WINDING TECHNOLOGY

PRECISION COIL WINDING MACHINES

MACHINERY CATALOGUE

Tel: +44 (0)1484 663389 **E-mail:** sales@windingtechnology.com **Web:** www.windingtechnology.com

PCWM Control

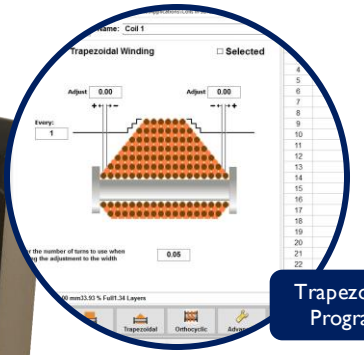
All WT winding machines are supplied with our PCWM control system which is one of the most powerful and user-friendly systems on the market.

Developed over 20 years, it's graphical touch screen user interface is intuitive and easy to learn. The system is based on Windows operating system with easy connectivity to the factory network, it also allows remote online diagnostics.

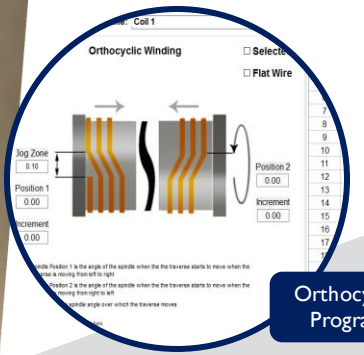
Advanced programming options are available for;

- Trapezoidal coils
- Orthocyclic coils
- Data logging
- Control of external devices such as tension systems.

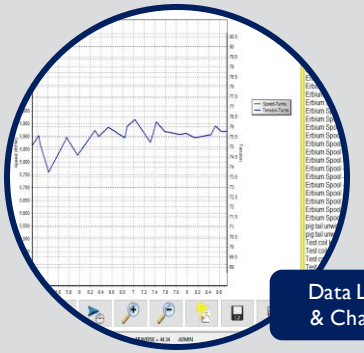
During the winding process, the system offers many manual overrides to adjust parameters and precisely control the layering. Turns counters, wire guide position, control buttons and critical information are displayed clearly on the production screen.



Trapezoidal Program



Orthocyclic Program



Data Log & Chart

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WINDING TECHNOLOGY

WT 150

The WT150 is a bench top winding machine, specifically designed for the production of small size coils and transformers. It is made with a high-quality machined aluminium framework and robust mechanical parts.

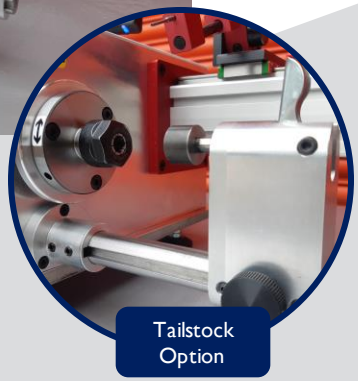
The main spindle is driven by a 0.75 Kw servo motor, and the required speed and torque is achieved with pre-installed transmission gears, as per the options shown in the specification data.

The wire guide carriage is mounted on a precision hardened steel rail with a linear bearing guide, and is driven by a 100W servo motor and precision fine pitch ball screw. An encoder on the main spindle provides high performance and exact movement of the wire guide.

The WT 150 machine is supplied with the following parts as standard;

- Machine headstock including winding spindle, faceplate & ER16 collet chuck.
- Traverse system including 1x wire guide
- Safety guard
- PCWM control system & PC with touch screen
- Push button control panel
- Foot pedal incorporating pedals for speed control slow speed and brake release
- Tailstock (optional)

Precision Wire Guide



Tailstock Option

Push Button Station

Technical Specification	
Coil Diameter	100 mm
Winding Length	120 mm
Pitch Range	0.001 to 50.00

Power & Dimensions	
Power	220/240v 50/60 Hz
Size (w x d x h)	475 x 320 x 250 mm
Weight	40 Kg

Speed & Torque		Wire Ø Range
Option 1	6000 rpm / 120 Ncm	0.01 to 0.65mm
Option 2	3000 rpm / 240 Ncm	0.01 to 1.00mm
Option 3	1500 rpm / 480 Ncm	0.01 to 1.40mm

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WINDING TECHNOLOGY

WT 300

The WT 300 is a floor standing coil winding machine specifically designed for the production of small to medium size coils and transformers.

