摩行科技
MOTION TECHNOLOGIES

# PRODUCT SUMMARY

New Energy Safety Protection Equipment

New Energy Fault Diagnosis and Detection Equipment

Three-Electronic System Maintenance Equipment





Cooperation · Win · Create · Grow

# COMPANY PROFILE

Motion Technology is a digital innovation-driven tech company specializing in the new energy sector. As the first internet-based tech firm to introduce the ' Full-Service Mobile Repair ' model into the automotive aftermarket, it aims to redefine the industry and pioneer new business models.

The headquarters operations center is located in Shanghai, while the R&D center is situated in Guangzhou. The founder and core team are drawn from leading new energy vehicle manufacturers and renowned automotive service chain maintenance enterprises, with extensive experience in the automotive industry.

| | | |
|---|---|---|
| Repair | Technology | Spare parts |
| After-sales | Training | Extended warranty |

**By the end of 2026 (China)**

National Urban Technology Operation Centers
**50+**

National Alliance Authorized Service Network
**6000+**

Technical engineers and service personnel at all levels
**20000+**

Coverage of Three-electric Technologies for New Energy Vehicles
**92%+**

MOTION TECHNOLOGIES

# ADVANTAGES OF PARTNER

- Permanent one-on-one WeChat group for vehicle repair consultation
- New Energy Vehicle Three-Electrical System Extended Warranty Product (Underwritten by Ping An)
- "Motion Technology" New Energy Vehicle Special Repair Brand Doorway Traffic
- Online marketing customer traffic to the store

# BUILDING A NATIONAL BUSINESS STRATEGY MAP

**National Alliance Authorized Service Network**









## INVENTION AND UTILITY MODEL PATENTS

A Method for Charging State Prediction of Lithium-ion Battery
A Fault Diagnosis Method for Lithium-ion Battery System
A Modified Kalman Filter for State Estimation of Lithium Battery
A New Type of New Energy Vehicle Battery Box
A new type of battery cooling device for new energy vehicles
A new energy vehicle battery bracket with impact force reduction
Over ten applications and various patents under development...

## Model of Conduct and Honor

National "First Batch" New Energy Vehicle Power Battery Testing and Maintenance Regulations
**Fan "Standard Application Pilot Unit"**
"First" is underwritten by China Ping An for the "Product Extended Warranty Liability Insurance"
Vice President Unit of China New Energy Vehicle Industry Association
Member units of China Automobile Maintenance Industry Association
Council Member Unit of Automobile Dealers of All-China Federation of Industry and Commerce
Tuhu Car Service, SKF, and Baoneng Motor are strategic partners in the automotive industry.
Strategic partners of Jingyou Technology and Yuanli Technology












# 01 New Energy Safety Protection Equipment

The power batteries and related components of new energy (electric) vehicles operate at high voltages, which can cause harm to the human body. Whether in research and development, production, or after-sales technical personnel, failure to correctly recognize the high-voltage risks associated with new energy vehicles and to properly implement protective measures in high-voltage work areas may result in severe high-voltage injuries.

During operations, personnel must wear insulated shoes and avoid carrying metal objects (e.g., coins in pockets). Use 1000V durable insulated gloves, inspecting for damage before use, and never touch high-voltage components without gloves. Conduct site inspections by placing prominent warning triangles to alert others to "Touching hazards during high-voltage work." When parking maintenance vehicles in the work area, ensure the ground and engine compartment are dry—no work in damp conditions. Confirm the work area is equipped with water-based fire extinguishers. Prepare required tools, ensuring they are insulated. Never perform high-voltage work with wet hands or on damp components. Stop operations immediately if the ground or surrounding area is



# New Energy Safety Protection Equipment

## Insulating gloves

Insulation gloves are five-fingered gloves made of natural rubber, formed by pressing, molding, vulcanizing, or dipping molding of insulating rubber or latex. They are primarily used in electrical work and serve as essential safety equipment and critical insulating protective gear in power operation, maintenance, and testing. The gloves feature a smooth and resilient inner lining, soft elasticity, and convenient on/off design.



**Product Parameter**

| Product name | 0 grade insulated gloves for live working |
|---|---|
| Brand | Shuangan |
| Test voltage (KV) | 5 |
| Service voltage （V） | 1000 |
| Operative norm | GB/T17622-2008 |
| Material quality | Emulsion |
| Scope of application | Applicable to work environments with alternating current (AC) voltage below 1000V |
| Maximum operating voltage AC (V) | 1000/1500 |
| Test voltage AC/DC (KV) | 5/10 |
| Minimum Tolerant Voltage (KV) | 10 |
| Maximum leakage current (MA) | ≤12 |

**Usage Notes**

- Suitable for workers in environments with alternating current (AC) voltage ≤ 1000V;
- Prior to use, the electrical properties must be tested by a nationally accredited testing institution to ensure compliance with regulations during storage, transportation, and sales. Routine electrical performance testing is required every 6 months thereafter.
- Before each use, an inflation test must be performed. If any damage is found, the device must not be used.
- Store properly after use, keep clean and dry, avoid contact with oils, acids, alkali and other corrosive substances, and keep away from heat sources;
- Routine monitoring shall be performed in accordance with the methods specified in the GB/T17622-2008 standard.

## Eye protector

**Product Features**

- The airtight frame effectively protects against harmful gases, liquids, and splashing particulates.
- Panoramic lenses are adopted without compromising the side field of view;
- The soft nasal frame and nasal pad ensure a non-compressive fit and airtight seal;
- Adjustable headband for different head shapes;
- Compatible with most corrective glasses;
- Heat-resistant frame: withstands temperatures up to 120°C for 4 hours and 200°C for 90 seconds.
- The lenses are easy to replace, reducing the cost of use.



**Product Parameter**

| Product model | MXHM-A3500 |
|---|---|
| Picture frame | PVC Green Sealed |
| Bandeau | Synthetic fiber, gray-green, adjustable length |
| Lens | PC transparent thickness 2.2mm |
| Paint-coat | Super Coating, Outer Side Scratch-Resistant, Inner Side Super Fog-Resistant |
| Impact resistance rating | Grade B (120 m/s) |
| Ultraviolet protection | UV400 100% protection |
| Filter grade | 2C-1.2 |
| Protection field | 3 Droplets or liquid splashes 4 Larger particulate matter 5 Gases and smaller particulate matter |
| Meet a criterion | EN166: 2001 |
| Weight （g） | 133 |
| Pack | 90 units per box |
| Application area | Polishing, grinding, polishing, machining, casting, forging, cement manufacturing, dirty and dusty environments, high-temperature working conditions |

# New Energy Safety Protection Equipment

## Insulation shoes (FF0714)



- Premium cowhide reverse-matched breathable mesh fabric, soft and skin-friendly;
- Multi-functional protection with SRC anti-slip technology, effortlessly handling complex working conditions;
- Cutting-edge insulation technology for reliable electrical protection;
- Ergonomic design, tailored to the foot morphology of Asians;
- SATA Element features an eye-catching design with material patchwork for breathable and comfort;
- Features a new water-absorbent cushion to prevent foot discomfort and odor.

## Arc and high voltage safety helmet





- Made from ABS material with added insulating agent, free from any impurities for superior insulation performance;
- 4-point braided lining evenly distributes stress, providing more uniform impact resistance and shock absorption.
- Durable and tough, resistant to wear and corrosion, and shock-resistant, providing enhanced safety protection;
- Arc and high-voltage protection (10KV).




