



AMTECH
WORLD LEADER IN
ULTRASONIC METAL WELDING

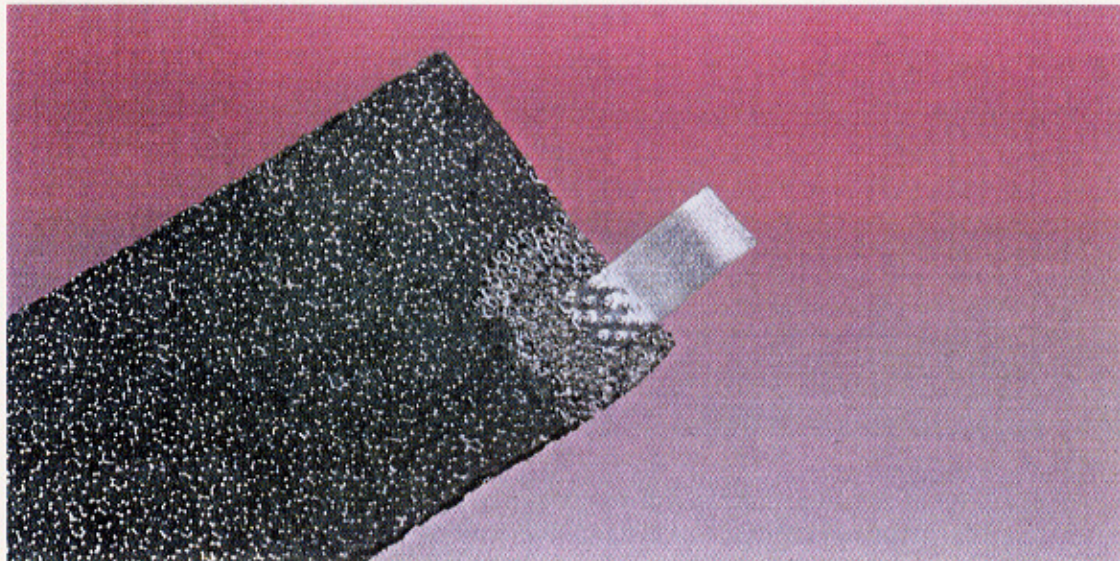
APPLICATIONS

APPLICATION BRIEF #21
BATTERY FOAM/MESH - 3/96

MAKE THE AMTECH CONNECTION

American Technology, Inc. has over fifteen years of experience helping battery manufacturers make the best, lowest cost electrical connections. The following application takes advantage of several inherent factors of ultrasonic metal welding: low temperature, mechanical process, long tool life and excellent process control.

Localized Clearing of Metal Powder Compound from Nickel Foam or Mesh Substrate as Used in Nickel-Metal Hydride Battery Cells



View of Finished Weld after Ultrasonic Clearing of Metal Powder Compound

END USE: Preparation of the nickel-metal hydride battery electrode for the attachment of an interconnecting tab. Prior to tab welding the metal powder compound must be removed to allow a tab to be welded to the nickel foam or mesh substrate.

MATERIALS: Metal powder compound impregnated nickel foam or mesh.

EQUIPMENT: Special AmTech ultrasonic system suitably tooled for metal powder compound removal.

PROCEDURE: The portion of the electrode to be cleared of metal powder compound is placed between a tool vibrating at an ultrasonic frequency and a stationary anvil. High frequency vibrations applied under pressure fracture the metal compound and then dislodge the resultant particulate.

ADVANTAGES: Ultrasonic clearing is a mechanical process. The high frequency vibrations break up the metal powder compound without damaging the nickel foam or mesh substrate. The process is quick (less than one second) and variables are monitored and controlled for consistent results.

AMERICAN TECHNOLOGY, INC.