It is made of a high quality aluminium framework and robust mechanical parts. The main spindle is driven by a 1.5kW servo motor, via a 2 step pulley to give a good range of speeds and torques. The wire guide carriage is mounted on precision hardened steel rails with linear bearing guides and is driven by a 400W servo motor and precision ball screw. An encoder on the main spindle provides high performance and exact movement of the wire guide.

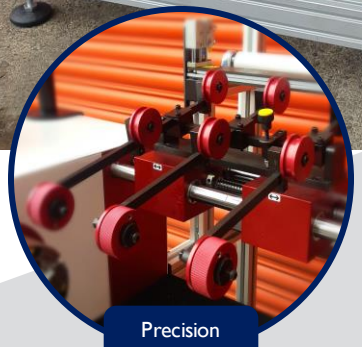
The WT 300 machine is supplied with the following parts as standard;

- Aluminium extrusion table and machined aluminium bed
- Headstock including winding spindle, faceplate & 3 jaw chuck or ER32 collet
- Push button control panel
- Traverse unit including adjustable wire guide mounting frame, 1x wire guide arm
- Safety guard
- PCWM control system & PC with touch screen
- Push button control panel
- Foot pedal incorporating pedals for speed control, slow speed and brake release
- Tailstock support with quick release action

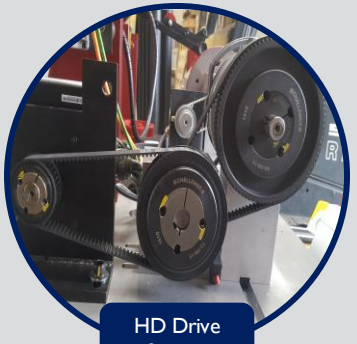
Technical Specification	
Coil Diameter	300 mm
Winding Length	350 mm
Centre Distance	380 mm
Max Load	150 Kg
Pitch Range	0.001 to 150.00

Power & Dimensions	
Power	220/240v 50/60 Hz
Size (w x d x h)	1150 x 520 x 1500 mm
Weight	180 Kg

Speed & Torque	
Standard	6000 rpm / 2.4 Nm
	1500 rpm / 9.5 Nm
HD Drive	535 rpm / 26 Nm


Precision Wire Guide


Tailstock & Slideway


HD Drive System

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WINDING TECHNOLOGY

WT 500

The WT 500 is a floor standing coil winding machine suitable for the production of medium size coils and transformers.

It is made of a high quality steel framework and robust mechanical parts. The main spindle is driven by a 2.2kW motor, with a 2 step gear box and HTD pulley reduction fitted as standard to give a large range of speeds and torques. The wire guide carriage is mounted on chrome steel linear guides and is driven by a 400W servo motor and precision ball screw. An encoder on the main spindle provides high performance and exact movement of the wire guide.

The WT 500 machine is supplied with the following parts as standard;

- Fabricated steel base and machined aluminium bed.
- 2 speed gearbox including winding spindle, faceplate & 3 jaw chuck
- Traverse unit including a double wire guide system suitable for round and flat wires
- Safety guard
- PCWM control system & PC with touch screen
- Push button control panel
- Foot pedal incorporating pedals for speed control, slow speed and brake release
- Tailstock support with quick release action

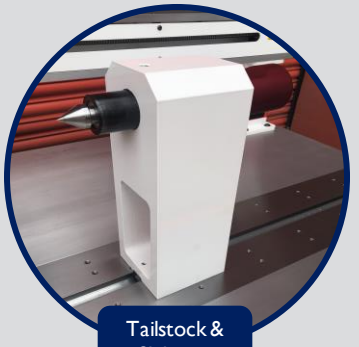
Technical Specification	
Coil Diameter	500 mm
Winding Length	850 mm
Centre Distance	900 mm
Max Load	500 Kg
Pitch Range	0.001 to 150.00

Power & Dimensions	
Power	220/240v 50/60 Hz
Size (w x d x h)	1650 x 700 x 1500 mm
Weight	500 Kg

Speed & Torque	
Option 1	183 rpm / 115 Nm
	2800 rpm / 7 Nm
Option 2	91 rpm / 230 Nm
	1400 rpm / 15 Nm


Wire Guide Unit


Faceplate and Chuck


Tailstock & Slideway

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WINDING TECHNOLOGY

WT 1200

The WT 1200 machine is a heavy duty floor standing machine suitable for the production of large size coils & transformers.

