

Materials Joining

Precision Cleaning

Automotive

Global Headquarters

— Danbury, Connecticut

Branson is the industry leader in the design, development, manufacture, and marketing of plastics joining, precision cleaning, ultrasonic processing, and ultrasonic metal welding equipment — the only company of our caliber worldwide. We are committed to providing solutions to the needs of our customers, and providing the latest in technology, both in products and processes. Our global organization provides us with the resources and the facilities to support our customers on a worldwide basis.

With more than 1,800 employees and 70 sales and service offices throughout the world, Branson's resources are substantial. Technology and manufacturing facilities are in Connecticut, Michigan, New York, Canada, Mexico, Germany, Slovakia, China, Hong Kong, Japan, and Korea.

Corporate History

Norman G. Branson founded Branson Instruments in 1946 in Danbury, CT, to harness ultrasonic energy for industrial purposes.

The first product was the Audigage — a nondestructive material thickness tester. The company expanded in 1953 by forming Branson Cleaning Equipment

Co. to develop ultrasonic cleaning equipment for emerging industrial technologies.

In 1960 Branson acquired Sonic Energy Corporation, which designed and manufactured the Sonifier® cell disruptor for biological research. Growth continued with the founding in 1963 of Branson Sonic Power Co. to expand the uses of high-intensity ultrasonic equipment.

Since 1984 Branson has been among the more than 60 autonomous divisions of St. Louis-based Emerson, a Fortune 150 company.

Branson Sonic Power Co. and Branson Cleaning Equipment Co. merged in 1986 and the next year combined resources in Danbury, to form Branson Ultrasonics Corporation.

In 1988, Delta Sonics (Paramount, CA) and Ultrasons Annemasse (France) were acquired to enhance systems building capabilities for precision cleaning. In 1992, Branson acquired Vinton, Inc. in Rochester, NY, a manufacturer of linear and orbital vibration welders. This facility now produces non-ultrasonic plastics joining products including linear and orbital vibration welders, hot plate welders, spin welders, and laser IRAM welders. The cleaning portion of Westinghouse was acquired in 1993, bringing Magnapak technology to the precision cleaning product mix.

In 1998 Branson acquired AmTech (American Technology) of Connecticut, manufacturers and marketers of ultrasonic equipment for metal welding and

tube sealing, and KVT Technologies Inc. in Ontario, Canada, manufacturers of automotive fuel tank assembly equipment and systems.

We are now organized in two business units: *materials joining*, which includes plastics joining, metal welding, systems automation, and fuel tank assembly, as well as special applications such as ultrasonic cutting and ultrasonic processing; and *precision cleaning*, including industrial cleaning technologies, commercial products (Branson® cleaners and Sonifier® processors), and special applications.

Ultrasonics and More

Ultrasonic energy is the creation and channeling of high-frequency sound waves for industrial purposes.

With plastics assembly, the energy is channeled through an acoustic tool called a 'horn.' The vibrations generate heat and cause subsequent melt where parts join. A strong molecular bond results. This assembly technique is fast, efficient, non-contaminating and requires no consumables, such as glue, making it ideal for industries seeking energy efficiency and productivity. The same principle pertains to sealing textiles and films.

For ultrasonic metal welding, an ultrasonic welder forms a weld by pressing the parts to be joined together and scrubbing them against one another to break up and disperse the surface oxides and contaminants. The resultant clean base metal surfaces are held tightly together. A metallurgical bond is created without reaching the melt temperature of the metals being joined.

Branson continually explores new methods of plastics joining and precision processing. The company has expanded its plastics joining technologies to include linear, orbital, and programmable motion vibration welding; hot plate; and spin welding. Like ultrasonic assembly, these techniques are also "thermal," in that they rely on heat to melt plastics for bonding. Vibration welding uses the friction generated when vibrating one section against another to produce heat for melting; likewise spin welding rotates one component against the other to melt and bond. Hot plate welding utilizes a heated platen introduced between the sections to melt the interface. The latest product for joining thermoplastics is laser IRAM technology, which uses light/laser radiation to cause a controlled melt in the parts.

