



GREWIN INDUSTRIAL GROUP CO.,LTD.

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NAME: GWA660-100 Fully Auto Toroidal Rectangular Core Winder



GW Series Machine Intro

- 1) Computer automatic production provides high precision, high efficiency, and reduces post-processing costs and labor cost.
- 2) Fully closed-loop monitoring of the entire feeding, clamping, punching, winding, cutting, and welding process. All process done in one single winding production step.
- 3) The HMI software is clear and easy to use, and the control system has multiple automatic calculation functions. Production can be carried out by inputting basic parameters.
- 4) All machines are equipped with world-renowned imported accessories, including Japan Yaskawa servo systems and an advanced Japan Panasonic computers, Japan SMC and Taiwan AIRTAC for pneumatic components. Taiwan servo reducers and Hiwin motion components, and other European and Japanese electrical accessories.

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Machine Main Features

1) 5-Axis Servo Motor

The machine utilizing 5-axis servo motor independently finishing the following actions:

- a) **First Axis:** Servo motor for cutter movement – Position the cutter correctly for different material width.
- b) **Second Axis:** Servo motor for cutting - Connected with a reducer to create enough force to cut off the silicon steel material.
- c) **Third Axis:** Servo motor for spindle – Connected with a precision reducer to provide the torque for the spindle for precision winding.
- d) **Forth Axis:** Servo motor for pushing plate – The pushing plate will push out the finished core from the mandrel.
- e) **Fifth Axis:** Servo motor for clamping and feeding – Clamp the material and feed it to the hook at the mandrel to complete a fastening action.

2) High Performance Control System

- a) Utilize an advanced Japan Panasonic PLC control system as our main PLC control with C language. The interface is Windows based HMI input control. Together, our machine will give you top performance with stable and reliable assistance throughout the production process.
- b) Multiple automatic calculation written in the software to reduce the time for operators to adjust and input.
- c) Equipped with self-protection programs to prevent unnecessary damage.
- d) Fully closed-loop monitoring of the entire feeding, clamping, hooking, cutter moving, winding, cutting, welding, and pushing process. All process done in one single winding production step.
- e) LED laser welding technology greatly improves welding quality and reduces scrap rates.
- f) Using a 10inch Taiwan WEINVIEW color touch screen with clear and easy-touse interface software.

3) Precision Ball Screw

This machine levelling and pushing action adopts Taiwan Hiwin precision ball screw nut, guider and slider (made in Taiwan), providing excellent precision and durability.

4) SMC/AIRTAC Pneumatic Components

The entire machine adopts SMC/AIRTAC pneumatic components, including various types of air cylinders, solenoid valves, magnetic sensors, precision pressure regulator, water separation and refueling filters, air pipes, and all nozzles, etc.

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5) [Electric Lifting Platform](#)

To accommodate different diameter coil mandrels, the feeding and cutting platforms can be electrically raised and lowered by pressing buttons as needed. Convenient and fast to use, greatly reducing the time for adjustment.

6) [Tungsten Carbide Cutter](#)

Cutting and punching units are made from tungsten carbide increasing the durability and the quality of the cuts.

7) [Structural Design of Machine Parts](#)

- a) The machine frame is made out of thick square tubes and steel plate merging together with a fully detachable metal outer shell.
- b) The inside and outside are well polished and painted.
- c) The surface of the machine steel parts has been well polished and then electroplated with hard chromium. This can enhance the wear resistance and maintain the machine's durability.

8) [More Flexible and Scientific Operating Software](#)

There are multiple automatic calculations codes written in the program to reduce the time for the operator to adjust the machine, to input parameters and to ensure simple and convenient use. By selecting the outer diameter and inner diameter and inputting thickness of the material, the entire production process can be automatically calculated. If there is a deviation caused by material problems, the compensation value of the dimensions can also be changed.

9) [Clamping and Feeding Material](#) Due to the unevenness of some material or material width is too thin, the material may not hook on to the mandrel, resulting in material feeding failure. We hereby design a servo clamping device to reduce the failure rate of feeding

10) [High Speed Automatic Decoiler](#) The automatic decoiler is made of high-quality steel and powered by imported motor, which has low noise and high efficiency. Speed is adjustable by the frequency controller to coordinate with the winding machine. The decoiler speed can reach up to 100 meters per minute

11) [Material Leveling Unit](#) A set of drum type leveling unit has been added to the platform of the equipment feeding entry. This will help to straighten uneven or bent materials and greatly increasing the success rate of hooking to the mandrel.

