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Submersible Transducer Systems

Add ultrasonic cleaning to existing tanks



Submersible ultrasonic systems are used when ultrasonic components are required to equip existing tanks with ultrasonic cleaning capabilities. Submersibles can be manufactured to fit virtually any tank shape or size, all available in a choice of operating frequencies to ensure the best possible cleaning results.

Submersibles packs which contain the actual transducers, are lowered into the cleaning fluid and are activated by the Ultrasonic Generators which are positioned nearby. Although the transducers are typically mounted to the tank bottom, they may also be mounted to the side of the tank by using a stainless

steel "Submersible Holster" or by directly bolting the submersible to the wall of the tank using the included mounting tabs. Submersible holsters also permit operators to quickly re-position the packs in the tanks. Regardless of mounting location, the electrical cable of the submersible packs must exit the tank to attach to the ultrasonic generators.

2 electrical cable mounting styles are available. A "Bulkhead Mount" is a permanent mounting style which requires that holes are cut into the wall of the cleaning tank. The submersible pack is mounted over this hole, and the electrical cable is passed through the hole to connect to the generators. A seal is supplied to permanently seal the hole.

The second electrical cable mounting option is the "Riser Mount." This mounting style is preferred whenever it is expected that the submersible might be removed from the tank in the future, when easy and ultra-fast replacement of submersibles is required, or when customers do not wish to cut holes in the existing tank. In the Riser Mount design, the electrical cable exits the tank through a liquid-tight stainless-steel tube which "rises" out through the liquid, out the top of the tank itself. Submersibles simply rest on the tank bottom, or are suspended in submersible holsters on the side of the tank, and no holes are required. This is a significant improvement over flexible risers which are subject to kinking and damage, do not look professional, and are actually composed of flexible hose that is not designed to keep liquid out bur rather liquid inside of the hose.

Submersible packs are manufactured of 316L stainless steel, and are welded shut once the transducers are mounted within. Before electrical testing is performed, submersibles are pressure tested for leaks, then electrically tested under the scrutiny of Zenith's quality control team,



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who are trained to look for even the smallest manufacturing defects or poor ultrasonic performance prior to shipment.

Submersible systems can be ordered with several different Operating Frequency options. Ultrasonic operating frequency can play a major role in the performance of the system, and must be properly matched to your application. Low frequency sonics, such as Zenith's 25kHz and 40kHz POWERSONIC systems, are used to remove stubborn industrial contamination, while high-frequency ultrasonics, such as 80kHz or 130kHz OMEGA-HF systems are used to remove light or sub-micron contamination in sensitive and critical cleaning applications, such as semiconductor, disk manufacturing, optical industries, and others, or if your

manufacturing, optical industries, and others, or if your components have small recessed areas or blind holes.



If your application requires BOTH powerful industrial cleaning action PLUS the ability to clean inside small blind holes down to sub-micron levels, ask about the newly patented CROSSFIRE, the world's only simultaneous Multiple Frequency Ultrasonic System available anywhere (pat #5,865,199 and 6,019,852). This system mounts transducers with DIFFERENT ultrasonic frequencies into the SAME submersible. Hard Disk manufacturers prefer 80/130kHz CROSSFIRE, while automotive engine component manufacturers prefer the 40/80kHz CROSSFIRE system.

Submersible ultrasonic systems are usually manufactured custom-made to ensure that the energy distribution in the tank is uniform and the proper amount of ultrasonic power is provided. However, Zenith does offer the following standard sizes:

STA1410: 14" x 10" x 3-4" tall. STA2107: 21" x 7" x 3-4" tall. STA2114: 21" x 14" x 3-4" tall. STA3607: 36" x 7" x 3-4" tall. STA3614: 36" x 14" x 3-4" tall.

Available options include cable length adjustments, ultrasonic timers, power intensity controllers, "holster" for side-tank mounting, erosion protection coatings, and others. If you have a tank which may require ultrasonic cleaning capabilities, contact Zenith Ultrasonics. We will provide you with a system which you can count on for many years of satisfactory cleaning performance, perfectly matched to your tank, and your application.