Fiber optic take-up and rewind ultra-high-speed integrated machine structure:

- Servo motor
- Precision Slider Module
- Self-developed intelligent winding system
- Precision fixture
- line protection system
- Tension control system

Suitable for a variety of types of rolled tubes;



Cylindrical wire shaft | Bilateral conical line shaft | Single-sided conical line shaft | Fiber optic drum with inner feed line

Technical data	
Details	
Size (length x width x height)	1200 x 1100 x 1200mm
Dimensions of the carton (length x width x height)	1330x 1190x 1390mm
Device net weight	430kg
Weight including packaging box	501kg
Allowable operating temperature	-20°C-55°C
Wire products	Optical fiber
Electrical parameters	
Working voltage	AC200-AC240-50HZ
Rated voltage	AC220V-50Hz
Maximum output power	4.0KW
Rated power	4.0KW
Winding speed	100-400m/min
Axle diameter	350mm
Maximum line shaft width	350mm
Tension adjustment device	
Tension control method	It is equipped with a tension adjustment system that enables fine-tuning of the winding tension.
Laying method	Developed two sets of high-speed synchronous wire drawing systems independently
Electronic wiring unit	
Maximum cable spacing	350mm
Standard wiring pitch	0.025mm
Pitch of the threaded rod for the guide rail	5mm
Control Panel	
Software	Independently developed fiber optic; dedicated intelligent control system

High-speed active pay-off machine

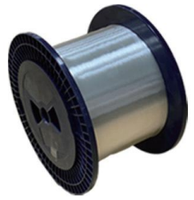
AWF-H-60

High-speed active fiber feeder is a fiber optic cable used for FPV drones,preciselycontrolling the feed speed, improving winding accuracy and reducing fiber damagehighspeed stability.Up to 500m/min, it can precisely control the speed toensure uniform winding, accurately adjust the tensionto avoid fiber damageor loosening and cooperate withhigh-precision equipment to improve winding accuracy,which can also reducefiber damageand ensure its performance and life.

High-speed active pay-off machine structure:

- Intelligent threading system
- High precision tension digital display system
- Fiber optic guide wheel
- Early warning system
- Adaptive speed control system
- Tension control system

Suitable for this type of rolled tube:



Laying optical fiber reel

Technical data	
Details	
Size (length x width x height)	820 x 800 x 480mm
Dimensions of the carton (length x width x height)	920 x 680 x 680mm
Device net weight	90kg
Weight including packaging box	120kg
Permissible operating temperature	Below 60°C
storage temperature	0-50°C
Wire products	Optical fiber
Electrical parameters	
working voltage	220V-60HZ
Rated voltage	100V-240V
Maximum output public ratio	1000w
Winding machine hardware parameters	
Laying speed	900r/min
Maximum spool width	30cm
Maximum load capacity	10kg
Maximum diameter of the support line disk	50cm
Tension regulating device	
Tension control mode	Equipped with tension regulating system Micro-adjustment of line tension can be made
Electronic radiation unit	
Support for minimum wire diameter	minimum0.025mm
Support maximum wire diameter	10mm
Control panel	
Software	Independently developed FPV fiber optic; dedicated intelligent control system

Fiber Optic High-Speed Rewinding and Unwinding Machine

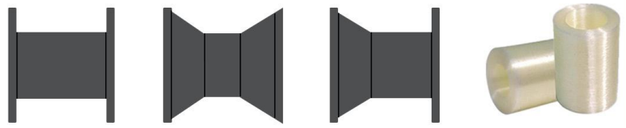
ITC - PLC - 150

The core advantages of this optical fiber winding machine are: intelligent touch screen PLC control (multi-language, easy to operate), compatible with special-shaped spools such as flared and conical (up to 400m/min). Dual-station manual tension fine-tuning + dual servo active wire feeding, ensuring smooth and stable winding and wire protection to prevent damage. Supports parameter adjustment during operation, fixed line speed and reel movement for cable arrangement, covering various winding methods such as honeycomb/layer increase and layer decrease (customizable). The contact optical fiber material is a dedicated guide wheel, featuring intelligent detection, S-shaped acceleration and deceleration, precise meter measurement, a maximum winding distance of 80 kilometers, high-speed stability, and is suitable for batch production.

Fiber optic take-up and rewind ultra-high-speed integrated machine structure:

- Servo motor + Asynchronous motor
- Precision Slider Module
- Self-developed intelligent winding system
- Precision fixture
- line protection system
- Tension control system

Suitable for a variety of types of rolled tubes;



Cylindrical wire shaft | Bilateral conical line shaft | Single-sided conical line shaft | Fiber optic drum with inner feed line

Technical data	
Details	
Size (length x width x height)	1200 x 1200 x 1240mm
Dimensions of the carton (length x width x height)	1520x 1370x 1400mm
Device net weight	364kg
Weight including packaging box	504kg
Allowable operating temperature	-20°C-55°C
Wire products	Optical fiber
Electrical parameters	
Working voltage	AC200-AC240-50HZ
Rated voltage	AC220V-50Hz
Maximum output power	3.8KW
Rated power	3.8KW
Winding speed	100-400m/min
Axle diameter	350mm
Maximum line shaft width	350mm
Tension adjustment device	
Tension control method	It is equipped with a tension adjustment system that enables fine-tuning of the winding tension.
Laying method	Developed two sets of high-speed synchronous wire drawing systems independently
Electronic wiring unit	
Maximum cable spacing	350mm
Standard wiring pitch	0.025mm
Pitch of the threaded rod for the guide rail	5mm
Control Panel	
Software	Independently developed FPV fiber optic; dedicated intelligent control system