Sturdy & durable | Comfortable &breathable | Quality assurance | ABS material quality | Heat resistant | T4 class insulation | Corrosion preventive | Shock resistance

**Technical parameter**

| Product name | Special safety helmet for electric power |
|---|---|
| Technology | Produce plastic articles by injection moulding |
| Material quality | ABS |
| Weight of safety helmet | Approximately 400 grams |
| Safety helmet + face shield weight | About 600 grams |
| Pigment | Red, Blue, White |

## Arc and high voltage protective clothing



**Technical parameter**

| Product name | Electrical insulation clothing |
|---|---|
| Product size | Free size |
| Product configuration | Top / Belted pants / Protective boots / Insulated gloves |
| Fabric material | EVA resin |
| Function Introduction | Live working, protection, safety |
| Scope of application | Designed to protect workers from electric shock during live-line operations on electrical equipment rated at 1000V or lower. |

## Water-based fire extinguisher (09948)



- High-concentration S-10-AB formulation;
- Certified by 3C, compliant with national standards;
- Super-strong ingredients, trustworthy;
- 6-year shelf life;
- Easy to carry and extinguishes fires instantly.



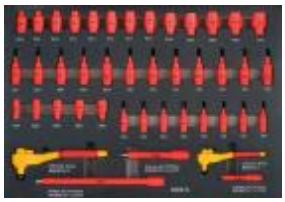
Fire certification | Rapid fire suppression | Non-toxic | Portable | Anti-corrosion | Long-term storage

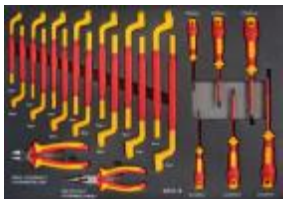
# New Energy Safety Protection Equipment

## Insulation tools (09948)

### 72 sets of new energy vehicle repair kits (including four-wheel-drive two-door tool vehicles)

- For details about 09948-1 and 95125, please refer to the respective product pages.
- Meets the requirements for insulated tools specified in the JT/T 1344-2020 standard;
- The insulation tools comply with IEC/EN 60900 standards and are certified by Germany's VDE.
- 68-piece new energy vehicle tool kit (featuring 4 drawers and 2-door tool cart) is now available for purchase.











**Product Parameter**

| Number | 09948 |
|---|---|
| External dimensions (cm) | 77 (Tool cart size) |
| External width (cm) | 53 (Tool cart size) |
| External height (cm) | 98 (Tool cart size) |
| Net weight (kg) | 50.7 |
| Number of embedded items per set | 72 items |
| Set configuration list | See Product Introduction |
| Warranty clause | For components within the kit, refer to the single-item warranty terms. The insulation layer is not covered by the warranty. |

### 72 sets of new energy vehicle repair kits

**First layer**

-1 set of 6.3mm VDE series insulated quick-release ratchet wrench (145mm)
-1 piece 6.3mmm series VDE insulated steering knuckle 75mm
-1 piece 6.3mm series VDE insulated hex socket 8mm
-1 piece 6.3mm series VDE insulated 6-angle sleeve 10MM
-1 piece 6.3mm series VDE insulated 6-angle sleeve 12mm
-1 piece 6.mm series VDE insulated 6-angle sleeve 13mm
-1 piece 6.3mm series VDE insulated 6-angle sleeve 14MM
-1 piece 6.3mm series VDE insulated hex socket screwdriver 3mm
-1 piece 6.3mm series VDE insulated hex socket screwdriver 5mm
-1 piece 6.3mm series VDE insulated hex socket screwdriver 6mm
- 1 piece 6.3mm series VDE insulated hex socket screwdriver 8mm
-1 piece 6.3mm series VDE insulated pattern socket screwdriver T20
-1 piece 6.3mm series VDE insulated pattern socket screwdriver T25
-1 piece 6.3mm series VDE insulated pattern socket screwdriver T27
-1 piece 6.3mm series VDE insulated pattern socket screwdriver T30
-1 piece 10mmseries VDE insulated quick-release ratchet wrench 200mm
-1 10mm Series VDE Insulated Steering Wrist 125mm
-1 piece 10mm series VDE insulated steering knuckle 250mm
-1 piece 10mm series VDE insulated hex socket 8mm
-1 piece 10mm series VDE insulated hex socket 9mm
-1 piece 10mm VDE insulated hex socket 10mm
-1 piece 10mm series VDE insulated 6-angle sleeve 11mm
-1 piece 10mm series VDE insulated 6-angle sleeve 12mm
-1 piece 10mm series VDE insulated 6-angle sleeve 13mm
-1 piece 10mm series VDE insulated 6-angle sleeve 14mm
-1 piece 10mm series VDE insulated hex socket 15mm
-1 piece 10mm series VDE insulated 6-angle sleeve 16mm
-1 piece 10mm series VDE insulated hex socket 17mm
-1 piece 10mm series VDE insulated 6-angle sleeve 18mm
-1 piece 10mm series VDE insulated 6-angle sleeve 19mm
-1 piece 10mm series VDE insulated 6-angle sleeve 21mm
-1 piece 10mm series VDE insulated 6-angle screwdriver socket 4mm
-1 piece 10mm series VDE insulated 6-angle screwdriver socket 5mm
-1 piece 10mm series VDE insulated 6-angle screwdriver socket 6mm
-1 piece 10mm series VDE insulated 6-angle screwdriver socket 8mm
-1 piece 10mm series VDE insulated 6-angle screwdriver socket 10mm
- 1 piece 10mm series VDE insulated 6-angle screwdriver socket T20
-1 piece 10mm series VDE insulated spline socket T25
-1 piece 10mmseries VDE insulated spline socket T27
-1 piece 10mm series VDE insulated spline socket T30
-1 piece 10mm series VDE insulated spline socket T40
-1 piece 10mm series VDE insulated spline socket T45
-1 piece 10mm series VDE insulated spline socket T50

**Second layer**

-1 VDE Insulated Plum Wrench (8mm)
-1 VDE insulated hex key 10mm
-1 VDE insulated hex key 11mm
-1 VDE insulated hex key 12mm
-1 VDE insulated hex key 13mm
-1 VDE insulated hex key 14mm
-1 VDE insulated hex key 15mm
-1 VDE insulated hex key 16mm
-1 set of VDE insulated hex wrench (17mm)
-1 set of VDE insulated hex wrench (18mm)
-1 set of VDE insulated hex wrench (19mm)
-1 set of VDE insulated hex wrench (21mm)
-1 set of VDE insulated hex wrench (22mm)
-1 set of VDE insulated hex wrench (24mm)
-1 set of T-series VDE insulated cross-head screwdrivers #1x80mm
-1 set of T-series VDE insulated flathead screwdrivers (2.5x75mm)
-1 set of T-series VDE insulated flathead screwdrivers (4x100mm)
-1 T-series VDE insulated crosshead screwdriver #0x60MM
-1 T-series double-handled cross-insulated screwdriver (2x100mm)
-1 T-series double-handled straight-insulated screwdriver (5.5x125mm)
-1 VDE Insulated Voltage-resistant tip pliers (6")
-1 VDE Insulated Voltage-Resistant Tongs ( 6")

**Third layer**

-1 piece cylindrical conical insulated plastic sliding sleeve (10mm)

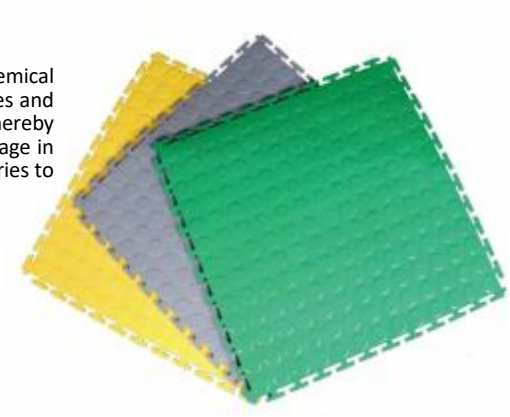
-1 piece cylindrical conical insulated plastic sliding sleeve (20mm)

-1 piece dual-purpose insulated scraper tool
-1 piece of straight-blade VDE cable stripping tool
-1 piece of insulated adjustable wrench (8")
-1 voltage tester pen
-1 insulated magnetic pickup

# New Energy Safety Protection Equipment

## Insulation mat and life hook

### Plastic Spliced Floor (AE3602)



The plastic mosaic flooring is made of PVC material, which exhibits stable physicochemical properties, being insoluble in water, alcohol, and gasoline, with low permeability to gases and water vapor. It is designed to enhance the insulation of the floor for personnel, thereby preventing or mitigating the hazards posed by single-phase grounding or insulation damage in electrical equipment during live operations, such as contact voltage and step voltage injuries to the human body.

