



東莞市森永機械有限公司

SUMWIC MACHINERY CO., LTD.



森永機械

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Automatic Toroidal Core Winder

RC50-20

RC100-30

RC150-50

RC200-80

RC250-100

RC300-120

RC400-120

RC500-120

中国大陆地址：广东省东莞市清溪镇葵青路 45 号 8 号楼 101 室

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Part 1: Product Introduction



About SUMWIC

SUMWIC is a leader in Toroidal core and Step-Lap lamination technology in China and has been serving in the transformer industry for 13 years. From the start, our vision has centered on producing high-quality, high-performance products. Now, our products have obtained 10 patents from the government of China.

Since 2010, when SUMWIC was founded, we focused on energy efficiency, design, and manufacture of high-quality transformer core equipment, such as:

- **RC Series Toroidal Core Winder.**
- SCR Series Step-Lap Core Cutting Line.
- SC Series 90 Degree Strip Cutting Line.
- SCF Series Wound Core Folding Machine.
- RCW Series Wound Core Winding Machine.

We now sell the machines to many small, and medium transformer manufacturers and core makers worldwide from the US, Korea, Poland, Taiwan, Singapore, and India, etc.

Today, we continue to innovate and be committed to research and development to meet the demands of tomorrow. Our products, expertise, and service are now in high demand worldwide. Welcome to contact us, SUMWIC machine, your core friend.

About Machine

The RC series is a high-speed, fully automatic toroidal core winding machine. This equipment is used for the purpose of winding toroidal cores, which are used in various electrical machines such as current transformers, power transformers, isolation transformers, inductors and chokes, auto transformers, etc. Our machine is equipped with the highest quality components and materials with the aim of achieving significant economies through low running costs, high-speed operation, and low maintenance.

Our machine is equipped with an advanced Panasonic PLC system and HMI touch screen to control the decoiler, winding machine, and laser welder. The decoiler will feed the materials through the guider to the leveling unit, deburring unit, and finally the cutting unit. Once the material is inside the cutter, the PLC will calculate an accurate measurement and feed the material to the hook pin on the mandrel. The servo motor will drive the mandrel to wind the materials into the required length for the toroidal core, and the cutter will then cut the sheets off. Lastly, the laser system will weld the core together, and a mechanical arm will pick up the core and transport it to the next work station.

Main Features

- Automatic feeding, punching, winding, cutting, welding and collecting with high speed and efficiency.
- PLC system and HMI touch screen to control servo motors, moving parts and pneumatic components.
- Continuous feeding, adjustable tension, accurate counting, closed-loop monitoring, automatic alarm.
- Automatic laser welding with perfect welding spot, pick up cores by machine hand.
- Equipped with lifting platform, leveling unit, deburring unit, tungsten alloy cutting and punching mould.
- Equipped with 1000W LED continuous laser welder, and the laser output can be adjustable.



Toroidal Cores



Toroidal Mandrels



Technical Specification

A) Toroidal Core Winder

| Model | RC50-20 | RC100-30 | RC150-50 |
|------------------------|---|------------------|------------------|
| Shape | Toroidal Core | | |
| Servo Motor | 5 | | |
| Mandrel Diameter | Ø8- Ø40mm | Ø10- Ø80mm | Ø20- Ø120mm |
| ID (Min) | Ø8 | Ø10 | Ø20 |
| OD(Max) | Ø50mm | Ø100mm | Ø150mm |
| Material Width | 5-20mm | 5-30mm | 10-50mm |
| Material Thickness | 0.18-0.5mm | 0.18-0.5mm | 0.18-0.5mm |
| Accuracy | < 0.1mm | < 0.1mm | < 0.1mm |
| Voltage | 380VAC, 50/60Hz, with wire 4mm ² | | |
| PLC | Panasonic | | |
| Air pressure | 6kgf/cm ² | | |
| Power | 5KW | 6KW | 8KW |
| Main Unit Size (LxWxH) | 1750x950x1530mm | 1800x1000x1530mm | 1900x1200x1820mm |
| Decoiler Size (LxWxH) | 1500x750x1410mm | 1500x750x1410mm | 1500x750x1410mm |
| Welder Size (LxWxH) | 1100x700x1000mm | 1100x700x1000mm | 1100x700x1000mm |
| Total Weight | 1310KG | 1430KG | 1550KG |
| Language | Chinese/English | | |

| Model | RC200-80 | RC250-100 | RC500-120 |
|-----------------------|--|------------------|------------------|
| Shape | Toroidal Core | | |
| Servo Motor | 5 | | |
| Mandrel Diameter | Ø40- Ø180mm | Ø40- Ø200mm | Ø100- Ø450mm |
| ID (Min) | Ø40 | Ø40 | Ø100 |
| OD(Max) | Ø200mm | Ø250mm | Ø500mm |
| Material Width | 20-80mm | 20-100mm | 20-120mm |
| Material Thickness | 0.18-0.5mm | 0.18-0.5mm | 0.18-0.5mm |
| Accuracy | < 0.2mm | < 0.3mm | < 0.3mm |
| Voltage | 380VAC, 50/60Hz, with cable above 4mm ² | | |
| PLC | Panasonic | | |
| Air pressure | 6kgf/cm ² | | |
| Power | 13KW | 14KW | 20KW |
| Size (LxWxH) | 2300x1500x1760mm | 2450x1500x1750mm | 3100x1700x1750mm |
| Decoiler Size (LxWxH) | 1910x1320x1130mm | 1910x1320x1130mm | 1910x1320x1130mm |
| Welder Size (LxWxH) | 1100x700x1000mm | 1100x700x1000mm | 1100x700x1000mm |
| Total Weight | 2420KG | 2500KG | 2650KG |
| Language | Chinese/English | | |

