

**BRANSON**

**Advanced Ultrasonic Cutting Systems**

High-performance solutions for the food processing industry.



**EMERSON**  
Industrial Automation

# Branson Ultrasonics Provide Precise Control Over Food Portioning.

As a pioneer in the development of ultrasonic technology, Branson brings more than 50 years of experience and application know-how to the precision cutting needs of the food processing industry.

Compared to traditional cutting methods, Branson ultrasonic systems provide superior performance across the board, particularly with issues of waste, presentation, processing speed, cleaning and downtime.

We work with a diverse range of food processors throughout the world, providing specialized cutting systems for a wide variety of products. Our in-depth experience covers foods that are soft, hard, warm, frozen and multi-layered, and include bakery, meat, dairy, vegetable and confectionery items.

Whatever your cutting application challenge, you can rely on Branson's technical expertise and responsive support to provide the most effective solution quickly.



## Early Collaboration Brings Quicker Solutions

Working together with equipment integrators and food processors at the earliest stages of a project is the quickest way to get a system up and running. From design to testing to implementation, the team effort speeds up the entire application development process. All critical details such as cuts per minute, number of blades, conveyor system width, horn stresses, and cooling requirements are assessed and determined, ensuring that the final outcome meets or exceeds every performance requirement. The process saves substantial time and costs, while yielding faster approvals for full-scale production.



## Fast Response, Worldwide

Branson's global presence allows us to implement solutions quickly in any part of the world. Whether production takes place in a single location or at multi-continent sites, Branson is always close by, ready to provide the assistance you need. We have over 70 technical centers, manufacturing facilities and

sales and support offices strategically positioned throughout the Americas, Europe and Asia. Our knowledge of local cultures, markets, and regulations can help projects develop rapidly, as well as assist multi-national organizations with international coordination.

Through our internal communications system, knowledge gained in one region is immediately disseminated to all Branson facilities around the world, so food processors everywhere can take advantage of the latest advances in ultrasonic technology.



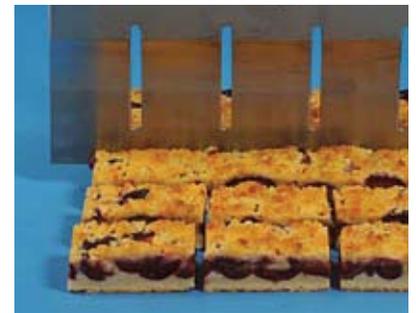
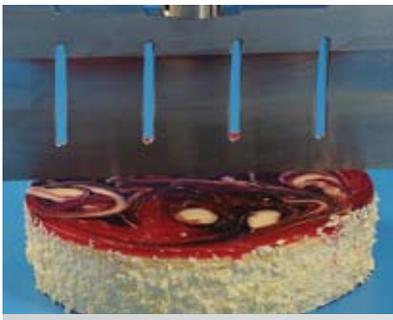
Ultrasonic Technology

# Benefits of Branson Ultrasonic Food Cutting Systems

Ultrasonic food cutting technology goes beyond the limits of conventional cutting systems by utilizing a vibrating blade as opposed to a static blade. The vibrations create an almost frictionless cutting surface, providing neater cuts, faster processing, minimal waste, longer blade life and less downtime. And, unlike traditional blades, which can clog when cutting sticky foodstuffs such as caramel or fat replacement products, ultrasonic systems keep cutting cleanly and can eliminate the use of release agents.



*Minimal friction means that food like cheese won't clog blades during the cutting process.*



## The Four-Part Ultrasonic Cutting System

**Power Supply** – also called the generator. Converts 50/60 Hz AC electric voltage into high-frequency electrical energy. Depending on the application, frequencies can be 20 kHz, 30 kHz or 40 kHz. At 20 kHz the horn (blade) vibrates at 20,000 times per second.

**Converter** – a sealed electro-mechanical device that receives the electrical energy from the power supply and converts it into high-frequency mechanical vibrations.

**Booster** – sits between the converter and horn (blade). Provides rigidity to the stack and controls the amplitude (range of motion) of the cutting horn.

**Cutting Horn** – also referred to as the knife or blade horn. Each is custom engineered for the specific application, utilizing Finite Element Analysis (FEA) to ensure exacting, long-term performance.



**Cleaner cuts for more attractive portions** – consistently produces clean, uniform cuts even through different layers without smearing, or through fillers like raisins or nuts with no displacement.

**Precision cutting of difficult products** – easily slices products like delicate angel food cakes with no deformity or crushing, as well as breads or bagels with hard crusts and soft interiors.

**Higher productivity leads to greater throughput** – ultrasonics provide faster cutting and slitting speeds than conventional bladed systems, and a smaller kerf helps minimize waste.

*Ultrasonic cutting allows for more attractive portions over traditional methods.*

**Reduced downtime for cleaning** – ultrasonic systems provide longer run times between clean-ups and can be cleaned in place, decreasing cleaning downtime by 70% to 90%.

