We aim to be much more than a machinery supplier. Our team has a vast range of winding experience and is able to offer help and advice on all aspects of coil winding, from tooling design to machine choice and set-up.

Ingrid West Machinery
~ Coil winding solutions you can rely on ~

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Working with local partners in the following countries: Austria, Czech Republic, Germany, Hungary, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.
WH 800 Single spindle transformer winding machine.

**Specification**

<table>
<thead>
<tr>
<th>Program</th>
<th>Microprocessor controlled, capable of holding 999 program sequences which may be run independently or in selected blocks for compound windings.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Spindle drive - High torque brushless DC induction motor producing a max torque 78.5 Ncm. Traverse - Constant current driven 4-phase stepper motor.</td>
</tr>
<tr>
<td>Application</td>
<td>Wire guide is capable of holding four wires at the same time for multiple windings e.g. standard EI transformers.</td>
</tr>
<tr>
<td>Package</td>
<td>Includes wire guide, margin tape &amp; cover tape attachments and wire feeder system, with comprehensive manual.</td>
</tr>
<tr>
<td>Wire size</td>
<td>0.02 – 1.0 mm</td>
</tr>
<tr>
<td>Max pitch</td>
<td>10 mm</td>
</tr>
<tr>
<td>Winding width</td>
<td>110 mm (max)</td>
</tr>
<tr>
<td>Bobbin dia</td>
<td>110 mm (max)</td>
</tr>
<tr>
<td>Max speed</td>
<td>6000, (optional) 3000 Rpm</td>
</tr>
<tr>
<td>Power</td>
<td>AC 230 / 110V ± 10%, 50-60hz</td>
</tr>
<tr>
<td>Dims</td>
<td>760 x 680 x 720 mm</td>
</tr>
<tr>
<td>Net weight</td>
<td>37 kg</td>
</tr>
<tr>
<td>CE cert. no.</td>
<td>AE9955093 01</td>
</tr>
</tbody>
</table>

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Working with local partners in the following countries:

Austria, Czech Republic, Germany, Hungary, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.
WH 800i Two spindle transformer winding machine.

**Specification**

**Program**
Microprocessor controlled, capable of holding 999 program sequences which may be run independently or in selected blocks for compound windings.

**Control**
Spindle drive - High torque brushless DC induction motor producing a max torque 78.5 Ncm.
Traverse - Constant current driven 4-phase stepper motor.

**Application**
Nozzle type wire guides feed each spindle, these are adjustable so that dual winding may be carried out successfully. Each guide is fed via a tension unit.

**Package**
Includes 2 x nozzle wire guides, 2 x tension units and cover tape attachment, with comprehensive manual.

**Wire size**
Typically 0.02 – 0.6 mm (1.0mm in single spindle mode).

**Max pitch**
10 mm

**Winding width**
110 mm (max)

**Bobbin dia**
110 mm (max)

**Max speed**
6000, 3000 (optional)

**Power**
AC 230 / 110V ± 10%, 50-60hz

**Dims**
760 x 680 x 720 mm

**Net weight**
37 kg

**CE cert. no.**
AE9955093 01

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Working with local partners in the following countries: Austria, Czech Republic, Germany, Hungary, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.
**WH 752 Heavy duty two spindle coil winding machine.**

### Specification

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program</strong></td>
<td>Microprocessor controlled, capable of holding 999 program sequences which may be run independently or in selected blocks for compound windings.</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td>Spindle drive - High torque brushless DC induction motor producing a max torque of 157 Ncm.</td>
</tr>
<tr>
<td><strong>Traverse</strong></td>
<td>Constant current driven 4-phase stepper motor.</td>
</tr>
<tr>
<td><strong>Application</strong></td>
<td>Roller type wire guide and separate tension unit for each spindle. Wire guides adjust for dual winding.</td>
</tr>
<tr>
<td><strong>Package</strong></td>
<td>Includes 2 x roller wire guides and 2 x tension units, with comprehensive manual.</td>
</tr>
<tr>
<td><strong>Wire size</strong></td>
<td>0.3 – 1.6 mm</td>
</tr>
<tr>
<td><strong>Max pitch</strong></td>
<td>10 mm</td>
</tr>
<tr>
<td><strong>Winding width</strong></td>
<td>110 mm (max)</td>
</tr>
<tr>
<td><strong>Bobbin dia.</strong></td>
<td>110 mm (max)</td>
</tr>
<tr>
<td><strong>Max speed</strong></td>
<td>3000 rpm</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>AC 230 / 110 V ± 10%, 50 – 60 Hz</td>
</tr>
<tr>
<td><strong>Dims</strong></td>
<td>600 x 480 x 900 mm</td>
</tr>
<tr>
<td><strong>Net weight</strong></td>
<td>55 kg.</td>
</tr>
<tr>
<td><strong>CE cert. no.</strong></td>
<td>AE 9955093 01</td>
</tr>
</tbody>
</table>

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**WH 520 Two spindle “Fly winding” machine.**

**Specification**

**Program**
Microprocessor controlled, capable of holding 999 program sequences which may be run independently or in selected blocks for compound windings.

**Control**
- Spindle drive: High torque brushless DC induction motor producing a max torque 78.5 Ncm.
- Traverse: Constant current driven 4-phase stepper motor.
- Index: Constant current driven 4-phase stepper motor.

**Application**
Nozzle type wire guides feed each spindle. Each guide is fed via a separate tension unit. With the *Fly winding* principle, wire is wound around the stationary core - ideal for motors.

**Package**
Includes 2 x nozzle wire guides, 2 x tension units and cover tape attachment, with comprehensive manual.

**Wire size**
0.03 – 0.6 mm

**Max pitch**
10 mm

**Winding width**
70 mm (max)

**Motor OD**
8 - 50 mm

**Motor Height**
20 mm (max)

**Max speed**
3000 rpm

**Power**
AC 230 / 110V ± 10%, 50-60hz

**Dims**
700 x 350 x 100 mm

**Net weight**
65 kg

**CE cert. no.**
AE9955093 01

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Ingrid West Machinery Ltd
Unit 5L, Delta Drive, Tewkesbury, Glos. GL20 8HB, United Kingdom
Tel. +44(0) 1684 273164 Fax. +44(0) 1684 273171
E-mail enquiry@ingridwest.co.uk Website www.coilwindingmachines.eu

WH 764 Four spindle coil winding machine.

Specification

Program
Microprocessor controlled, capable of holding 999 program sequences, which may be run independently or in selected blocks for compound windings.

Control
Spindle drive - High torque brushless DC induction motor producing a max torque of 78.5Ncm.
Traverse - Constant current driven 4-phase stepper motor.

Application
Nozzle type wire feeder heads on each spindle; these have adjustable parallelism so multiple winding may be carried out. Each spindle via a separate tension unit.

Package
Includes 4 x nozzle type wire feeder heads, 4 x tension units and comprehensive manual.

Wire size
0.02 – 0.6 mm

Max pitch
10 mm

Winding width
100 mm (max)

Bobbin dia.
100 mm (max)

Max speed
6000 rpm

Power
AC 230 / 110 V ± 10%, 50 – 60 Hz

Dimensions
1000 x 500 x 1000 mm

Net weight
60 kg

CE cert. no.
AE9955093 01

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Working with local partners in the following countries:
Austria, Czech Republic, Germany, Hungary, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.
**WH 766T Skeining Six spindle coil winding machine.**

**Specification**

**Programming**  
Microprocessor controlled, capable of holding 999 program sequences, which may be run independently or in selected blocks for compound windings.

**Control**  
Spindle drive - High torque brushless DC induction motor producing a max torque of 78.5Ncm.  
Traverse - Constant current driven 4-phase stepper motor.

**Application**  
Designed for thin wires that require skeining. Nozzle type wire feeder heads on each spindle; these have adjustable parallelism so that multiple winding may be carried out.  
Each spindle is fed via a separate tension unit through a skeining device.  
**Automated skein function** - The winding is stopped a few turns from the end, and the machine automatically performs the skeining function. Half of the skeined length is then wound into the bobbin, and the remaining skeined length is used for the start of the next coil.

**Package**  
Includes 6 x nozzle type wire feeder heads, 6 x skeiner units, and comprehensive manual.

- **Wire size** 0.03 – 0.30mm  
- **Max pitch** 10 mm  
- **Winding width** 100 mm (max)  
- **Bobbin dia.** 100 mm (max)  
- **Turns** 9999.9 turn or 99999  
- **Max speed** 6000 rpm  
- **Power** AC 230 / 110 V ± 10%, 50 – 60 Hz  
- **Net weight** 85 kg  
- **CE cert. no.** AE9955093 01

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Working with local partners in the following countries:  
Austria, Czech Republic, Germany, Hungary, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.
Heavy duty versatile single spindle coil winding machine WH 751.

**Specification**

**Program**
Microprocessor controlled, capable of holding 999 program sequences which may be run independently or in selected blocks for complex windings.

**Control**
Spindle drive - High torque brushless DC induction motor.

**Traverse**
Constant current driven 4-phase stepper motor.

**Application**
Bigger transformers and large wire windings, long coils, antennas.

**Package**
Base machine with belt selectable drive ratios for 3000 and 800 max. rpm, tensioner stand, tailstock, and comprehensive manual.

**Accessories**
Large choice of wire tensioners, taping and speed foot switch.

**Wire size**
0.02 – 3.0 mm

**Max pitch**
10 mm

**Bobbin dia.**
200 mm (max)

**Winding width**
300 mm (max)
700 mm (option)*

**Net weight**
58 kg

**Dims**
950 x 520 x 600 mm

**Power**
AC 230/110 V±10%
50/60Hz

**CE cert. no.**
AE 9955093 0

<table>
<thead>
<tr>
<th>Max Speed (Rpm)</th>
<th>Max Torque (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>800 / 3000</td>
<td>8.8 / 1.1</td>
</tr>
<tr>
<td>400 / 1600**</td>
<td>17.6 / 2.2</td>
</tr>
</tbody>
</table>

* This machine is also available with an extended bed for coils longer than 300mm.

** High Torque version available as an option.

For examples of wire feeder heads and other accessories, please see overleaf.