With precision cleaning and processing, ultrasonic energy is applied to liquid, where cavitation results. Cavitation, the formation and collapse of thousands of vacuum bubbles, creates a highly effective scrubbing of both exposed and hidden wetted surfaces. The use of ultrasonics achieves higher quality, and more consistent cleaning of parts for greater productivity.



In precision processing, new equipment and chemistries are being added to address environmental concerns and the need to meet increasingly stringent cleaning specifications. New environmentally-friendly degreaser lines have been developed, as have higher-frequency ultrasonics for submicron particles. Work in the processing areas of degassing, cell disruption, and chemical reaction enhancement have been particularly successful.

KVT Technologies specializes in the design and manufacture of custom built equipment for finishing and assembling plastic automotive fuel tanks. KVT provides fully integrated automation systems, including material handling.

Resources

To ensure corporate growth, Branson emphasizes the development of new technology. This focus is evident in the full Research and Development department at our worldwide headquarters, supported by advanced engineering centers in Asia-Pacific, Europe, and North America. Many patents have been awarded through the research efforts in Engineering and the Applications Laboratories.

In the fully-equipped Welding and Cleaning Applications Laboratories, customers' requirements for new processes are met. Branson's technical expertise also is shared through seminars offered at headquarters, regional centers, or in the customer's facility.

Product Highlights

Materials Joining: ultrasonic welders, linear and orbital vibration welders, hot plate welders, spin welders, metal welding systems, laser IRAM, thermal welders, and automated welding systems.

Precision Cleaning: Aqueous, semi-aqueous, and solvent cleaning systems, robotic handling systems, Branson[®] benchtop cleaners, and Sonifier[®] processors.

At a Glance -

- International headquarters in Danbury, CT.
- Executive offices, Engineering, Research and Development, Finance, Marketing, Human Resources, Customer Service, Manufacturing, Welding and Cleaning Applications Laboratories in headquarters.
- North American Regional Customer Technical Centers in Atlanta, Boston, Chicago, Detroit, Dallas, and Los Angeles. Sales and service offices in every major U.S. city.
- More than 70 sales and service offices throughout the world. Major facilities in U.S., Mexico, Germany, Slovakia, China, Hong Kong, and Japan.
- Wholly-owned subsidiaries: KVT Technologies, Inc., Canada; and Branson Ultrasonics, England. Joint venture: Shanghai Branson Ultrasonics, China.
- ISO-9001:2000 Certified for welding lines in

U.S.A., Germany, and Holland since 1994; and in Rochester, NY, and Rochester Hills, MI in 1998; cleaning line in 2000; KVT in 2002, and metal welding in 2003. Certified ISO-9002 in Mexico in 1998. ISO 14001 certified in Danbury, CT, in 1998.

Our Mission

Branson Ultrasonics is the world leader in materials joining and precision cleaning. The employees of Branson Ultrasonics are committed to providing 100% customer satisfaction through continuous improvement in:

- Customer & Supplier Alliances
- Technology & New Product Development
- Marketing & Sales
- Manufacturing
- Product Quality
- Services & Support

Our people are the source of our strength.

Education, involvement, and teamwork are essential for us to achieve superior products and services that meet or exceed our customers' requirements worldwide. The quality and integrity of our products and services define Branson's reputation.

Total customer satisfaction will result in increased global market participation, excellent business performance, and enhanced employee satisfaction.

Applications (a sampling)

Automotive - *Welding* tail lamps, instrument panels, bumpers, fuel tanks, manifolds, fuel filters, and numerous valves and sensors; *cleaning* ABS components, fuel injectors, electronic ignitions, and various precision parts.

Consumer products - *Welding* plastic watches, toys, toothpaste tubes, video & audio tape cassettes, inkjet cartridges, and computer floppy disks; *cleaning* jewelry, dental devices, computer disk drives, and audio-video equipment.

Electrical - *Welding* toggle switches, connectors, terminal blocks, switches; wire splicing, wire terminations; and *cleaning* printed circuit boards, stencils and screens, and other sensitive devices.

Plus - Myriad welding and cleaning applications in the medical, packaging, textile, optical, and metal-working industries.

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