

Introduction to Micro-Arc Oxidation Power Supply

GAOHUI' s micro-arc oxidation power supply is a high-performance specialized power source for forming ceramic coatings on aluminum, magnesium, titanium and their alloys. Adopting advanced high-frequency pulsed electric field technology, it generates dense, high-hardness (1000 - 3000 HV) ceramic coatings with excellent corrosion resistance and insulation. Featuring customizable 0 - 1000A current, 750V voltage output and intelligent digital control, it balances superior surface treatment performance with energy efficiency, making it the ideal choice for industrial batch production and laboratory R&D in aerospace, medical equipment, deep-sea technology and other high-end fields.



How to Select a Suitable Micro-Arc Oxidation Power Supply

Selecting the right **micro-arc oxidation power supply** (single-channel or dual-channel rectification type) is critical to ensuring stable micro-arc oxidation process effects and production efficiency. When choosing a micro-arc oxidation power supply, customers must prioritize three core requirements to match their actual production and R&D needs:

1. **Process Specification Compliance:** The micro-arc oxidation power supply must meet the technical parameters required by the micro-arc oxidation process, including power output capacity, waveform type (single/dual pulse), and the adjustable range of current and voltage values, to ensure consistent coating quality.
2. **Reliability & Safety:** The structural design, circuit stability, cooling mechanism and safety protection systems of the micro-arc oxidation power supply directly determine its long-term operation performance. High-quality micro-arc oxidation power supply is equipped with comprehensive protection functions and three-proofing treatment to adapt to harsh industrial environments.
3. **Cost-Effectiveness:** On the basis of meeting process and reliability requirements, the price-performance ratio of the micro-arc oxidation power supply should be considered, including after-sales service, maintenance convenience and energy consumption level, to reduce the overall operating cost of the project.

Technical Specifications of GAOHUI Micro-Arc Oxidation Power Supply

Our industrial-grade **micro-arc oxidation power supply** has a flexible optional specification range (Current 0 - 1000A, Voltage 750V) and is designed with modular and intelligent features, fully meeting the precision requirements of different application scenarios. The detailed technical parameters are as follows:

1. **Input Voltage:** AC 380V $\pm 10\%$, 50Hz (industrial standard input, strong anti-interference)
2. **Operating Mode:** Switchable Constant Current/Constant Voltage mode, free adjustment according to process needs
3. **Output Waveform:** Standard single-pulse waveform; customizable dual-pulse waveform | Single-pulse: 0-750V forward voltage adjustable/0 to Max forward

current adjustable | Dual-pulse: 0 to Max positive/negative voltage/current independent adjustable

4. **Output Frequency:** 100–3000Hz (customizable, matching different metal material oxidation processes)
5. **Duty Cycle:** 5–100% stepless adjustable, precise control of discharge time
6. **Intelligent Operation:** Supports single-segment/multi-segment operation, 50 process recipes storage & one-click recall, historical data and fault log inquiry for easy process optimization and equipment maintenance
7. **Environmental Adaptability:** Professional "Three-Proofing" treatment (moisture-proof, mold-proof, salt-spray proof), ensuring stable full-load long-term operation in high-humidity, corrosive industrial environments
8. **Comprehensive Protection:** Built-in overcurrent, overheating, overvoltage, phase loss and other output protection functions (**Note:** The micro-arc oxidation power supply must not be operated under short-circuit conditions)
9. **Human-Machine Interaction:** Equipped with RS485 communication interface for remote control, real-time operation status indicators, and emergency stop button for safe operation
10. **Timing & Alarm:** Customizable timing operation (0 for continuous operation), automatic alarm for abnormal status to avoid production losses

Single & Dual Pulse Micro-Arc Oxidation Power Supply Models

GAOHUI provides a full range of single-pulse and dual-pulse micro-arc oxidation power supply models, with air-cooled and water-cooled cooling methods optional, to match different production scales and process requirements. The specific model parameters are as follows:



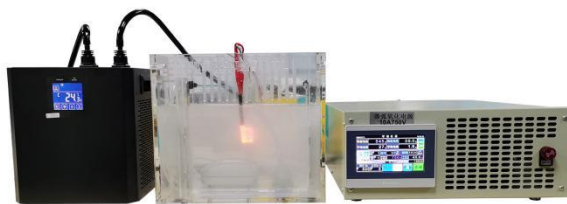
Specifications and Models Table

Single-Pulse Micro-Arc Oxidation Power Supply Model Table				
Serial Number	Forward Current	Forward Voltage	Cooling Method	Size (mm)
1	5A	750V	Air-cooled	198*250*430
2	10A	750V	Air-cooled	510*560*230
3	30A	750V	Air-cooled	510*560*460
4	50A	750V	Air-cooled	510*560*460
5	100A	750V	Air-cooled	580*650*1623
6	200A	750V	Water-cooled	1155*650*903.5
7	300A	750V	Water-cooled	1155*650*903.5
8	500A	750V	Water-cooled	1155*650*1473.5