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12) **Deburring Unit** If the material has burrs during the slitting process, it is difficult to ensure the size and quality of the wound core. Therefore, this unit, made from the wear-resistant tungsten alloy, automatically removes burrs from the material during the production process.

13) **Automatic Material Retrieval Robotic Arm** After the core is completed, it will be automatically taken out by the mechanical arm and slowly placed on the inclined platform for sliding. With the help of this process, there will be no scratches or impacts on the core. The retrieval unit greatly increases the safety of the operator.

Technical Specifications

Name: Fully Automatic Winding Machine (Toroidal 5-Axis)

Model: GWA660-100

Size: 4.35m (L) x 1.65m (W) x 1.75m (H)

Weight: 2800 kg

Voltage: Three Phase 380VAC; 50Hz (standard)

Capacity: 14KW

Air Pressure: 6kgf/cm²

Language: Chinese / English

A) Machine

- 1) Max. Core OD: $\varnothing$ 250mm (Diagonal Line)
- 2) Mandrel Diameter: $\varnothing$ 40-200mm (Diagonal Line)
- 3) Material Width: 20-100mm
- 4) Material Thickness: 0.18-0.5mm
- 5) Both Sides Accuracy: < 0.3mm

B) Decoiler

- 1) Max. Material OD: 1200mm
- 2) Expand Range: 450-508mm
- 3) Max. Coils Loading: 1000kg
- 4) Max. Speed: 150m/min

C) High Speed Laser Welder

1. Max. Laser Output: 1000W
2. Operation Mode: Optical
3. Size: 1.1m (L) x 0.7m (W) x 1m (H)

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List of Components

No.	Parts name	Quantity	Origin
1	Panasonic FP Series High Performance Control System	1	Japan
2	Panasonic 750W Servo Motor / Driver (Cutter Moving)	1	China
3	Panasonic 750W Servo Motor / Driver (Clamping & Feeding)	1	China
4	Panasonic 3000W Servo Motor / Driver (Winding)	1	China
5	Panasonic 3000W Servo Motor / Drive (Cutting)	1	China
6	Panasonic 3000W Servo Motor / Drive (Pushing)	1	China
7	Taiwan Hiwin Precision Screw / Nut	-	Taiwan
8	Taiwan Hiwin Precision Linear Guideway	-	Taiwan
9	Taiwan RB Precision Servo Reducer	2	Taiwan
10	Tungsten Alloy Punching and Cutting Die	1	China
11	Taiwan WEINVIEW 10 inch Touch Screen	1	Taiwan
12	SMC/AIRTAC Pneumatic Components	-	Japan / China
13	Japan NSK Precise Ball Screw Bearings	3	Japan
14	Japan NSK/KOYO/IKO Bearings	-	Japan
15	Korean AUTONICS Encoder	1	Korea
16	Panasonic or SICK Metal Sensor and Photoelectric Sensor	12	Japan / Germany
17	CheeMing 90W Gear Motor and Reducer. (Lifting)	1	China
18	CheeMing 7.5KW Gear Motor and Reducer. (Decoiler)	1	China
19	Siemens 11KW Inverter (Decoiler)	1	China
20	Components in Control Cabinet (Fuji, Schneider, Siemens)	-	Japan / Europe
21	Taiwan ONN 3 Colors Warning Lamp.	1	China
22	German Siemens Controls, Emergency Buttons, Lightings, etc....	3	China
23	Full Function OS Software	1	China

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PACKAGING:

Packaging Material: Carton/Wooden case with foam inside.

- 1.General package(Paper carton or plastic bag): For small equipped parts for Digital CNC Wire Coil Winding Machine, Package it with form and pack paper to guarantee unbroken during the transport.
2. Wooden case package: For larger scale Digital CNC Wire Coil Winding Machine ,we have special skilled carpenter, who would make the proper wooden case with exact thickness,density,length.
3. The up arrow ↑marked on the outer wooden case. Buffer material would be put in the wooden case to prevent crack and shock.

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FACTORY:

We-GREWIN INDUSTRIAL GROUP is expert in winding machines lines for 28Years. Our Grewin have ISO9001:2015,CE approvals,Machines'Patents,"high-tech enterprises"by the government.

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