Kerry Ultrasonics

quality precision cleaning

Manual & Automated Ultrasonic Equipment Range

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where quality comes to the surface

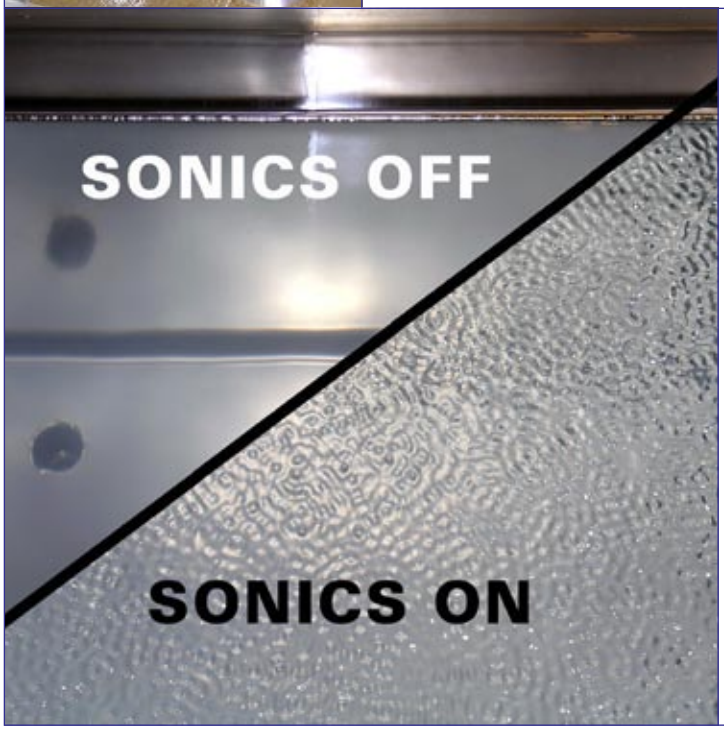
Introduction to ultrasonics

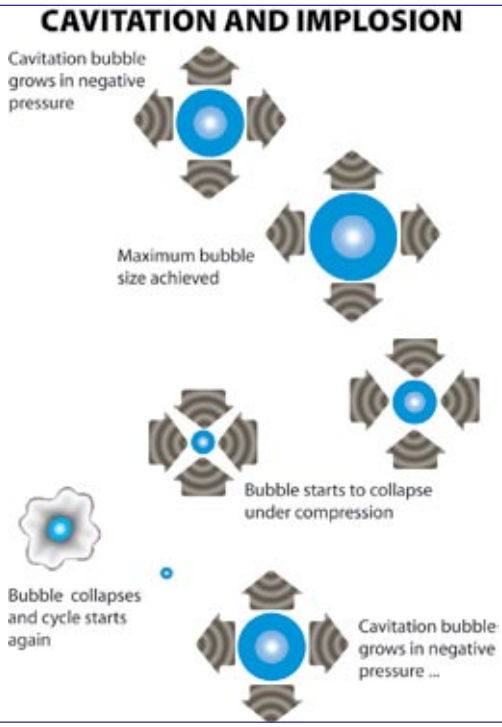
How does it work?

Why use ultrasonics

Ultrasonics offers a rapid and highly effective method of precision cleaning components to a very high standard. Manual cleaning or spray wash methods may struggle with blind holes, tubes, difficult to reach crevices or stubborn surface contamination but these problems are easily dealt with when ultrasonics are used.

Ultrasonic cleaning is brought about by the introduction of high-frequency sound waves (usually between 20-80 kHz) into a liquid by transducers, normally attached to the bottom of the tank. The resulting action is called 'cavitation'. Cavitation is created by high and low pressure areas produced in the solution as the sound waves pass through it. In low-pressure areas, microscopic 'bubbles' form, then the pressure rises rapidly as the next sound wave passes through the solution. The millions of tiny bubbles violently implode and create a highly effective 'scrubbing' action on any immersed component surface. At the standard 38 kHz, this is happening 38,000 times per second.