---

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Working with local partners in the following countries: Austria, Czech Republic, Germany, Hungary, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.
WH 751a Air coil winder with hot-air bonding.

Many people believe that it is impossible to make air coils on a bench-top machine, but with the help of IWM you can do it!

The advantages of making your own air coils include:-
- Fast turn-around for prototypes
- Full control over the production process
- Flexibility and cost control

All you need is:-
- A Wey Hwang 751 air coil winding package
- Tooling design and manufacture & IWM know-how!

Package includes:-
- WH-751 bobbin winding machine
- Tensioner and wire guide as required
- Safety heat-shield
- Heat gun
- Manual tailstock

Precise control of the heat-gun air temperature and air flow rate, and exact positioning of the nozzle, warm the wire and the tooling just enough to guarantee perfect adhesion of wire to wire, with correct release from the tooling.

Careful design of the tooling, and Wey Hwang’s advanced machine controllability, ensure reliable wire entry and exit from the coil every time.

For the price of the tooling – refundable against machine order we can create tooling and wind you some samples to demonstrate quality (and cycle time) created from this package.

As these machines are custom made, please speak to us about the coil specification you wish to produce

We aim to be much more than a machinery supplier. Our team has a vast range of winding experience and is able to offer help and advice on all aspects of coil winding, from tooling design to machine choice and set-up.
WH 751 Air coil winder with hot air bonding.

We want to show you some examples of the capabilities of the machine.

<table>
<thead>
<tr>
<th>Coil Data</th>
<th>Wire (mm)</th>
<th>ID (mm)</th>
<th>Turns</th>
<th>Cycle time (Sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.06</td>
<td>13</td>
<td>220</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>0.2</td>
<td>62 * 36</td>
<td>74</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>0.315</td>
<td>13</td>
<td>54</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>0.71</td>
<td>90</td>
<td>150</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>0.18</td>
<td>13</td>
<td>243</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>0.315</td>
<td>Triangular</td>
<td>277</td>
<td>45</td>
</tr>
</tbody>
</table>

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Working with local partners in the following countries:
Austria, Czech Republic, Germany, Hungary, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.
Tensioners - Fine wire, low cost.

These mechanical tensioners provide precision control of winding tension for wires in the range from 0.02mm to 2.0 mm.

The arm position provides feedback to the system, adjusting the main friction wheel to regulate and maintain constant tension during the winding cycle.

Felt pads provide pre-tension and remove dust and other debris from the wire.

Ceramic eyelets and roller guides at each point of contact protect insulation from mechanical damage, guide the wire.

The performance of these units is exceptional given the low cost, providing outstanding value for money.

* The wire sizes shown are a guide only, for copper magnet wire at recommended “Standard Tension”. The tension required in practical applications may vary considerably.

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Min Tension (grams)</th>
<th>Max Tension (grams)</th>
<th>Min Wire Gauge (mm) *</th>
<th>Max Wire Gauge (mm) *</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC3S</td>
<td>2</td>
<td>11</td>
<td>0.02</td>
<td>0.04</td>
</tr>
<tr>
<td>TCSS-X</td>
<td>7</td>
<td>30</td>
<td>0.03</td>
<td>0.06</td>
</tr>
<tr>
<td>TCSS</td>
<td>9</td>
<td>50</td>
<td>0.04</td>
<td>0.08</td>
</tr>
<tr>
<td>TCS-E</td>
<td>20</td>
<td>130</td>
<td>0.06</td>
<td>0.13</td>
</tr>
<tr>
<td>TCS</td>
<td>40</td>
<td>200</td>
<td>0.08</td>
<td>0.16</td>
</tr>
<tr>
<td>TCM</td>
<td>90</td>
<td>500</td>
<td>0.16</td>
<td>0.25</td>
</tr>
<tr>
<td>TCL-X</td>
<td>200</td>
<td>2000</td>
<td>0.20</td>
<td>0.60</td>
</tr>
<tr>
<td>TCLL-X</td>
<td>1000</td>
<td>5000</td>
<td>0.50</td>
<td>1.2</td>
</tr>
<tr>
<td>TC3L</td>
<td>2000</td>
<td>10000</td>
<td>0.70</td>
<td>2.0</td>
</tr>
</tbody>
</table>

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Ingrid West Machinery

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Working with local partners in the following countries:
Austria, Czech Republic, Germany, Hungary, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.
Magnetic Tensioners.
Providing stable & consistent tension control over long periods.

Wire tension is one of the critical parameters of any coil winding process, having an influence on product characteristics, particularly DC resistance. Tensioning devices are therefore required to ensure constant wire tension throughout the winding process.

One major disadvantage of mechanical tensioning devices is that the friction materials are in contact with each other, resulting in mechanical wear. Therefore the tension may change from the set value over time.

Key advantages of Magnetic Tensioners:

These magnetic tensioners use a permanent magnet as a non-contact method of generating a variable friction on the main wheel of the tensioner, maintaining wire tension at the set value for long periods with no requirement for adjustment.

The arm position provides feedback to the system, adjusting the main friction wheel to regulate and maintain constant tension during the winding cycle.

Felt pads provide pre-tension and remove dust and other debris from the wire.

Ceramic eyelets and roller guides at each point of contact protect insulation from mechanical damage, and guide the wire.

The performance of these units is exceptional given the low cost, providing outstanding value for money.

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Min Tension (grams)</th>
<th>Max Tension (grams)</th>
<th>Min Wire Gauge (mm)</th>
<th>Max Wire Gauge (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTCSS</td>
<td>4</td>
<td>40</td>
<td>0.03</td>
<td>0.07</td>
</tr>
<tr>
<td>MTCS</td>
<td>10</td>
<td>120</td>
<td>0.04</td>
<td>0.14</td>
</tr>
<tr>
<td>MTCM</td>
<td>50</td>
<td>400</td>
<td>0.08</td>
<td>0.25</td>
</tr>
<tr>
<td>MTCL</td>
<td>80</td>
<td>600</td>
<td>0.12</td>
<td>0.35</td>
</tr>
</tbody>
</table>

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Magnetic Tensioners with tension release
Providing stable & consistent tension control over long periods.

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These magnetic tensioners use a permanent magnet as a non-contact method of generating a variable friction on the main wheel of the tensioner, maintaining wire tension at the set value for long periods with no requirement for adjustment.

The arm position provides feedback to the system, adjusting the main friction wheel to regulate and maintain constant tension during the winding cycle.

Felt pads provide pre-tension and remove dust and other debris from the wire.

Ceramic eyelets and roller guides at each point of contact protect insulation from mechanical damage, and guide the wire.

The models shown here have a pneumatic cylinder (controllable from the winding machine) for tension release as required during pin wrapping operations.

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Min Tension (grams)</th>
<th>Max Tension (grams)</th>
<th>Min Wire Gauge (mm)</th>
<th>Max Wire Gauge (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTASS</td>
<td>4</td>
<td>40</td>
<td>0.03</td>
<td>0.07</td>
</tr>
<tr>
<td>MTAS</td>
<td>7</td>
<td>120</td>
<td>0.04</td>
<td>0.14</td>
</tr>
<tr>
<td>MTAM</td>
<td>15</td>
<td>430</td>
<td>0.06</td>
<td>0.25</td>
</tr>
</tbody>
</table>

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*Working with local partners in the following countries: Austria, Czech Republic, Germany, Hungary, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.*
A Revolution in Wire tension technology for the COIL WINDING industry

The new generation wire constant feeding device

Advanced Digital Display
With ergonomic Keys for easy operation

Automatic compensating arm
Wire ‘Storage and Release’ capability to manage sudden wire absorption or release during the working process and simultaneously keeping the wire feeding tension at the set value (Patent).

Motor Driven and suitable to self adjust accordingly to the set Tension Profile.

Dual Drive Feeding System
control and maintain a constant winding feeding (input) tension during the entire process.

Motor torque control System
CONSTANT WIRE TENSION CONTROL

Tension Sensor – precision load cell

Fully programmable
easy parameter setting (Tension Profiler, % tolerances, ...) for diversified working conditions.

High Tech Digital Technology
Featuring simultaneous dual control on both wire feeding tension and wire running speed for a complete feeding control.

Tension Profiler Function
possibility to program up to 2 different wire feeding tension values without any interface/connection to the coil winding machine or up to 4 different wire feeding tension values during winding cycle, utilising two digital inputs.

We aim to be much more than a machinery supplier. Our team has a vast range of winding experience and is able to offer help and advice on all aspects of coil winding, from tooling design to machine choice and set-up.

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~ Coil winding solutions you can rely on ~

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**BENEFITS**

- **Impressive Versatility**
  - Fully programmable parameters according to the wire and application requirements and possibility to dynamically modify tension according to the manufacturing process stage (‘Tension Profiler’ Function).
- **A wide application range**
  - A single device able to cover a wide wire tension and diameter range.
- **Production Process Efficiency Maximisation**
  - Able to work at maximum machine speed, thus dramatically reducing wire breakage
- **Minimises Labour Costs**
  - Minimised machine operator time, thanks to advanced and user-friendly programming options.
- **Centralised programming and monitoring**
  - Matrix controller external unit able to program and control CWF units at a glance and monitoring the whole process production status also in graphical form.
- **Performance**
  - Drastic process simplification, simultaneous TOP Quality, Accuracy and Repeatability results.
- **Fully programmable**
  - Easy parameter setting (Tension Profiler, % tolerances, ...) for diversified working conditions.
- **A compact Solution**
  - Easy plug & play installation.
- **Programmable tension range**
  - Two versions available:
    - 5~1500g(cN) Wire diameters 0.06~0.5mm (42~24 AWG) resolution +/-1g
    - 0.5~200g(cN) Wire diameters 0.015~0.13mm (54~36 AWG) resolution +/-0.1g

![Input Tension vs Output Tension graph](image)

- **Output Tension**
- **Input Tension**
- **Wire Speed**
Feeder head /Guide heads

Multi wire and tape Feeder Head
- Used for producing multi-winding transformers at one workstation
- Allows use of up to 4 different wire sizes without rethreading
- Felt pads for cleaning of wire and back tension
- Includes margin tape and cover tape attachment

Guide tube feeder head
- Ceramic parts at every wire contact point, to protect the wire coating
- Guide tube places wire accurately
- Independent micro-adjustment for more than one spindle.
- Felt pad for cleaning of wire and back tension
- Takes guide tubes of inside diameter 0.3 ~ 1.2 mm

Fixed roller feeder head with micro adjustment
- Durable brass rollers to control heavy gauge wire
- Independent micro-adjustment for more than one spindle.
- Felt pad for cleaning of wire and back tension

Variable angle roller feeder head
- Durable brass rollers to control heavy gauge wire
- Adjustable angle of feed.
- Adjustable roller position enables wire pre-bend / straightening.