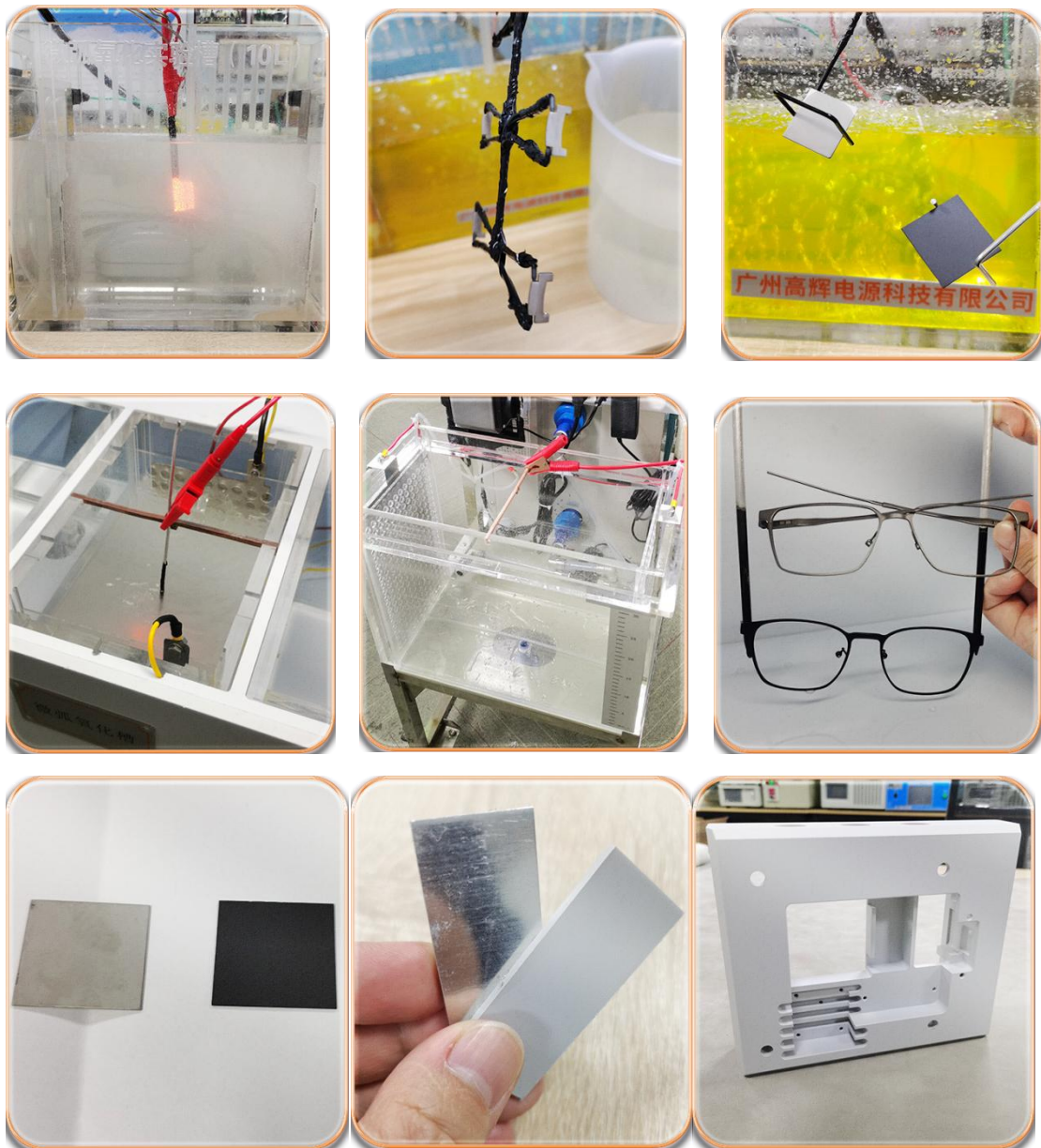
Dual-Pulse Micro-Arc Oxidation Power Supply Model Table						
Serial Number	Forward Current	Forward Voltage	Reverse Current	Reverse Voltage	Cooling Method	Size (mm)
1	10A	750V	3A	300V	Air-cooled	510*560*460
2	30A	750V	10A	300V	Air-cooled	510*580*681
3	50A	750V	15A	300V	Air-cooled	510*580*1156
4	100A	750V	30A	300V	Air-cooled	580*650*1623
5	200A	750V	50A	300V	Water-cooled	1155*650*903.5
6	300A	750V	100A	300V	Water-cooled	1155*650*903.5
7	500A	750V	150A	300V	Water-cooled	1155*650*1473.5