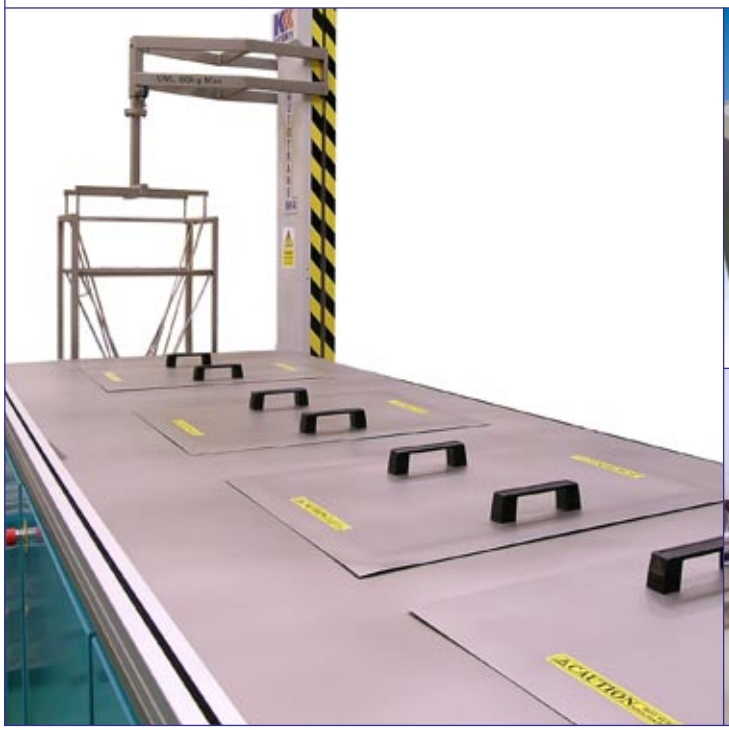
Kerry ultrasonic cleaning equipment range

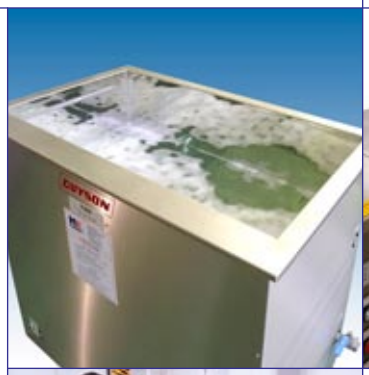
Aqueous and solvent systems for precision cleaning and degreasing

Guyson International provide full manufacturing, sales, support and service for our comprehensive range of 'Kerry' branded ultrasonic cleaning equipment. These units, from the smallest bath to the largest automated multi-tank system, provide cost effective precision cleaning of components in industries as diverse as medical, aerospace, electronics, automotive, glass and optics, defence, and rubber and plastics. Kerry ultrasonic cleaning equipment includes both aqueous and solvent systems for precision cleaning and degreasing.

Ultrasonic baths, tanks and 2-3 stage systems are normally recommended for lower volume cleaning. Multi-stage aqueous systems are for higher throughput and may be automated. Guyson safe solvent systems are also available to meet particular types of cleaning demands. Submersible transducers can be supplied with a tank or retrofitted to an existing customer process.

From October 2007 the Solvent Emissions Directive (SED) came into force to prevent or reduce the direct and indirect effects of emissions of volatile organic compounds (VOCs) from organic solvent users. Guyson's Kerry Microsolve systems use 3M™ Novec™ HFE (hydrofluoroether) or HFC (hydrofluorocarbon) which do not contain chlorine and do not deplete the ozone layer. They are fully compatible with SED regulations.





Pulsatron ultrasonic baths

Safe, fast, effective cleaning of small parts

Pulsatron KC and MKC ultrasonic baths provide safe, fast and effective cleaning in a fraction of the time required by hand cleaning. Lightly soiled items such as jewellery may take only seconds, while medium soil is normally removed in around two minutes.

Microprocessor controlled MKC baths are available in capacities of 6, 14 and 22 litres (approx.) and allow the user to pre-set exact cleaning times (up to 99.9 mins) and temperatures (from 20° to 80°C), thus ensuring the same high level of cleanliness every time.

Smaller units, Pulsatron KC baths, are also available with 2 and 3 litre capacity. KC baths are particularly easy to use, with a simple on/off switch for the ultrasonics and operating instructions printed on the bath's front panel.

