



ALUMINUM ELECTROLYTIC CAPACITORS SOLUTION PROVIDER



AGS-Electronics

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Factory Information

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Enterprise honor

National High-tech Enterprises

Established in

September 2004

Registered capital

USD 6 million

Total staff

158 people

Product

Snap-in Aluminum Electrolytic Capacitors
Screw Aluminum Electrolytic Capacitors
EDLC



Product Range

Snap-in



High voltage, high capacitance, mainly used in power supply and energy industry

Electrical Characteristics

size: $\Phi 22$ – $\Phi 42$
voltage: 10V–**700V**
capacitance: 39 μ F–56,000 μ F
Load life: 10,000h (105°C)

Screw



High voltage and high capacitance, used in industrial power supply and new energy

Electrical Characteristics

size: $\Phi 35$ – $\Phi 100$
voltage: 10V–**750V**
capacitance: 1,000–680,000 μ F
Load life: 20,000h (85°C)
10,000h (105°C)

EDLC



High capacitance, low ESR and excellent watt density

Electrical Characteristics

size: $\Phi 22$ – $\Phi 60$
voltage: 2.5V–2.7V, 5V
Capacitance: 0.5F–3000F
Load life: 700,000cycles(65°C)

Production Capacity

In order to ensure product quality and to improve the reliability, factory has imported multiple sets of advanced production equipment with high degree of automation and accuracy from Europe, USA, Japan, and Taiwan.



Snap-in

3,000,000 pieces/month
36,000,000 pieces/year

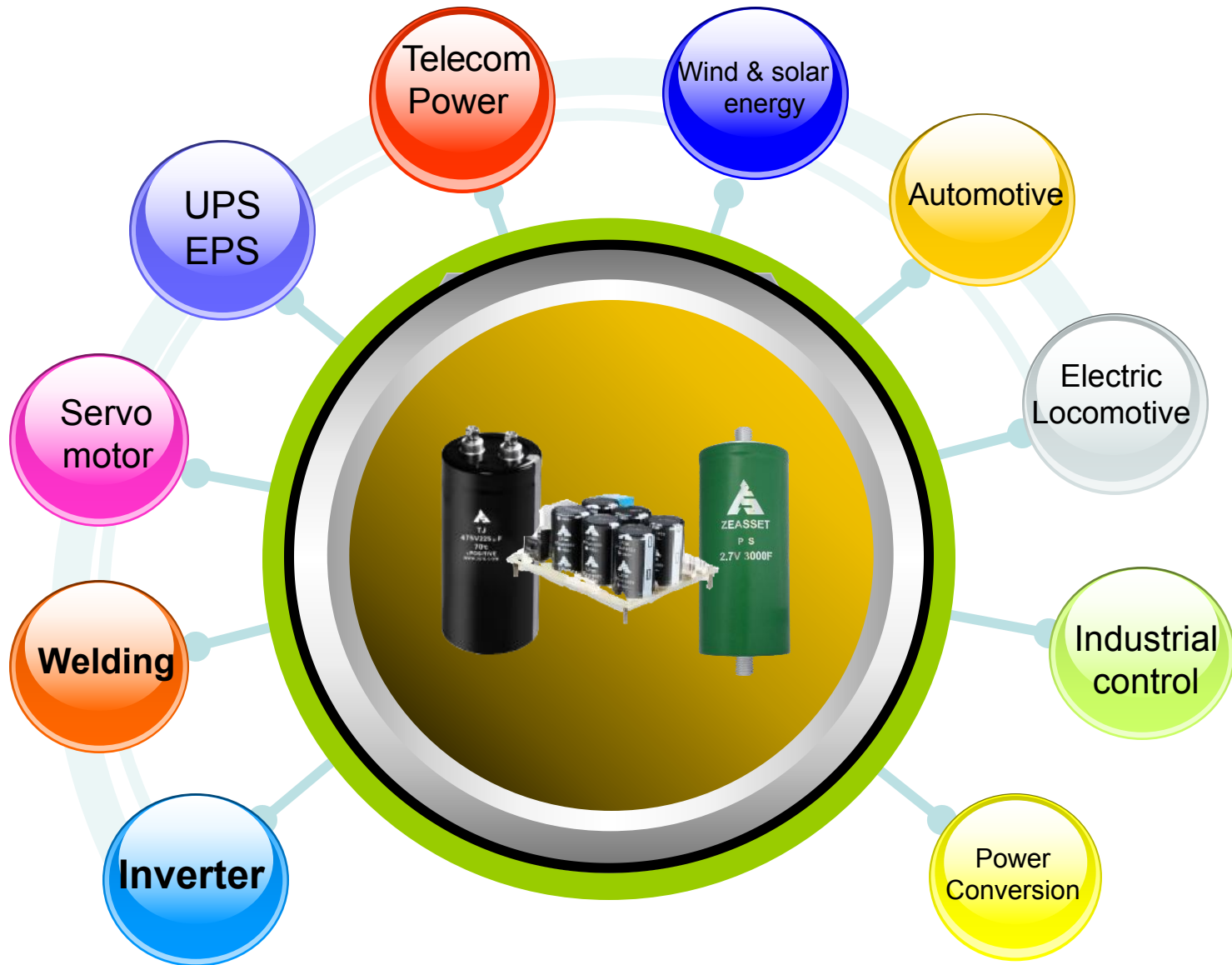


Screw

100,000 pieces/month
1,200,000 pieces/year

Application

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Typical Customers

- Frequency Converter



- Solar Energy / UPS



- Welding Machine



- Elevator



Typical Customers

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- EV, Charging Point Locomotives