**Quality materials meet highest food industry standards** – equipment is built from stainless steel and titanium to ensure improved sanitary, safety and processing performance.

**Minimal surface friction extends blade life** – ultrasonic horn blades stay sharper longer than motionless blades, increasing productivity and minimizing maintenance.

**Engineered for 24/7 operation** – Branson ultrasonic cutting systems are designed and tooled to meet the need for high-level performance day after day in the harshest processing environments.

## ***Versatile Designs for Optimum Yield***

Branson ultrasonic systems can be adapted to existing conventional cutting equipment with minor



modifications, or custom-built systems can be designed and engineered to match your precise specifications.

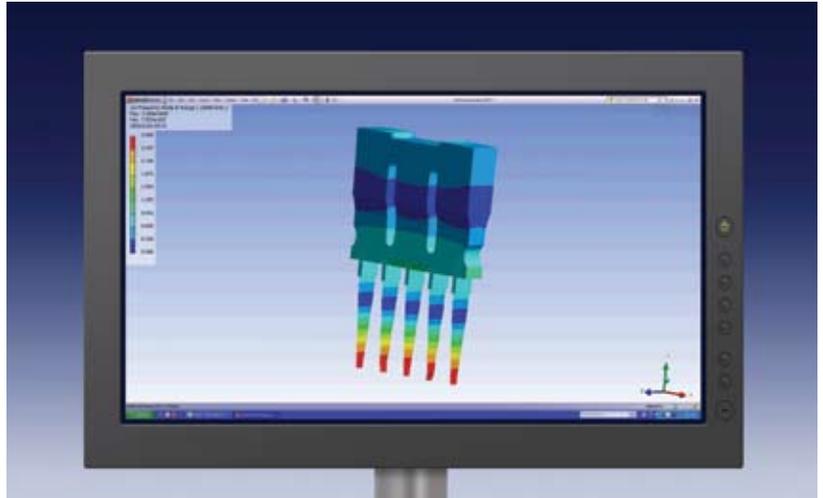
All Branson ultrasonic cutting systems are ruggedly built for maximum functionality and reliability. Systems can be designed with one blade or up to fifteen blades, depending on the cutting

needs and yield requirements of the application. 20 kHz ultrasonic blades can cut as deep as 5 1/2" and up to 14" in width. Slitting blades can slit product down to 2 1/2" on centers and span 8" to 10" across.

# Test Cutting System Performance at Branson's Applications Lab

To make sure that you achieve the best precision cutting solution, we invite you to test your concepts at Branson's applications development laboratory. The lab is staffed by experts in ultrasonic food processing, who will help you assess the feasibility of your application.

We can perform sample runs on conveyors that simulate your operation to ensure the critical synchronization of the cutting path with the speed of the conveyor. Factors such as throughput rate, height and width, product temperature, density and any special ingredient inclusions will all be evaluated to be sure that the system



meets your requirements for consistency and productivity. In addition, we have ultrasonic demonstrator equipment that can be attached to your existing line to test system performance at your site.

*Application Development*



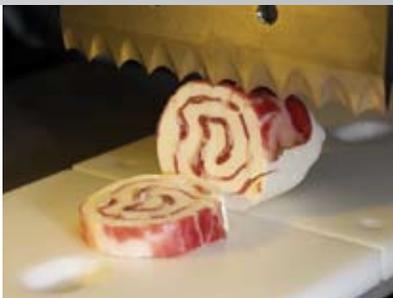
## A Partner You Can Count On

Branson has developed strong ties with food processors of every size, worldwide. Customers value our wide array of support services that range from consultation, engineering assistance, and staff training, to post-installation troubleshooting, parts replacement, and preventative maintenance. Branson's customer service and technical support are on call 24/7 as part of our 100% commitment to customer satisfaction. You can depend on Branson's expertise to be there whenever and wherever it's needed.



Branson is part of the Industrial Automation division of Emerson, a diversified international manufacturing and technology company committed to developing technological breakthroughs that advance the performance of a wide range of products and processes. Emerson takes pride in developing forward-thinking technologies that help customers stay ahead of the curve.

Inspired by Emerson's proactive corporate philosophy, we utilize our technological capabilities and global reach to implement custom solutions that can help food processors successfully compete in a demanding and changing marketplace.



## Looking Ahead

Driven by our culture of innovation, we continue to enhance our food processing capabilities through product improvements and developing new applications. Through significant investments in R&D we create superior tooling for our cutting systems. We're also utilizing ultrasonic technology to find new ways to shape and form various food items.

Our participation in the publicly funded industrial collective research initiative, and partnerships with various research centers throughout the world, keep us at the forefront of new developments. Food processing applications now under test are the use of ultrasonic technology to enhance food flavors, tenderize meats and release the vitamins in foods.

We believe that by continually expanding and refining our capabilities we can help our customers do what they do better. To learn how Branson's expertise can serve your needs, contact the regional center nearest you.

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