It is made of a high quality cast iron framework and robust mechanical parts. The main spindle is driven by a 5.5kW AC motor. The standard machine is fitted with a 2 step gearbox to give a large range of speeds & torques. The wire guide carriage is mounted on chrome steel linear guides and is driven by a 400W servo motor and precision ball screw. An encoder on the main spindle provides high performance and exact movement of the wire guide.

The WT 1200 machine is supplied with the following parts as standard;

- Fabricated steel framework & heavy duty cast iron bed
- 2 speed gearbox including winding spindle, faceplate & 3 jaw chuck
- Traverse unit including a wire guide system suitable for round and small rectangular wires
- Safety guard
- PCWM control system & PC with touch screen
- Push button control panel
- Foot pedal incorporating pedals for speed control slow speed and brake release
- Tailstock support with wind in / out action

Technical Specification	
Coil Diameter	800 mm
Winding Length	1100 mm
Centre Distance	1200 mm
Max Load	800 Kg
Pitch Range	0.001 to 150.00
Power & Dimensions	
Power	380/415v 50/60 Hz
Size (w x d x h)	2200 x 800 x 1800 mm
Weight	1000kg
Speed & Torque	
Standard	600 rpm / 93 Nm
	63 rpm / 890 Nm
HD Drive	300 rpm / 186 Nm
	48 rpm / 1150 Nm

Wire Guide Options

Insulation Dispensers

Gear Box 2 Speed

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WINDING TECHNOLOGY

WT 1500

The WT1500 machine is a heavy duty floor standing machine suitable for the production of large size coils & transformers.

The machine is available with 3 separate modules, the winding head, the tailstock support and traversing wire guide system. This modular system allows the flexibility to build each machine to suit the customer's specific requirements.

Model A: Comprising of the winding head module only, it is supplied as a stand-alone unit complete with our simple turns counter control system, and speed control foot pedal.

Model B: Comprising of the winding head and tailstock support modules. The tailstock can be used to support larger coils. The tailstock mounts to a machined flat base, and the position can be adjusted along the length of the base.

Model C: Comprising of the winding head, tailstock & traverse system modules. A variety of traverse systems are available, from standard wire guide systems to traversing tension systems. The model C is supplied with our PCWM control system.

Technical Specification	Model A	Model B	Model C
Coil Diameter	1500 mm	1500 mm	1500 mm
Winding Length	500 mm	1800 mm	1800 mm
Centre Distance	N/A	2000 mm	2000 mm
Max Load	500 Kg	2000 Kg	2000 Kg
Pitch Range		N/A	0.001 - 150.00
Speed & Torque			
Standard		18 rpm / 1840 Nm	
Other		On Request	
Power & Dimensions			
Power		380/415v 50/60 Hz	
Width	950 mm	3500 mm	3500 mm
Depth	950 mm	950 mm	TBA mm
Height	1750 mm	750 mm	750 mm
Weight	800 Kg	1000 Kg	TBA

Wire Guide Options

Tailstock & Support

Expanding Mandrel

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WINDING TECHNOLOGY

WT 500 Rotor Bander

Our range of rotor banding machines can be used for wrapping Kevlar, prepreg carbon fibre or glass tape around high-speed PM rotors.

The machines are capable of winding multi filament tows at very high tension directly onto the rotors or to produce sleeves to be pressed onto the rotor.

Developed over many years, our machines incorporate many innovative ideas to produce quality wound components. The PCWM control system allows you to create a data file containing all critical winding data (fibre batch numbers / fibre tension / etc) for each component wound

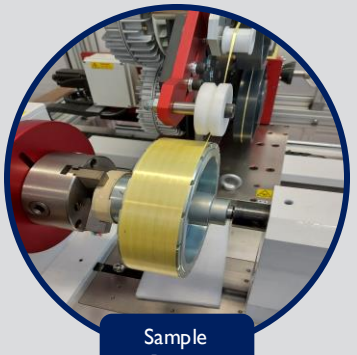
Options available:

- Shrink tape de-reeler & tension system
- Resin dispensing system
- Cut & heat stamp system for glass tapes
- Pneumatic chuck & tailstock

Technical Specification	
Coil Diameter	500 mm
Winding Length	800 mm
Centre Distance	1000 mm
Max Load	500 Kg
Pitch Range	0.001 to 150.00
Fibre Spools	200mm Ø x 300mm long
Fibre Tension	Up to 900N
Speed & Torque	
Standard	100 rpm / 210 Nm
Power & Dimensions	
Power	220/240v 50/60 Hz
Size (w x d x h)	1800 x 1300 x 1750 mm
Weight	800 Kg

Fibre Tensioner

Motorised De-reeler



Sample Rotor

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WINDING TECHNOLOGY

WT 300 Rotor Bander

The WT300 rotor banding machine has been specifically designed for wrapping glass tape around high-speed PM rotors.