- White Goods using inverter Technologies



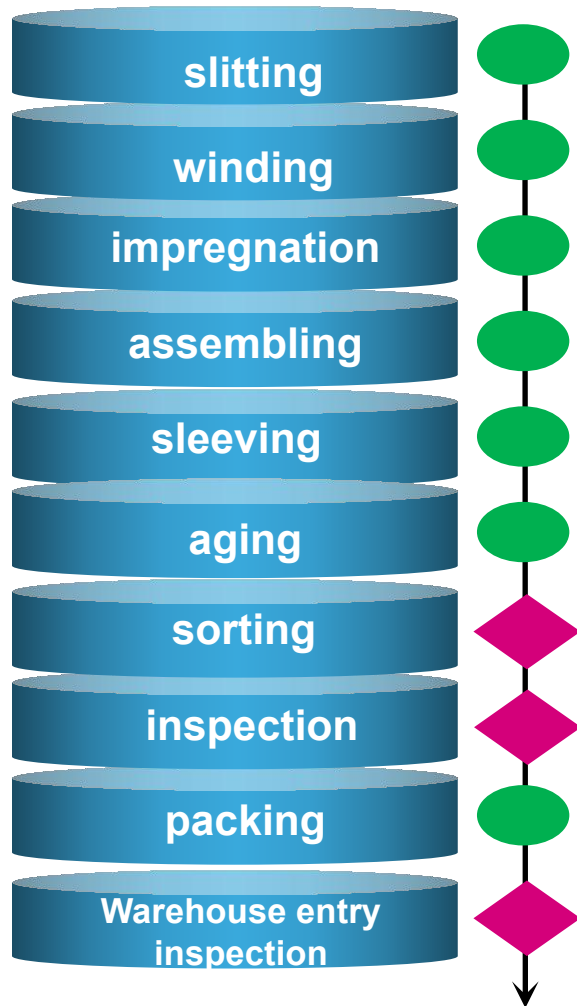
- Medical Equipment

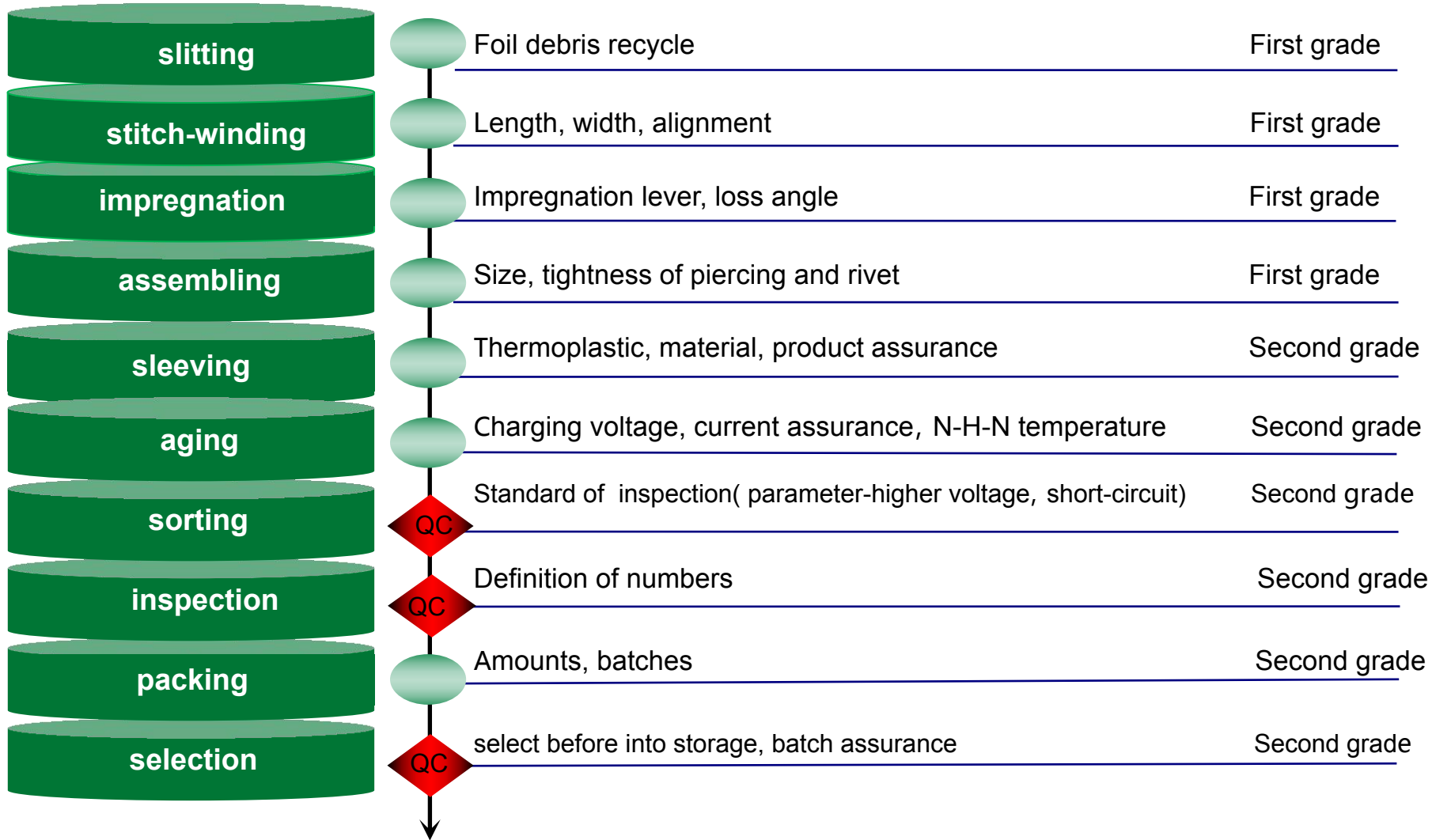


- Servo Drive



Manufacturing Process





Electrolyte

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Electrolyte is one of the most critical raw materials of aluminum electrolytic capacitors and plays a vital role on product performance. We commit ourselves to R&D of high-performance electrolyte with advantages as followings:

- **high temperature resistance**
- **high spark voltage**
- **high stability**



Technologies of Cleaning Foil Ash

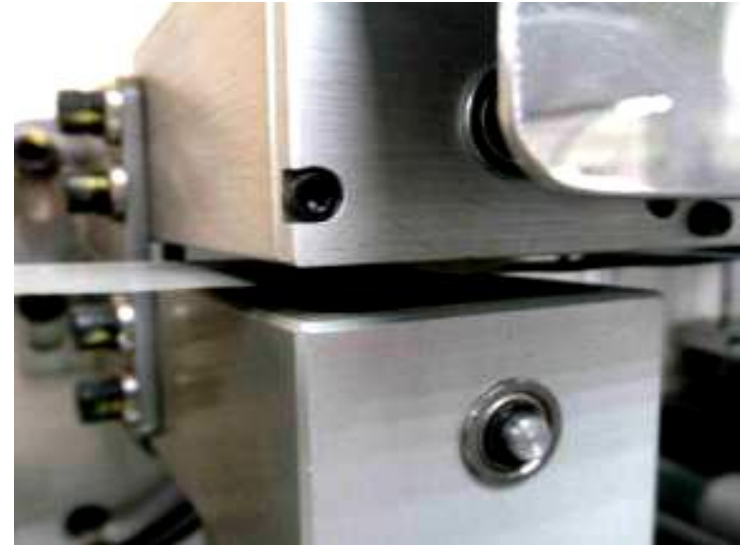
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Foil Cleaner on Cutting Machine



The sucker on cutting machine effectively collects the foil ash and debris during foil cutting. This helps to prevent foil ash floats in the air and attached to the foil that would increase the risk of breakdown.

Automatic Brush on Winder

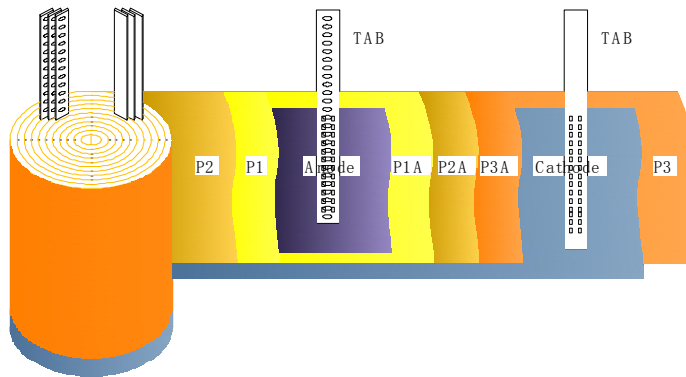


Addition brushes and ash suction in the Arco winding machine to reduce risk of debris on the foil and further ensure the product quality.