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Large bobbins / solenoids and air coils need a tailstock to support the outer flange during winding.

The WH-751 machine can be fitted with either a manual or a pneumatic tailstock, and either option can be mounted or removed in minutes. All tailstocks are adjustable for left-to-right position, and are provided with a removable precision angular contact bearing.

<table>
<thead>
<tr>
<th>Heavy Duty</th>
<th>Specifications</th>
<th>Pneumatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 mm</td>
<td>Stroke length</td>
<td>50 mm</td>
</tr>
<tr>
<td>180 mm</td>
<td>Maximum clearance when open, from tool holder face</td>
<td>150 mm</td>
</tr>
<tr>
<td></td>
<td>to tailstock bearing face</td>
<td></td>
</tr>
<tr>
<td>10 mm</td>
<td>Bearing ID to locate tool</td>
<td>8mm</td>
</tr>
<tr>
<td>N/A</td>
<td>Air supply</td>
<td>5 Bars</td>
</tr>
</tbody>
</table>

**De-spooler Drum**

- Internal Diameter 224 mm
- Internal Height 295 mm
- Ceramic grommet at wire exit point to prevent damage to wire coating
- Anti-slip mat to secure wire spool
- Easy assembly for fast changeover

**Wire Drum Feeder**

- Fits 100mm standard aperture in wire drums
- Pulley with ceramic insert and precision bearing
- Adjustable sprung wire press with felt pads
- Height to pulley spindle approx. 125 mm
- Ceramic grommet at wire exit point to prevent damage to wire coating

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Floor Standing Heavy Duty Bobbin winding Machine range

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EZ-2500 WINDING MACHINE

DESCRIPTION.
The EZ-2500 is a floor standing style winding machine, Large size to be easily placed in a factory or workshop, equipped with head and bench in galvanised steel and covered in stainless steel, face plate, tailstock with security closure, guider system and foot pedal.

The machine is governed by numeric control and CNC electronic programming.

This machine is specially designed for the manufacture of re-winds, large rotor coils for use in wind turbine industry, using aluminium or copper wires, including rectangular or flat wires with a special guider.

The concept and design facilitates the placement of necessary accessories such as end-fillers or insulation paper in foil, of various levels.

TECHNICAL CHARACTERISTICS.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wire Ø</td>
<td>0.01 – 30 mm</td>
</tr>
<tr>
<td>Winding speed</td>
<td>0 - 60 r.p.m</td>
</tr>
<tr>
<td>Max. winding length</td>
<td>2,250 mm</td>
</tr>
<tr>
<td>Max. Distance between points</td>
<td>2,500 mm</td>
</tr>
<tr>
<td>Spindle height (from floor)</td>
<td>1,300 mm</td>
</tr>
<tr>
<td>Tailstock movement</td>
<td>1,500 mm</td>
</tr>
<tr>
<td>Guider precision</td>
<td>Manual</td>
</tr>
<tr>
<td>Main shaft motor</td>
<td>7.5 HP</td>
</tr>
<tr>
<td>Guider motor</td>
<td>0.3 HP (Brushless)</td>
</tr>
<tr>
<td>Power source</td>
<td>3 x 380Vca - 50Hz</td>
</tr>
<tr>
<td>Weight</td>
<td>1,500 Kgs</td>
</tr>
</tbody>
</table>

PROGRAMMING CHARACTERISTICS.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard with the machine, turns counter,</td>
<td>CMZ240</td>
</tr>
<tr>
<td>simple program</td>
<td></td>
</tr>
<tr>
<td>By request, electronic control</td>
<td></td>
</tr>
<tr>
<td>Max. No. of programmable windings</td>
<td>Max. 130</td>
</tr>
<tr>
<td>Max. No. of windings per coil</td>
<td>Max. 12</td>
</tr>
<tr>
<td>Type of programming</td>
<td>CNC</td>
</tr>
<tr>
<td>DELIVERY TIME</td>
<td>60 Days from order confirmation</td>
</tr>
</tbody>
</table>

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E-1200 WINDING MACHINE

DESCRIPTION.
The E-1200 is a floor standing style winding machine, medium sized to be easily placed in a factory or workshop, equipped with head and bench in galvanised steel and covered in stainless steel, fixation plate, tailstock with security closure, guider system protection and pedal.
The machine is governed by numeric control and CNC electronic programming.
This machine is specially designed for the manufacture of solenoids and power and distribution transformers from 10 to 1.200 KVA, using aluminium or copper wires, including rectangular or flat wires with a special guider.
The wide range of velocities, up to 500 r.p.m, permits primary and secondary windings on the same machine, thus reducing the production processes.
The concept and design facilitates the placement of necessary accessories such as end-fillers, insulation paper or foil, of various types.

TECHNICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Wire Ø (and profile wire)</th>
<th>Max winding length</th>
<th>Max distance between points</th>
<th>Max winding Ø</th>
<th>Guiding precision</th>
<th>Winding shaft speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01 – 30 mm</td>
<td>1.100 mm</td>
<td>1.200 mm</td>
<td>800 mm</td>
<td>0.01 mm</td>
<td>500/250 rpm *</td>
</tr>
</tbody>
</table>

* The standard machine is available in two models, high speed and low speed, other combinations available on request

<table>
<thead>
<tr>
<th>Belt Position **</th>
<th>High Speed 500 RPM</th>
<th>Low Speed 250 RPM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Torque (Nm)</td>
<td>Speed (Rpm)</td>
</tr>
<tr>
<td>1</td>
<td>172</td>
<td>500</td>
</tr>
<tr>
<td>2</td>
<td>1033</td>
<td>96</td>
</tr>
</tbody>
</table>

** The head has two belt positions; the position directly depends on the product to be wound

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E-900 SGB WINDING MACHINE

Medium-sized bench Winding Machine. Equipped with:

✓ Traverse head ✓ Face plate.
✓ Guider system ✓ Safety shielded foot pedal.
✓ Strength and ✓ CNC motion controller and simple electronic programming.
✓ Torque and setup ✓ Tailstock - with security lock.

The applications of this machine include the manufacture of solenoids, inductors, and transformers, with capacity to make multiple windings and even distribution and power transformers from 10 to 600 KVA.

There are various configurations of speed ranges, up to 3,000 r.p.m. This allows winding of primaries easily and with very short production cycle times.

TECHNICAL CHARACTERISTICS.

| Wire Ø and profile wire | 0.01 – 10mm |
| Max winding length | 800 mm |
| Max distance between points | 900 mm |
| Max Winding Ø | 560 mm |
| Guider precision | 0.01 mm |
| Winding shaft speed. | 1,500 /3,000 r.p.m** |
| Torque and speed | (** There are two versions of this machine each having four gear positions) |

<table>
<thead>
<tr>
<th>Gear Position</th>
<th>1500 RPM version</th>
<th>3000 RPM version</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Torque (Nm)</td>
<td>Speed (Rpm)</td>
</tr>
<tr>
<td>1</td>
<td>26</td>
<td>1500</td>
</tr>
<tr>
<td>2</td>
<td>39</td>
<td>1000</td>
</tr>
<tr>
<td>3</td>
<td>156</td>
<td>250</td>
</tr>
<tr>
<td>4</td>
<td>234</td>
<td>166</td>
</tr>
</tbody>
</table>

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E-900 SERVOTECH WINDING MACHINE

Medium-sized bench Winding Machine. Equipped with:

- ✓ Face plate.
- ✓ Guider system
- ✓ Safety shielded foot pedal.
- ✓ CNC motion controller and simple electronic programming.
- ✓ Tailstock - with security lock.

State-of-the-art winding machine with highly advanced features, including an automatic gearbox, energy efficient servo motors, and intelligent torque boosting technology.

The applications of this machine include the manufacture of solenoids, inductors, and transformers, with capacity to make multiple windings and even distribution and power transformers from 10 to 600 KVA.

The automatic gearbox is a new feature of the “SERVOTECH” model, enabling the appropriate gear ratio to be selected by software.

This allows winding of primaries easily and with very short production cycle times.

TECHNICAL CHARACTERISTICS.

<table>
<thead>
<tr>
<th>Wire Ø and profile wire</th>
<th>0.01 – 10mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max winding length</td>
<td>800 mm</td>
</tr>
<tr>
<td>Max distance between points</td>
<td>900 mm</td>
</tr>
<tr>
<td>Max Winding Ø</td>
<td>560 mm</td>
</tr>
<tr>
<td>Guider precision</td>
<td>0.01 mm</td>
</tr>
</tbody>
</table>

* The standard machine is available with speed torque shown below, however please contact us should you require other ratings

<table>
<thead>
<tr>
<th>Gear Position</th>
<th>1500 RPM version**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Torque (Nm)</td>
</tr>
<tr>
<td>1</td>
<td>43</td>
</tr>
<tr>
<td>2</td>
<td>261</td>
</tr>
</tbody>
</table>

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**E-600 WINDING MACHINE**

**DESCRIPTION** Medium-sized “Power house!” Winding Machine.

Equipped with:
- ✓ Traverse head
- ✓ Sturdy base
- ✓ Tailstock - with security lock,
- ✓ Guider system
- ✓ & Safety shielded foot pedal.
- ✓ Controlled by numeric PLC and electronic programming.

This machine is designed for the manufacture of solenoids, inductors, distribution and power transformers, with capacity to make multiple windings and a wide range of wire sizes.

There are various configurations of speed ranges, (depending machine version). This produces a fast cycle time for high turn primary windings.