- Insulation
- Anti-skip
- Anti-aging
- Easy to cut
- Easy to install



**Product Parameter**

| | |
|---|---|
| Product size / piece (cm) | 50*50 |
| Thickness / sheet (mm) | 6 |
| Withstand voltage （KV） | 10 |
| Weight/Tablet (kg) | 1.6 |

### Insulated life hook (AE3604)

The Insulated Rescue Hook is an improved practical safety rescue device based on the insulated operating lever. Specifically designed for modern live-line work, high-voltage testing, industrial production, and high-voltage equipment maintenance sites, it serves as a safety rescue tool. By pulling, it can safely detach personnel engaged in high-voltage equipment maintenance, testing, or those in poor condition from hazardous areas, providing effective rescue and defensive functions.

- Insulated poles made of epoxy resin
- Large-diameter U-shaped hooks
- Insulated rubber handle for comfortable grip and safe operation
- Implement the standard DL/T976



**Product Parameter**

| | |
|---|---|
| Bearing （kg） | >80 |
| Applicable voltage (Kv) | 110 |
| Length | Section 2: 2 meters |

## Warning signs and barriers

Material of magnetic warning sign: Insulating material

Function: Used for high-voltage power supply and disconnection in new energy vehicles




**Technical parameter**

| Product name | Extensible isolation strip |
|---|---|
| Chassis diameter | 2-meter line chassis diameter 320mm / 3-meter line chassis diameter 320mm / 5-meter line chassis diameter 350mm |
| Material quality | Stainless steel, titanium steel, baked enamel |
| Total height | Approximately 900 mm |
| Weight | Approximately 6 kg per unit (including chassis) |
| Specifications | Approximately 900mm x 320mm x 63mm |
| Telescopic band | 2-meter line: Actual length 1.9m / 3-meter line: Actual length 2.9m / 5-meter line: Actual length 4.9m |
| Fittings of a machine | Standard chassis + stainless steel rod + telescopic fabric (each item included) |







# 02 New Energy Fault Diagnosis and Detection Equipment

The electronic and electrical systems of new energy vehicles are more complex than those of traditional cars, involving multiple components such as high-voltage systems, battery management systems (BMS), motor controllers, and charging systems. The high-voltage systems in new energy vehicles pose safety hazards, and improper operation may lead to electric shocks, fires, or explosions. Professional diagnostic equipment can help maintenance personnel safely identify and resolve issues.

The new energy fault diagnosis and detection equipment can read and analyze the electronic control unit (ECU) data of the vehicle, provide accurate fault codes and maintenance guidance, reduce misdiagnosis and unnecessary disassembly, quickly locate the fault point, shorten the maintenance time, and improve work efficiency.



## Digital Multimeter

### Digital multimeter (SATA 03015)



- Features high performance, low power consumption, and automatic range adjustment;
- AC/DC voltage, AC/DC current, resistors, capacitors, frequency, on/off capability, diodes, backlight function;
- Robust, secure, and reliable full-range overload protection;
- Includes 1 9V 6F22 battery;
- All components except fuses, batteries, and probes are covered by a two-year warranty.

**Product Parameter**

| Number | 03015 | |
|---|---|---|
| **Characteristic** | | |
| Maximum reading | 3999 | |
| Auto / Manometer | Voluntarily | |
| **Measurement function** | **Range** | **Basic accuracy** |
| Volts d.c | 400mV | ±(0.8%+5) |
| | 4V/40V/400V | ±(0.5%+5) |
| | 1000V | ±(1.0%+5) |
| Alternating voltage | 4V | ±(0.8%+5) |
| | 40V/400V | ±(1.0%+5) |
| | 1000V | ±(1.2%+5) |
| Direct current | 400μA/4000μA/40mA/400mA<br>4A/20A | ±(1.0%+7)<br>±(1.5%+7) |
| Alternating-current | 400μA/4000μA/40mA/400mA<br>4A/20A | ±(1.8%+10)<br>±(2.5%+10) |
| Resistance | 400Ω | ±(1.0%+5) |
| | 4kΩ/40kΩ/400kΩ | ±(0.5%+5) |
| | 4MΩ | ±(1.5%+5) |
| Frequency | 40MΩ | ±(3.0%+10) |
| | 10Hz-1MHz | ±(1.0%+5) |
| | 10MHz | This is for your reference only |
| Electric capacity | 40nF | ±(3.5%+20) |
| | 400nF | ±(2.5%+5) |
| | 4μF | ±(3.5%+5) |
| | 40μF | ±(4.0%+5) |
| | 400μF | ±(5.0%+5) |
| | 1000μF | This is for your reference only |
| Duty cycle | 5%-95% | ±(2.0%+3) |
| Temperature | - | - |
| Short circuit buzzer | have | |
| Diode test | have | |
| Relative mode test | have | |
| **Other characteristics** | | |
| Data-hold | have | |
| Be in a poor light | have | |
| Auto shut off | have | |
| EN61010-1 CAT II /CAT III | CAT III 1000V | |
| Cell | 9V 6F22 battery | |
| Size （mm） | 184 x 89 x 62 | |
| Weight （g） | 440 (includes battery and case) | |

## Insulation meter

### Handheld Insulation Resistance Tester (SATA AE3501)



This handheld insulation resistance tester combines digital multimeter and digital insulation tester functions. It supports DC/AC voltage measurement, resistance testing, and on/off testing. The device features polarity indication, overload range indication, data retention, manual and automatic range selection modes.

- Features 4 test voltage levels: 100V,250V,500V, and 1000V;
- Humanized design with a remote control for the watch pen, enabling single-handed operation.
- 4000-character reading display with analog bar;
- Automatic voltage release function enhances user safety.

**Product Parameter**

| | |
|---|---|
| Volts d.c | 400mV/4V/40V/400V/1000V |
| Alternating voltage | 400mV/4V/40V/400V/1000V |
| Insulation measurement | 0.1MΩ~2GΩ |
| 100V | 0.1MΩ to 20.00MΩ (resolution: 0.01MΩ) |
| | 20.0MΩ to 100.0MΩ (resolution: 0.1MΩ) |
| 250V | 0.1MΩ to 20.00MΩ (resolution: 0.01MΩ) |
| | 20.0MΩ to 200.0MΩ (resolution: 0.1MΩ) |
| 500V | 0.1MΩ to 20.00MΩ (resolution: 0.01MΩ) |
| | 20.0MΩ to 200.0MΩ (resolution: 0.1MΩ) |
| | 200MΩ~500MΩ (resolution 1MΩ) |
| 1000V | 0.1MΩ to 20.00MΩ (resolution: 0.01MΩ) |
| | 20.0MΩ to 200.0MΩ (resolution: 0.1MΩ) |
| | 200MΩ to 2000MΩ (resolution: 1MΩ) |

| | |
|---|---|
| Resistance measurement | 400Ω~40MΩ |
| Diode | Have |
| Open circuit test | Have |
| Manual / automatic range | Switchable (insulation resistance without manual range) |
| Excessive range indicator | Have |
| Data-hold | Have |
| Auto shut off | Have |
| Be in a poor light | Have |
| Source | 6*1.5VAAA |
| Security classification | CATIII 1000V CATIV600V |
| Size （mm） | 192x92x61 |
| Weight （g） | 472 |

### Insulation resistance tester (Fluke 1508)



The Fluke 1508 Digital Pendulum Meter is a powerful handheld insulation tester featuring a Chinese interface and LCD display. This precision tool is ideal for testing cables, motors, and transformers. Its one-touch calculation function automatically computes polarization indices and dielectric absorption rates, eliminating manual errors. No more memorizing complex formulas or recording multiple readings – accurate measurements save time and costs. With its robust design, reliability, and user-friendly operation, the Fluke 1508 enhances productivity.