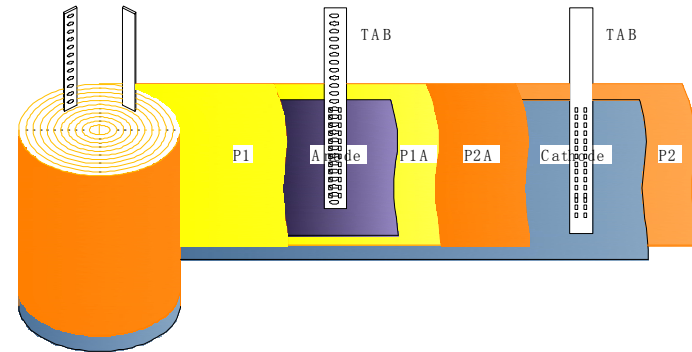
Winding Technology

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6-ply Paper Winding Machine



This Factory: 6-ply paper

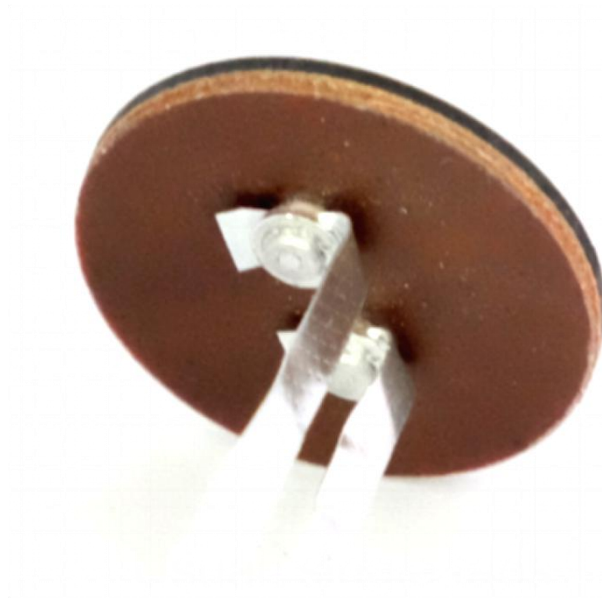


Others : 4-ply paper

Our winding machines are from Arco in Italy, these advanced winding machines realize 6-layer paper winding which means 2-ply more than the traditional 4-ply winding structure. That helps to improve product overpressure resistance ability and reduce the ESR value.

Dual taps / Multi taps

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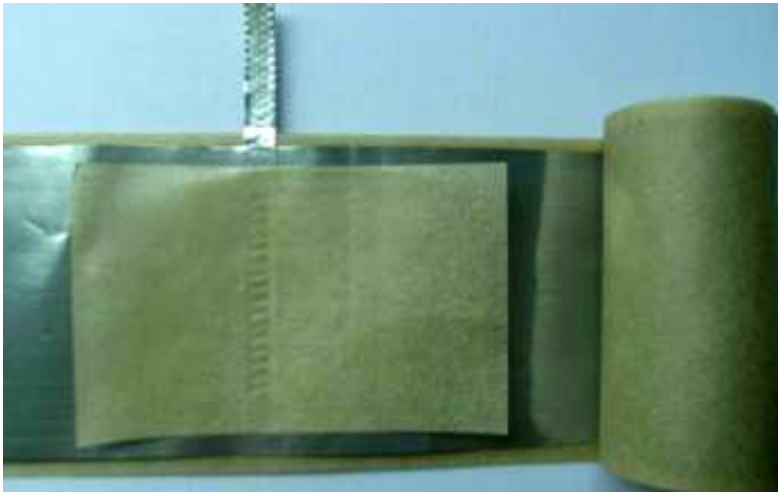


Dual taps / Multi taps means addition current paths, at the same time, that reduces Dissipation Factor and ESR values which improves high ripple current capacity.

Liner Electrolytic Paper Technology

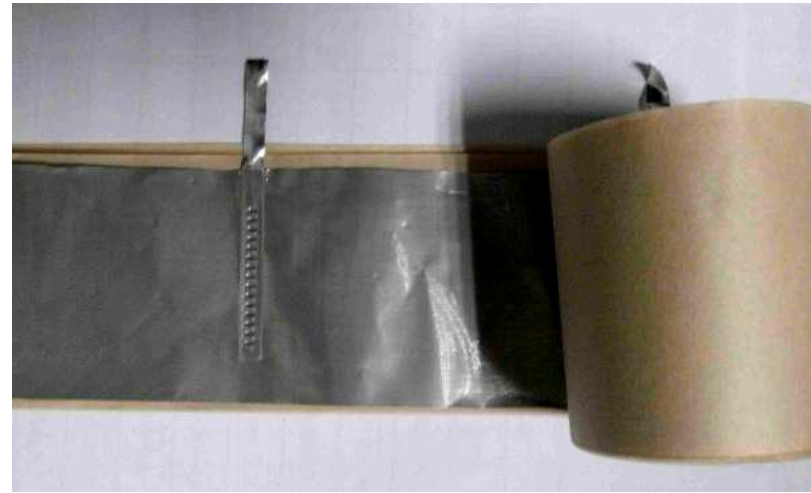
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(Used in snap-in products)



With liner electrolytic paper

Because riveted junction is a weak point, breakdowns easily happen under high voltage situations. Placing a liner electrolytic paper cover, those connection points improve the high voltage resistance capability and product reliability.



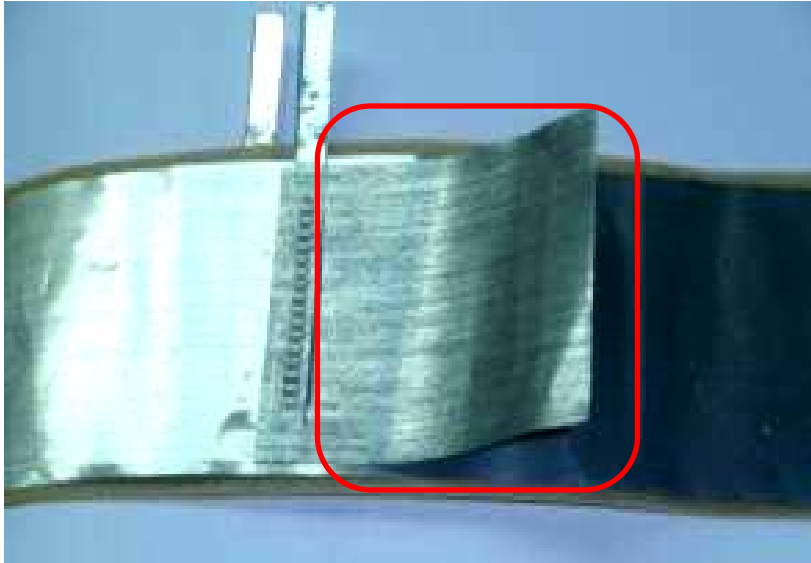
Without liner electrolytic paper

Higher risks of breakdown occur under high voltage situation.

The Negative Foil Liner Process

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(Used in snap-in product)



With The negative foil liner

Placing a layer of cathode foil can increase the contact area between the taps and negative foil, increase the current conduction surface and effectively improve cooling performance.



Without the negative foil liner

The contact form between taps and negative foil without negative foil liner just has point-surface contact, which leads to less contact area and weak conductive capability.

