



Zenith Ultrasonics

Waves at Work

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ORBIT Basket-less Ultrasonic Cleaning System

Continuous conveyor system similar in operation to a conveyor spray washer.



The ORBIT continuous conveyor ultrasonic cleaning system is very similar to a spray washing system where parts are placed onto a moving conveyor belt to be cleaned, rinsed, and dried as the parts pass through the system. The difference is that with the ORBIT, ultrasonic systems are used to do the cleaning rather than spray nozzles. As a result, parts are cleaned more thoroughly and completely.

Spray washing systems are “line-of-sight” cleaning systems. The areas of the parts that are most effectively cleaned are those areas that are directly exposed to the spraying action produced by the spray nozzles. If the spray

does not strike the parts in certain areas, these areas will not be effectively cleaned. However, ultrasonic cleaners have the ability to clean everywhere on the parts down to a microscopic level. Blind holes, crevices, internal passages, metal folds, and other similar detail are all cleaned to a level which is not achievable with a spray washing system. When deionized water is provided in the rinse using your existing deionized water supply or our optional DI-1.5 Deionization System, the ORBIT produces spot-free pristine cleaning results that can meet the most demanding cleaning requirements.



Parts are placed onto the conveyor belt or custom fixtures that Zenith can provide to support the parts being cleaned. This belt either moves continuously or intermittently using external signals from existing robotic part loading systems. The parts are first moved through the included CROSSFIRE Multiple Frequency Ultrasonic System which removes the contaminants. The cleaning chamber is continuously filtered while floating particles are swept from the surface .

As the parts leave the ultrasonic cleaning chamber, they are spray-cleaned and blown-off to reduce the amount of detergent that will transfer into the rinse chamber thereby reducing the load on any closed-loop deionization systems and extending rinse water life if using an existing water supply.



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The parts are then transferred into the rinse area where they are ultrasonically and pressure-rinsed using a 2nd CROSSFIRE ultrasonic system.

After rinsing is complete, the parts are dried using compressed air knives or the optional air knives with an on-board regenerative blower to eliminate the need for compressed air in the drying chamber. The optional Drying Tunnel will add additional drying capabilities to this system if needed.

The ORBIT includes a stainless steel filtration system to extend cleaning fluid life and rinse chamber filtration can also be included as optional equipment. The system is controlled with an on-board PLC control system with a color touch-screen interface for the most convenient operation.

Included Features:

- ORION Hi-power Digital Ultrasonic Generators & PULSE-SONIC transducers with Sweep Frequency Circuit, Power Intensity Controls, internal over-temperature protection, overload indicator, multi-function digital display, and automatic frequency tracking. CROSSFIRE multi-frequency ultrasonics in both cleaning and rinsing chambers.
- Stainless steel conveyor belt and bearing assemblies.
- 14.5" conveyor belt width with flights to hold parts in place during movement through the system.
- Includes ultrasonic cleaning, spray cleaning, detergent blow-off, ultrasonic rinsing, spray rinsing, and compressed air drying with optional drying tunnel.
- Variable Frequency Drive for conveyor speed adjustment.
- Dual-housing stainless steel filtration system with high-volume stainless steel flow pump.
- 316L stainless steel processing tanks which are internally and externally welded and supported.
- Polished 304 stainless steel frame and exterior latching access panels.
- Variable Frequency Drive for conveyor speed adjustment.
- High-speed immersion heating systems with closed-cell foam insulation and digital temperature controllers.
- 316L stainless steel process area covers.
- 7" wide-screen touch-screen HMI and PLC control system with input monitor for troubleshooting.
- NEMA4X main control enclosure with lock-out capable disconnect switch
- Many options available to customize the system to suit your needs such as pump drain systems, automatic liquid level maintenance and filling systems, water purification systems for the rinse, automatic rinse quality maintenance systems, and more.

If you are looking for a cleaning line which does not require the use of baskets and can provide pristinely-cleaned parts, the ORBIT is your best equipment choice. Contact Zenith Ultrasonics for a quotation and to set up a free-of-charge Test Cleaning to ensure that this system can meet your budgetary and cleaning needs.