- Insulation testing from 0.01 MΩ to 10 GΩ;
- Insulation test voltages: 50 V, 100 V, 250 V, 500 V, and 1000 V, suitable for various applications;
- The pass/fail (comparison) function simplifies and facilitates repetitive testing;
- Save/Call function with 19 storage units, saving time and labor;
- Remote test probes facilitate repetitive testing or access to hard-to-reach test points;
- The live circuit detection function prevents testing if a voltage exceeding 30 V is detected, thereby enhancing personnel protection.
- Automatic voltage discharge function for capacitors, enhancing personnel protection;
- AC/DC voltage: 0.1 V to 600 V;
- Resistance: 0.01 Ω to 20.00 KΩ;
- Auto-shutdown feature to save battery power;
- CAT IV 600 V safety rating, providing enhanced protection for personnel;
- Included accessories: remote probe, test line and probe, and crocodile clip;
- The optional Fluke MH10 magnetic suspension system allows hands-free operation for other tasks;
- 4 AA alkaline batteries (NEDA 15 A or IEC LR6), capable of withstanding at least 1000 insulation tests;
- 1-year warranty.

# New Energy Fault Diagnosis and Detection Equipment

**Product Parameter**

| | | |
|---|---|---|
| Accuracy | Scope | 600.0 V |
| | Resolution ratio | 0.1 V |
| | 50 Hz to 400 Hz ± (% reading + digit) | ± (2 % + 3) |
| Input impedence | 3 MΩ (nominal value), <100 pF | |
| Common-mode rejection ratio (1 kΩ unbalanced) | 60 dB at 50 or 60 Hz DC | |
| Overload protection | 600 V RMS or DC | |
| **Ground wire resistance measurement** | | |
| Range / resolution | 20.00 Ω | 0.01 Ω |
| | 200.0 Ω | 0.1 Ω |
| | 2000 Ω | 1 Ω |
| | 20.00 kΩ | 0.01 kΩ |
| Accuracy | ± (1.5 % + 3) | |
| Overload protection | 2 V RMS or DC | |
| Open circuit test voltage | > 4.0 V , < 8 V | |
| Short-circuit current | > 200.0 mA | |
| Insulation technical index | | |
| Measuring range | 0.01 MΩ to 10 GΩ | |
| Test voltage | 50 V、100 V、250 V、500 V、1000 V | |
| Test voltage accuracy | + 20 % , - 0 % | |
| Short circuit test current | 1 MA, nominal value | |
| Self discharge | When C = 1 μF or less, the discharge time is <0.5s. | |
| Charged circuit detection function | Testing is prohibited if a voltage greater than 30 V is detected before test initialization. | |
| Maximum capacitive load | It can operate under a load of up to 1 μF. | |
| **General technical parameters** | | |
| Maximum voltage applied to any terminal | 600 V AC RMS or DC | |
| Storage temperature | -40 ° C to 60 ° C (-40 ° F to 140 ° F) | |
| Working temperature | -20 °C to 55 °C (-4 °F to 131 °F) | |
| Temperature coefficient | 0.05 × (given accuracy) / °C, when the temperature is <18 °C or> 28 °C (<64 °F or> 82 °F) | |
| Relative humidity | 0% to 95%, at temperatures ranging from 10°C to 30°C (50°F to 86°F) | |
| | 0% to 75%, at 30°C to 40°C (86°F to 104°F) | |
| | 0% to 40%, at 40°C to 55°C (104°F to 131°F) | |
| Vibration resistance | Random, 2 g, 5-500 Hz, compliant with MIL-PRF-28800F, Class 2 instrument requirements | |
| Resistance to impact | A drop from 1 meter meets the requirements of IEC 61010-1, 2nd edition (1-meter drop test, 6 sides, oak flooring) | |
| Electromagnetic compatibility | In a 3 V/M RF field, accuracy = the specified accuracy (EN 61326-1:1997) | |
| Safe | Complies with the requirements for CAT IV 600 V equipment specified in ANSI/ISA 82.02.01 (61010-1) 2004, CAN/CSA-C22.2 No.1010.1, and IEC/EN 61010-1, 2nd Edition. | |
| Attestation | CSA, compliant with CSA/CAN C22.2 No.1010.1; TUV, compliant with IEC/EN 61010-1, 2nd edition | |
| Cell | 4 AA batteries (NEDA 15A or IEC LR6) | |
| Battery life | For insulation testing: | At room temperature, the new battery can withstand at least 1000 insulation tests. All tests refer to standard conditions: 1000 V, up to 1 MΩ, with a duty cycle of 5 seconds on and 25 seconds off. |
| | Resistance measurement: | At room temperature, the new battery can perform at least 2500 ground resistance measurements. All tests refer to standard tests: 1 Ω, with a duty cycle of 5 seconds on and 25 seconds off. |
| Size | 5.0 cm high × 10.0 cm wide × 20.3 cm long (1.97 in high × 3.94 in wide × 8.00 in long) | |
| Weight | 550 g （1.2 lb） | |
| IP grade | IP40 | |
| Above sea level | Work | |
| | Non-working (storage) | |
| Overload capacity | 110% range | |

## Clip-on ammeter

### True Effective Value AC/DC Clamp Meter (SATA AE3502)



This 6000-count true RMS digital clamp meter measures AC/DC voltage, current, resistance, on/off status, polarity, capacitance, frequency, temperature, and duty cycle. It features non-contact AC voltage detection, relative value measurement, data retention, backlight display, low-voltage battery indicator, automatic shutdown, and illumination functions.

- The product complies with the EN 61010 international safety standard;
- High-performance AC/DC clamp meter;
- Maximum and minimum value recording function for easy data comparison;
- Non-contact electrical detection for quick identification of live wires.

**Product Parameter**

| | |
|---|---|
| Real effective value | Have |
| Display screen | Count 6000 |
| Volts d.c | 600mV/6V/60V/600V |
| Alternating voltage | 6V/60V/600V |
| Alternating-current | 60A/600A |
| Direct current | 60A/600A |
| Resistance | 600Ω/6kΩ/60kΩ/600kΩ/6MΩ/60MΩ |
| Open circuit test | Have |
| Temperature | -20℃ -1000℃ |
| Weight （g） | 262 |

| | |
|---|---|
| Frequency | 9.999Hz - 9.999MHz |
| Electric capacity | 6nF - 60mF |
| Duty cycle | 5% - 95% |
| Diode test | Have |
| Data-hold | Have |
| Be in a poor light | Have |
| Opening size (mm) | ϕ34 |
| Product size (mm) | 216 x 71 x 43 |
| Security classification | CATIII 600V |

# New Energy Fault Diagnosis and Detection Equipment

## Voltage tester



The tester has the functions of AC/DC voltage test, continuity test, diode test, phase sequence test, and illumination function, which can assist illumination in the case of insufficient light.