Spin Riveting & Laser Welding

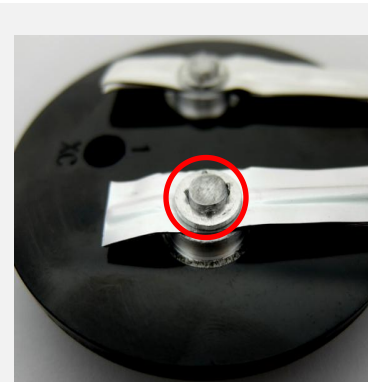
(Used in screw capacitors)

Laser Welding Machine



Spin Riveting & Laser Welding

The taps and terminals completely fused together reduce contact resistance by 60~70% comparing with traditional piercing riveting..

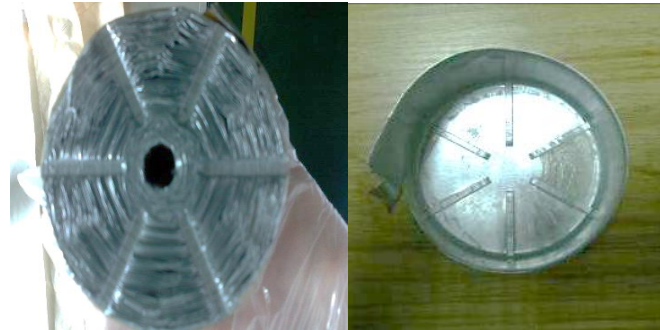


Traditional Piercing Riveting

Stick taps and terminals together with aluminum gaskets means higher resistance.

Extended Cathode Foil and Convex Rib

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Extended cathode foil & convex on aluminum housing

Extended cathode foil means full contact with bottom of aluminum case, which results in 18~20% improvement of heat conduction and effectively improves the characteristics at high frequency.



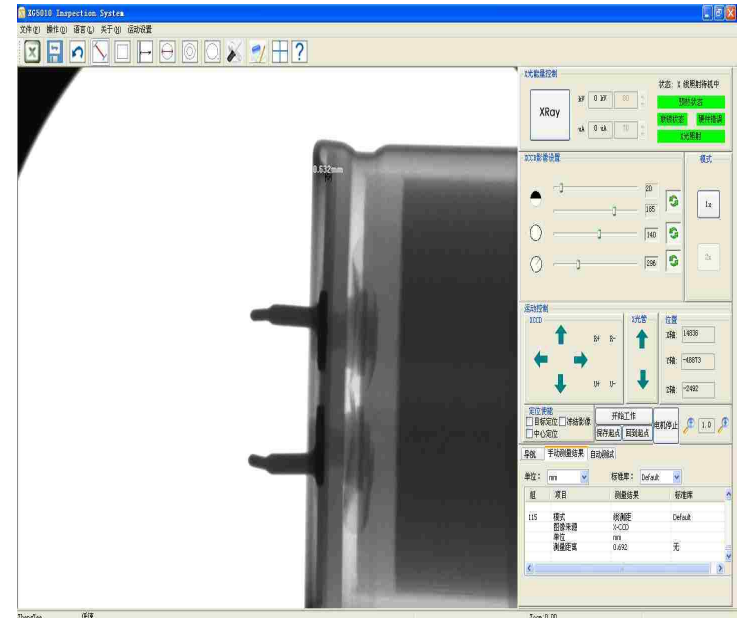
Without extended cathode foil & convex rib on aluminum cases

The cooling effect is poor.

Quality Control

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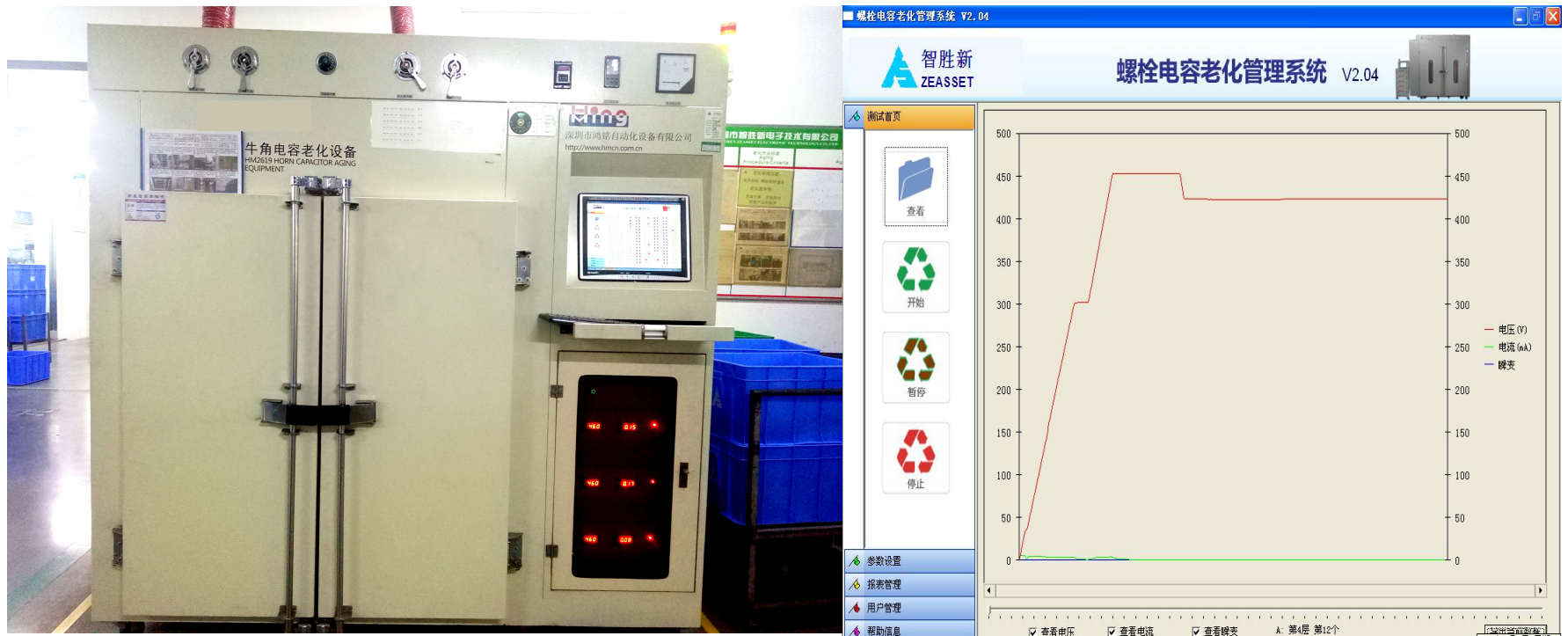
Advanced detecting instruments



X-RAY testing equipment checks the internal situation of the seals and positions of cores putting products into lossless perspective to achieve more reliable quality.

Fully-Automatic Aging Machine

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Most advanced full-automatic aging machine has the advantages of high efficiency and strong consistency. It's voltage can be divided into multiple segments and it has an intelligent control system. The situation of aging for each product can be accessed by the computer. Defective products can be removed automatically to make sure full aging of each product. At the same time, oxidation film can be better repaired, and the performance parameters of the product can be more stable.

