



**Highclean Ultrasonics**<sup>®</sup>  
Manufacturing of Ultrasonics Cleaning System  
AN ISO 9001 : 2008 Certified Company



### COMPANIES PROFILE.



### COMPANIES DETAILS.

#### About Us

*With the view to meet the cleaning and maintenance requirements of several industries, HIGHCLEAN ULTRASONICS is engaged in manufacturing, exporting and supplying of industrial ultrasonic cleaners, spray washing machines and vapor degreasers. Our wide range is designed using latest technology and thus adheres to the international standards of quality. The company was established in the year 1992 by Mr. Dharampal Singh Tomar, who holds vast experience in dealing in ultrasonic technology. His business insight has helped us in grabbing the potential of the industry and addressing the demands of several industries like printing, medical, automobile, jewelry and air conditioner components to name a few. Serving the demands of these industries, we have come a long way, and established a reputed clientele for ourselves in the domestic and international markets.*

#### Our Aim and Objective

*“We ensure that our equipment reach the clients in the stipulated time frame. We value the feedback of our clients for enhancing the performance and quality of our range of ultrasonic cleaning systems. Our objective is to manufacture the ultra modern ultrasonic washing equipments and cleaning systems that satisfies our clients’ unique requirements. As we feel that our client looks for perfection in our equipment, we must incorporate advance features to satisfy their cleaning requirements.”*

## Our Team

*It is owing to the unswerving commitment of our team that we have been able to offer our clients with a quality assured range of ultrasonic cleaning systems, spray washing machines and vapor degreasers. A vital aspect of our organization, our expert professionals are backed by detailed knowledge regarding each and every stage of manufacturing process. Our team of professionals includes the following:*

- *Engineers*
- *Technical experts*
- *R&D executives*
- *Quality inspectors*
- *Skilled workers*
- *Marketing personnel*

*Our expert professionals continue to update themselves with the latest demands of the market and are consistently contributing towards the growth and development of our organization.*

## Quality Assurance

We have nurtured a quality assurance team by which we are able to undertake strict measures for aligning our range of industrial ultrasonic cleaning systems, spray washing machines and vapor degreasers to international standards of quality. For guaranteeing zero defects in our equipment, we ensure complete vigilance of our manufacturing process and conduct strict tests to conform its quality. Our testing is based on the following parameters:

- Durability
- Performance
- Uptime and speed
- Operational fluency
- Effectiveness in cleaning

Based on our quality driven approach, we have been able to garner numerous accolades from our clients across the globe.

### Contact Office

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## **TABLE TOP ULTRASONIC CLEANER**



The Most Powerful Tabletop Ultrasonic Cleaner Available Highclean Ultrasonics Table top cleaner is a compact, stainless steel cleaner that delivers the power and reliability you'd expect from a more expensive industrial model. Utilizing exclusive piezo ceramic ultrasonic transducers and a heavy gauge, polished stainless steel housing, the compact cleaner offers outstanding performance and value when compared to cheap disposable piezoelectric units. Use of durable stainless steel materials and analog controls provide for minimal maintenance and years of trouble-free service. The Tabletop cleaner uses Highclean's environmentally safe, water-based cleaning formulations to remove soils from a wide variety of metal, plastic, ceramic or glass parts -- with the use of solvents or neutral base chemicals.

**Consider These Key Features And Benefits Of Highclean's Tabletop Cleaner:**

\*30minutetimerforaccuratecycleTimes

\*Drain valve makes draining and refilling quick and easy  
 \* Stainless steel cabinet, parts basket (optional) and lid (optional) holds up to virtually any environment

\*Industrialdesign/durability / piezo ceramic transducers

\* 30-40 kHz Sweep Frequency generator provides effective cavitation with no standing waves or hot spots

### **Technical Specifications**

Specification are subject to change without notice

Average Ultrasonic Power	Tank Material	Tank outer cabinet material	Tank Size L x W x H (inch )	Tank Capacity (liters)	Generator Type	Input Power A/C
UC-150 W	SS316/16G	SS304/ M.S.	7''x6''x6''	3.90	Built-in / separate	1 Ph
UC-250 W	SS316/16G	SS304/ M.S.	10''x8''x6''	7.50	Built-in / separate	1 Ph
UC-300 W	SS316/16G	SS304/ M.S.	8''x8''x10''	10.00	Built-in / separate	1 Ph
UC-500 W	SS316/16G	SS304/M.S.	15''x12''x10''	28.00	Built-in / separate	1 Ph