- Complies with EN 61243 international safety standards, ensuring reliable and secure performance;
- IP64-rated protection, enabling operation in harsh environments;
- The product can still measure the voltage under power even when the battery is dead;
- The starting voltage is only 12V.

**Product Parameter**

| | |
|---|---|
| Voltage measurement range | 10-1000V AC/DC |
| Voltage detection | > 10V Auto power on |
| Sound indication | Beep |
| Polarity detection | Have |
| Frequency range | 45Hz - 65Hz |
| Continuity test | Have |

| | |
|---|---|
| Three-phase electric test | 120V-690V |
| Classification of waterproof | IP64 |
| Lighting | Have |
| Self-checking | Have |
| Simple battery-free test | Voltage: 10-1000V AC/DC |
| Security classification | CATIII 1000V CATIV600V |

## Milliohmmeter



**Product features:**

- Employ the four-wire method to measure resistance;
- Equipped with rechargeable lithium batteries;
- Measurement range: 0.01 mΩ to 19990, with 6 measurement steps;
- "Keep" button: Used to retain data;
- Backlighting function.

**Product Parameter**

| Range | Resolution ratio | Accuracy |
|---|---|---|
| 20Ω | 0.01mΩ | ± (1.0% + 3) |
| 200Ω | 0.1mΩ | ± (1.0% + 3) |
| 2Ω | 1mΩ | ± (1.0% + 3) |
| 20Ω | 10mΩ | ± (1.0% + 3) |
| 200Ω | 100mΩ | ± (1.0% + 3) |
| 2000Ω | 1Ω | ± (1.0% + 3) |

## Discharge equipment



The SKILIWAH HV-S4 is an upgraded version of the fourth-generation discharge pen, supporting high-voltage discharge from 450V to 800V. Ideal for repairing household appliances like TV lights and car components, it serves as a reliable repair tool. Featuring a premium pen barrel with a rubber-coated tip to prevent accidental short circuits, the detachable tip allows easy connection when the connecting wire breaks. Its circuit design eliminates polarity restrictions, allowing users to freely connect the positive and negative terminals to the capacitor.

# New Energy Fault Diagnosis and Detection Equipment

## Lithium battery internal resistance tester (BLN)



**Product features:**

- High-precision chips—3 sets of 20-bit chips;
- True AC measurement—non-destructive testing;
- Stable and efficient—batch testing;
- 4-wire measurement—Kelvin 4-wire clamp.

**Electrical parameters**

| | |
|---|---|
| Internal resistance multi-range (0.01 mΩ) | 0~200mR / 0.2~1R / 1~200R |
| Voltage range | 0~150V (0.01V) |
| Current range | 0~15A (0.001A) |
| Range of capacity | 0~999999mAH |
| Charging voltage | 5V/200mA |

## Handheld oscilloscope (AE3508)



This oscilloscope is a multifunctional handheld instrument, combining dual-channel operation, 25MHz digital storage oscilloscope, and 6000-count true RMS digital multimeter, designed for field testing, maintenance, and repair.

- Wide test range, from 10mV/div to 500V/div;
- Automatic tracking measurement with no manual gear shifting required—measure instantly upon touch.
- The BNC socket features a recessed design to prevent terminal damage during drops.
- Side straps are configured for easy handheld control.

**Product Parameter**

| | |
|---|---|
| Display screen | 3.5-inch TFT LCD with 240×320 pixel resolution |
| Broadband | DC-25MHz (-3dB) |
| Number of channels | 2 |
| Rise time | 14ns |
| Sampling rate | 100MS/S |
| Horizontal sensitivity | 10ns/div-5s/div |
| Horizontal accuracy | 0.01% + 1 pixel |
| Vertical sensitivity | 10mV/div-500V/div |
| Vertical accuracy | ±(3% + 1 pixel) |
| Vertical resolution | 8bit |
| Storage depth | 1Kpts |
| Storage method | Settings, Waveform |
| Ccoupling | AC, DC |
| Input impedence | 1MΩ, ≤20pF |
| Size （mm） | 121 x 212 x 50 |
| Weight （g） | 730 |

| | |
|---|---|
| Trigger source | CHA \ CHAB \ External Trigger |
| Trigger path | Triggered on the rising or falling edge |
| Trigger coupling | AC, DC |
| Multimeter performance | |
| Show | Count 6000 |
| Maximum allowable input voltage | CATIII 600V |
| Volts d.c | 600mV/6V/60V/600V/1000V |
| Alternating voltage | 600mV/6V/60V/600V/1000V |
| Resistance | 600Ω/6kΩ/60kΩ/600kΩ/6MΩ/60MΩ |
| Electric capacity | 6nF/60nF/600nF/6μF/600μF/6mF |
| Diode test | Have |
| Open circuit test | Have |
| Resistance | 600/6k/60k/600k/6M/60MΩ |
| Electric capacity | 6n/60n/600n/6μ/600μ/6mF |

# New Energy Fault Diagnosis and Detection Equipment

## CAN box (09948)

The new energy diagnostic CAN box integrates three functions—Zhouligong CAN, PCAN, and Kvass—into a single device. Supporting hundreds of host computers, it covers most common passenger and commercial vehicles on the market. Designed for battery pack data analysis, CAN data acquisition, message parsing, and testing, it provides technical support and remote diagnostics.



**functional characteristics：**

- Holds over 90% of China's power battery manufacturers, including CATL, Gotion High-Tech, BYD, EVE Energy, and CALB, with more than 200 diagnostic software solutions for vehicle-mounted systems, effectively addressing battery data collection challenges for mainstream vehicle models in the market.
- The battery diagnostic kit supports both diagnostic and firmware update functions, seamlessly compatible with controllers from all brands, ensuring stable operation without frame loss.
- Capable of collecting data including cell voltage, charge/discharge current, insulation resistance, relay status, overall voltage differential, and State of Health (SOH) metrics within the battery pack.
- Integrated CAN communication message acquisition and writing, with bidirectional transmission capability.

**Host Computer Integrated Version**





Connection diagram and data of Pentium PC



BAIC upper computer data

## New Energy Vehicle Diagnostic Instrument (P81)



**Functional characteristics：**

- Covering new energy vehicle diagnostics for over 100 brands, including Tesla, BYD, XPeng, Li Auto, GAC AION, and more.
- Battery pack testing covers 200 brands, including automotive brands, battery manufacturers, and commercial vehicles.
- Enables testing of high-voltage components including air conditioning compressors, OBC, and DCDC modules, allowing instant repair confirmation without on-board testing. This eliminates redundant disassembly and reassembly cycles, dramatically boosting maintenance efficiency.
- Supports CAN and CAN FD protocols, enabling CAN data transmission and reception to replace CAN cards. The configurable CAN pins eliminate jumper wires, supporting diagnostics for Buick, Chevrolet, and Cadillac models manufactured after 2020.