**TECHNICAL CHARACTERISTICS.**

| Max. Distance between points | .............................. 650mm |
| Max winding length.          | .................................. 600mm |
| Max. Ø of winding.           | .................................. 420mm |
| Height from center face plate to machine base | .......................... 300mm |
| Face plate diameter.         | .................................. 220mm |
| Tailstock Morse Cone.        | Nº 2 .................................. |
| Guider precision.            | 0,001 mm ............................ |
| Spindle Resolution.          | 0,01 turns ........................... |
| Main shaft motor (Parker).   | .................................. 1.2Nm |
| Guider motor (Brushless servomotor) | .................................. 250 Kg |
| Weight (approx.)             | .................................. 250 Kg |
| Electrical source.           | 220Vac - 50Hz ............................ |

**TORQUE AND SPEED**

Winding shaft speed ...................................... 400 rpm / 300 rpm

<table>
<thead>
<tr>
<th>Belt Position</th>
<th>version - 400 RPM</th>
<th>version - 300 RPM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Speed (Rpm)</td>
<td>Torque (Nm)</td>
</tr>
<tr>
<td>1</td>
<td>400</td>
<td>70</td>
</tr>
</tbody>
</table>

E-mail enquiry@ingridwest.co.uk Website www.coilwindingmachines.eu
E-300 WINDING MACHINE

DESCRIPTION

Small-sized bench Winding Machine.

Equipped with:
✓ Traverse head
✓ Sturdy base
✓ Tailstock - with security lock,
✓ Guider system
✓ & Safety shielded foot pedal.
✓ Controller by numeric PLC and electronic programming.

The applications of this machine is intended for the manufacture of solenoids, reactances, transformers, with capacity to make multiple windings and even distribution and power transformers.

There are various configurations of speed ranges, up to 9,000 r.p.m. This allows winding of primaries easily and with very short production cycle times.

TECHNICAL CHARACTERISTICS.

<table>
<thead>
<tr>
<th>Wire Ø</th>
<th>Max. Winding length</th>
<th>Max. distance between Centres</th>
<th>Max. Winding Ø</th>
<th>Guider precision</th>
<th>Main shaft motor power</th>
<th>Guider motor power</th>
<th>Electrical source</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01 – 2.5mm</td>
<td>390 mm</td>
<td>500 mm</td>
<td>250 mm</td>
<td>0.001 mm</td>
<td>2 HP</td>
<td>0.4HP (Brushless)</td>
<td>3 x 380Vca - 50Hz</td>
</tr>
</tbody>
</table>

TORQUE AND SPEED

Winding shaft speed......3000 rpm / 6000 rpm / 9000 rpm

Torque and speed (** There are three version of this machine each having three belt positions)

<table>
<thead>
<tr>
<th>Belt Position</th>
<th>G version - 3000 RPM</th>
<th>N version - 6000 RPM</th>
<th>R version - 9000 RPM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Speed (Rpm)</td>
<td>Torque (Nm)</td>
<td>Speed (Rpm)</td>
</tr>
<tr>
<td>1</td>
<td>3000</td>
<td>6</td>
<td>6000</td>
</tr>
<tr>
<td>2</td>
<td>1500</td>
<td>12</td>
<td>3000</td>
</tr>
<tr>
<td>3</td>
<td>750</td>
<td>24</td>
<td>1500</td>
</tr>
</tbody>
</table>

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E-300W WINDING MACHINE – “Industry 4

DESCRIPTION Small-sized bench winding machine.

Equipped with:

✓ Traverse head
✓ Sturdy base
✓ Tailstock - with security lock,
✓ Guider system
✓ Controlled by numeric PLC and electronic programming.
✓ Safety shielded foot pedal (Optional).

This machine is designed for the manufacture of solenoids, inductors and transformers, (with capacity to make multiple windings).

There are various configurations of speed ranges, up to 13,000 rpm (depending on machine version). This produces a fast cycle time for high turn primary windings.

TECHNICAL CHARACTERISTICS.

Max. Winding length ................................................................. 285 mm
Max Wire pitching Ø ................................................................. 99 mm
Max. distance between points ..................................................... 370 mm
Max. Winding Ø ................................................................. 240 mm
Face plate diameter ................................................................. 60 mm
Guider precision ................................................................. 0,001 mm
Spindle Resolution ................................................................. 0.01 turns
Main shaft motor ................................................................. Brushless servomotor
Guider motor ................................................................. Brushless servomotor
Electrical source ................................................................. 230Vac - 50 Hz
Dimensions (L*W*H) ................................................................. 1000 x 520 x 310 mm
Net Weight (approx) ................................................................. 140 Kg

Torque and speed

<table>
<thead>
<tr>
<th>SPEED (rpm)</th>
<th>TORQUE (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13,000</td>
<td>1</td>
</tr>
<tr>
<td>2,750</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPEED (rpm)</th>
<th>TORQUE (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>19</td>
</tr>
<tr>
<td>300</td>
<td>50</td>
</tr>
</tbody>
</table>

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**PROGRAMMING CHARACTERISTICS.**

User interface ................................................................. 7 inch (178 mm) Colour Touch Screen
No. of programmable windings ................................................................. Max. 1,000
No. of windings per coil .................................................. 10,000 program & 200 winding per program
- when connected to a local network ............................................ Virtually infinite storage
Software language ........................................................................... Main European
Type of programming ................................................................. CNC
Network Connectivity (Ethernet plug) ......................................................... RJ45
Delivery Time .............................................................................. 60 Days from order confirmation

**KEY BENEFITS OF THE NEW E-300W**

The new range of solutions has been designed in accordance with the "Industry 4.0" concept, providing capabilities for traceability, remote control and process monitoring.

The E-300W provides a combination of high performance with reduced cost and a “state-of-the-art” control system.

The new hardware platform reads variables and parameters in “real time” and makes them available online.

Operators, managers, quality controllers and engineers can view the “live” information via the Internet from anywhere in the world using any “smart” device - for example, a laptop, tablet computer or even a Smartphone.

**Built-in network functionality:**

- Save and recall programs from the main company server,
- Check the status of the winding machine from anywhere in the world.
- Setup using the touch screen or remote control using laptop or tablet.
- Programs are easily searched and selected.
- Easy back up to Cloud storage.

This is the first in a new line of machines from ERASAN - “value engineered” without losing the focus on maximum performance.

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- Czech Republic
- Germany
- Hungary
- Poland
- Portugal
- Romania
- Slovakia
- Slovenia
- Spain
- Sweden
DESCRIPTION.

Robust and reliable, the E-1200C winding machine is a floor standing style winding machine.

The sturdy chassis is manufactured from heavy gauge welded steel for durability, painted for ease of cleaning and maintenance.

The machine consists of a headstock with face plate, and pedal.

Due to the intended application of this machine, it does not have a guiding system.

This machine is specially designed for the manufacture of solenoids, distribution transformers from 10 to 1,200 KVA, using aluminium or copper wires, including rectangular or flat wires.

TECHNICAL CHARACTERISTICS.

- Maximum winding shaft speed: 500 r.p.m
- Winding shaft slow speed: 0 – 20-60-120 r.p.m
- Maximum coil diameter: 1,600 mm
- Maximum torque (low speed): 80 Kgm
- Main motor: 5 HP (3.7 kW)
- Power source: 3 x 380Vca - 50Hz
- Air supply: 6 bar (minimum)
- Delivery: 90 DAYS from confirmation of the order.

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Please contact your local partner for more information

TECHNICAL CHARACTERISTICS.

Various configurations of machine available depending on your application requirements.

For example:

1 foil, 1 insulator // 1 foil, 2 insulators // 2 foils, 2 insulators.

Max foil width ........................................ 600, 900 up to 1500 mm
Guider precision ...................................... built in sensor detecting the foil edge creates a continuous feedback loop to ensure precise turn on turn foil layering
Type of programming ................................. CNC- industrial PC
DELIVERY TIME........................................ 6-9 months from order confirmation. (Please confirm at time of order)

Various stages / process of automation can be added to the function of the machine according to your requirements. Shown here is a cold pressure welding station, used for fixing the terminal leads “in-line” during the winding.
We aim to be much more than a machinery supplier. Our team has a vast range of winding experience and is able to offer help and advice on all aspects of coil winding, from tooling design to machine choice and set-up.

Ingrid West Machinery
~ Coil winding solutions you can rely on ~

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Erasan’s range of Winding machine accessories

The Erasan range of heavy duty coil winders often require a tensioning device mounted behind the machine. For wire sizes greater than 1.0mm the best method is to apply a braking force to the supply spool itself and not the wire.

Shown below are some the devices previously commissioned.

<table>
<thead>
<tr>
<th>Number of spools</th>
<th>1</th>
<th>2</th>
<th>4</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example layout drawing of 4 spool version.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TECHNICAL CHARACTERISTICS

- Number of spools: 1, 2, 4, 32 versions available
- Wire Ø: 0.01 – 99 mm
- Spool Diameter: up to 500/750 mm
- Braking method: pneumatic controlled hydraulic caliper
- Delivery time: 60 Days from order confirmation

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4 Coil De-spooler

This is a floor standing de-coiling machine, medium sized and easily placed in a factory or works. Profile wire de-coiling device, two levels, 4 spool capacity, with hydraulic disc braking system pneumatically controlled. All controls brought up to the machine, as shown below with hydraulic gauge indicators, and tension release switch:

**TECHNICAL CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Weight per coil</td>
<td>250 Kgs</td>
</tr>
<tr>
<td>Max coil (spool) Ø</td>
<td>750 mm</td>
</tr>
<tr>
<td>Max No Spools</td>
<td>4 pcs</td>
</tr>
</tbody>
</table>

*Please note that 1, 2, 8 & 32 spool versions are also available.*

*Please speak with your local representative for further information or custom requirements.*

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The Erasan range of heavy duty coil winders often require a tensioning device mounted behind the machine. For wire sizes greater than 1.0mm the best method is to apply a braking force to the supply spool itself and not the wire.

To meet the growing customer demand, working to improve control of the higher wire tensions required for larger wires and profile.

**A new generation in profile wire tensioning and de-coiling.**

Working similar to a foil machine in “torque following” mode, the torque to the winding axis is monitored and the reverse torque to driven de-coiler is controlled according to the required tension.

The operator can program a digital tension value that is measured and kept constant during the winding cycle.

Shown below: a previously commissioned device.

The range is available in standalone fixed units similar to the DP series of 1,2,4 up to 32 spool varieties.