DIGITAL CONTROL OUTSIDE S.S.BODY  
MODEL AVAILABILITY 1500W TO 2000W



MANUAL CONTROL OUTSIDE S.S.BODY  
MODEL AVAILABILITY 1500W TO 2000W



DIGITAL CONTROL OUTSIDE BODY  
M.S.POWDER COATED MODEL  
AVAILABILITY FROM 1500W TO 3000W



DIGITAL CONTROL OUTSIDE BODY  
M.S.POWDER COATED MODEL  
AVAILABILITY FROM 500W TO 750W



DIGITAL CONTROL OUTSIDE BODY  
M.S.POWDER COATED MODEL  
AVAILABILITY FROM 500W TO 750W



TRAY



DIGITAL CONTROL OUTSIDE BODY  
M.S.POWDER COATED MODEL  
AVAILABILITY FROM 500W TO 750W



MANUAL CONTROL OUTSIDE S.S.BODY  
MODEL AVAILABILITY 500W TO 500W



DIGITAL CONTROL OUTSIDE S.S.BODY  
MODEL AVAILABILITY 500W TO 500W

## SINGAL CHAMBER ULTRASONIC CLEANING SYSTEM



The Single Chamber Unit is designed to set on a countertop, placed into a cut away, or put in a custom built stainless steel frame for portability. This unit's ability to be used singly or incorporated into a system makes it adaptable to almost any application. The rugged design includes heavy gauge stainless steel construction to stand up to any environment.

Economically designed for tough batch cleaning, Single Chamber Units are ideal for the removal of oils, ground in buffing and polishing compounds and a variety of hard-to-remove contaminates. The powerful scrubbing action of the exclusive piezo ceramic ultrasonic transducers reaches even the smallest of crevices and blind holes. The Single Chamber Units use Highclean's environmentally safe, water-based cleaning formulations to remove soils from a wide variety of metal, plastic, ceramic or glass parts -- without the use of solvents or harmful chemicals

[Ideal For Incorporation Into Your Existing Cleaning System. Consider These Features Of Highclean's Single Chamber Unit](#)

### **Salient Features:**-----

- \* Transducers Mounted on Studs by Special High Capacitance Welding-----
- \* Mesh Type SS Baskets-----
- \* Thermostatic Controlled Heating -----

### **Optional Features:**-----

- \* Castor Wheels-----
- \* Level Sensors-----
- \* Mechanical / Electronic Timers -----
- \* Digital Temperature Indicator/ Controller-----
- \* Stainless Steel Enclosure -----
- \* Filtration System-----
- \* Oil skimmers -----

Average Ultrasonic Power	Tank Material	Tank outer cabinet material	Tank Size L x W x H (inch )	Tank Capacity (liters)	Generator Type	Input Power A/C
UC-150 W	SS316/16G	SS304/M.S.	7''x6''x6''	3.90	Built-in / separate	1 Ph
UC-250 W	SS316/16G	SS304/M.S.	10''x8''x6''	7.50	Built-in / separate	1 Ph
UC-300 W	SS316/16G	SS304/M.S.	8''x8''x10''	10.00	Built-in / separate	1 Ph
UC-500 W	SS316/16G	SS304/M.S.	15''x12''x10''	28.00	Built-in / separate	1 Ph
UC-600 W	SS316/16G	SS304/M.S.	12''x12''x18''	40.50	Built-in / separate	1 Ph
UC-750 W	SS316/16G	SS304/M.S.	15''x12''x18''	51.00	separate	3 Ph
UC-1000 W	SS316/16G	SS304/M.S.	24''x12''x18''	81.00	separate	3 Ph
UC-1500 W	SS316/16G	SS304/M.S.	30''x145''x18''	126.00	separate	3 Ph
UC-2000 W	SS316/16G	SS304/M.S.	30''x18''x20''	168.00	separate	3 Ph
UC-2500 W	SS316/16G	SS304/M.S.	36''x12''x18''	201.00	separate	3 Ph
UC-3000 W	SS316/16G	SS304/M.S.	40''x20''x20''	250.00	separate	3 Ph