Items benefiting from ultrasonic cleaning include jewellery, clock and watch parts, optical lenses and frames, dental and surgical instruments, printed circuit boards, and manufactured parts in production or maintenance.

Pulsatron ultrasonic tanks

Industrial quality parts cleaning

Pulsatron KS ultrasonic cleaning tanks are robustly constructed using AISI 316L polished stainless steel for durability, while Kerry Pulsatron ultrasonic generators ensure powerful parts cleaning and long equipment life.

Typical uses include:
Production cleaning e.g. removal of oils, swarf, polishing compound, brazing flux, solder flux, carbonised deposits and moulding residues. Applications include: refurbishment of computer, photocopier and engine components, maintenance of mould tools, cleaning of extrusion dies, printing components, surgical instruments, electronics assembly system parts and small machine components

KS tanks are microprocessor controlled for precision and repeatability. Sonics operation times may be set in 0.1 minute increments up to 99.9 minutes, and solution temperature may be set in the range 20°- 80°C in 1°C increments.

Standard KS systems operate at 38 kHz (±10%); however, optional external generator control allows switchable dual frequency (36/66 kHz ±10%), variable power control and programmable operation of up to seven programs.

UCR & CRD

Ultrasonic wash and rinse with or without drying option

Ultrasonic clean and rinse systems

Pulsatron UCR aqueous clean and rinse systems provide a heated ultrasonic cleaning tank, an immersion rinse weiring to drain, and a hand held spray for final rinse. Example uses include: removal of oils, swarf, polishing compound, brazing flux, solder flux, carbonised deposits etc. UCR systems are microprocessor controlled, allowing the user to pre-set precise cleaning times and solution temperatures. Options include pumped filtration, heated immersion rinse, and deionised water spray rinse.

Clean, rinse and dry

The Pulsatron CRD 450 is a manually operated system providing ultrasonic cleaning with heating, immersion rinse weiring to drain, a hand held spray for second rinse (DI optional), and recirculating hot air dry up to a maximum temperature of 100°C. The Pulsatron CRD is an affordable 3-stage aqueous system suitable for applications such as PCB defluxing, metal finishing and maintenance cleaning.

For either of these cleaning units a variable power generator control provides switchable dual frequency cleaning (36/66 kHz ±10%), variable power control, and programmable operation of up to 7 programs.

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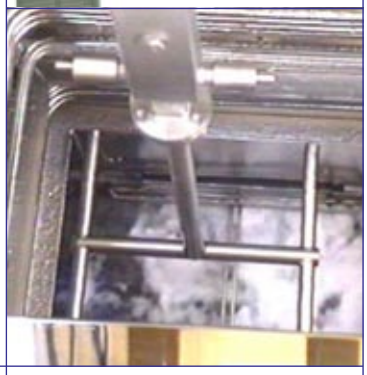
Microsolve

High quality precision cleaning using SED compliant processes

Microsolve Mono-Solvent two-stage systems provide ultrasonic cleaning using HFE (hydrofluoroether) or HFC (hydrofluoro-carbon) solvents, followed by vapour rinsing and freeboard dry. Typical applications include precision cleaning of bearings, gyro components and precision medical components; maintenance cleaning of pneumatic and hydraulic components; and, in electronics, flux removal from PCBs or from soldering jigs and fixtures.

Microsolve Co-Solvent systems provide two ultrasonic cleaning stages, followed by vapour rinsing and freeboard dry. In the first cleaning stage a mixture of HFE and a hydrocarbon solvating agent removes gross contamination from the components. Large quantities of dirt and oils can be taken up by the solvating agent, making the process particularly suitable for heavy duty ultrasonic cleaning applications.

The Co-Solvent process handles with ease applications such as removal of polishing compounds, maintenance cleaning of power generation system components, and flux removal from PCBs, including no-clean and lead-free solder flux residues.