**VCI device specifications**

| Project | Description |
|---|---|
| CPU model | GD32F105 |
| CPU clock speed (MHz) | 108 |
| SC （k） | 256 |
| Running memory (KB) | 96 |
| Communicating protocol | CAN/CANFD、K、J1850、RS485 |
| CI | DB15, USB, Bluetooth |
| Support voltage | DC: 9-32V |
| Operating ambient temperature | -40° C ~ 80° C |
| Size （mm） | 135 x 90 x 28 |

**Many functional advantages make new energy maintenance more efficient**



# New Energy Fault Diagnosis and Detection Equipment

### New Energy Vehicle Diagnosis

The system covers over 100 brands of new energy vehicles, including BYD, XPeng, Li Auto, and GAC AION. (More models will be added in the future)

Full vehicle diagnostic model list (Updating...)

| | | | | |
|---|---|---|---|---|
| 宝骏新能源 | 广汽埃安 | 开沃新能源 | 三菱新能源 | 一汽奔腾新能源 |
| 北汽新能源 | 广汽传祺新能源 | 凯翼新能源 | 上汽大通新能源 | 领途新能源 |
| 比亚迪新能源 | 国金新能源 | 康迪新能源 | 名爵新能源 | 远程汽车 |
| 比亚迪商用车新能源 | 国机新能源 | 卡威新能源 | 荣威新能源 | 跃进新能源 |
| 长安新能源 | 海马新能源 | 力帆新能源 | 神河 | 云度新能源 |
| 长城新能源 | 汉腾新能源 | 零跑新能源 | 速达新能源 | 五菱商用车新能源 |
| 长丰猎豹新能源 | 华泰新能源 | 铃途新能源 | 赛力斯新能源 | 一汽红塔商用车 |
| 昌河新能源 | 红旗新能源 | 理想新能源 | 思皓新能源 | 知豆新能源 |
| 成功 | 华晨鑫源新能源 | 陆风新能源 | 申龙商用车新能源 | 众泰新能源 |
| 创维汽车 | 华菱星马新能源 | 南京金龙 | 腾势新能源 | 中华新能源 |
| 大乘新能源 | 江淮新能源 | 哪吒汽车 | 特斯拉新能源 | 淮源混动 |
| 大运新能源 | 江铃新能源 | 纳智捷新能源 | 威马新能源 | 中通物流 |
| 东风风神新能源 | 捷途新能源 | 慧克新能源 | 五菱新能源 | 中兴新能源 |
| 东风风光新能源 | 吉利新能源 | 启辰新能源 | 雅骏新能源 | 中国重汽新能源 |
| 东风风行新能源 | 金龙 | 奇瑞新能源 | 现代新能源 | 一汽森雅新能源 |
| 起亚新能源 | 九龙 | 起亚新能源 | 小鹏新能源 | 瑞易 |
| 东南新能源 | 黑马飞腾 | 庆铃商用车新能源 | 新特新能源 | 开瑞新能源 |
| 东风商用新能源 | 江铃商用新能源 | 瑞驰新能源 | 小蜂 | 枫叶汽车 |
| 福田 | 江淮商用新能源 | 雄麒新能源 | 野马新能源 | |

### Battery pack diagnosis

Battery pack inspection covers over 200 brands, including automotive brands, battery brands, and commercial vehicles.

Cell voltage



Battery temperature



Battery data flow



### Battery data analysis

The system comprehensively records dynamic battery data during vehicle charging, discharging, or driving. Through data analysis, it detects hidden faulty cells and quickly identifies underperforming ones.




### High pressure component test

After repairing high-voltage components like air conditioning compressors, OBC, and DCDC, the system instantly determines repair success without requiring vehicle testing. This eliminates redundant disassembly and reassembly, dramatically boosting maintenance efficiency.



# New Energy Fault Diagnosis and Detection Equipment

## New Energy Diagnostic Instrument P01 (2)



**product function**

- Battery pack undergoes "special-grade" inspection;
- Dedicated connector for battery pack inspection;
- Innovation-enabled fast charging port detection;
- Comprehensive inspection of all vehicle systems.

**Product Features**

- Covers over 95% of new energy vehicle systems with continuous updates;
- Supports three-phase ionization testing and other essential maintenance functions;
- Offers four battery pack connection options: OBD interface, dedicated connector, jumper cable, and quick-charger port.
- Standard battery pack connector with integrated aviation plug for enhanced testing efficiency;
- Supports ADAS calibration, tread pattern inspection, insulation tester, oscilloscope, digital power supply, multimeter, current clamp, and endoscope modules;
- Dual Wi-Fi configuration: The host and VCI maintain separate Wi-Fi connections, ensuring uninterrupted internet access for the host during VCI operation.
- Provides a comprehensive vehicle topology diagram, clearly visualizing the communication network to enable rapid fault location.

**Product function**

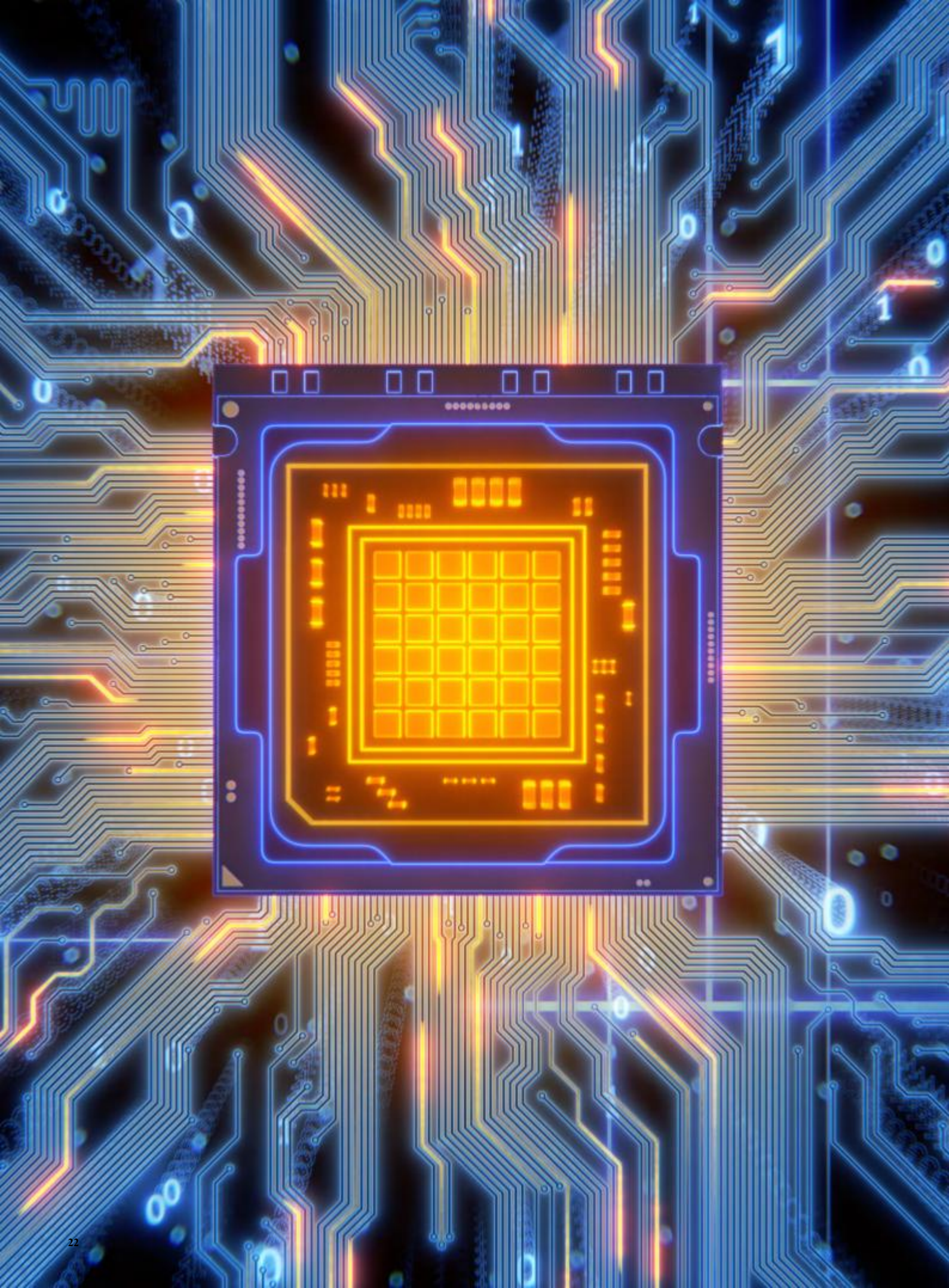
- The battery pack inspection system supports testing for passenger vehicles, commercial vehicles, and various battery brands. It can read SOC/SOH, individual cell/modular voltage, temperature, and other battery status and fault information. The system automatically calculates key metrics such as total voltage, voltage difference, and peak/minimum voltage, and flags abnormal data.
- Vehicle inspection supports comprehensive system testing for new energy vehicles, including code reading, code clearing, data stream reading, motion testing, and special functions.
- The fast-charging port detects Bluetooth-connected fast-charging guns, reads battery pack data through the vehicle's fast-charging port, and enables rapid battery pack inspection.
- The maintenance function supports offline testing of DC-DC converters, OBC (On-Board Charger), air conditioning compressors, and 48V mild hybrid components, with over 30 commonly used special functions.
- ADAS calibration supports calibration of ADAS systems for numerous vehicle models in Europe, America, Asia, and China, compatible with multiple devices including ADAS PRO+, ADAS MOBILE, ADAS LITE, and ADAS RADAR3IN1.
- The inspection report supports categorized display of battery pack inspection reports, vehicle inspection reports, ADAS calibration reports, and other types.
- The software upgrade supports online updates for vehicle software, firmware, and APP.
- The module supports functional expansion including tread pattern detection, digital power supply, oscilloscope, multimeter, current clamp, insulation testing, and endoscope.