Fully-Automatic Testing Technology

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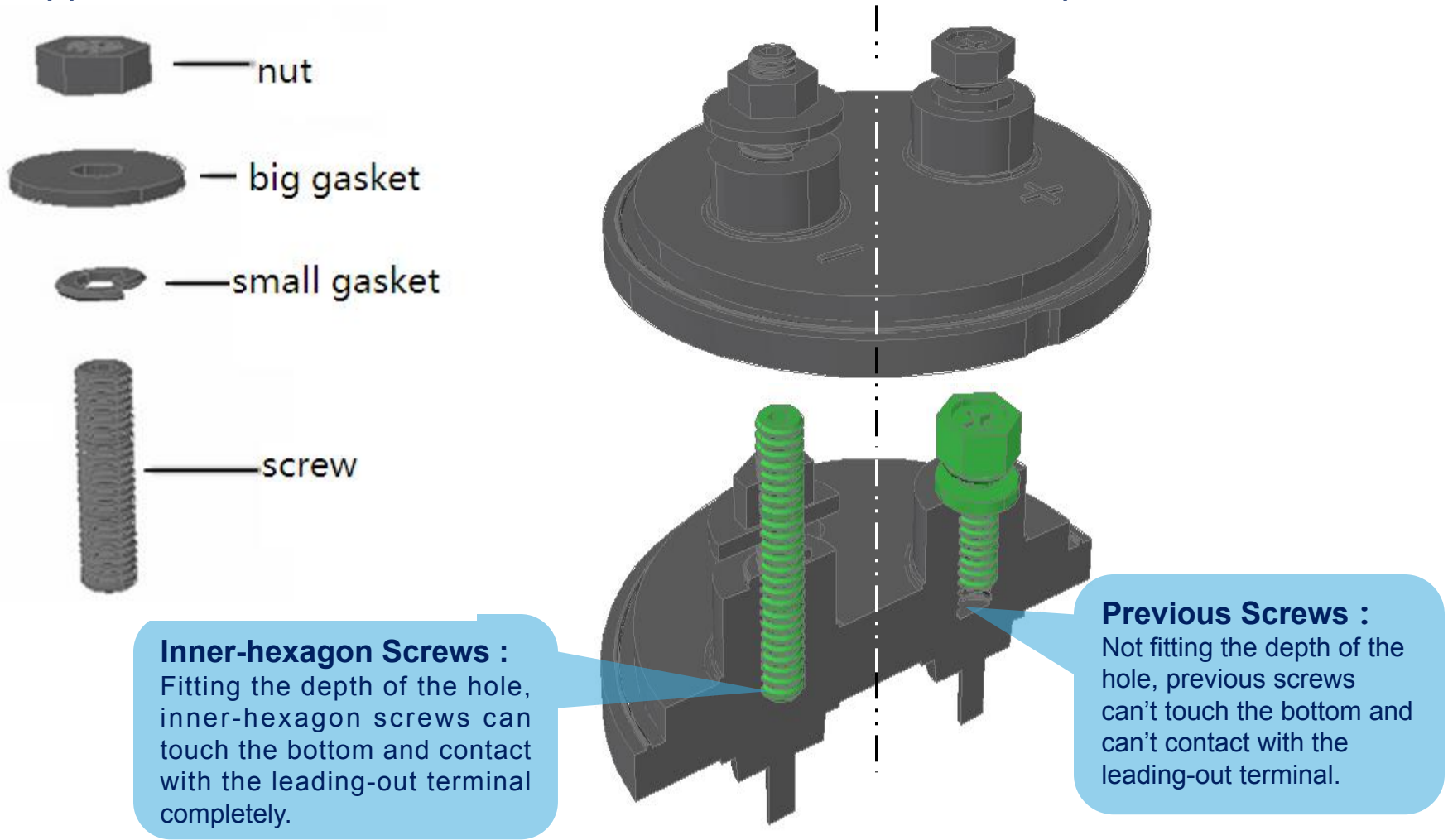


The advanced full-automatic testing machine (Factory has property right of the design of this equipment) can filtrate automatically according to the performance data set in the system as well as 100% sort the unqualified products whose performance parameters don't reach the standard through setting multiple values for products' capacitance. The system can store the testing data of each product automatically for quality management and later reference.



Fixed by Inner-hexagon Screws

It is useful for reducing the phenomenon of slipped screws and the contact resistance, used in screw capacitors.



Plastic Clamp Rings

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Comparing with metal clamp rings:

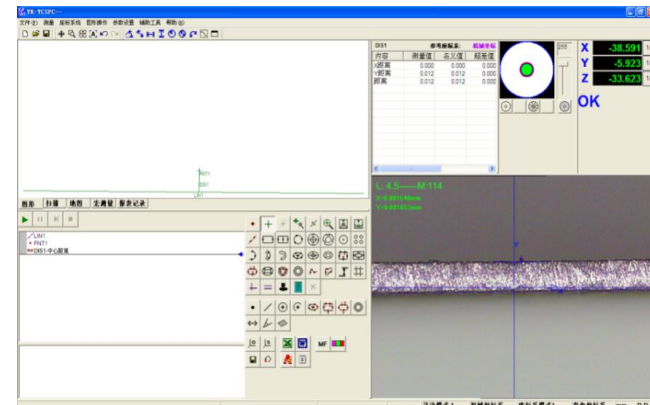
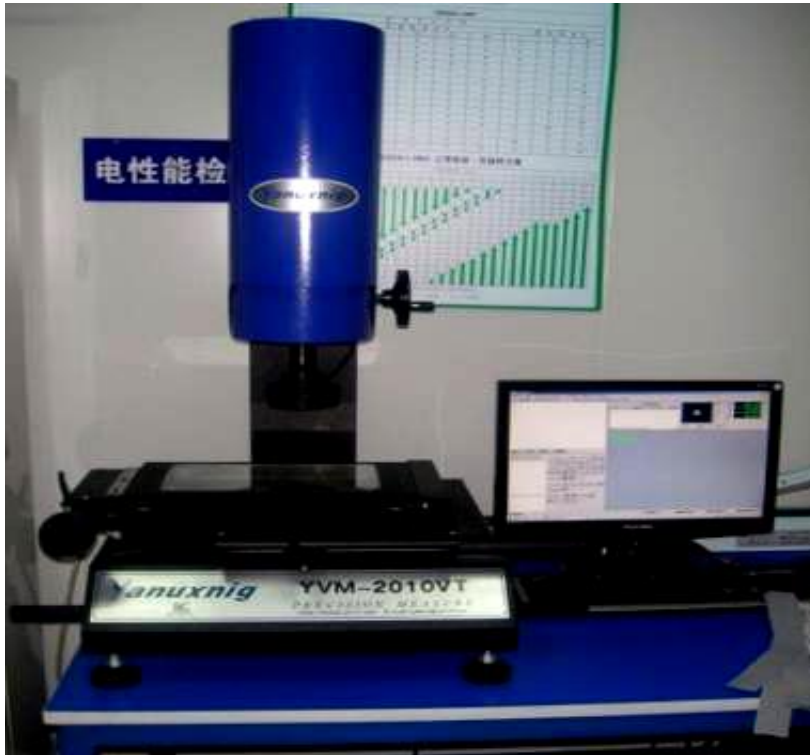
Effectively solve the hidden danger of electric conduction of metal clamp rings;

