

INJECTION MOLD CLEANING

The use of ultrasonic cleaning equipment for routine injection mold maintenance has been effectively employed for many years. It provides a number of benefits not achievable using more traditional methods. As a non-contact method, mold detail is not damaged during cleaning and critical tolerances can be maintained, extending mold life. The higher levels of cleanliness attained using ultrasonic cleaning also results in better releases and longer runs while improving productivity and minimizing scrap. The penetrating nature of ultrasonic cleaning removes residual polymer and releases from mechanically active mold components extending their life and can also remove buildups from internal cooling ports and channels, thereby improving polymer flows.

ULTRASONIC TECHNOLOGY

Ultrasonic cleaning depends upon cavitation, the rapid formation and violent collapse of minute bubbles or cavities in a cleaning liquid. This activity, when combined with an appropriate cleaning chemistry, creates a unique penetrating action that is highly effective, even in blind holes and tiny crevices. This combination of high energy, deep penetration, and non-contact gets results. No other process cleans faster, more safely, or more thoroughly.

THE EQUIPMENT

Ultrasonics is an immersion technology that requires three components. The first is a tank to hold the cleaning liquid. The second is a number of ultrasonic transducers, which convert electrical energy to sound energy, and finally, a generator to produce the required high frequency power, which is delivered to the transducers. Branson offers these parts in a number of configurations to meet the specific needs of your application. Sizes range from tabletop units for small molds or segments to fully integrated automated systems for larger molds or higher volumes found in larger molding operations.

THE CHEMISTRY

While the chemistry can vary based on the mold material or the type of soil, most molds are cleaned in a buffered alkaline solution. These materials are widely available and very cost effective to use. To help with chemistry selection and process development, Branson maintains a free application evaluation service. Parts submitted to the applications laboratory will be cleaned and returned with recommended chemistry, process, and equipment to meet your operational needs.

BEFORE CLEANING

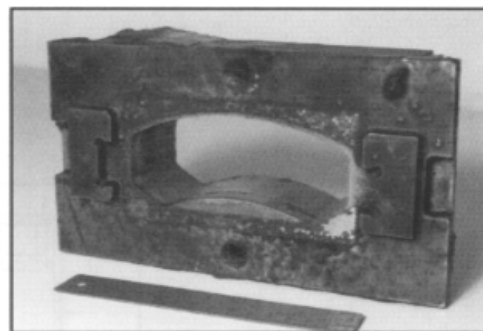


Figure 1. Note encrusted material on mold surface.

AFTER CLEANING

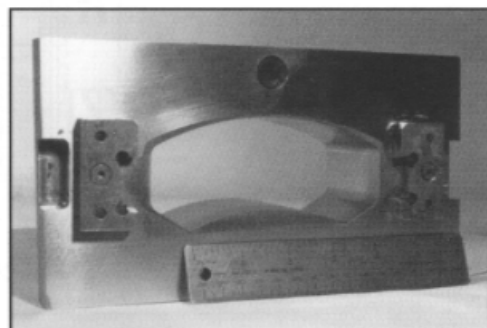


Figure 2. Material is removed, without mold damage.

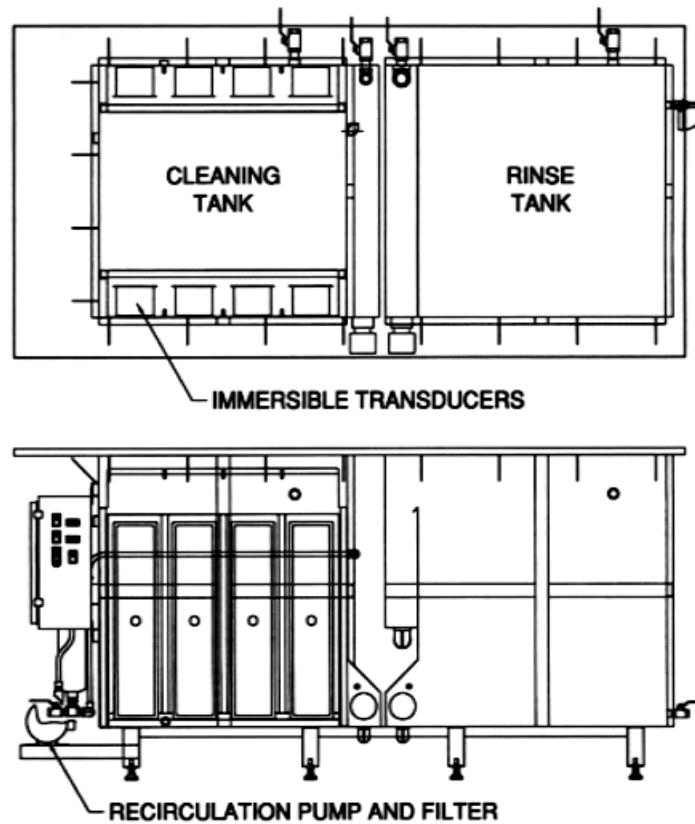
STANDARD FEATURES

- S-8300 Series ultrasonic generator for maximum power and process control
- Modern piezoelectric transducers for reliability
- Stainless steel construction for durability
- Thermostatically controlled heat to enhance ultrasonics and improve cleaning
- Optional pump and filter system available on all units

SYSTEM BENEFITS

- Substantially fewer man-hours spent on maintenance
- Improved mold life
- More shots between maintenance tasks
- Reduced scrap and waste
- System is easy to operate and maintain
- Better product finish and detail over time

TYPICAL SYSTEM *



* Larger and smaller units are available

BRANSON ULTRASONICS CORPORATION

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