**GB - (Guider Base) options**

However as shown above, there is the option to mount the whole de-coiler onto a ballscrew carriageway.

Reducing factory space requirements, the servo-driven de-coiler monitors the exact position of the guider on the machine, so the spool moves the same distance and with the same speed as the machine guider.

---

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---

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**TH3- ELECTRONIC TENSIONER**

**For Heavy Duty Winding Machines**

**DESCRIPTION.**

The TH3 is a floor standing style heavy duty tensioner. Suitable for wires 0.5 to 3mm in diameter.

For maximum stability, provision has been made to enable this unit to be bolted to the floor.

The wire is perfectly guided as soon as it leaves the supply spool, through ceramic eyelets with soft felt pads and a set of adjustable pulleys to give the desired pre-tension, according to the thickness of the wire and without damaging the insulation.

The brake pulley is controlled by electrically powered braking system, giving *highly repeatable settings*, adjustable by potentiometer or integrated digitally into the main winding machine software.

There are 3 different versions of the tensioner TH3.

In the **TH3-S** (standalone) version, the tensioner is independent of the winding machine, and includes a small control box for regulation of the tension, which is set by adjusting a potentiometer.

There is adjustable height positioning of the de-reeling cone on the column to match your supply spool height.

The **TH3-IS** (Integrated Simple) version - This version is also available without the support stand and ideal to mount onto your machine traverse.

The supply voltage is 230V single phase and the maximum power consumption is 25W.

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Ingrid West Machinery Ltd

Unit 5L, Delta Drive, Tewkesbury, Glos. GL20 8HB, United Kingdom
Tel. +44(0) 1684 273164  Fax. +44(0) 1684 273171
E-mail enquiry@ingridwest.co.uk Website www.coilwindingmachines.eu

In the TH3-I (integrated) full version, the tensioners are integrated with the machine and its controller.

The tension is controlled from the machine’s operating software, setting the desired tension independently for each winding and stored with that program / coil setup.

SPECIFICATION.

<table>
<thead>
<tr>
<th>Model</th>
<th>TH3-S</th>
<th>TH3-IS</th>
<th>TH3-I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stand included</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Control Box</td>
<td>Yes / Pot</td>
<td>Yes / Pot</td>
<td>No (in winding machine program)</td>
</tr>
</tbody>
</table>

Maximum spool diameter ........................................ 500 mm
Maximum spool height ........................................ 650 mm
Working method .................................................. ELECTRICAL
Max. Torque ............................................................ 12Nm
Diameter TH3 .......................................................... 137 mm
  Max. Tension ...................................................... 18 Kg
  Max. Speed ....................................................... 2000 rpm
  Min. Speed ....................................................... 40 rpm
  Max. Working Temp ............................................ 70º C
Dimensions (mm) ................................................... 670x540x1755
Weight ................................................................. 95 Kg
DELIVERY TIME ..................................................... 60 Days from order confirmation
(Please confirm at time of order)

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Working with local partners in the following countries: Austria, Czech Republic, Germany, Hungary, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.
Profile Wire Guider GP1 - Single wire

The Erasan range of heavy duty coil winders require a guide head system suitable for the application to be wound, many factors influence the choice of guide head, from wire size to wire type / profile etc. Shown below is the single profile wire guider, please do ask your local agent if you require a custom solution.

The front roller is also adjustable in height / angle. This “negative effect” roller can be used to produce an upward curve on the wire. When wound onto the flat sides of the bobbin the inverse curve of wire presses against the long flat edges of the bobbin, reducing the bow effect.

The guide head angle is adjustable; Course adjustment in steps of 18° Fine adjustment from bolt underneath

The guide head has four profile rollers - adjustable width & wire insulation protecting Teflon side walls, as well as outer “V” groove roller for round wire

Standard Max wire width 40mm Option GP1-D Max Wire width 80mm

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Profile Wire Guider GP2 - Multiple wires

The Erasan range of heavy duty coil winders require a guide head system suitable for the application to be wound, many factors influence the choice of guide head, from wire size to wire type / profile. Shown below is the multi profile wire guider, however please do ask your local agent if you require a custom solution.

This guide has at the rear, a series of four parallel roller sets, each is mounted at 90° to the previous one and independently adjustable.

The front roller is also adjustable in angle. This “negative effect” roller can be used to produce an upward curve on the wire, meaning when wound onto flat sides of bobbin, the inverse curve of wire presses against the long flat edges, reducing the bow effect.

The reason for this is to bring multiple wires coming from different supply spools together – forming a single packet to then wind onto the core / bobbin.

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Range of Expandable Mandrels - For Heavy Duty Winding Machines

ROUND STYLE - DESCRIPTION.
Customers often need to wind the foil or wire onto a mandrel which can be expanded during the winding process and then collapsed to allow the finished coil to be removed. Iron cores or laminations can then be inserted later in the process.
Shown below are some examples of the previous designs we have made.

As can be seen in the photos, the expanding mandrel are finished with aluminium bars and wood mounted on the outer diameter. Each mandrel has a built in gearbox which is driven by a pneumatic hand tool, which expands the mandrel for winding and then collapses it for easy removal of the coil at the end of the winding process. Larger versions can be provided with an expanding and contracting mechanism that is powered by hydraulics.

TYPICAL TECHNICAL CHARACTERISTICS.

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Min</th>
<th>Max.</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>250</td>
<td>425</td>
<td>1800</td>
</tr>
<tr>
<td>400</td>
<td>400</td>
<td>650</td>
<td>1800</td>
</tr>
<tr>
<td>500</td>
<td>500</td>
<td>820</td>
<td>2000</td>
</tr>
<tr>
<td>820</td>
<td>820</td>
<td>1300</td>
<td>2000</td>
</tr>
</tbody>
</table>

However, please do note that this is only a representative range, and nearly 90% of these mandrels are made to customer order and specifications.

Please tell us your requirements:
Range of Expandable Mandrels - For Heavy Duty Winding Machines

RECTANGULAR STYLE - DESCRIPTION.

The new generation of expandable mandrels provide the possibility of winding with rectangular, circular or ovoid shape coils, without changing mandrel. Allows winding with round & flat / profile wires as well as foil. Over the main tile the customer can assemble supplements with geometry according to the application. Simple manual opening & can be mounted in cantilever or between points.

Both the main body and tiles are made of treated steel which ensures robustness and protection against rust and corrosion. Wide range of opening add to its' versatility. Strong and robust design leads to high loading capacity. Faceplate & Tailstock coupling as well as the main dimensions of expandable mandrel are configurable to your requirements. Additional supplements can be mounted on the main mandrel to allow a variety of rectangular or ovoid cores to be wound.

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4 Spindle Multi Axis Automatic Winding Machine

Application:
Relays, Automotive ABS coils, LCD coils, transformers, ignition coils, inductors, sensor coils, solenoids DVD reader, Inverter, Switching Power Supplies, Ballast Transformer and other bobbin-wound products.

Main features:
- The wire guide movement can be freely programmed in all 3 axes (X, Y, and Z).
- Wraps either radial or axial pins, - programmable nozzle movement through 0° and 90° angles.
- Wire cutting on bobbin pin, nozzle cut or nipper. Method can be chosen by operator and setup in the program.
- Simplified programming with teach-in programming system using 15” touch screen, windows based interface, industrial PC with USB, Ethernet network and DVD ROM facilities.
- Easy to change tooling and machine set-up recalled from the onboard computer when changing product.
- Fully CE compliant.

Options:
- Air nipper for larger wire.
- Load and unload shuttle transfer system.
- Skeining (twisting) unit.
- Customised accessories to suit your application.

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6 Spindle Multi Axis Automatic Winding Machine

Application:
Relays, Automotive ABS coils, LCD coils, transformers, ignition coils, inductors, sensor coils, solenoids DVD reader, Inverter, Switching Power Supplies, Ballast Transformer and other bobbin-wound products....

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- Wraps either radial or axial pins, - programmable nozzle movement through 0° and 90°angles.
- Wire cutting on bobbin pin, nozzle cut or air nipper. Method can be chosen by operator and setup in the program.
- Password function, prevent accidental program change.
- Simplified programming with teach-in programming system using 15” touch screen.
- Easy to change tooling and machine set-up recalled from the onboard computer when changing product.
- Fully CE compliant.

Options:
- Air nipper for larger wire.
- Load and unload shuttle transfer system (as shown).
- Skeining (twisting) unit (as shown).
- Customised accessories to suit your application.

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8 Spindle Multi Axis Automatic Winding Machine.

Application:
Relays, Automotive ABS coils, LCD coils, transformers, ignition coils, inductors, sensor coils, solenoids DVD reader, Inverter, Switching Power Supplies, Ballast Transformer and other bobbin-wound products.

Main features:
- The wire guide movement can be freely programmed in all 3 axes (X, Y, and Z).
- Wraps either radial or axial pins, programmable nozzle movement through 0° and 90° angles.
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- Simplified programming with teach-in programming system using 15" touch screen.
- Easy to change tooling and machine set-up recalled from the onboard computer when changing product.
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Options:
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- Load and unload transfer system (as shown).
- Skeining (twisting) unit (as shown).
- Customised accessories to suit your application.

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12 Spindle Multi Axis Automatic Winding Machine

Application:
Relays, Automotive ABS coils, LCD coils, transformers, ignition coils, inductors, sensor coils, solenoids DVD reader, Inverter, Switching Power Supplies, Ballast Transformer and other bobbin-wound products.

Main features:
- The wire guide movement can be freely programmed in all 3 axes (X, Y, and Z).
- Wraps either radial or axial pins, programmable nozzle movement through 0°, and 90° angles.
- Wire cutting on bobbin pin, nozzle cut or nipper. Method can be chosen by operator and setup in the program.
- Password function, prevent accidental program change.
- Simplified programming with teach-in programming system using 15" touch screen.
- Easy to change tooling and machine set-up recalled from the onboard computer when changing product.
- Fully CE compliant.

Options:
- Automatic load / unload system.
- Load and unload shuttle transfer system (as shown below).
- Skeining (twisting) unit.
- Customised accessories to suit your application.

