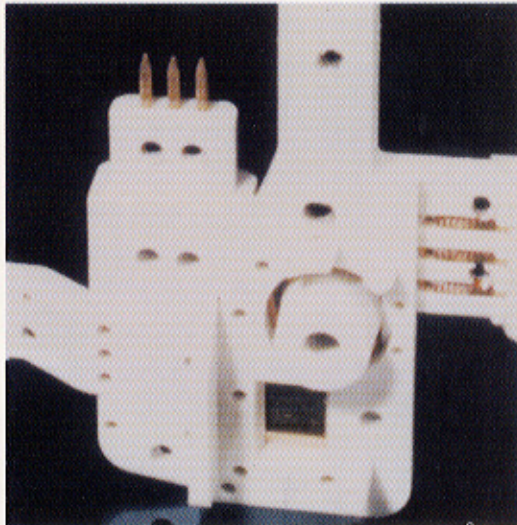
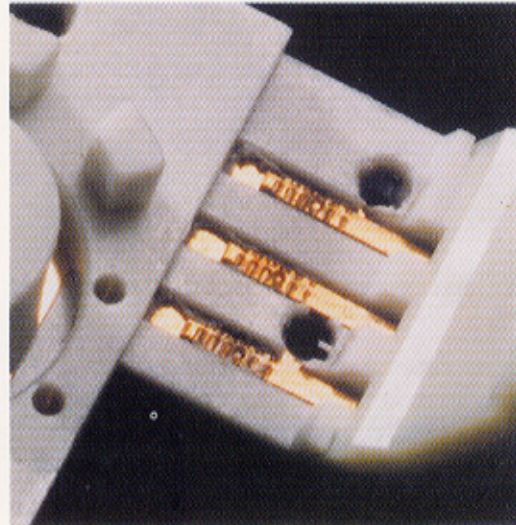


American Technology, Inc. is the world leader in the development and application of ultrasonic metal welding equipment and processes. We apply our broad base of experience to help manufacturers make the highest quality, lowest cost welds in non ferrous metals. The application described here is an example 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.

Simultaneous Welding of Copper Terminals to Beryllium Copper Carrier



Floating Horn Assembly



View Showing Finished Ultrasonic Welds

END USE: Component of an automotive floating horn switch assembly.

MATERIALS: Three copper terminals and a beryllium copper carrier.

EQUIPMENT: AmTech Ultrasonic welder suitably tooled for the specific application.

PROCEDURE: Copper terminals are placed into the welding tool over the fixtured assembly. The weld cycle is initiated, surface oxides and contaminants are disbursed and three high quality electrical connections are made in a single operation.

ADVANTAGES: Simultaneous welds are possible because no electrical current passes through the workpiece and no

melting occurs. Since high temperatures are avoided the process ensures that the beryllium copper spring qualities are not compromised. Ultrasonic welding is a mechanical process and, therefore, is ideal for welding highly conductive alloys since the resistivity of the materials to be joined is not a factor. 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 are precisely monitored and controlled providing consistent results and SPC capabilities.

AMERICAN TECHNOLOGY, INC.