The closed loop tension system provides precise and consistent tension to the tape as it is being wound.

Developed over many years, our machines incorporate many innovative ideas to produce quality wound components. The PCWM control system allows you to create a data file containing all critical winding data including tape batch numbers, tape tension, etc., for each component wound

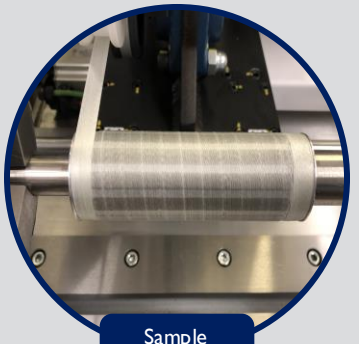
Options available:

- Extended machine bed & banding length
- Cut & heat stamp system for glass tapes
- Pneumatic chuck & tailstock

Technical Specification	
Coil Diameter	300 mm
Winding Length	350 mm
Centre Distance	380 mm
Max Load	150 Kg
Pitch Range	0.001 to 150.00
Tape Spools	300mm Ø x 20mm width
Tape Tension	Up to 500N
Speed & Torque	
Standard	100 rpm / 26 Nm
Power & Dimensions	
Power	220/240v 50/60 Hz
Size (w x d x h)	1500 x 1000 x 1600 mm
Weight	380 Kg

Fibre Tensioner

Tape De-reeler



Sample Rotor

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WINDING TECHNOLOGY

Design & Build Service

Winding Technology has an appetite for research and development projects. We offer a complete design and build service, providing our clients with a solution that meet their specific requirements. This is a feature of our company personality that many clients find truly beneficial.

Our PCWM software can be customised to integrate additional screens seamlessly, simplifying the programming of complex operations, and reducing operator error.

If you have any specific requirement or new ideas which you would like to implement on a winding application, then we are here to help bring these projects to fruition.

Previous D&B projects include;

- Fibre optic coils wound with a dual wire guide system, allowing 2 coils to be wound simultaneously.
- Resistor coils wound with a vertical corrugated tape
- Sensor coils with small diameter and up to 2m long.


Dual Wire Guide Unit


Resistor Tape Wind


2m Long Sensor Coil

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WINDING TECHNOLOGY

Machine Rebuilds

We understand the need to extend asset lives through refurbishing your existing or redundant coil winding machines.

We can rebuild your machines with one of our new control system for a fraction of the cost of a new machine.

When the rebuild work is complete, the machines are like new and fully compliant with current machine build standards. All rebuilt machines are supplied with a 12 month mechanical parts warranty and 3 year electrical parts warranty.

We have been rebuilding machines for the past 30 years and have a wealth of experience, rebuilding most well know machine brands.

Manufacturer	Model
Bobifil	ER33 / ER900 / ER1200
Meteor	307 / M01 / M20
Marsilli	WM06 / WM26
FAG / IWT	FW200
Bachi / Itasca	100 / 115 / 120

Other: Samatic / Erasan / Stolberg / LAE / EMA

Itasca 100

Samatic 2002

EMA GB28

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WINDING TECHNOLOGY

Tension Systems

Motorised Spool Tensioner

The MST systems comprise of a motorised spool de-reeler and a dancer / tension unit. They are built to suit specific winding applications.

The spool de-reeler and dancer unit work together to accurately control the tension and supply of the wire / fiber to the winding machine. The system is designed to maintain constant and accurate tension even during acceleration, rapid deceleration, and when the bobbin is stationary. The de-reeler unit also has the facility to rewind back onto the supply spool.

Options:

- Length counter
- Start lead length generator
- Tension logging for each component wound