**Host parameters**

| | |
|---|---|
| Display screen | 10.1 inches (1920 x 1200) |
| CPU | 2.0GHz octa-core |
| Internal storage （GB） | 4 |
| Memory （GB） | 128 |
| System | Android |
| Wi-Fi | 2.4GHz/5GHz dual Wi-Fi |
| Camera | Front: 800W / Rear: 1300W |
| Cell | 9360mAH/3.8V |
| Joggle | Type A、Type C |
| Communication | Wi-Fi, Bluetooth, USB |
| Size （mm） | 318 x 40.5 x 246.5 |

**VCI parameter**

| | |
|---|---|
| Working voltage | DC 9V-36V |
| CPU | Cortex-A7 + Cortex-M7 |
| Internal storage （MB） | 256 |
| Memory （GB） | 8 |
| System | Linux |
| Wi-Fi | 2.4GHz/5GHz |
| Joggle | Type B 、 0BD II-16 、 DC-IN |
| Communication | Wi-Fi, Bluetooth, USB |
| Size （mm） | 197 x 40 x 83 |





# 03 Three-electric system maintenance equipment

The battery pack is one of the most expensive components in new energy vehicles. During operation, it may experience various faults such as battery cell damage, circuit issues, and abnormal temperature, all of which could potentially lead to safety incidents. Maintenance equipment can help detect and repair these problems, thereby enhancing the safety of the battery pack.

Over time and with repeated charge-discharge cycles, the battery pack's performance will gradually decline. Professional maintenance equipment can generate detailed fault diagnosis reports, enabling technicians to quickly pinpoint issues and perform targeted repairs.









# Maintenance equipment for three-electric system

## Equalizer

**Product Features**

- Automatic identification of battery pack series count for batteries with voltage between 2.5V-5V
- The equalization voltage is adjustable with flexible settings, supporting both automatic recognition and manual input modes, and can be configured within the 2.5V to 5V range.
- One-click operation with flexible parameter settings, user-friendly and highly effective. The single-string input interface supports voltage ranges from-15V to +15V.
- The touch display features large, clear text with comprehensive data: voltage series, total voltage, average voltage, peak voltage, minimum voltage, maximum voltage difference, balanced voltage, and battery string count are all neatly organized, ensuring instant data visibility.
- The ultra-powerful fan features an optimized airflow design that boosts circulation volume for intense cooling. Its enhanced performance delivers twice the heat dissipation efficiency, revolutionizing traditional cooling methods.



**Equalizer function**

- Supports 1-24 series lithium battery packs (including ternary lithium, lithium iron phosphate, and lithium titanate batteries with voltage ranges from 2.5V to 5V);
- The voltage measurement error is ±0.003;
- Power input: 110VAC to 240VAC, 50/60Hz, with a maximum balanced current of 25A (constant current discharge). During operation, the program automatically adjusts the current based on the actual voltage difference to ensure optimal battery balancing precision.
- The device also provides comprehensive parameter displays to help users monitor battery status in real-time, including: 24-cell voltage readings, total voltage, maximum cell voltage, maximum voltage cell position, minimum cell voltage, minimum voltage cell position, maximum voltage difference, initial control voltage, forced equalization voltage, total cell count, discharge status, equalization status, discharge current, discharge power, and internal temperature.
- This instrument accommodates diverse user scenarios by providing multiple manual parameter settings. Users can access the "Parameter Setup Desktop" to manually adjust parameters according to their actual usage requirements.
- One-touch balance adjustment with automatic string identification, featuring under-voltage, over-voltage, and overheating alerts to help users instantly identify faulty cells in the battery pack, while providing built-in protection.
- The system automatically stops after equalization is completed, accompanied by a long buzzer sound to indicate the process is finished.
- Good balance effect and fast speed.

## Lithium battery capacity meter



**Function of lithium battery capacity meter**

Primarily used for charge-discharge testing of lithium-ion batteries to determine key parameters such as capacity, voltage, and internal resistance, enabling battery classification. The main functions of a lithium battery capacity classification cabinet are as follows:

Capacity test: Through discharge testing, the actual capacity of the battery is measured to determine its storage capability.

Voltage test: Monitor the battery's voltage during charging and discharging to ensure it operates within the specified voltage range.

Battery classification: Based on parameters such as capacity and internal resistance, batteries are categorized into different grades for easier management and use.

Data logging: Records the charge-discharge data of each battery, including charge-discharge curves, capacity, internal resistance, etc., for traceability and analysis.

Automation Control: Modern containerized battery cabinets are typically equipped with automated control systems that can automatically perform charge and discharge testing procedures, thereby enhancing production efficiency.

Safety protection: Features overcharge, overdischarge, overcurrent, and short-circuit protection to ensure the safety of the testing process.

Communication interface: Enables data upload and process control through communication with host computer or other management systems.

Temperature monitoring: The battery's temperature is monitored in real time during testing to prevent performance or safety issues caused by extreme temperatures.

# Maintenance equipment for three-electric system

*Can be integrated with standard 19-inch racks or custom cabinets to form a complete, ready-to-use system.*



