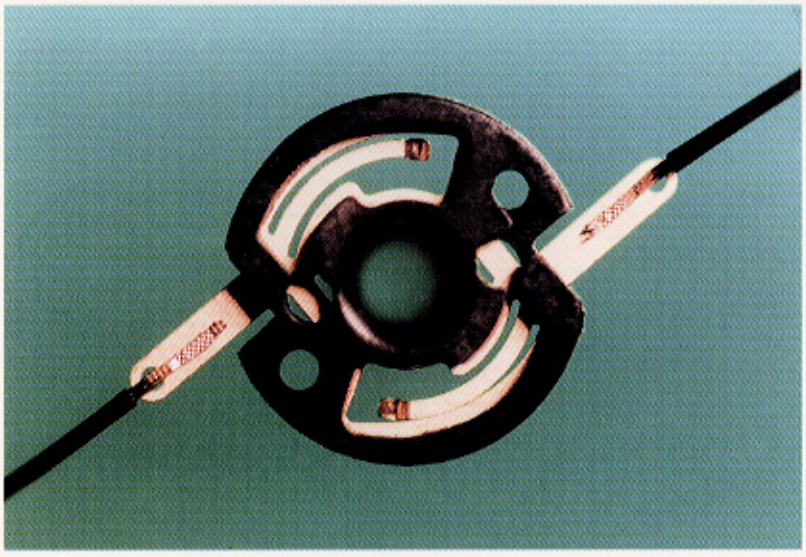
AMTECH®
WORLD LEADER IN
ULTRASONIC METAL WELDING

APPLICATIONS

APPLICATION BRIEF #13
WIPER SWITCH - 4/96

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.

Copper Stranded Wire to Beryllium Copper Terminal



View Showing Finished Switch Assembly

END USE: Terminate stranded wire to an automotive wiper switch found in the control stalk on the steering column.

MATERIALS: 24 AWG stranded Copper wire and Beryllium Copper terminal/wiper switch assembly.

EQUIPMENT: AmTech Ultrasonic welding system consisting of multiple welding heads for making simultaneous welds on a totally automated production line.

PROCEDURE: Wires and switch assemblies are loaded into pallets. The pallets are indexed into a triple headed welding station. Five wires are terminated to two switch assemblies in one cycle of the welding station.

ADVANTAGES: The low temperature characteristic of the ultrasonic weld leaves the vital spring properties of the beryllium copper wiper unaffected. Ultrasonic welding is a mechanical process. No electrical current passes through the workpiece and no melting occurs. The process, therefore, is ideal for welding highly conductive alloys since the resistivity of the materials to be joined is not a factor. 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 are precisely monitored and controlled providing consistent results and SPC capabilities.

AMERICAN TECHNOLOGY, INC.
25 Controls Drive, Shelton, CT 06484 USA Phone: (203) 926-2677 Fax: (203) 926-2678 Toll Free: 1-800-888-6089
e-mail: welders@amtechultrasonic.com http://www.amtechultrasonic.com