Spool De-reeler


Length Counter


Pneumatic Clamp

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Tension Systems

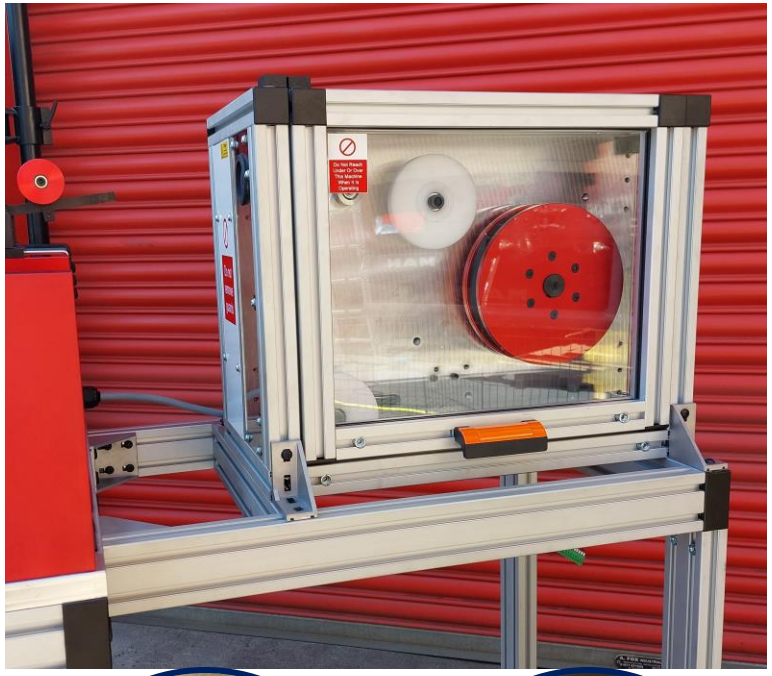
HDP

The HDP tensioner is ideal for applying high tension to heavy gauge wires during the winding operation.

Tension is applied to the wire using a large diameter pulley attached to a brake unit. The system uses a magnetic particle brake or pneumatic disk brake, the choice of brake will depend on the tension required and the line speed of the wire for the specific application.

A pneumatic dancer arm is used to keep the tension constant during the winding process, even if winding onto a square or rectangular shaped formers.

The HDP system can be controlled manually using a suitable regulator (electronic pot or air regulator). Or, if the system is to be used in conjunction with a WT winding machine, we can use closed loop tension control. The PCWM control system allows you to program the tension for each component, automatically monitor and adjust the tension during winding, and record the tension data to a data file for each component.



Technical Specification	
Model: HDP-PB-L & HDP-MB-L	
Tension Range	Up to 25 Kg
Wire Ø	Up to 2.5mm
Model: HDP-PB-H & HDP-MB-H	
Tension Range	Up to 60 Kg
Wire Ø	Up to 4.2mm

Power & Shipping Details	
Power	220/240v 50/60 Hz
Size (w x d x h)	500 x 500 x 1600 mm
Weight	80 Kg

Pneumatic Dancer

Load Cell

Pneumatic Brake

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WINDING TECHNOLOGY

Tension Systems

HDF

The HDF tensioner has been designed to hold and apply tension to large wire supply spools. The tension system frameworks can be supplied to hold multiple wire spools on one frame.

The wire supply spool is mounted horizontally onto the main cantilever arm of the HDF tensioner, and locked in place using taper cones and a threaded handwheel.

The system uses either a pneumatic or magnetic particle brake system, depending on the application. Tension is regulated by an adjustable air regulator (pneumatic) or potentiometer dial (mag brake) which can be mounted at the front of the winding machine. An air shut off valve (pneumatic) or On/Off switch (Mag brake) is also supplied which allows the operator to turn off the spool tension and pull a length of wire from the tensioner.

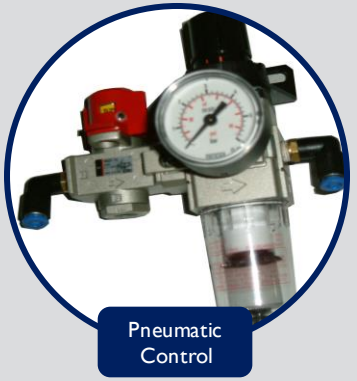
Options

- Frameworks to hold multiple HDF tension units
- Frameworks to hold the spools in the horizontal or vertical axis
- Traversing systems (manual or motorised)

Technical Spec	HDF 500	HDF 700	HDF 900
Max. Spool Ø	500 mm	700 mm	900 mm
Max. Spool Width	200 mm	300 mm	300 mm
Max. Spool Weight	75 Kg	150 Kg	150 Kg
Max. Tension	30 Nm	105 Nm	105 Nm
Power & Shipping Details			
Mag Brake System	24220/240v 50/60 Hz		
Pneumatic System	6 Bar		
Size (w x d x h)	TBA		
Weight	TBA		

Spool Mounting

Double Tensioner



Pneumatic Control

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WINDING TECHNOLOGY

Tension Systems

Traversing Frameworks

Any of the WT range of tensioners can be mounted onto traversing systems which allows the whole tension system to move with the wire guide arm on the winding machine, saving valuable factory space.