Micro-Arc Oxidation Experimental Equipment Series

For scientific research institutions and laboratory R&D, GAOHUI has developed a compact micro-arc oxidation power supply experimental system, which is a dedicated small micro-arc oxidation power supply matched with an intelligent temperature control system and modular reaction device. The experimental micro-arc oxidation power supply supports up to 750V adjustable output, with rapid parameter switching and laboratory-grade precision, perfectly suitable for ceramic coating preparation, material performance testing and micro-arc oxidation process development of aluminum, magnesium, titanium metals. The compact design saves laboratory space, and the operation is simple, which is the ideal experimental equipment for materials science research.



Experimental Case Studies



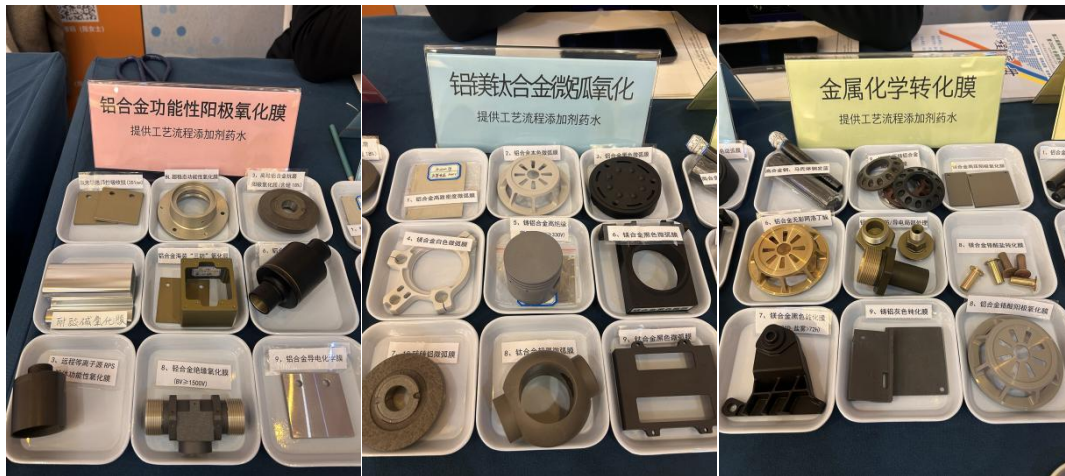
Color Coating Support of Micro-Arc Oxidation Power Supply Processing

GAOHUI' s micro-arc oxidation power supply can realize diversified color ceramic coating preparation through process parameter adjustment, supporting a variety of color finishes for different metal materials, meeting the aesthetic and functional requirements of different application scenarios. The color and material matching is as follows:

Color	Aluminum Alloy	Magnesium Alloy	Titanium Alloy
Black	✓	✓	✓
White	✓	✓	✓
Blue	✓	-	✓
Obsidian Blue	-	-	✓
Clear Blue	-	-	✓
Yellow	✓	✓	✓
Champagne	-	✓	-
Bronze	-	✓	✓
Green	-	-	✓
Purple	✓	-	-



Wide Applications of GAOHUI Micro-Arc Oxidation Power Supply





Why Choose GAOHUI Micro-Arc Oxidation Power Supply?

1. **Core Technology Advantages:** Independent R&D high-performance digital control system, multi-stage composite waveform output, precise parameter adjustment to match all micro-arc oxidation processes
2. **Full Model Coverage:** 0-1000A current, 750V voltage optional, single/dual pulse, air/water cooling models, meeting all industrial and laboratory production and R&D needs
3. **Reliable Quality:** Three-proofing treatment, comprehensive protection functions, stable full-load long-term operation for a long time with low failure rate; all products pass strict multi-dimensional performance testing before leaving the factory
4. **Intelligent Operation:** Humanized touch screen interface, one-click recipe storage and recall, real-time historical data inquiry, RS485 remote control, simple operation and easy production management
5. **Customization Service:** Professional technical team with rich industry experience provides personalized product customization according to customer's actual process, production scale and scene requirements
6. **Perfect After-Sales Service:** One-stop full-process technical support, on-site installation and commissioning, regular follow-up maintenance, timely fault solution, solving all customer use worries