- The material of the plastic clamp rings is flame-retardant;
- Plastic clamp rings employ the dustproof design to resist the entry of dust and ash and the occurrence of fox-fire

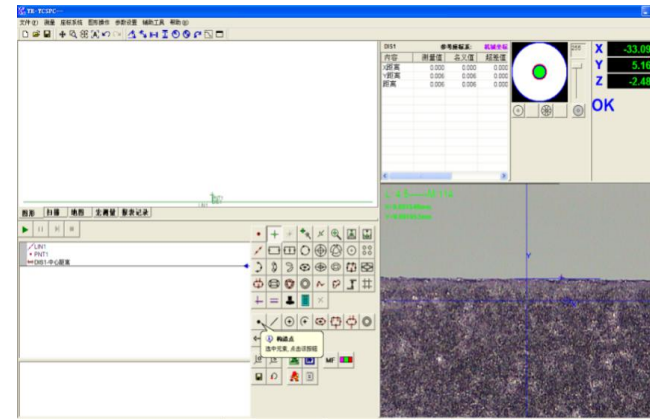


Advanced detecting instruments

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Vertical Foil
Ash
Measurement



Lateral Foil
Ash
Measurement

Unique ash-magnifying device can monitor the vertical and lateral ashes on positive and negative foil and the result could be indicated on computer by data and figures.

Advanced Inspection Instruments

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Carrying out quantitative analysis on contained ions of raw materials with advanced UV spectrophotometer to strictly control the harmful ions like Cl^- and $(SO_4)_2^-$ and to improve the quality.



Using moisture analyzer to strictly control the contained water of electrolyte and finished products so as to make sure the performance and quality of products.

Product Reliability

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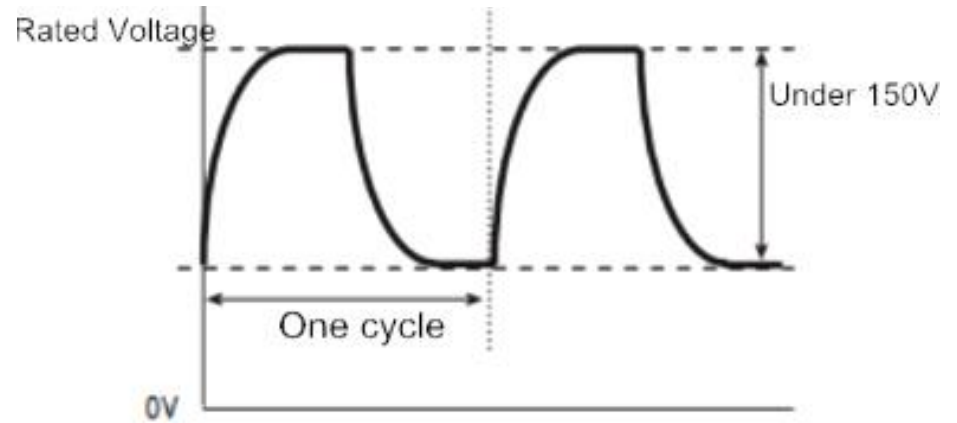
Qualification test

- High Temperature Load Test
- High-Temperature Storage
- Low-Temperature Storage
- Steady State Damp Heat Test
- Temperature Characteristics
- Ripple Current Resistance Test
- Surge Voltage Test
- Heat Resistance Test as Welding
- Pressure released Test (Anti-Explosion)



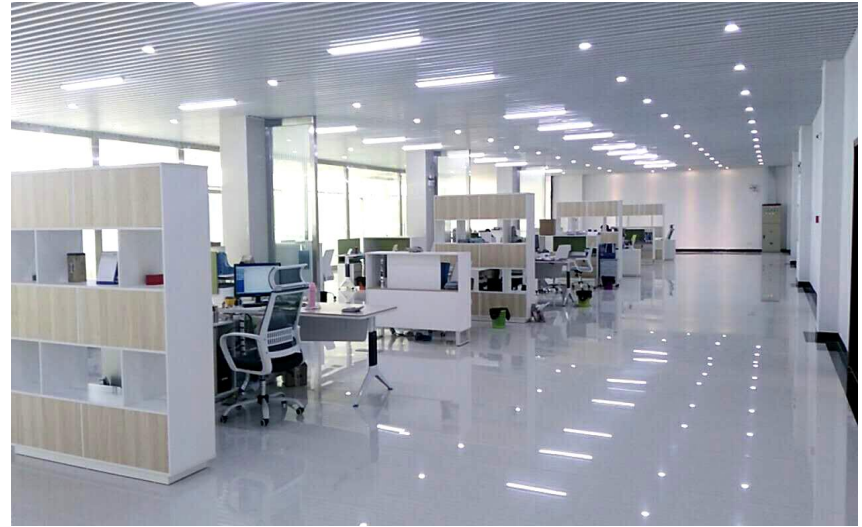
Real-life Application Test

- 20 million rapid charge and discharge
- Rapid charge and discharge
- (12 thousands times/hours)
- Inverter application life-cycle test
- Servo controller baking machine life-cycle test
- Welding machine test



0.3s/cycle 0.13s/charge 0.17s/discharge

Modern Production Facility



Modern Production Facility

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Certifications

- ISO9001-2015 Quality management system certification
- ISO14000-2015 Environment management system certification
- IATF 16949
- RoHS Report
- UL Certification