**SPECIAL FREQUENCY: 30 to 40 kHz.**



## MULTISTAGE ULTRASONIC CLEANING SYSTEM



### **OLD METHOD OF CLEANING**

The current practice involves use of chlorinated solvents like TCE, PCE etc. that are the choice solvent used through the industries in their cleaning process. Aqueous ultrasonic cleaning system are very popular due to their good solvency, lower heat of evaporation, high or absence of flash point, non-corrosive nature, relative stability & compatibility with metals & glass. However all chlorinated solvents are hazardous to human health & environment. Some chlorinated solvents are suspected to cause cancer (Carcinogenic) over prolong exposure. Being hazardous to health their usage has come under intense investigation from pollution control & health authorities & has already been banned by developed countries. This has lead to shift to alternative cleaning technology based on aqueous solvents

Another factor driving the shift to aqueous ultrasonic cleaning system is the environmental hazard caused by chlorinated solvents due to their Ozone depleting property. Due to this they have been targets of strong Government regulations throughout the world. It may be not long before similar legislation is introduced in India to phase out their usage

### **THE NEW METHOD**

Aqueous ultrasonic cleaners are environmentally benign, technically feasible alternative to solvent cleaning. The medium used for cleaning is predominantly water compounded with Alkali, Surfactants, Water conditioners, Corrosion inhibitors, Foam stabilizers etc.

Aqueous ultrasonic cleaners in many cases have replaced solvents without sacrificing cleaning performance. However due to the nature of solvent used, successful implementation of aqueous ultrasonic cleaning system require a careful design effort necessitated due to the multistage operations involved like While solvent based cleaning primarily rely on chemical properties of the solvent, whereas aqueous ultrasonic cleaning system rely on the mechanical

properties like high-pressure spray, Ultrasonic agitation, dunking, etc. apart from the chemical properties of the aqueous medium.

### **1.Pre cleaning tank (Injection flood wash)**

A very high-pressure spray of liquid is introduced within the process liquid to create a strong turbulence causing effective mass transfer between the chemical (detergent) and the contaminant (oil). Subsequently saponification and emulsification processes are carried out

### **2. Ultrasonic Cleaning.**

Ultrasonic power is created by Piezo electric crystals suitably bonded and excited by a high frequency signal create an alternate pressure effect in the liquid which dislodges minute particles. This effect tears apart the solution and produce cavitation bubbles. When these bubbles collapse, during the compression mode of the cycle, high pressure mechanical effects are created blasting away the solid soil from the surface. While Ultrasonic cavitations aids in the solvency of the oil and fat in the cleaning media and the cavitation power helps in dislodging the solid soil.

### **3. Rinsing**

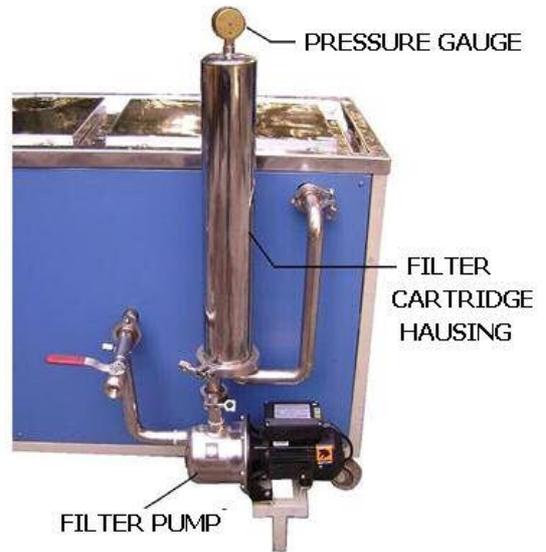
The carry over chemicals on the surface of the components are removed in the rinsing station. To achieve a quick dissolution of the carry over chemicals the water is heated. Many a time this process is done twice at different stations.

