

What's all the noise about ultrasonics?

With more people putting money into better maintenance of their boats, marine service shops everywhere are looking for economical and efficient ways to service boat engines more quickly. One way some shops have found to provide better service (and save labor costs) is by using ultrasonic systems for cleaning engine parts and components.

Every good mechanic knows that a clean engine runs better. And every good manager knows the value of returning spotless equipment to his customers. In the past, this has meant using lots of elbow grease and costly, toxic chemicals. But now, marine shops around the country are using more technologically advanced cleaning systems that save time and money—while providing far superior results.

Ultrasonic cleaning is widespread in the automotive industry today. These systems combine advanced technology with ecologically safe, biodegradable soaps, resulting in safer, more efficient cleaning.

"It's fabulous. We really like it," says Walter Beacham of Beacham Marine, a small marine repair shop in Pasadena, Maryland. Beacham uses an Omegasonics ultrasonic parts-cleaning system, and says: "It's at least 50 percent better at cleaning than the old way, and it reduces a lot of labor time. But for me, the main thing is that it's non-toxic and safer to use."

How ultrasonic systems work

When ultrasonic energy is introduced into a cleaning solution, it creates a pattern of alternating high and low pressure. The extreme low-pressure phase creates microscopic vacuum bubbles. During the subsequent high-pressure phases, the bubbles implode violently.



This process is known as cavitation.

Cavitation provides an intense scrubbing action that leads to quick and consistent cleaning. It takes the standard practice of manual immersion and agitation to a much higher level. The bubbles are small enough to penetrate even microscopic crevices, allowing for cleaning in the most out-of-reach corners.

When cleaning marine inboard and outboard motors, the "gentle" part of the equation is very important, because many of the parts and components of marine motors are made out of aluminum. These parts must be cleaned in a way that will prevent future corrosion.

"We had to find a method of cleaning the carbon and oils out of Mercury's outboard products, without removing the corrosion inhibitors that are placed in the blocks," says Lee Molinski of Mercury Marine in Oshkosh, Wisconsin.

"Everything we are dealing with is aluminum," Molinski says, "so we can't use the traditional automotive style of cleaning—ovens or caustics.

These high-tech cleaning systems can provide a less-toxic alternative to solvents

Plus, we are right on the Fox River, on the waterfront, so we have to be very careful what we have in the facility from an EPA standpoint."

A hard-working device

Molinski adds that Mercury Marine's ultrasonic system is particularly reliable. "It runs without a beep," he says. "We basically do the entire engine with the ultrasonic system—crankshaft, cylinder block, exhaust manifolds, and so on. The machine runs a solid eight hours a day. It runs from 6:00 in the morning to 2:30 in the afternoon, five days a week; it doesn't get shut off."

Both Beacham and Molinski say their staff saves a considerable amount of time by not having to scrub away at engines and components to get them clean enough for use. With ultrasonics, most parts can be cleaned within minutes. Cleaning times will vary depending on the condition of the parts, the level of heat in the tank and the cleaning agent used.

Ultrasonic cleaning systems are becoming more and more affordable all the time, and range from large stand-alone systems that can clean entire engine blocks to table-top systems designed for smaller parts. Despite what may seem like a significant initial investment, they can save repair shops money in the long run by reducing labor and expenses on costly cleaning agents. ⚓

Omegasonics manufactures a complete line of ultrasonic cleaning equipment ranging from table top carburetor cleaners to large capacity floor models ideally suited for the marine industry. For more information, visit www.omegasonics.com, or call 800/669-8227.