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**B) High Speed Decoiler**

| Model | RC500-120 |
|--------------------|----------------------|
| Supplier | SUMWIC |
| Type | One Side |
| Expansion | Manual |
| Max. Coils OD | 1200mm |
| Expand Range ID | 450-508mm (Standard) |
| Max. Coils Loading | 1000kg |
| Max. Feeding Speed | 250m/min |
| Size (LxWxH) | 1910x1320x1130mm |
| Weight | 950KG |

C) Continuous Laser Welder

| Model | SL-1000 |
|-------------------|-----------------|
| Max. Laser Output | 1000W |
| Spot Size | 0.5-5mm |
| Operation Mode | Continuous |
| Focal Length | 150mm |
| Laser Cable | 5m |
| Cooling Mode | Water-Cooling |
| Size (LxWxH) | 1100x700x1000mm |
| Weight | 180KG |



List of components

| No. | Parts name | Quantity | Origin |
|-----|--|----------|----------------|
| 1 | Panasonic FP Series high performance control system | 1 | Japan |
| 2 | Panasonic servo motor / drive device (for punching die moving) | 1 | China |
| 3 | Panasonic servo motor / drive device (for clamping & feeding) | 1 | China |
| 4 | Panasonic servo motor / drive device (for winding) | 1 | China |
| 5 | Panasonic servo motor / drive device (for cutting) | 1 | China |
| 6 | Panasonic servo motor / drive device (for pushing) | 1 | China |
| 7 | Taiwan Hiwin precision screw | 1 | Taiwan |
| 8 | Taiwan Hiwin precision screw nut | 1 | Taiwan |
| 9 | Taiwan Hiwin precision screw | 2 | Taiwan |
| 10 | Taiwan Hiwin precision screw nut | 2 | Taiwan |
| 11 | Taiwan Hiwin precision linear guideway | 3 | Taiwan |
| 12 | Taiwan SESAME precision servo reducer | 2 | Taiwan |
| 13 | Tungsten alloy punching and cutting die | 1 | China |
| 14 | Taiwan WEINVIEW 10 inch touch screen | 1 | Taiwan |
| 15 | Japanese SMC pneumatic components | - | Japan / China |
| 16 | Japanese NSK precision bearings for ball screws (P4 class) | 3 | Japan |
| 17 | All bearings from Japanese NSK/KOYO | - | Japan |
| 18 | Taiwanese POINT Heat exchange cooler | 1 | China |
| 19 | Korean AUTONICS encoder | 1 | Korea |
| 20 | Korean Autonics metal detector and origin detector | 12 | Korea |
| 21 | Taiwan CPG gear motor and reducer.(for Lifting) | 1 | China |
| 22 | Taiwan CPG gear motor and reducer.(for Decoiler) | 1 | China |
| 23 | Panasonic inverter (for Decoiler) | 1 | China |
| 24 | Components in control cabinet (Mitsubishi, Schneider, Siemens) | - | Japan / Europe |
| 25 | Taiwan ONN 3 colors warning lamp. | 1 | China |
| 26 | Germany Siemens buttons | 3 | China |
| 27 | Toroidal operation system | 1 | China |

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Part 2: Packing Items

Overseas standard packing with no scratch and rust during long-range transportation

- 1) Applying Anti-Rust Oil
- 2) Covering with stretch Film
- 3) Covering aluminum air bag
- 4) Vacuuming air bags
- 5) Boxing all the pallet
- 6) Loading to the Container

Part 3: Reference Photos

RC50-20 Machine Photo



RC100-30 Machine Photo



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RC150-50 Machine Photo



RC250-100 Machine Photo



RC300-120 Machine Photo





Manufacture and Delivery Photos.



Machine Photos from Customer.



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Cooperative Corporation.



Reference Certificate.

The image displays three certificates side-by-side:

- Trademark of SUMWIC:** A Chinese Trademark Registration Certificate (商標註冊證) for the SUMWIC brand, registered on April 28, 2015, and valid until February 27, 2025. The registrant is Sumwic Machinery Co., Ltd.
- Invention Patent:** A Chinese Patent Certificate (發明專利證書) for a "一种全自动磁轭绕线机及制作工艺" (A kind of fully automatic magnetic core winding machine and its manufacturing process). The patent number is ZL 2013 1 0238066.4, granted on June 19, 2015.
- Certificate of Compliance:** An EC Conformity Assessment Certificate (Certificate of Compliance) for a Fully-Automatic Core Winding Machine (RC200-80, RC250-80, RC100-40, RC50-20, YW-260A). It certifies compliance with the EMC Directive (2004/108/EC) and the CE marking requirements.

End.....