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Optional accessories for multi spindle series

When configuring the range of multi spindle machinery, several customer/application specific accessories may be required, we like to think we have one of the most comprehensive available, and can offer a solution to almost and winding requirement.

Options:

- **Air Nipper for wire range 0.2mm – 0.8mm.**

  For cutting larger wire diameters the pin tear method will no longer work. In this case we can fit air operated cutters close to the nozzle head.

- **Load and unload Turret Tailstock.**

  Allows automated load & unload, improving the machine throughput / cycle, and allowing easy access for extra stations to be added to the line, e.g. soldering, welding etc.

- **Tensioners stand**

  An essential piece of equipment to mount all supply spools of wire, the unit can be built to hold the required number of spools for the number of spindles on the winding machine. Offered with mobile options, changing reels can be done away from the machine.

- **Skeining unit.**

  When making a solder connection to fine wire, the mechanical strength of a single strand of wire may not be sufficient. The skeining unit reinforces the start and finish leads of the winding by twisting multiple strands of the wire together, so that they will then withstand the soldering process.

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Fully automatic “Air coil” winding machine

Application:
For winding self supporting coils using thermo-plastic coated wire.

The wire is heated using hot air as it is wound onto a former, bonding the turns together. At the end of the cycle, the former is then removed and the finished coil ejected from the machine. Typical products include: RFID coils, laser heads, voice coils, magnet coils, sensor coils, vibrator coils and pancake motor coils.

Main features:
- Clamp/cut system, layer winding, coil unloading arm, wire lead picker, all fully automatic during each cycle - operatorless.
- Freely programmable pitch control & guider movements enabling precise layer winding.
- Freely programmable servo driven tailstock movements provides programmable coil width.
- Easy to integrate to other devices utilising available I/O: such as:-
  - Cold air jet,
  - Skeining unit,
  - Alcohol dispensing,
  - Electronic tensioner - with selectable tension during the wind cycle.
- 15” touch screen for easy setup, with industrial PC, network card, simple program backup to USB memory stick.
- Synchronously driven tailstock ensures precise tool alignment and allows for smaller core ID’s.
- Temperature & Air flow of the hot air system is freely programmable.

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RFID CHIP INDUCTOR WINDING.

Multi Axis Automatic Winding Machine

Application:
0603, 0805, 1008 chip sizes and other ferrite-wound products....

Main features:
- The wire guide movement can be freely programmed in all 3 axes (X, Y, and Z).
- Built-in welding system to connect start and finish leads.
- Bowl fee ferrite component, Wire cutting on tooling clamp, guide over start pad on ferrite, weld, winding, guide over end pad, weld, cut end wire, remove ferrite, unload - all preformed in a fully automatic way.
- Password function, prevent accidental program change.
- Simplified programming with teach-in programming system using 15” touch screen.
- Easy to change tooling and machine set-up recalled from the onboard computer when changing product.
- Fully CE compliant.

Options:
- Load and unload to tape and reel.
- Various tooling can be designed depending on component requirements.
- Customised accessories to suit your application.

Main technical specifications

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of spindles</td>
<td>1</td>
</tr>
<tr>
<td>Wire size</td>
<td>0.025-0.1 mm</td>
</tr>
<tr>
<td>Spindle speed</td>
<td>3,000 rpm</td>
</tr>
<tr>
<td>Spindle position</td>
<td>=&gt; 0.1°</td>
</tr>
<tr>
<td>accuracy</td>
<td></td>
</tr>
<tr>
<td>Nozzle movement</td>
<td>0.001 mm</td>
</tr>
<tr>
<td>Spindle control</td>
<td>Winding spindle 3 Axis servo motor</td>
</tr>
<tr>
<td>Welding machine</td>
<td>Welding table 2 axis stepper motor</td>
</tr>
<tr>
<td>Adjustable parameters</td>
<td>0-300 / Touch time 3ms</td>
</tr>
<tr>
<td>Control system</td>
<td>Panasonic FP Σ system</td>
</tr>
<tr>
<td>Interface</td>
<td>Delta DOP-A57</td>
</tr>
<tr>
<td>Touch screen</td>
<td>15 inch</td>
</tr>
<tr>
<td>Air supply</td>
<td>6 Bar</td>
</tr>
<tr>
<td>Power supply</td>
<td>single phase 220V +10% 50Hz</td>
</tr>
<tr>
<td>Power consumption</td>
<td>3 KW</td>
</tr>
<tr>
<td>Weight</td>
<td>120 Kg</td>
</tr>
<tr>
<td>Dimensions (cm)</td>
<td>1070(W) x 800(L) x 1880(H) – excluding wire spool stand</td>
</tr>
</tbody>
</table>

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E-FLY FLY WINDING MACHINE

DESCRIPTION.
This is a special machine for conducting coils used in alternators. As a single head, it produces one coil per cycle. This machine is built on a steel chassis welded and aluminium profiles. The wire guide system is placed on linear bearing guides, which ensures a precise guide control and great robustness.

KEY FEATURES
- Programmable aperture of “nose tooling”, using slip rings and servo motor
- Motor of wire guide Brushless servo motor
- Main motor Brushless servo motor with break
- Table positioning motor Brushless servo motor
- Protection Shield with pneumatic function controlled by program
- Specific software for this application.
- CE normative.

TECHNICAL CHARACTERISTICS
Max Wire Ø (round) .......................................................... 1,2mm
Max winding length .................................................................................. 150 mm
Max. Ø of winding ..................................................................................... 270 mm
Main Motor, Brushless, (Medium Inertia) .................................................. 6,36 Nm
Wire guide motor, Brushless ................................................................. 2,2 Nm
Drive motors .......................................................................................... By 3 Hi-tech Servos
Max. Winding speed .................................................................................. (1500 r.p.m)
Main controller ....................................................................................... CTE-240
Software language (others available on request) ......................................... English
Max. Programmable Pitch ........................................................................ 9mm
Spindle Accuracy ..................................................................................... 1/10
Guiding precision .................................................................................... 0,01mm
Dimensions (approx.) ................................................................................ 1250 x 1050 x 1250
Weight approx. .......................................................................................... 450 Kg

PROGRAMMING CHARACTERISTICS.
Max. No. of programmable windings (Standard 50) ..................................... Max. 175
Max. No. of windings per coil (Standard 20) ................................................ Max. 200
Type of programming .............................................................................. CNC
DELIVERY TIME .................................................................................... 60 Days from order confirmation.

We aim to be much more than a machinery supplier. Our team has a vast range of winding experience and is able to offer help and advice on all aspects of coil winding, from tooling design to machine choice and set-up.

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Specification

Program  TWC-01 digital controller holds up to 999 program sequences
Control  DC 400 W spindle motor with stepping motor for spreading
Features  Choice of Belt or Slider type winding heads both available in 4 or 6 inch versions
Package  Includes base, core rotator, winding head and your first shuttle
Wire size  0.05 – 1.1 mm (depending on machine head type and shuttle size)
O D Range  8 – 60 mm
Min finished I D  3 mm (depends on shuttle size & core height)
Min wire size  depends on shuttle size and head type
Max speed  1500 rpm (depending on winding head)
Power  AC 230 /110 V ± 10%, 50 - 60hz
Dims  600 x 620 x 640 mm
Net weight  70 kg
CE cert. no.  AE9955093 01

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## SHUTTLE WIRE CAPACITY CHART (IN FEET) 1 FOOT = 304.8 mm

<table>
<thead>
<tr>
<th>HEAD TYPE</th>
<th>B4 BELT TYPE</th>
<th>B6 BELT TYPE</th>
<th>S4 SLIDER TYPE</th>
<th>S6 SLIDER TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PICTURE</td>
<td>![Picture]</td>
<td>![Picture]</td>
<td>![Picture]</td>
<td>![Picture]</td>
</tr>
<tr>
<td>COIL O.D.</td>
<td>5~60mm</td>
<td>8~60mm</td>
<td>8~60mm</td>
<td>8~60mm</td>
</tr>
<tr>
<td>MIN.FIN. I.D.</td>
<td>3mm</td>
<td>6mm</td>
<td>7mm</td>
<td>7mm</td>
</tr>
<tr>
<td>MAX. HEIGHT</td>
<td>25mm</td>
<td>45mm</td>
<td>25mm</td>
<td>45mm</td>
</tr>
<tr>
<td>WIRE SIZE</td>
<td>0.12~0.8mm</td>
<td>0.25~0.9mm</td>
<td>0.04~0.35mm</td>
<td>0.05~0.4mm</td>
</tr>
<tr>
<td>SHUTTLE DIA.</td>
<td>100mm</td>
<td>150mm</td>
<td>100mm</td>
<td>150mm</td>
</tr>
<tr>
<td>SHUTTLE TYPE</td>
<td>2.4, 2.5, 2.8, 3.4</td>
<td>4.7, 6.3, 7.9</td>
<td>4.7, 6.3, 7.9, 9.5</td>
<td>4.7, 6.3, 7.9, 9.5</td>
</tr>
<tr>
<td></td>
<td>4.7, 6.3, 7.9, 9.5</td>
<td>9.5,12.7, 15.6</td>
<td></td>
<td>9.5,12.7, 15.6</td>
</tr>
</tbody>
</table>

Min. Finished I.D. will be different by shuttle size and coil height.