| Model | | | MX-5V3A-8CH |
|---|---|---|---|
| Specification of equipment | | | 5V/3A |
| Device channel count | | | 8 |
| Channel control mode | | | Each channel is independently controlled with four-wire current and voltage acquisition |
| Channel point | | | The constant current source and constant voltage source adopt a dual closed-loop structure. |
| Input resistance | | | ≧ 1mΩ |
| Voltage | voltage range | charge | 10mV-5V (device port) |
| | | discharge | 1V-5V (device port), the minimum discharge voltage depends on the cable length |
| | accuracy | | ±0.1% of FS, ambient temperature 15℃~35℃ |
| Current | current range | charge | 6mA-3A |
| | | discharge | 6mA-3A |
| | accuracy | | ±0.1% of FS, ambient temperature 15℃ to 35℃ |
| Power | single channel output power | | 15W |
| | stability | | 0.2% of FS |
| Time | current response time | | ≦ 10ms |
| Data logging | Record frequency | | 1Hz |
| | Data recording conditions | | Minimum interval: 1s |
| | | | Minimum voltage interval: 1 mV |
| | | | Minimum current interval: 1mA |
| Charge | Charging mode | | Constant current charging, Constant voltage charging, Constant current and constant voltage charging, Constant power charging |
| | cut-off condition | | Voltage, Current, Relative Time, Capacity, -△V |
| Discharge | discharge mode | | Constant current discharge, constant power discharge, constant resistance discharge |
| | cut-off condition | | Voltage, Current, Relative Time, Capacity, -△V |
| Pulse mode | charge | | Constant current mode, constant power mode |
| | discharge | | Constant current mode, constant power mode |
| | minimum pulse width | | Suggestion over 5 seconds |
| | cut-off condition | | Voltage, Relative Time |
| DCIR | DCIR（selectable） | | Supports custom sampling for DCIR calculation |
| Recurrence | cycle test | | You can set 399 commands and 65535 loops. |
| Protect | software protection | | Supports power loss data protection |
| | | | Supports reboot (requires UPS power) |
| | | | Overvoltage protection, undervoltage protection, capacity protection, overcurrent protection, undercurrent protection |
| | | | Anti-inverting protection |
| Data export method | | | Excel、PDF |
| Cooling-down method | | | Forced air cooling |
| Equipment noise | | | 60dB |
| Communication mode with host computer | | | Network |
| System requirements | | | Windows XP and later versions |
| Operating temperature range | | | 0℃ ~40℃ |
| Storage temperature range | | | -10℃ ~50℃ |
| Relative humidity of working environment | | | ≦ 70% RH (no water vapor condensation) |
| Relative humidity of storage environment | | | ≦ 80% RH (no water vapor condensation) |
| Input active power | | | 450W |
| Power input | | | AC220V ±10%/50Hz, other power specifications available |
| Jig type | | | Customize as required |

# Maintenance equipment for three-electric system

## Air tightness tester





**Product Features**

- Enables direct presetting of battery pack parameters including capacity, pressure, testing duration per phase, and leakage limits;
- High-sensitivity pressure sensing with excellent testing accuracy and stability;
- The pressure gauge displays real-time process pressure curves, ensuring the testing process is fully transparent.
- Alarm when a test fails or is abnormal.

**product function**

- Low-pressure air tightness testing—using compressed air as the medium, applying pressure to the battery pack cavity and detecting pressure changes with high-sensitivity sensors to determine its sealing performance.
- Parameter settings—allows presetting parameters including workpiece number, volume, pressure, time intervals for each stage, and leakage limits;
- Process visualization—real-time monitoring of operational phases including inflation, pressure stabilization, leakage detection, and exhaust.
- Dual-pressure display—real-time monitoring of current pressure and leakage fluctuation;
- Historical Records—Automatically save historical data with airtight integrity. Supports curve chart display and allows exporting historical data as Excel files to USB drives, or sharing data summaries via email or QR codes as PDF files.
- Online Upgrade—Supports online device upgrades without using a USB drive for local updates.

**Product Parameter**

| Model | MX-100 |
|---|---|
| Working power supply | AC90-264V/40-60Hz |
| Test pressure range | 0-30kPa |
| Sensor resolution | 1Pa |
| Test accuracy | ±5Pa |
| Joggle | RJ45x1/USBx2 |

| Model | MX-100 |
|---|---|
| Power | 20/Max |
| Air source requirements | 0.1~1.0MPa dry compressed air |
| Intake port / test port | Medium 6mm trachea / Medium 6mm trachea |
| Working temperature | -10~55℃ |
| Working humidity | 1096~9096 |

## Handheld laser welding machine



- Handheld Galvanometer Laser Welder for Lithium Batteries
- Supports 0.3mm-3mm copper/aluminum welding
- Equipped with air cooling system
- Robust welding with guaranteed safety and reliability
- New Energy Storage Battery Welding
- Supports spot welding, butt welding, overlay welding, and sealing welding
- Compatible with various materials
- Versatile across industries, the ultimate choice for businesses

**Product Parameter**

| Model | MX-2000 |
|---|---|
| Service voltage | AC220V ±10%50Hz |
| Laser power | 2000W (maximum) |
| Laser wave length | 1070 ±10nm |
| Fiber length | 8m (standard) |
| Operate mode | Continuous / modulated pulse |
| Welding speed range | 0-20000mm/s |
| Cooling water machine | Double-temperature and double-control constant temperature water tank |
| Working environment temperature range | 15℃ ~35℃ |
| Working environment humidity range | 10~90% non-condensable |
| Suggested welding thickness | 0.3~5mm |
| Body size (cm) | 91 x 50 x 70 |
| Body weight (kg) | About 138 |

# Maintenance equipment for three-electric system

## Gantry laser welding machine



Specifically designed for industries such as electronics, automotive, and hardware, it offers targeted functionality, high efficiency, and stable performance. Applicable to: mobile phones, tablets, automobiles, kitchen and bathroom appliances, hardware, small household appliances, and other related fields.

**Software control**

A professional laser welding PC motion control system with multilingual display (Chinese, English, etc.) for global applications.

- Implement proven industrial motion control solutions to integrate laser welders and motion control into the machine's PC interface.
- Easy to program, debug, and maintain. Capable of performing automatic or semi-automatic spot welding, butt welding, overlay welding, and sealing welding, suitable for complex planar straight lines, circular arcs, and any trajectory welding.
- The software features an IDE-style integrated development environment, combining graphic editing, runtime monitoring, data acquisition programming, and motion control into a unified interface. Its streamlined and professional layout significantly enhances work efficiency.
- Real-time control without requiring any additional PC operating system plugins;
- High-performance motion control on four axes enables spatial welding trajectory programming.

**Product Parameter**

| Model | MX-1000 |
|---|---|
| Laser wave length | 1070-1080nm |
| Laser power | 2000W |
| Laser output stability | ±2% |
| Laser weight | 40kg |
| Fibre diameter | 100μm, multimode |
| Fiber length | 10 meters |
| The light spot can reach | Ø0.2mm |

| Model | MX-1000 |
|---|---|
| Pumping source | Semiconductor |
| Beam quality | ≤ 1.1 |
| Targeting and positioning | Red Light + CCD Camera Surveillance System |
| Power consumption of laser host | ≤ 3KW |
| Electricity demand | 220V ±5%/50Hz |
| Cooling-down method | Water cooling, deionized water |
| Water cooling temperature | 27 ~33 ℃ |

## Gantry Galvo Continuous Laser Welding Machine (with Protective Cover)

**Device Introduction**

This model features a sealed protective enclosure and integrates critical components including a fiber-optic continuous laser, gantry motion mechanism, high-power galvanometer welding head, water -cooling system, and PC control system. With high power output, precise beam quality, maintenance-free operation, and superior electro-optical conversion efficiency, it can weld arbitrary planar geometric patterns such as points, straight lines, and circles. As a highly efficient, safe, and stable high-power fiber laser welding machine, it demonstrates excellent performance in lithium battery welding processes.

**Model Features**

- Gantry motion structure with wide travel welding range;
- Enclosed operation with protective cover, ensuring overall safety and reliability;
- High photoelectric conversion efficiency with excellent beam quality;
- Adjustable laser power with low power consumption and maintenance-free operation;
- Automatic top-pressure welding system, reducing tooling requirements;
- PC industrial control computer with CNC programming for welding systems, simple and easy to learn;
- Supports adding CCD visual positioning system and automatic focus measurement system.



**Application area**

Applied to new energy lithium battery: busbar welding, nickel transfer welding, tab welding, bolt transfer welding, busbar welding, explosion-proof valve welding, housing sealing welding, liquid injection port welding, etc.

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