

The Ultraseam® 20 is the ultimate metal seam welder – ideal for continuous welding of aluminum and copper foils at speeds up to 22 meters per minute. It uses ultrasonic energy for low cost, clean, and efficient operation. Tool life can exceed one million meters of weld.



### System Description

The complete Ultraseam®-20 as shown consists of two modules: the power control system and the weld head. The power control incorporates a 3,000 Watt, 20 kHz power supply and a DC motor speed control. Amplitude is electronically adjustable to enable welding of a range of material, thicknesses, and operating speeds.

The weld head is extremely rugged and features heavy duty tapered roller bearings. A DC motor provides variable bi-directional speed control. A pneumatic cylinder and pressure regulator permit easy adjustment of the weld force.

### Equipment Features

- True metallurgic bonds provide excellent heat transfers.
- All mechanical process - no electrical current passes through the workpiece and no melting occurs.
- Ideal for welding similar or dissimilar electrical grade alloys and nonferrous metals of varying thicknesses.
- Lowest cost per weld compared to fusion methods for metal joining.
- Superior tool life.

- Welding variables can be precisely monitored and controlled providing consistent results and SPC capabilities.
- Energy efficient
- Easy to set up and operate

### Optional Equipment

- Rotating anvil assembly for continuous welding.
- Machine base with drive mechanism to shuttle the weld head over a fixtured workpiece.

### Typical Applications



## Additional Applications



*This close-up emphasizes the cleanliness, uniformity, and consistency of the ultrasonic weld*

## Process Description

Ultrasonic welding is a mechanical process. No electrical current nor thermal energy passes through the workpiece and no melting occurs. It is ideal for welding similar or dissimilar alloys since resistance and thermal conductivity are not factors. Nonferrous metals of different thicknesses are effectively welded by this system. The thermal and electrical properties of the weld are unrivaled by any other process.

Compared to fusion methods of joining metals, ultrasonic metal welding provides the lowest cost.

This is achieved through low power (1/30th that of comparable resistance welding) and superior tool life.

The AmTech system is energy efficient and easy to set up and operate. It requires only compressed air and a 200-250 V AC, 20 Amp service. All power, control, and electrical equipment is located inside the machine's housing. Single point air and electrical inputs provide simplified installation and maintenance.

## Specifications

|                              |                                                                                        |
|------------------------------|----------------------------------------------------------------------------------------|
| Weld head weight:            | 34 kg (80 lbs.)                                                                        |
| Weld head size:              | Width: 362 mm (14.25 in.), height: 203 mm (8.0 in.), length: 578 mm (22.75 in.)        |
| Voltage:                     | 200-250 V AC, 50/60 Hz, 1Ø, 20 amps service                                            |
| Cooling requirements:        | 80 liters/minute (2 cfm)                                                               |
| Air pressure:                | 5 Bar (60 psig)                                                                        |
| Range of weldable materials: | 2 layers of 0.2 mm (0.008 in.) up to 1.0 mm (0.039 in.) of annealed copper or aluminum |
| Linear speed:                | Adjustable up to 15 meters per minute (22 by special order)                            |

**ISO 9001:2000 and ISO 14001 Certified**