### SHUTTLE WIDTH

<table>
<thead>
<tr>
<th>FOR B4 &amp; S4 TYPE</th>
<th>FOR B6 &amp; S6 TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHUTTLE WIDTH</strong></td>
<td><strong>AWG NO.19</strong></td>
</tr>
<tr>
<td>0.912MM</td>
<td>2.4</td>
</tr>
<tr>
<td>0.813MM</td>
<td>2.8</td>
</tr>
<tr>
<td>0.724MM</td>
<td>3.4</td>
</tr>
<tr>
<td>0.643MM</td>
<td>4.7</td>
</tr>
<tr>
<td>0.574MM</td>
<td>6.3</td>
</tr>
<tr>
<td>0.511MM</td>
<td>7.9</td>
</tr>
<tr>
<td>0.455MM</td>
<td>9.5</td>
</tr>
<tr>
<td>0.404MM</td>
<td></td>
</tr>
<tr>
<td>0.361MM</td>
<td></td>
</tr>
<tr>
<td>0.320MM</td>
<td></td>
</tr>
<tr>
<td>0.287MM</td>
<td></td>
</tr>
<tr>
<td>0.254MM</td>
<td></td>
</tr>
<tr>
<td>0.226MM</td>
<td></td>
</tr>
<tr>
<td>0.203MM</td>
<td></td>
</tr>
<tr>
<td>0.180MM</td>
<td></td>
</tr>
<tr>
<td>0.160MM</td>
<td></td>
</tr>
<tr>
<td>0.142MM</td>
<td></td>
</tr>
<tr>
<td>0.127MM</td>
<td></td>
</tr>
<tr>
<td>0.114MM</td>
<td></td>
</tr>
<tr>
<td>0.102MM</td>
<td></td>
</tr>
<tr>
<td>0.089MM</td>
<td></td>
</tr>
<tr>
<td>0.079MM</td>
<td></td>
</tr>
<tr>
<td>0.064MM</td>
<td></td>
</tr>
<tr>
<td>0.056MM</td>
<td></td>
</tr>
<tr>
<td>0.051MM</td>
<td></td>
</tr>
<tr>
<td>0.046MM</td>
<td></td>
</tr>
</tbody>
</table>

### COLOUR INDICATION

- **WHITE**: FOR B4 TYPE
- **YELLOW**: FOR B4 & S4 TYPE
- **GREEN**: FOR S4 TYPE
- **WHITE**: FOR B6 TYPE
- **YELLOW**: FOR B6 & S6 TYPE
- **GREEN**: FOR S6 TYPE

---

**Ingrid West Machinery Ltd**

Unit 5L, Delta Drive, Tewkesbury, Glos. GL20 8HB, United Kingdom
Tel. +44(0) 1684 273164  Fax. +44(0) 1684 273171

E-mail enquiry@ingridwest.co.uk Website www.coilwindingmachines.eu
WH 900A Toroid winding machine.

Program: TWC-01 digital controller holds up to 999 program sequences

Control: DC 400 W spindle motor with stepping motor for spreading

Features: Choice of Belt or Slider type winding heads both available in 8 or 12 inch versions

Package: Includes base, core rotator, winding head, your first shuttle, and comprehensive manual

Wire size: 0.3 – 1.2 mm (depending on machine head type and shuttle size)

O D Range: 40 – 200 mm

Min finished I D: 12 mm (depends on shuttle size & core height)

Min wire size: depends on shuttle size and head type

Max speed: 1200 rpm (depending on winding head)

Power: AC 230 / 110 V ± 10%, 50 - 60hz

Dims: 770 x 690 x 550 mm

Net weight: 80 kg

CE cert. no. AE9955093 01

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**SHUTTLE WIRE CAPACITY CHART (FEET)**

1 FOOT = 304.8 mm

<table>
<thead>
<tr>
<th>SHUTTLE WIDTH</th>
<th>FOR B8 &amp; S8 TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>1.290MM</td>
<td>60</td>
</tr>
<tr>
<td>1.151MM</td>
<td>76</td>
</tr>
<tr>
<td>1.024MM</td>
<td>49</td>
</tr>
<tr>
<td>0.912MM</td>
<td>61</td>
</tr>
<tr>
<td>0.813MM</td>
<td>77</td>
</tr>
<tr>
<td>0.724MM</td>
<td>97</td>
</tr>
<tr>
<td>0.643MM</td>
<td>123</td>
</tr>
<tr>
<td>0.574MM</td>
<td>155</td>
</tr>
<tr>
<td>0.511MM</td>
<td>194</td>
</tr>
<tr>
<td>0.455MM</td>
<td>247</td>
</tr>
<tr>
<td>0.404MM</td>
<td>312</td>
</tr>
<tr>
<td>0.361MM</td>
<td>393</td>
</tr>
<tr>
<td>0.320MM</td>
<td>498</td>
</tr>
</tbody>
</table>

* Finished ID will vary according to shuttle specification and coil height
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<table>
<thead>
<tr>
<th>HEAD TYPE</th>
<th>G10S WINDING</th>
<th>G10B WINDING</th>
<th>G13 WINDING</th>
<th>T10S TAPING</th>
<th>T10B TAPING</th>
<th>T13 TAPING</th>
</tr>
</thead>
<tbody>
<tr>
<td>PICTURE</td>
<td>SHUTTLE TYPE</td>
<td>WIRE SIZE</td>
<td>MAX. HEIGHT</td>
<td>MIN. FIN. I.D</td>
<td>COIL O.D.</td>
<td>TAPE WIDTH</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40~150mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8, 12,</td>
<td>0.5~1.5mm</td>
<td>80mm</td>
<td>25mm</td>
<td>40~150mm</td>
<td>TAPE WIDTH</td>
</tr>
<tr>
<td></td>
<td>16, 20, 25</td>
<td>0.5~2.2mm</td>
<td>80mm</td>
<td>35mm</td>
<td>60~150mm</td>
<td>4~8mm</td>
</tr>
<tr>
<td></td>
<td>8, 12,</td>
<td>0.5~2.6mm</td>
<td>120mm</td>
<td>45mm</td>
<td>80~250mm</td>
<td>8~15mm</td>
</tr>
<tr>
<td></td>
<td>16, 20, 25</td>
<td>-</td>
<td>80mm</td>
<td>25mm</td>
<td>80~250mm</td>
<td>12~25mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td>45mm</td>
<td></td>
</tr>
</tbody>
</table>

Min. Finished I.D. Will be different by shuttle size and coil height.
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Tel. +44(0) 1684 273164  Fax. +44(0) 1684 273171
E-mail enquiry@ingridwest.co.uk  Website www.coilwindingmachines.eu

WH 300 G7 Toroid winding machine.

Specification

Program          TWC-01 digital controller holds
                 up to 999 program sequences

Control          DC 400 W spindle motor with
                 stepping motor for spreading

Features         The Gear type winding heads
                 was designed for winding small coil with precise
                 winding requirement.

Package          Includes base, core rotator,
                 head and your first shuttle

Wire size        0.5 – 2.6 mm (depending on
                 shuttle size)

O D Range        28 - 80 mm
Min finished I D 15 mm
                (depends on shuttle size &
                core height)

Shuttle Dia.     175 mm

Max speed        300 rpm

PowerAC          230 /110 V ± 10%, 50 - 60hz

Dims             690 x 630 x 780 mm

Net weight       85 kg

CE cert. no.     AE9955093 01

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**WH 200 Hook winder.**

**Specification**

**Program**
- Digital controller capable of holding winding operations, Fully programmable per turn (wire spacing). Start position, direction and segment winding angle programmable.
- In semi-automatic mode, hold-time is programmable at top and bottom of

**Control**
- Pneumatically operated hook
- Mechanically adjustable stroke length
- Turns counted digitally

**Full control of core rotation using stepping motor**

**Package**
- Includes full height cabinet, digital controller and one hook
- Air cylinder, filter & regulator; stepper motor system

**Hook sizes**
- 3 standard hook sizes, with specials available

**Wire size**
- 0.3 ~ 2.2 mm

**O.d. range**
- 15 ~ 80 mm

**Air supply**
- Typically 5 Bar

**Power supply**
- AC 230 /110 V ± 10%, 50 – 60 Hz

**Dimensions**
- 70 x 55 x 150 cm

**Hook data**

<table>
<thead>
<tr>
<th>Hook type</th>
<th>H5</th>
<th>H8</th>
<th>H10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hook size</td>
<td>5 mm</td>
<td>8 mm</td>
<td>10 mm</td>
</tr>
<tr>
<td>Min. finished i.d.</td>
<td>8 mm</td>
<td>11 mm</td>
<td>14 mm</td>
</tr>
</tbody>
</table>

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**Hook winder "Pullwinder"**

Pneumatically driven needle hook

**Package**
- Bench mounting base and one hook
- Air cylinder, filter & regulator with pneumatic foot pedal

**Hook sizes**
- 3 standard hook sizes
- with specials available

**Wire Range**
- 0.2 ~ 3.5 Ø mm

**Core OD Range**
- 15 ~ 80 Ø mm

**Hook Sizes**
- 3, 6, 8 & 10 mm

**Air supply**
- Typically 5 Bar

**Weight**
- ~ 45 Kgs

**Dimensions**
- 40 x 30 x 90 cm
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**Hook winder with 3 dimensions:**

<table>
<thead>
<tr>
<th>Type</th>
<th>SKS 50-200</th>
<th>SKS 50-320</th>
<th>SKS 50-400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height mm ca.</td>
<td>920</td>
<td>1160</td>
<td>1280</td>
</tr>
<tr>
<td>Wire range</td>
<td>Ø0,2 mm to Ø3,5 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coil diameter (OD MAX)</td>
<td>Ø15 mm ~ Ø150 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air supply</td>
<td>8 bar</td>
<td>8 bar</td>
<td>8 bar</td>
</tr>
<tr>
<td>Cylinder Festo</td>
<td>DNC-50-200</td>
<td>DNC-50-320</td>
<td>DNC-50-400</td>
</tr>
</tbody>
</table>

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Ingrid West Machinery Ltd

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**Toroidal Tape winder - "AIR JET"**

The Air jet is a rapid way to tape small Toroidal cores, giving machine wound repeatability and quality on every product run.

- Cutting length between 20-999mm
- Tape width from 7mm up to 50mm

Simple operation process...

1. Place the core
2. Hold tape over top of toroid
3. The finished taped core

With the help of “Air Jet”, the tape will be pushed through the core, after that, we have to bring the tape over the top of the toroid to produce the wound tape turns...

---

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E I lamination stacking machines.

These machines stack standard E I laminations in a wide range of sizes, from EI-19 to EI-180 & UI & EE ranges.

Other sizes are available; please contact us to discuss your requirements.

Laminations of 0.35 mm to 0.5 mm thick are stacked at up to 300 pieces per minute, manually or automatically, with full interleaving.

<table>
<thead>
<tr>
<th>Standard range, manual: -</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EI-43</td>
<td>EI-48</td>
</tr>
<tr>
<td>EI-84</td>
<td>EI-85.8</td>
</tr>
<tr>
<td>EI-152.4</td>
<td>EI-162</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard range, automatic: -</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EI-76.2</td>
<td>EI-85.8</td>
</tr>
</tbody>
</table>

Other sizes & OEM laminations available to order.

