

Ultrasonic Metal Welding Machine For Glovebox Use

Item Number: DH07



Introduction

Ultrasonic metal welding machine for glovebox use supports aluminum foil and nickel copper foil tab welding with 800W 40kHz power precise 4 x 4 mm weld area and controlled utility requirements for battery research laboratory assembly workflows under specified compressed air conditions.

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Application	Description	Key Benefit
Lithium-ion battery cell research	Join a 0.10 mm pure aluminum strip to 0.012-0.018 mm pure aluminum foil for laboratory electrode-tab and current-collector studies, within the stated limit of 20 foil layers.	Provides a reference-backed aluminum welding process with a defined material stack and 4 x 4 mm weld area.
Copper-foil current collector development	Weld a 0.10 mm pure nickel strip to 0.012-0.018 mm copper foil for experimental copper-side interconnect work.	Supports the specified nickel-to-copper combination at the documented 800 W and 40 kHz configuration.
Glovebox-based cell assembly workflows	Use the equipment in glovebox-related battery assembly planning where the stated footprint, 110 V power condition, and compressed-air requirement can be accommodated.	Enables utility and space evaluation using published generator and welding-head dimensions.
Multilayer foil connection trials	Evaluate the documented aluminum-foil or copper-foil joining processes using stacks of up to 20 foil layers.	Establishes a clear layer-count boundary for experimental planning and process documentation.
Battery tab process development	Develop point-welded connections using the specified 4 x 4 mm welding area and applicable aluminum or nickel strip combinations.	Gives teams a fixed weld-footprint reference for tab geometry and fixture design.
Materials joining laboratories	Conduct controlled ultrasonic welding studies on the two documented pure-metal strip and foil combinations.	Uses explicit thickness ranges and environmental requirements to define the tested operating envelope.
Pilot cell fabrication stations	Integrate the unit into a compact laboratory station supplied with 110 V power and 0.4-0.6 MPa compressed air.	Allows facilities to verify key utility conditions before assigning the system to a pilot workflow.

Parameter	Specification
Site-facing item number	DH07
Equipment type	Ultrasonic metal welding machine for glovebox use
Ultrasonic power	800 W
Operating frequency	40 KHZ
Welding area	4 x 4 mm
High-power generator dimensions (L x W x H)	480 mm x 365 mm x 202 mm
Welding head dimensions at uppermost point (L x W x H)	420 mm x 180 mm x 290 mm
Measurement units	All measuring instruments on the equipment use metric units
Voltage requirement	110 V +/-10%
Air-source pressure	0.4-0.6 MPa
Maximum humidity	Less than 48%
Maximum temperature	Not higher than 45 C

Documented welding process	Strip material	Strip thickness	Foil material	Foil thickness	Maximum foil layers	Welding area
Process 1	Pure aluminum strip	0.10 mm	Pure aluminum foil	0.012-0.018 mm	Within 20 layers	4 x 4 mm
Process 2	Pure nickel strip	0.10 mm	Copper foil	0.012-0.018 mm	Within 20 layers	4 x 4 mm