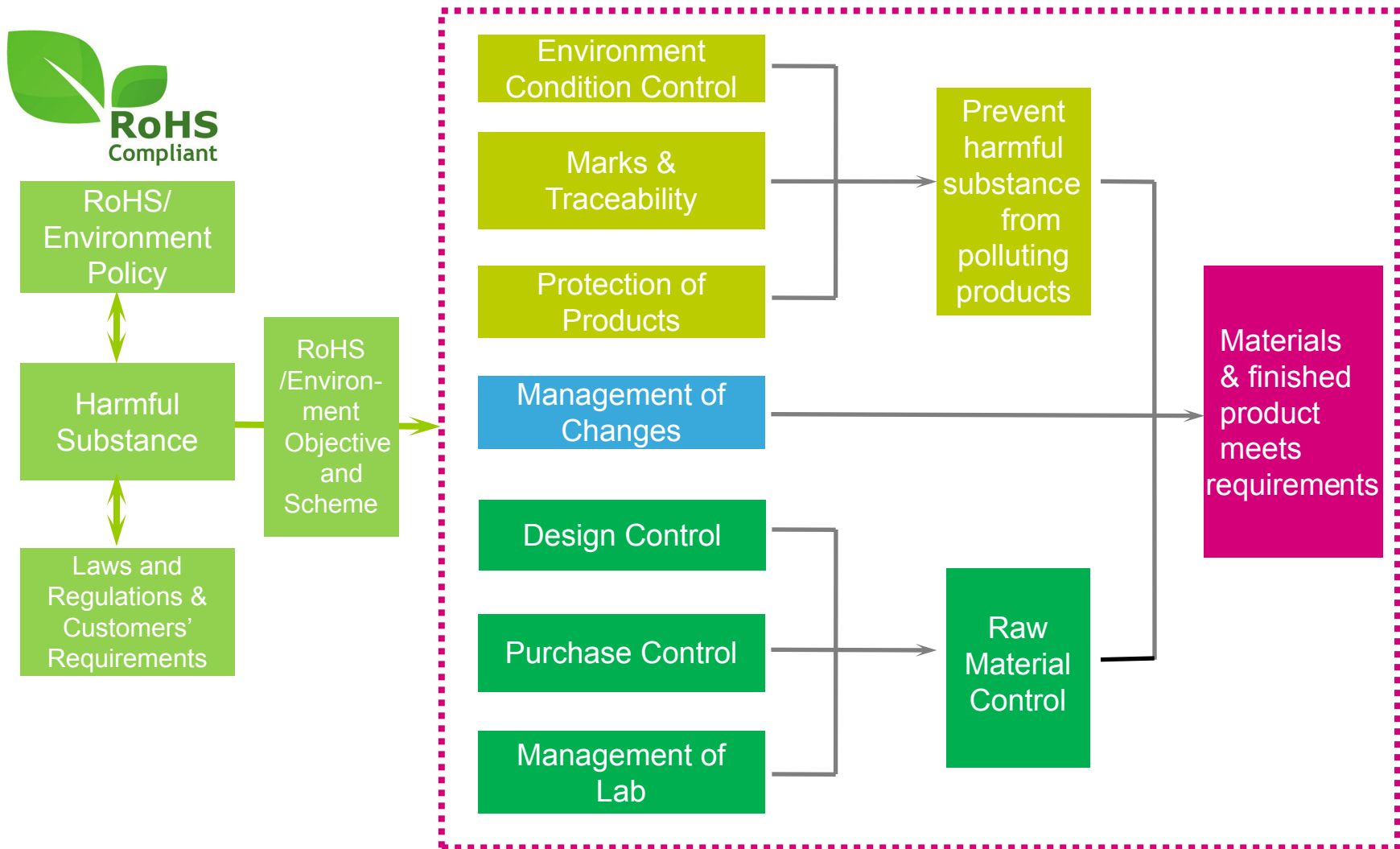


Production Environmental Management



Environmental Protection and Sustainability is our company goal, therefore we have continuously improved our manufacturing process to achieve higher energy efficiency and material utilization. Through achieving the certifications of ISO14001 and RoHS, we spare no effort to reduce the negative impact on the environment and contribute to the environment improvement of the relevant communities.

RoHS Control



Industry-University-Research Cooperation

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Cooperating with higher-education universities and research institutions



