



Zenith Ultrasonics

Waves at Work

85 Oak St., Norwood, NJ 07648-0412 Tel: 800-432-SONIC (7664) sales@zenith-ultrasonics.com www.zenith-ultrasonics.com

Multi-tank Cleaning Consoles

Which include multiple processing stages



Zenith's line of multi-tank ultrasonic cleaning systems are used when more than just ultrasonic cleaning is required.

Most ultrasonic cleaning operations are composed of 3 steps:

- The cleaning stage where contaminants are removed from the product.
- The rinsing stage where the cleaning agent is removed from the product.
- The drying stage where the rinse water is removed from the product.

A multi-stage console provides a series of tanks which accomplish the above operations, all of which are welded into a

seam-less stainless steel countertop and supported by a stainless steel frame with latching access panels.

In most cases, one or 2 ultrasonic cleaning tanks are included, 1 or 2 rinse tanks are included, and drying tank is included. However, the number of tanks and tanks which are included depend upon the specific needs of each customer. Parts are processed by moving the product from tank-to-tank by hand, with an overhead hoist, or with one of Zenith's automated systems such as Transtar or Advantage (Patent 10,112,221). Additional tanks can be added if needed, such as a rust-preventative dipping tank to prevent oxidation on steel parts, a compressed air blow-off tank, or others.

A question most will ask at this point is "how do I know how many tanks I will need?" Here are some guidelines to assist you in making a preliminary assessment:

- The only time that 2 ultrasonic tanks would be needed is if parts are extremely contaminated, or if more-than-one cleaning fluid is needed. Over 95% of the systems that Zenith has sold in its long history have only required a single ultrasonic cleaning tank.
- The number of rinse tanks needed will depend upon the cleaning result you would like to obtain, and to a smaller degree the amount of water you would like to conserve. If zero-residue performance is needed with absolutely pristine cleaning results and no water spots, you would need at least 2 rinsing tanks. Adding a 3rd rinsing tank might be needed if you are cleaning batch-after-batch of parts on a nearly continuous basis. In the majority of cases, 2 rinse tanks are adequate for the majority of applications.



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- The number of drying tanks needed will largely depend upon how many parts you wish to process in a given period of time. The drying operation is typically longer than the cleaning and rinsing operations, and therefore determines the throughput of the cleaning system. If you need your machine to be capable of cleaning more product, you would need to include multiple drying tanks, or a Zenith multi-position dryer tunnel. Zenith's Aero-clean system includes such a drying tunnel since it is specifically designed for high-volume zero-residue cleaning results. In the vast majority of cases, a single drying tank is needed.

The above points lead to a single conclusion; in the vast majority of cases, a 4-tank multi-stage cleaning system composed of a single cleaning tank, 2 rinsing tanks, and a drying tank is needed and this happens to be Zenith's most popular system design.

Zenith's standard line of multi-tank cleaning systems includes the following:

- MTC2: This model includes a single ultrasonic cleaning tank and a single rinsing tank, and is used when existing drying means are already available and rough-cleaning results are required.
- MTC3: This model includes a single cleaning tank, a single rinsing tank, and a single drying tank and is used for rough cleaning of items which do not require zero-residue cleaning results. The neighboring middle photo is of a MTC3 with optional Advantage Automation System.
- MTC4: This model includes a single ultrasonic cleaning tank, dual cascading rinsing tanks, and a single drying tank. This design is Zenith's most popular design by far and can address the majority of cleaning applications. When supplied with deionized water, this system will produce zero-residue cleaning results on most parts. The neighboring photo depicts a MTC4 with Advantage Automation System.





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- MTC5: This model includes a single ultrasonic cleaning tank, triple cascading overflow rinsing tanks, and a single drying tank. This design would be more appropriate to conserve the consumption of deionized water, when the number of parts being processed is nearly continuous, or when parts have design features which tend to trap excessive amount of liquids. This design can also be adjusted to include 2 ultrasonic cleaning tanks, 2 cascading rinsing tanks, and a single drying tanks for applications where 2 different cleaning agents are required. The neighboring photo depicts an MTC5 cleaning system equipped with Zenith's Advantage Automation System (patent pending).



- Standard sizes include baskets which are 12" x 20" x 14" tall, 18" x 24" x 15" tall, 22" x 28" x 15" tall, 24" x 36" x 18" tall, and 36" x 48" x 24" tall. Any other size can be fabricated if needed to meet your specific needs.

For those customers who require something completely different than the above-detailed standard options, Zenith can custom-manufacture a system specifically for your needs and this is a Zenith specialty. While most competitive manufacturers prefer to sell standard equipment and charge huge premiums for a custom design, you will find Zenith to be refreshingly different, in some cases recommending a custom design to reduce cost.

All systems are manufactured with a true tubular 304 polished stainless steel support frames for superior tank and structural support, 316 stainless steel anks and exterior panels, and internal components which are easily accessible through the front of the system.

There are also a host of additional options which can be added to these systems to enhance their operation such as Transtar or the patented Advantage Automation Systems, Nova Semi-automation Systems, Pump Drain Systems, Automatic Liquid Level Maintenance, Automatic Fill Systems, Deionization Systems, Wastewater Evaporators, pH Neutralization equipment, custom basket fixtures to support product in the orientation required for optimal cleaning, our patented CROSSFIRE Multiple Frequency Ultrasonics, Slow Pull Drying Systems, Process Area Enclosures with or without door interlocks, Light Curtain Safety Devices, Automatic Covers, and many others.

Whatever your cleaning application may require, Zenith has the equipment and experience to ensure that the system provided meets your every need. For additional information regarding our line of multi-tank consoles, contact us and speak with one of our sales engineers.