



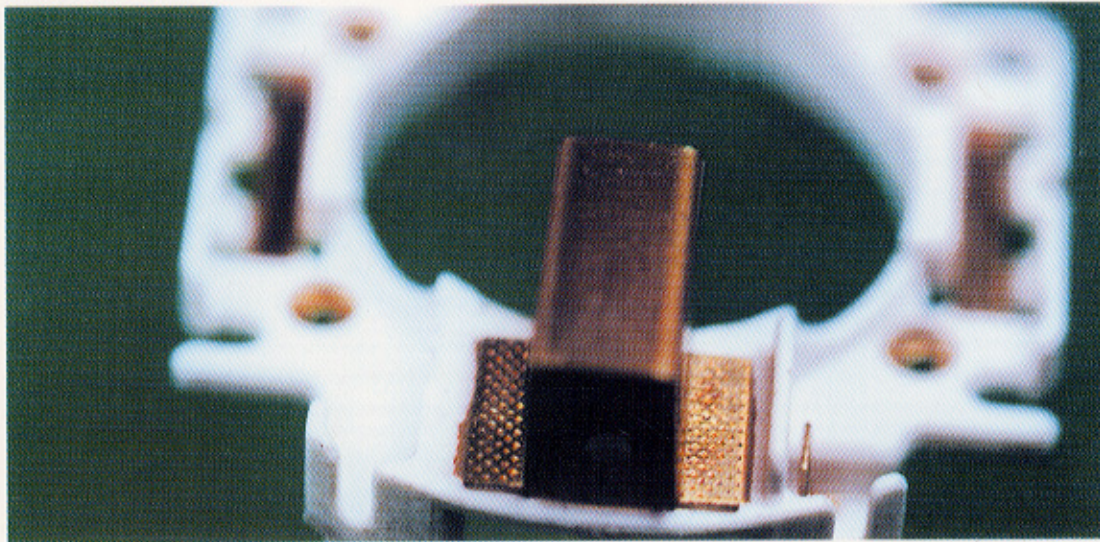
AMTECH[®]
WORLD LEADER IN
ULTRASONIC METAL WELDING

APPLICATIONS

APPLICATION BRIEF #26
BRUSH HOLDER - 6/96

American Technology, Inc. is the world leader in the development and application of ultrasonic metal welding equipment and processes. We apply our broad base of experience to help manufacturers make the highest quality, lowest cost welds in non ferrous metals. The application described here is an example of how the many benefits of ultrasonic welding; excellent process control, no consumables, long tool life, low temperature, simple operation and no surface preparation, have been applied to improve productivity and quality.

Weld Brush Holder Assembly



View of Welded Brush Holder Assembly

END USE: Brush holder for fractional horsepower motor.

MATERIALS: Brass, "insert molded" into a plastic motor housing and a stamped brass brush holder.

EQUIPMENT: AmTech Ultraweld[®]20 3000 watt welder with special tooling to hold and align parts prior to welding.

PROCEDURE: Parts to be joined are placed into the welding tool. The weld cycle is initiated, surface oxides and contaminants are disbursed. The brass brush holder parts are welded to one another in less than 0.5 seconds.

ADVANTAGES: Consistent, high quality welds are possible because no electrical

current passes through the workpiece and no melting occurs. Plastic components are not damaged by heat. Ultrasonic welding is a mechanical process and, therefore, is ideal for welding conductive alloys since the resistivity of the materials to be joined is not a factor. The electrical and thermal properties of an ultrasonic weld are unrivaled by any other process. Compared to fusion methods for joining metals, ultrasonic metal welding provides the lowest cost per weld. This is achieved through lower power consumption (1/30th that of a comparable resistance welder), superior tool life and lower labor cost (because ultrasonic welders can be operated by unskilled labor). Finally, the welding variables can be precisely monitored and controlled providing consistent results and SPC capabilities.

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