

World-class solutions,
worldwide

Ultrasonic assembly
for all your
fabric and film
applications



DUKANE

Intelligent Assembly Solutions

Reliability in ultrasonic assembly for fabrics and film

Non-Woven



Ultrasonic fabric and film assembly for reliability, versatility and quality

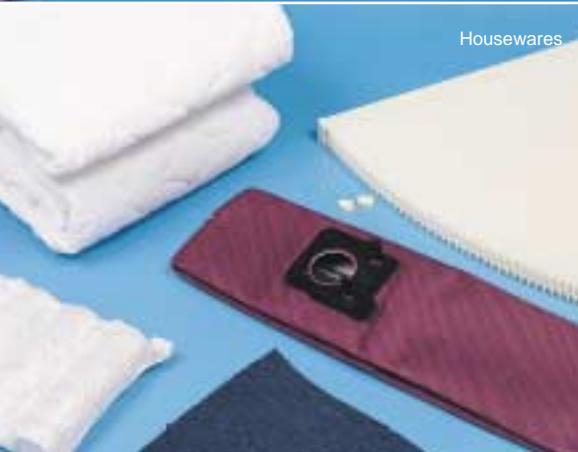
Filtration



The traditional ways of fabric and film assembly are being replaced by Ultrasonics—the faster, cleaner, safer and more economical way to bond or slit a wide range of materials. Dukane Ultrasonics is the most trusted name in the ultrasonic industry.

Ultrasonics uses vibratory energy and frictional heat to seal or slit even the most delicate types of fabric and film. Since only the contact area heats up, there is no threat of contamination or damage to the material in the surrounding area. No solvents, adhesives, mechanical fasteners or external heat are required. The finished assemblies are environmentally friendly and ready for immediate use.

Housewares



Thanks to our 30 plus years of experience, worldwide network of ultrasonic experts, regional offices and tech centers, Dukane has the resources to offer customized solutions, the right equipment, and unparalleled customer support.



Fabric types and film for ultrasonic assembly:

Wovens: Formed by the regular interweaving of filaments or yarns.

Nonwovens: Formed by bonding or interlocking fibers, yarns, or filaments.

Knits: Formed by interconnecting continuous loops of filaments or yarns.

Coated materials: Fabrics and films covered with a layer of thermoplastic, such as polyethylene, polypropylene, or urethane.

Laminates: Fabrics and films consisting of two or more dissimilar layers in a “sandwich” form.

Films: Formed from the thermoplastic material which has been cast, extruded, or blown into a film.

The material you use can come in different combinations. Dukane offers a free feasibility test which will show you all the advantages of ultrasonic assembly—the faster and better way to join fabrics and films.

Automotive



Medical



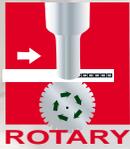
Customized ultrasonic capabilities for all your fabric and film applications

Since each application is unique, Dukane offers a wide range of ultrasonic products and services. From the initial consultation to design, installation, follow-up and training, we ensure that you get the most reliable ultrasonic processing equipment—from basic portable low-cost welders and standard equipment to advance process control systems.

Ultrasonic processing is a fast, clean and repeatable process that produces strong bonds while consuming very little energy. Dukane has the right solution for your processing needs.

Rotary/Continuous Ultrasonic Bonding:

This technique bonds two or more layers of materials by passing them between the gap between a vibrating horn and a rotary drum (also called an anvil). The resulting composite material retains a high degree of its softness, breathability and absorption. These properties are especially critical for hospital gowns, sterile garments, diapers and other applications used in the medical industry.



Ultrasonic Slitting: When a thermoplastic material is slit ultrasonically, its edges are also sealed, preventing the fibers/yarns from unravelling. The smooth, beveled edges also prevent the buildup of roll material.

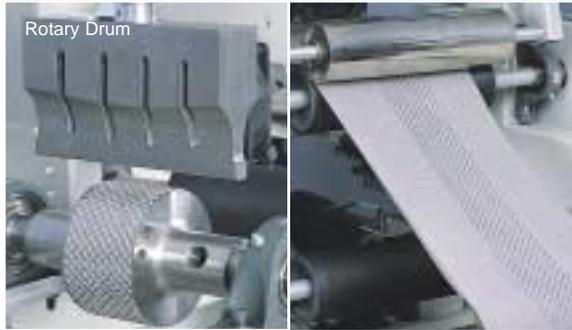
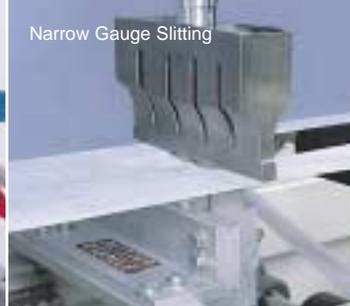
Plunge: Material remains in a fixed location, periodically contacted by the horn.

Traversing: Material remains in a fixed location and the horn moves over it.

Depending on your application requirements and manufacturing process, Dukane can suggest the best method for your needs.

Conventional Slitting
frayed edge

Ultrasonic Slitting
no fraying
sealed edge



Plunge

Keeping pace with Ultrasonic fabric and film technology for cost-effective custom solutions

We offer cutting-edge technology and features that add up to superior performance and extended service life of our ultrasonic equipment. For instance, our **Dynamic Process Controller** gives you advanced control and reliability. **Auto Trac Tuning** automatically maintains a consistent operating frequency. **Line and Load Regulation** features compensate for power fluctuations for uniform assembly of delicate materials such as thin films.

Dukane also custom designs each horn and fixture to exacting standards. **Finite element analysis** is an advanced design technique used by our engineers to evaluate horn design and optimize performance before any material is machined. **Advanced CNC machining** is used to ensure that acoustic horns are machined to precise tolerances. **Custom engineering** is used for special applications including custom software development and system design and construction. **Quality and continuous product improvement** are ongoing processes at Dukane. We keep pace with technology to offer high performance and quality in every ultrasonic assembly system we design and build.

Dukane's Regional Offices



Fabric and film processing applications can be very specialized. Our regional offices and Fabric & Film tech centers located across the United States can work closely with your professionals and offer ultrasonic consultation and problem solving. Our field sales and applications support engineers can respond quickly with custom solutions.



All of our locations offer a wide range of services including applications engineering, tooling design, systems integration, service, support and training as pictured domestically, and worldwide.

With international resources, design and manufacturing capabilities to match your requirements anywhere in the world, Dukane is committed to global compatibility.



Here are just a few of the fabric and film materials that can be ultrasonically welded.

Thermo-Plastic Type	Acrylic	Nylon	Polyester	Polyethylene	Polypropylene	Polyvinyl-chloride (PVC)	Urethane
Wovens	X	X	X		X	X	X
Non-Wovens	X	X	X	X	X		X
Knits	X	X	X		X		
Films	X	X	X	X	X	X	
Coated Materials	X	X	X	X	X	X	X
Laminates		X	X	X	X	X	

Since there are many possible combinations of materials, please send your material in for feasibility testing.

Dukane Ultrasonics
 2900 Dukane Drive
 St. Charles, IL 60174 USA
 TEL (630) 584-2300
 FAX (630) 584-3162
 E-MAIL usinfo@dukane.com



www.dukane.com