西安交通大学
XI'AN JIAOTONG UNIVERSITY

广东工业大学
Guangdong University of Technology

天津大学

广日电梯
GUANGRI

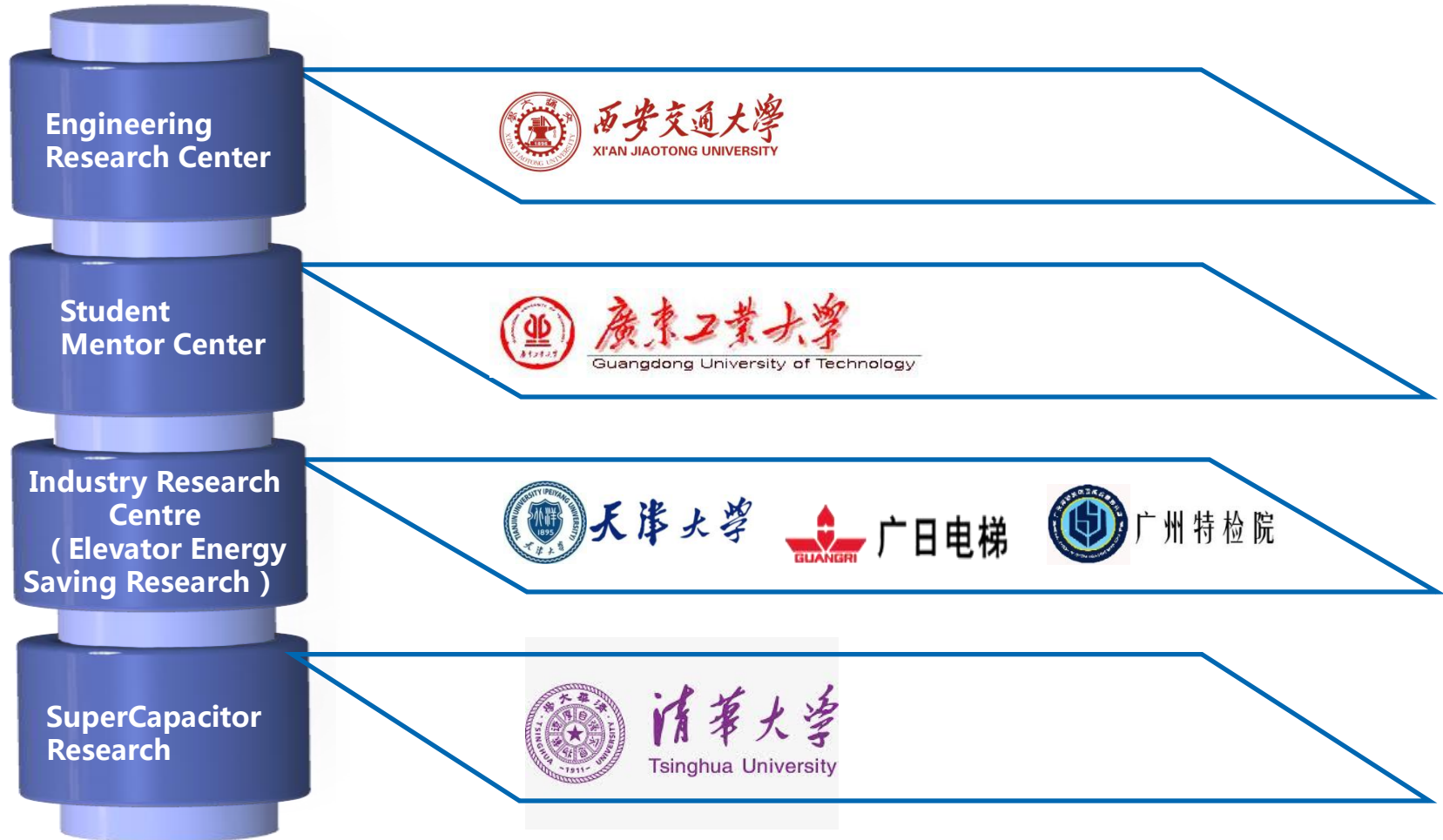
中山大学
SUN YAT-SEN UNIVERSITY

广州特检院

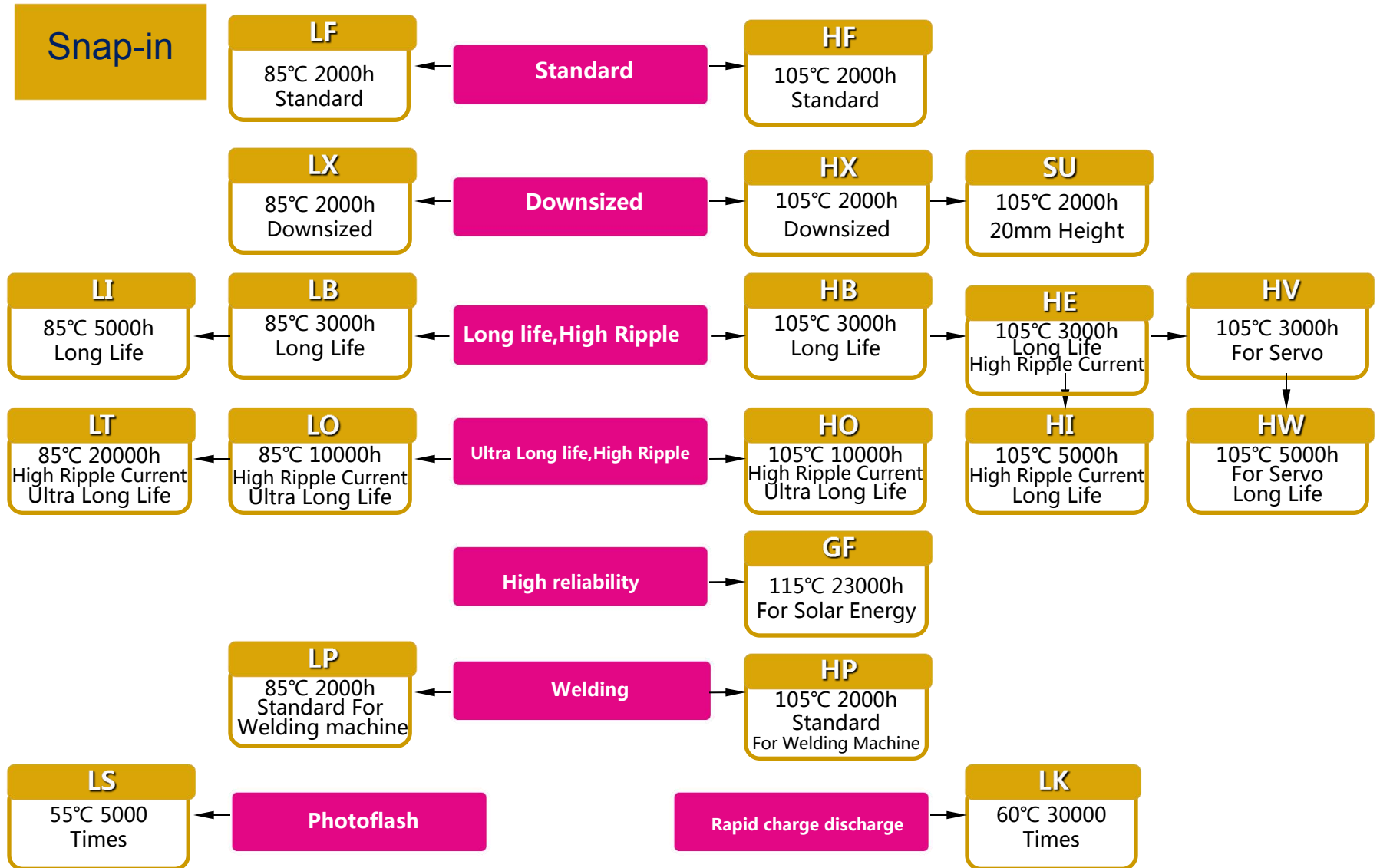
Adopting international advanced technology;
Accelerating technical transformation

Collaboration Programs with Universities

Working with university research centers

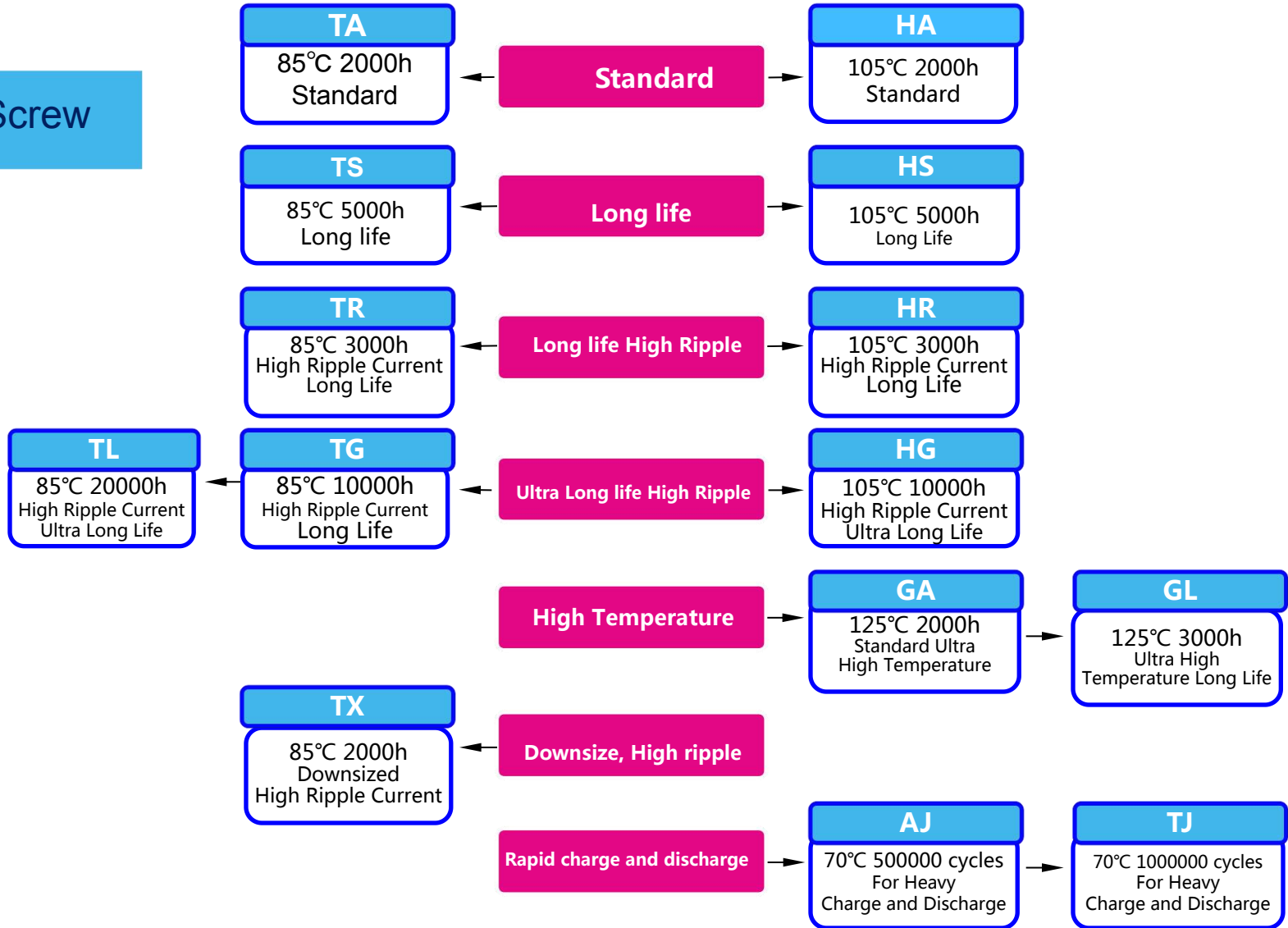


Product Lines



Product Lines

Screw





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Thank you

For more information Please visit
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