Fiber optic winding machine

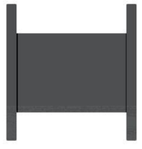
ITC - PLC - 43

The optical fiber dedicated windingmachine is a fiber optic winding machine for, with uniform winding tension, smooth line release, and good fiberic communication signals.At a fast winding speed of up to 150 meters perminute,the machine is able to rewind fiber opticsand other precision materials with extremely high precision quality.

FPV optical fiber special winding machine structure:

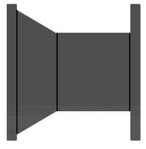
- **Stepper motor**
- **screw slide table**
- **Self-developed intelligent winding system**
- **Precision fixture**
- **line protection system**
- **Tension control system**

It is suitable for various types of spool

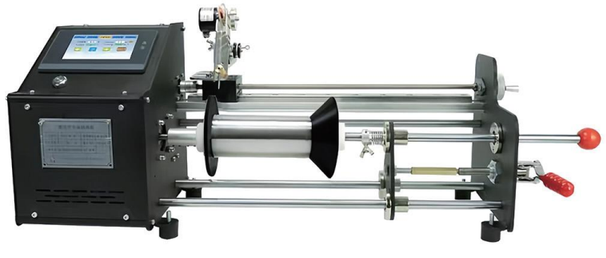


Cylindrical wire shaft

Bilateral conical line shaft



Single-sided conical line shaft



Technical data	
Details	
Size (Length x width x height)	700x 260 x 330mm
Dimensions of the carton (Length x width x height)	750 x 340 x 340mm
Device net weight	14.5kg
Weight including packaging box	17.5kg
Permissible operating temperature	15-40°C
Storage temperature	0-50°C
Wire products	Optical fiber
Electrical parameters	
working voltage	220V-60HZ
Rated voltage	100-240V
Maximum output public ratio	300w
Fiberoptic machine and tailstock	
Maximum linear velocity	200m/min
Shaft diameter	30-160mm
Maximum spool width	260mm
Maximum load capacity of spool	5kg
Maximum diameter of fixture	80mm
Tension regulating device	
Tension control mode	Mechanical tension
Electronic wire-laying unit	
Maximum pitch line distance	200mm
Standard pitch of stranded wire	0.05mm
Maximum pitch of the conductor	2mm
Control panel	
Software	Independently developed fiber optic; dedicated intelligent control system

Fiber optic winding machine

ITC - PLC - 70

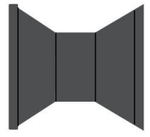
The FPV optical fiber dedicated windingmachine is a fiber optic winding machine for FPV , with uniform winding tension, smooth FPV line release, and good fiberic communication signals.At a fast winding speed of up to 300 meters per minute, the machine is able to rewind fiber optics and other precisionmaterials with extremely high precision quality.

FPV optical fiber special winding machine structure:

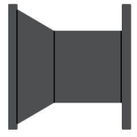
- **Servo motor**
- **Precision Slider Module**
- **Self-developed intelligent winding system**
- **Precision fixture**
- **line protection system**
- **Tension control system**

Suitable for a variety of types of rolled tubes;

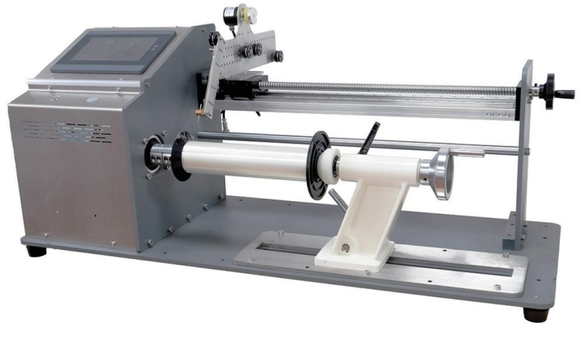
Cylindrical wire shaft



Bilateral conical line shaft



Single-sided conical line shaft



Technical data	
Details	
Size (length x width x height)	970 x 360 x 380mm
Dimensions of the carton (L x W x H)	1030 x 440 x 490mm
Device net weight	57kg
Weight including packaging box	80kg
Permissible operating temperature	15-40°C
Storage temperature	0-50°C
Wire products	Optical fiber
Electrical parameters	
working voltage	220V-60HZ
Rated voltage	100-240V
Maximum output public ratio	1000w
Fiberoptic machine and tailstock	
Maximum linear velocity	300m/min
Shaft diameter	30-300mm
Maximum spool width	400mm
Maximum load capacity of spool	20kg
Maximum diameter of fixture	150mm
Tension regulating device	
Tension control mode	To be used with the active pay-off machine.
Electronic wire-laying unit	
Maximum pitch line distance	400mm
Standard pitch of stranded wire	0.025mm
Maximum pitch of the conductor	2mm
Control panel	
Software	Independently developed fiber optic; dedicated intelligent control system