

Intelligent 8000W Ultrasonic Battery Welding Machine For Up To 120 Layer Electrode Welding

Item Number: DH06



Introduction

Intelligent 8000W ultrasonic battery welding machine delivers stable 24 kHz electrode tab welding for aluminum and copper foils up to 120 layers, with automatic amplitude compensation, quality monitoring, bilingual touchscreen control, and reliable low-resistance joints.

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Application	Description	Key Benefit
Lithium-ion cell tab welding	Joins 0.2 mm aluminum strip to up to 120 layers of aluminum foil for battery electrode-tab connections.	Supports high-layer aluminum-foil welding with specified 3 x 10 mm, 3 x 20 mm, or 3 x 30 mm weld points.
Copper current-collector tab welding	Joins 0.2 mm nickel strip to up to 120 layers of copper foil in electrode assembly workflows.	Provides a defined capability for dense copper-foil stacks and nickel-strip connections.
Battery R&D process development	Establishes and evaluates welding conditions for varying material thicknesses and layer counts during cell research.	Time, energy, power, and depth modes support structured process trials.
Pilot-line electrode assembly	Produces repeatable welded tab connections while recording real-time frequency and welding-power conditions.	Quality-limit monitoring and alarms help identify parameter deviations during repeated work.
Multilayer foil stack joining	Creates metal-to-metal welds where a large number of thin current-collector layers must be consolidated.	Stable amplitude output and automatic compensation help maintain welding stability.
Battery manufacturing quality verification	Evaluates weld quality through visual weld condition, defined monitoring limits, and destructive tensile-strength checks as appropriate for the material stack.	Helps teams assess joint integrity, surface condition, and process consistency.
Aluminum and copper foil electrode fabrication	Supports separate aluminum/aluminum and nickel/copper welding combinations used in battery electrode processing.	Dedicated stated welding capacities clarify material compatibility before process setup.

Parameter	Specification
Site-facing identifier	DH06
Power	8000W
Frequency	24KHZ
Power supply	220V/ 50Hz
Air supply	≥0.5MPa
Control method	CPU control
Maximum upper ultrasonic electrode travel	20mm
Welding time	0.05~ 9S
Touch display	4.3-inch anti-interference touchscreen
Display language	Chinese and English
Adjustable display parameters	Trigger time; welding time; power; secondary-wave delay time

Parameter	Specification
Real-time display	Frequency and welding power
Alarm functions	Fault-type alarm; out-of-limit welding-quality alarm
Startup diagnostic function	Automatic self-inspection; welding-system parameter scan and real-time display
Amplitude function	Automatic amplitude compensation
Controller circuit	Optimized international advanced full-bridge regulated circuit; constant-amplitude output; automatic frequency tracking; no manual adjustment required
Intelligent control modes	Time, energy, power, energy, depth
Welding-head material	Powder alloy
Welding-head material detail	Imported powder-alloy steel with high hardness; high-precision ground pattern
Welding-head service life	More than 150,000 operations per side
Lower ultrasonic electrode material	Imported special mold steel
Lower ultrasonic electrode characteristics	Wear-resistant, high-temperature-resistant, tough, high mechanical rigidity, and low deformation after heat treatment
Ceramic plate	German imported black plate
Aluminum rod	Aluminum Company of America
Aluminum welding capacity	0.2mm aluminum strip + aluminum foil within 120 layers
Aluminum weld-point sizes	310mm, 320mm, 3*30mm
Nickel/copper welding capacity	0.2mm nickel strip + copper foil within 120 layers
Nickel/copper weld-point sizes	310mm, 320mm, 3*30mm
Stated weld characteristics	Firm weld; low internal resistance; no false welding; no powder vibration; no separator burning; no insulating-tape heating; no electrode-tab or foil cracking
Stated weld surface condition	Smooth surface without wrinkles; no raised burrs on reverse side; full, clear weld spots; firm and reliable welds
Remaining welded contact area between metals	More than 80%
Strength assessment	Destructive tensile strength can be tested according to layer count and material thickness