The traverse systems can be moved manually or by fully automated motorised systems.

For the motorised systems the movement can be controlled by a sensor which detects the position of the wire. Or, the PCWM control system can control the movement of the whole tension system.

Adjustable Guide

HDF700-2 + HD

HDF900-3

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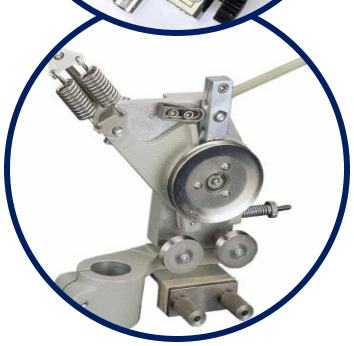
WINDING TECHNOLOGY

Tension Systems

TC Range	Grams	Wire
TCS3S	2.0 – 11.0	0.02 – 0.04
TCSS	9.0 – 50.0	0.04 – 0.08
TCS	40.0 – 200.0	0.08 – 0.16
TCM	90.0 – 500.0	0.16 – 0.25

TCL Range	Grams	Wire
TCL	200 – 2000	0.2 – 0.6
TCLL	1000 – 5000	0.5 – 1.2
TCLLL	2000 – 10000	0.7 – 2.0



HD Unit	Kg	Wire
HD	0.40 – 23.5	0.25 – 2.5

MTAD Range	Grams	Wire
MTAD 800	100 – 800	0.14 – 0.40
MTAD 1200	200 – 1200	0.25 – 0.50
MTAD 2000	300 – 2000	0.30 – 0.70

Tensioner Monitor & Display

Tel: +44 (0)1484 663389 **E-mail:** sales@windingtechnology.com **Web:** www.windingtechnology.com

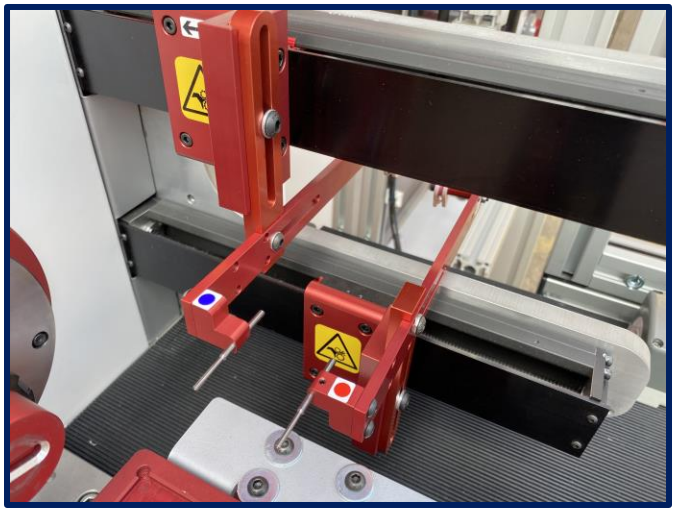
Contact us

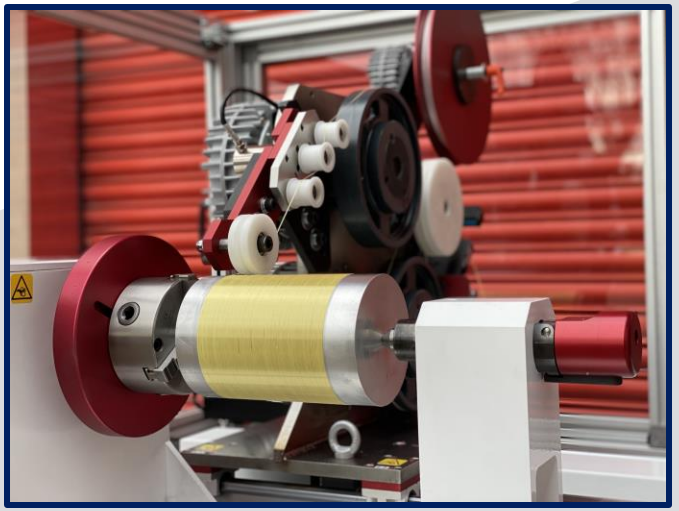
Winding Technology Ltd
Unit 10, Honley Business Centre
New Mill Road
Huddersfield
HD9 6QB
United Kingdom

sales@windingtechnology.com

Tel: +44 (0)1484 663389

www.windingtechnology.com





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