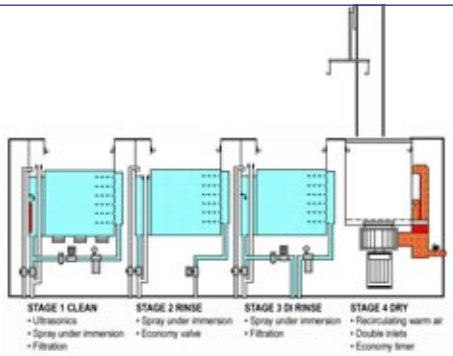
Microclean

Multistage aqueous systems for high quality cleaning

The standard Microclean 4-stage aqueous cleaning system (heated ultrasonic clean, rinse, rinse, warm air dry) suits a wide range of cleaning needs in aerospace, automotive, electronics and other industries. Closed loop high purity deionised water rinsing provides organic and ionic cleanliness superior to MIL standard. The machines can also be specified for high precision cleaning without ultrasonics for processes which do not require their use.

Standard Microclean features include weir overflow to all wet stages. Options include: pre-clean module with oil separator for heavy duty cleaning, ultrasonics to rinse stages, vertical agitation to all wet stages, double capacity hot air drying for increased throughput. The Microclean's modular design means that additional stages can be added to meet a variety of process requirements.

Microclean systems may be operated manually or fitted with Autotrans Mk4 automation, where the Microclean's PLC-based control system interfaces with the Autotrans to provide fully automatic operation.



Sub micron quality cleaning of high volume components

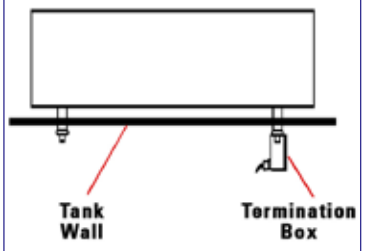
Supercleaners are designed to meet the most demanding component cleaning requirements of the precision engineering sector and are intended for clean room installations. These systems provide multi-stage aqueous ultrasonic cleaning and high purity deionised water rinsing, multi-frequency variable power ultrasonics, and hot air drying. They remove organic residues down to ppb (parts per billion) levels and particulate contamination to 0.1 microns.

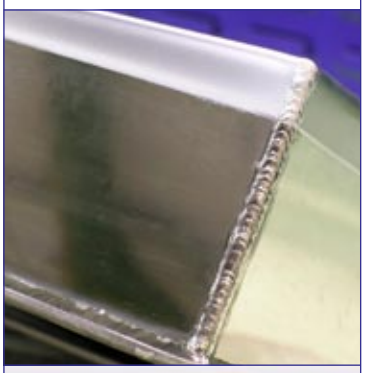
The process is well established for high specification high volume cleaning applications, including computer disk drive components such as base castings, top covers and HSAs. Multi-head Autotrans automation with pick and place operation allows each Autotrans head to release baskets in process tanks while performing other transfers. Autotrans program intelligence continuously monitors basket positions to maximise throughput and system integrity.

SCADA (Supervisory Control and Data Acquisition) continuously monitors system variables, alarms and events, providing automated reporting configured to customer requirements.

KST & RT transducers

Submersible block and rod type transducers





KST Submersible Transducers

KST submersible block transducers are designed to allow retrofit to existing cleaning tanks or incorporation into new machines on an OEM basis. All these submersible block transducers are manufactured from 316L stainless steel, and radiating faces are hard chrome plated for resistance to cavitation erosion.

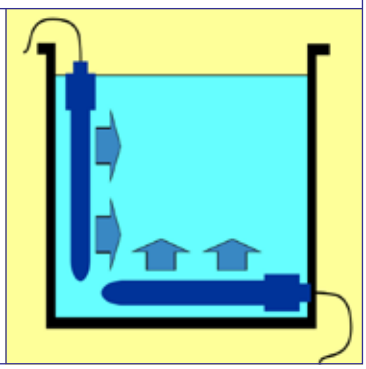
Power is provided by the new Guysonic generator with Primewave controller. The powerful Guysonic generator can deliver up to 1000 watts (1kW) of power per channel, up to 2kW per chassis, for powerful cleaning and reliability. Six standard block configurations are available, depending on the size of tank in which they are to be used. We will also be pleased to quote for your specific requirements.

RT submersible transducers

Pulsatron RT ultrasonic transducers retrofit easily to existing tanks or in-line systems to improve cleaning quality in areas such as metal finishing, electro-plating and parts maintenance. They remove all traces of processing soils without damage to polished surfaces, and, in parts to be electro-plated, prevent problems such as adhesion or staining.

