BRANSON

Branson Applications Development Laboratories

Setting the Standard for Plastics Joining Technology

For over 60 years, Branson Ultrasonics' commitment to excellence has led to the development of industry-leading capabilities. As a part of Emerson Industrial Automation, Branson engineering has set the standard for innovation and made Branson a global leader in plastics joining technology.

At the heart Branson's problem-solving capabilities are two, state-of–the-art : Application Development Laboratories. With unmatched technology and expertise and a portfolio comprising; Ultrasonics, Laser, Thermal, Clean Vibration, Spin, Contour Infrared and Hot Plate Welding Technologies, you can rely on Branson's engineers to provide the most effective solutions to your most demanding challenges.

Stage I: Initial Review

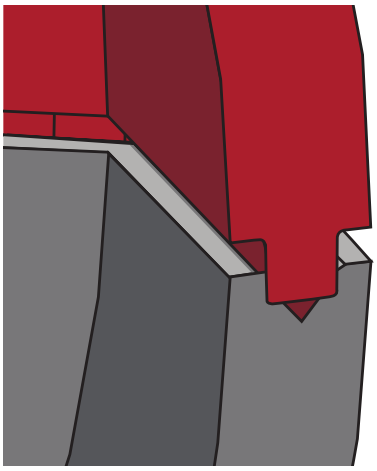
Branson offers you an unparalleled understanding of the science, technology, and production demands of plastics joining. Working in strict confidentiality, Branson's application engineers conduct an expert, in-depth review and analysis of your application requirements, materials needs, and production challenges. This analysis results in a joining technology recommendation based on facts, insight, and objectivity – a recommendation that is then tested and proven through an application development process that includes concept and design, feasibility studies, prototype tooling, production testing, and more.

EMERSON
Industrial Automation

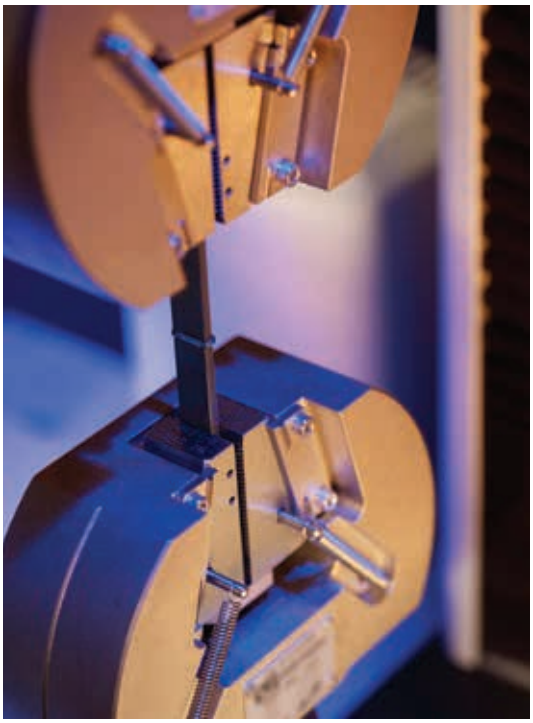
Stage II: Concept and Design

During the concept & design stage, Branson's application engineers work from 3D CAD drawings to review the part size and geometry. The resulting feasibility report includes a description of the current design, as well as a list of the potential issues such as butt-weld conditions, delicate areas, flash, possible leak paths, thin features, sharp corners, and more.

The report also includes a fully-dimensional, custom-tailored weld joint design, along with tooling and equipment recommendations. Whenever novel materials are involved in the application, Branson can also perform an in-depth material weldability evaluation. With ultrasonics, for example, this study allows Branson's engineers to determine the ease of welding a polymer in both a near-field and far-field condition, the amplitude required for welding, weld strength versus material bulk strength, and the viability of various weld joint designs.



Throughout the concept and design process, Branson works in close collaboration with your engineers to review and discuss particulars of the proposed solution to ensure proper implementation.



Stage III: Testing and DOE

The testing phase involves prototype development to determine feasibility, as well as to identify and address any issues that could compromise production outcomes.

Branson's Acoustic Tooling Group develop the design and manufacturing of prototype tooling. Using Finite Element Analysis (FEA), Branson's engineers are able to optimize horn performance to ensure:

- Adequate amplitude for the thermoplastic material to be welded
- Proper amplitude uniformity at the horn face for consistent welding
- Correct frequency tuning
- Appropriate stress level to prevent horn fatigue and failure

Once tooling and parts are available, Branson's engineers perform weld trials and Design of Experiments protocols to determine whether the requirements of the application have been met. The weld results and test data are then analyzed and used to guide any necessary part or tool design changes to yield the most robust process possible. Both of these steps help ensure the efficient integration of the new joining technology into your manufacturing process.

Stage IV:

Application Release, Training and Installation

Once tooling and parts are developed, Branson's Engineers support you with comprehensive oversight of equipment installation to facilitate a smooth production launch.

In addition, Branson offers three levels of technical training to support the proper operation of your equipment:

2-Day Seminar

Branson Applications Development Laboratory
Branson Global Headquarters
Danbury, Connecticut

- Twice a year
- Tutorials on theory and design
- Hands-on technical demonstrations

Half-Day and Full-Day Seminars at Your Facility

- Content and scope to be customized to your needs
- Hands-on demonstrations
- Training manuals for attendees

Online Webinars

- Custom-tailored to meet your unique requirements

BRANSON

State-of-the-Art Equipment, Global Resources, Service Excellence

Branson Applications Development Labs are equipped to address a wide variety of application needs, including rigid plastic, textiles, packaging, films, and food processing.

The Branson Ultrasonics Applications Lab is located at our headquarters in Danbury, CT, while the Non-Ultrasonics Lab is in Honeoye Falls, NY. The Labs feature some of the most advanced testing equipment in the industry: Z-Axis leak tester, BT Integra-Pack Package Test System, Dino-Lite Digital and Leitz LABORLUX 8 electron microscopes, Stratasys Dimension Elite 3D printer, Tinius Olsen 5000 tensile tester, and more. Application Lab services are also available in Branson's regional offices: Chicago, Illinois; San Dimas, California; Atlanta, Georgia; Monterrey, Mexico; Sao Paulo, Brazil.

Branson's leadership in plastics joining technology is renowned. But it does not stop with world-class applications development capabilities. With facilities in the Americas, Europe, and Asia/Pacific, Branson customers can count on seamless integration of Branson equipment into their operation, as well as prompt access to technical support and uncompromising service excellence, around the world.

To learn more, contact the Branson office near you or e-mail Branson.Applications@emerson.com.

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