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Range of Wire Stripping machines
We offer three types of enamel Wire removal systems, the choice between them mainly depends of wire size and application.

WH-S03
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Specification & Features

- Ideal for small labels and small work areas
- Will dispense labels and die-cut parts
- Photosensor Accuracy and Reliability
- Automatically removes paper, vinyl, acetate, polyester, foil, etc. from its liner
- Automatically **rewinds** liner scrap for a cleaner working environment
- Liner scrap is easily removed
- No maintenance required
- Adjustable strip plate for hard-to-release labels
- High Torque Motor for large diameter label rolls
- Label counter 0 - 999999 pcs
- Roll ID (min) 25mm
- Roll OD (max) 250mm
- Label Length 3 to 150mm
- Label Width 4 to 140mm
- Feed Speed 16 – 130 mm/Sec – adjustable via dial
- Power supply 110 / 220 / 240 VAC 50 / 60 Hz
- Dimensions 210L x 210W x 220H
- Weight 4.5 Kgs

**IWM Taping Solutions**

**Tape – cut to length machines**

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*Austria, Czech Republic, Germany, Hungary, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.*
Tensioner meters.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Range</th>
<th>Resolution</th>
<th>Tension Units</th>
<th>Copper Wire</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX-1-125</td>
<td>0-125g</td>
<td>0.1 to 1g</td>
<td>cN, grams or lb</td>
<td>54 - 37 AWG, .01 - .11 mm</td>
</tr>
<tr>
<td>TX-1-1000</td>
<td>10-1000g</td>
<td>1 to 5g</td>
<td>N, grams or lb</td>
<td>40 - 32 AWG, .08 mm - .20 mm</td>
</tr>
<tr>
<td>TX-1-5000</td>
<td>50-5000g</td>
<td>5 to 10g</td>
<td>N, grams or lb</td>
<td>40-28 AWG, .08 mm - .30 mm</td>
</tr>
</tbody>
</table>

Large, easy to read backlit, graphic display with adjustable backlighting and contrast. Data Logging feature included; Capture and view data within a user-defined time window. Select the time window; then select the sampling rate (from 1-100 Hz).

- Active, color changing Bar Graph
- Select Material and Size. Instrument automatically adjusts the calibration
- Minimum and Maximum values

**S - Speed and Length Option**
Indicate real-time speed in FPM, or MPM. Maximum measurable speed is 9,999 FPM or 9,999 meters per minute, however line speeds in excess of 2,000 FPM are generally unsafe for hand-held applications. Read length of part run in feet or meters. Maximum length measuring up to 9,999 meters or feet.

**A - Analog Output Option**
Analog Output Option for both speed and tension values. 0-5 VDC or 4 -20 mA with software-definable ending sequences. Provided with 10’ cable. Data outputted at 40Hz.

**E - RS-232 Serial Output Option**
Provided with 10’ cable to interface with your receiving device. Select data sampling rate from 1, 2 or 5 Hz. After capturing the data, review the data on the instrument's display or upload it using the 10’ serial interface cable.

Order code: [Model number] + [options]
e.g. tx-1-1000-S-E

We aim to be much more than a machinery supplier. Our team has a vast range of winding experience and is able to offer help and advice on all aspects of coil winding, from tooling design to machine choice and set-up.

**Ingrid West Machinery**
~ Coil winding solutions you can rely on ~

Working with local partners in the following countries:
Austria, Czech Republic, Germany, Hungary, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.
We aim to be much more than a machinery supplier. Our team has a vast range of winding experience and is able to offer help and advice on all aspects of coil winding, from tooling design to machine choice and set-up.

Digital Tensioner Display.

B500 / TD-J1000 tension measurement indicators can be mounted on a winding machine independently of the tension unit for real-time measurements, easy installation features, access to DC24V power required.

E1000 This tension monitor tension values, in addition to real-time display, its highlight feature is the ability to connect to the computer, gathering accurate records through the PC software, you can carry out after the required data analysis or set the alarm, This software can work simultaneously detecting / recording 100 measuring points, to enhance the quality of your wound product.

- Direct display of real time measurement reading
- Wide tension range
- Independent operation ; for single or multi-spindle applications.
- Compact design, simple operation.

- Accuracy: +/- 1% FS
- Power: 24V DC (external power sources required.)
- Dimensions 25 (W) x 140mm(H) x 45mm (D)
- Weight : 126g

** Range Options **

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
<th>Resolution</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>B500</td>
<td>3g-500g</td>
<td>0.5g</td>
<td>Real-time display of tension / plastic housing</td>
</tr>
<tr>
<td>J1000</td>
<td>3g-1000g</td>
<td>1 g</td>
<td>Real-time display of tension / aluminum alloy housing</td>
</tr>
<tr>
<td>**</td>
<td>3g-1000g</td>
<td>2 g</td>
<td>Tension computer records the data real-time display / aluminum alloy shell</td>
</tr>
</tbody>
</table>

** Available soon **
We aim to be much more than a machinery supplier. Our team has a vast range of winding experience and is able to offer help and advice on all aspects of coil winding, from tooling design to machine choice and set-up.

**Ceramic Roller Guides**

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Dimensions in mm</th>
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<tbody>
<tr>
<td></td>
<td>A</td>
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<td>IWM1001</td>
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<tr>
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<td>IWM1008</td>
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</table>

Our ceramic roller guides are made from fine Alumina ($\text{Al}_2\text{O}_3$), which provides excellent resistance to wear from heat and friction.

The ceramic surfaces are polished to a mirror finish in order to reduce friction to a minimum.

The ceramic ring is enclosed with plastic flanges to reduce weight and inertia, the core of the ceramic parts is mounted onto a bearing to optimise performance.

These rollers are normally used for guiding the wire during coil winding operations, but also have many applications in the wire manufacturing and textile industries.
Our ceramic captive rollers are made from fine Alumina (Al₂O₃), which provides excellent resistance to wear and reduces heat and friction.

The ceramic surfaces are polished to a mirror finish in order to reduce friction to a minimum.

The wire jump preventer is used in instances in which there are radical changes in direction and prevents wire jumping out of the pulley during winding processes.

There is a high speed bearing within the pulley’s porcelain circle which keeps the sliding distance between the enamelled wire and the OD under 0.2mm.

Normally used for guiding the wire during coil winding operations, but also have many applications in the wire manufacturing and textile industries.

Standard stock sizes are highlighted in green; all other sizes are available subject to minimum order quantities.
Ceramic Eyelet Guides and Grommets

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Dimensions in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>IW-001</td>
<td>A 4.5 B 2.8 C 1.0 D 3.0 E 1.0</td>
</tr>
<tr>
<td>IW-002</td>
<td>A 5.0 B 3.5 C 2.4 D 3.6 E 1.0</td>
</tr>
<tr>
<td>IW-003</td>
<td>A 6.8 B 4.7 C 2.6 D 3.3 E 1.3</td>
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<tr>
<td>IW-004</td>
<td>A 10.0 B 7.2 C 4.8 D 8.8 E 1.7</td>
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<tr>
<td>IW-005</td>
<td>A 10.0 B 7.0 C 4.8 D 8.8 E 1.7</td>
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<td>IW-006</td>
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<td>IW-007</td>
<td>A 7.8 B 5.2 C 3.0 D 5.5 E 1.5</td>
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<td>IW-008</td>
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<td>IW-009</td>
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</tr>
<tr>
<td>IW-010</td>
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<td>A 8.0 B 5.4 C 2.5 D 5.5 E 1.5</td>
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</table>

Our ceramic eyelet guides are made from fine Alumina (Al₂O₃), which provides excellent resistance to wear from heat and friction.

The ceramic surfaces are polished to a mirror finish in order to reduce friction to a minimum.

These eyelets are normally used for guiding the wire during coil winding operations, but also have many applications in the wire manufacturing and textile industries.

Standard stock sizes are highlighted in green; all other sizes are available subject to minimum order quantities.
GUIDE TUBES - IWM Standard stock sizes

Part number format
W ABCD-E-FGHI

How to specify the tube...
AB = Bore size in mm (12>1.2; 08>0.8; 03>0.3 etc..)
CD = Tube length in mm (30>30mm; 45>45mm etc...)
E = Tube OD in mm (030>3mm is standard)
FG = Shank Diameter in mm (12>1.2; 08>0.8; 03>0.3 etc..)
HI = Shank Length in mm (15>15mm; 06>6mm etc...)

<table>
<thead>
<tr>
<th>Standard stock sizes</th>
<th>AB = Bore size</th>
<th>CD = Tube length</th>
<th>E = Tube OD</th>
<th>FG = Shank Diameter</th>
<th>HI = Shank Length</th>
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<td>2.9</td>
<td>15</td>
</tr>
</tbody>
</table>

Custom guide tubes
- Made to order

We can produce a vast range of custom guide tubes, for many applications.

Simply send us your drawings for a competitive quote.
**Special Ceramic Guide Tubes (Nozzles)**

**Description:**

The coil winding guide tube (or nozzle) is a vital component for high quality coil winding.

Our ceramic guide tubes are made for advanced coil winding requirements. They are precision engineered for high speed winding with excellent accuracy, and minimise stress to the wire.

**Advantages:**

**Precision:** Concentricity between the clamping diameter and the outlet diameter is 0.01 mm. The inner bore diameter's tolerance is 0.01 mm - excellent for precision coil layering.

**Minimum Friction:** Made of a solid piece of high grade ceramic; there are no joints for easy threading, which also ensures a smooth path for wire travel. Every inner bore is fully polished. Both the inlet and outlet radius are carefully calculated, shaped and polished to a mirror finish to minimize stress to the wire.

**High Wear Resistance:** The characteristics of these ceramic guide tubes offer significant advantages over both tungsten carbide and ruby guide tubes. The special ceramics are harder than tungsten carbide and are more rigid than the stainless sleeve of ruby guide tubes.

**Ordering Information:**

<table>
<thead>
<tr>
<th>Part Number</th>
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<th>L</th>
<th>D</th>
<th>D1</th>
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</table>
Ingrid West Machinery
~ Coil winding solutions you can rely on ~