Supplied complete with a Pulsatron RT ultrasonic generator, RT transducers have a stated power rating of 1000W, 1500W or 2000W in combination with an operating frequency of 25, 30 or 40 kHz.

RT transducers have a 360° radiating field providing omni-directional energy with no dead spots. Machined from high quality titanium alloy or stainless steel, and with protection against short and open circuits, overheating and dry running, they enjoy excellent operational safety and long life.



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Automated handling options

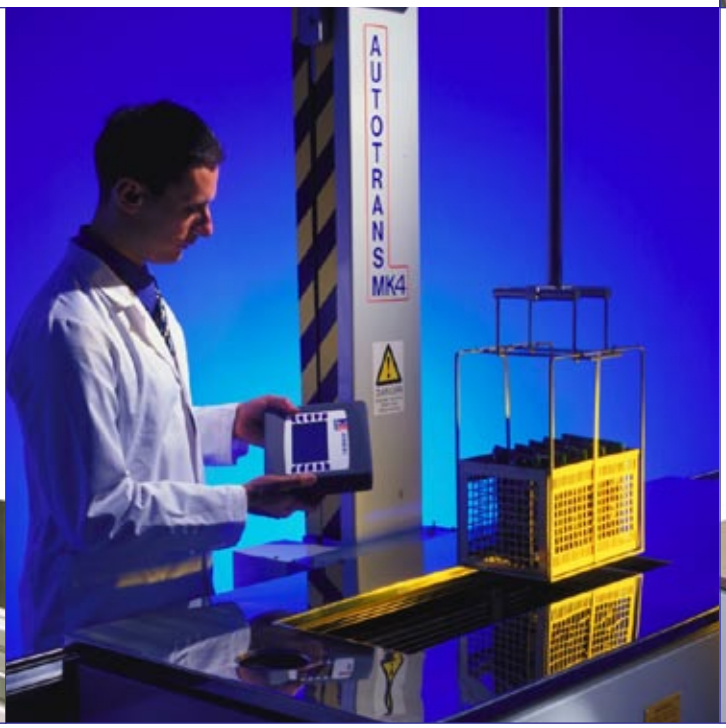
Autotrans - automated handling systems can save you money

Autotrans work handling systems range from the Autotrans Single Axis Lift to the fully automated Autotrans Mk4 Major, which handles loads of up to 80 kg and can operate several Autotrans heads simultaneously.

Autotrans systems may include load/unload stations or feed and exit conveyors. A 'basket recognition' feature available on Autotrans Mk4 systems allows automatic selection of the correct pre-programmed cleaning process to suit the basket contents.

Reduced running costs
Automation of the cleaning process reduces running costs on both solvent and aqueous systems by assuring consistent, repeatable quality, reducing reject rates, and increasing throughput.

With Microsolve systems further cost reductions result from controlling speed of basket entry and withdrawal from the vapour zone, thus reducing solvent drag-out and losses to atmosphere caused by disturbance of the vapour blanket.



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Guyson International

Guyson International Limited is the largest independent manufacturer of blast finishing, spray washing and ultrasonic cleaning equipment in Europe and supplies a worldwide customer base. Guyson offer automated handling solutions, where suitable, including both robot load & unload and also pick & place options.

Comprehensive ranges of automatic and manual blast cabinet systems are available to suit all production situations. Specialist applications include surface treatment of medical implants, shot peening of turbine blades and surface preparation of components such as cutting tools, to improve coating adhesion, prior to PVD coating.

Ultrasonic equipment includes bench top baths for laboratory, medical and light industrial use and ultrasonic cleaning tanks for industrial use. Microsolve systems for precision cleaning in wide range of sectors including electronics, optics, aerospace and defence, as well as multi-stage aqueous ultrasonic systems for specialised cleaning of components such as medical implants, hard disk drives, diamonds, optics etc.

Also available are a range of aqueous spray wash equipment including conveyorised tunnel washers, rotary basket washers, rotary drum washer for small parts, a PCB stencil cleaner and a compact high impact hot aqueous spray washer designed for the workshop. Full product and application information for all equipment is available on the Guyson website.

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