

CONTACT: Crystal Rumph, (203) 796-0528
Crystal.Rumph@Emerson.com
www.BransonCleaning.com

For immediate release:

PHYSICAL VAPOR DEPOSITION SUBSTRATE CLEANING - IMPROVED WITH ULTRASONIC CLEANING

Physical Vapor Deposition (PVD) substrates require a contaminate free surface which is achieved by using a precision cleaning and drying process. While many cleaning processes and equipment methods can be utilized to achieve a precision clean substrate, Branson offers some of the best cleaning technologies available today.

The two most common cleaning technologies used on PVD substrates, and in precision cleaning, are aqueous cleaning and solvent cleaning. Ultrasonic cavitation uniquely provides the cleaning/scrubbing method required for a high degree of precision cleaning. The selection of the appropriate process, equipment and process control are determined by a number of requirements specific to each individual company and the variety of substrates/parts processed. For example some considerations are the degree of cleanliness, method of fixturing parts, throughput requirements, available facilities and type of coating.

How does this technology work?

Ultrasonic scrubbing or liquid cavitation is the formation and implosion of microscopic vacuum bubbles that gently jolt contaminate from a substrate. In conjunction, solvents and aqueous chemistries along with heat, assist in emulsifying and containing contaminates. Ultrasonic cleaning is an encompassing technology, where many other scrubbing technologies are line-of-sight dependant.

- MORE -

Physical Vapor Deposition Substrate Cleaning, Page 2

Ultrasonic sound waves fill the bath with alternating low and high pressure zones at frequencies of 20-180 KHz. During the low pressure zone, liquid molecules are pulled apart forming microscopic vacuum bubbles, and then on the high side of the ultrasonic wave, the bubble implodes. The implosion of the vacuum bubble releases energy, dislodging adhered contaminates from the substrate. (Figure 1)

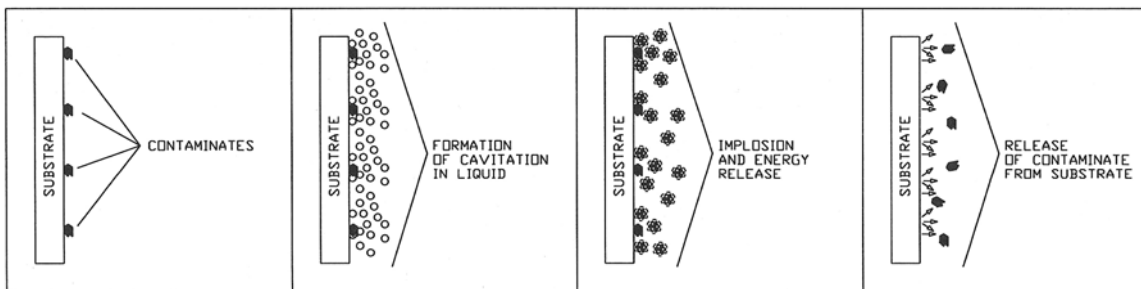


Figure 1: Illustration of the ultrasonic cleaning process

A typical solvent or aqueous process will consist of a cleaning stage, then a rinsing stage, followed by drying. Fixturing of the substrates to optimize cleaning and ergonomics for handling is critical, along with matching throughput requirements. Footprint, facilities availability such as water, power, air, ventilation, and drains also impact the selection of the best cleaning technology and equipment.

Aqueous Systems

The Branson OMNI Cleaning System is a fully-configured ultrasonic cleaning and rinsing system with a built-in dryer. The equipment incorporates quality materials and workmanship without unnecessary extras. It offers a full range of hard working features while occupying only a fraction of the floor space of comparable systems. All controls are mounted in a convenient control box and operate at 24 volts for safety.

- MORE -

Physical Vapor Deposition Substrate Cleaning, Page 3

The Branson FlexLine Cleaning System is a cost-effective modular ultrasonic cleaning, rinsing and drying system. The equipment incorporates quality materials and workmanship without unnecessary extras. It offers more features and capabilities than tabletop units and greater flexibility than fixed-configuration console units.

The Benchmark Series precision modular cleaning systems incorporate design features and design standards by which all other systems are judged. From state-of-the-art ultrasonic generators to the latest in process management, the Benchmark Series will meet your needs. They are designed from an end-user point of view. Quality, reliability, process flexibility, and serviceability are all designed in. Virtually any combination of cleaning, rinsing, and drying modules is available.

Solvent Systems

The Branson B252R Ultrasonic Vapor Degreaser is one of a series of environmentally sound, cost effective precision degreasers. It integrates state-of-the-art controls with maintenance practicality and small footprint in a standard ultrasonic vapor degreaser. It incorporates all of the important environmental and safety features typically found in larger units. All controls are clustered on a compact front-mounted digital control panel.

The Branson B-Series Ultrasonic Vapor Degreaser is the latest in a series of environmentally sound, cost effective precision degreasers. Branson, well known for ultrasonics, is also the global leader in solvent cleaning technology. The B-Series integrates over 55 years of degreasing experience with the demanding needs of a changing marketplace to offer you a functional solvent solution to your cleaning needs.

- MORE -

Physical Vapor Deposition Substrate Cleaning, Page 4

Branson offers a full range of ultrasonic cleaning equipment

The flexibility and range of all Branson cleaning systems allows you to select components and create the cleaning system that meets your needs, matching system features to your application requirements. Branson can assist in all aspect of developing the cleaning process parameters, testing the process, engineering the solution and implementing the entire process. Branson Ultrasonics Corporation provides detailed information and guidelines for optimal use of their cleaning & welding equipment for customers and interested persons.

Headquartered in Danbury, Connecticut, Branson Ultrasonics Corporation is the leading worldwide manufacturer of plastics joining equipment including ultrasonic, linear and orbital vibration welders, hot plate welders, laser IRAM welders, infrared welders, and spin welders for assembling thermoplastics. Branson also manufactures ultrasonic equipment for sealing and/or slitting thermoplastic textiles and films, food cutting and processing, metal welding, processing biological and chemical solutions, and precision commercial and industrial cleaning. Branson was founded in 1946 and is a subsidiary of Emerson Electric Co., St. Louis, MO.

###