### **4. Drying Hot air blow**

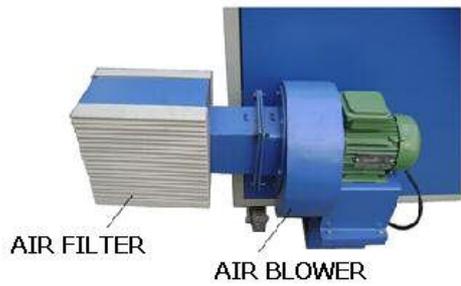
the components are dried in this station by a blast of hot air at around 100 deg



- 1) *Filter pump*
- 2) *Ultrasonic Tank Drain*
- 3) *Rinsing Tank Drain*
- 4) *Air Connection for Manual Air Gun & Rinsing Tank Bubbles.*
- 5) *Manual Tank Air Wash Drain*
- 6) *Blower*



FILTRATION SYSTEM



## SINGLE / MULTI CHAMBER VAPOUR DEGREASERS



**HIGHCLEAN ULTRASONICS** Vapour Degreasing System enhances cleaning speed and effectiveness where high degree of cleaning is required. These systems save energy, labour, floor space, consumables and hence most cost effective. **How does it work?** The components are first cleaned in pre-cleaning chamber for removal of gross contaminants, followed by vigorous ultrasonic agitation. Then the components are held in vapour chamber for vapour condensation to remove the residual contamination.-----

As the components reach the vapour temperature the condensation stops and components come out clean and dry. For efficient solvent recovery, water is circulated in the condensing coils. The system comprises of two, three or four chambers depending upon the level of contamination and degree of cleaning required. Units are also available with direct refrigeration cooling systems, distillation plants, filtration plants and fume extraction systems.-----

### **MULTI STAGE ULTRASONIC VAPOUR DEGREASING SYSTEM**

HIGHCLEAN ULTRASONICS Vapour Degreasing Systems come with elegantly painted, compact, portable cabinets and are ideal for following applications

**General Industries**-----  
Tools, dies, moulds, castings, gear, mechanism, pumps, bearings, spray guns, vacuum valves, fire extinguishers, cutlery, scissors, silverware, brassware. LPG valves & components etc.-----

#### **Electronics**

Semiconductor components, PCB's, Electronic assemblies, Capacitors, Rotary Switches, Resistors, Electronic Microscope Components, Cathod Ray Tube Components, Solar Cells.-----

#### **Electricals**

Motors, Generators, Supply Meters, Voltmeters, Ammeters, Switches, Thermostats, Switch Gears, Vacuum Interrupters, Circuit Breakers, etc.

**Aircraft**

Bearings, Pumps, Filters, Hydraulic Components, Altimeters, Anemometers, Gyroscopes.

**Automotive**

Fuel Injectors, Spark Plugs (Carburetors), Pistons, Valves, Bearings, Filters, Engine Blocks, Shock Absorbers.

**DEGREASING SYSTEM-----**



Technical specifications for 2 chamber vapor degreasing system

		HU/2/250	HU/2/500	HU/2/1000	HU/2/1000
Chamber Dimensions Effective (inch)	U/S Chamber( L X B X H )	10'' x 8''x 6''	15'' x 12'' x 10''	15'' x 12'' x 18''	24'' x 12'' x 18''
Total Solvent Cap. (Lit)	Vapour Chamber	10'' x 8'' x 16''	15''x 12'' x 20''	15'' x 12'' x 28''	24'' x 12'' x 28''
U/s Power Output	230 V, 1 Ph / 50 Hz OR 415 V, 3 Ph 50 Hz with four wires	7.5	28	51	81
		250w	500w	750w	1000w



Technical specifications for 3 chamber vapor degreasing system

		HU/3/250	HU/3/500	HU/3/1000	HU/3/1000
Chamber Dimensions Effective (mm)	pre.Cleaning Ch.	10'' x 8'' x 5''	15'' x 12'' x 9''	15'' x 12'' x 17''	24'' x 12'' x 17''
	U/S Chamber	10'' x 8'' x 6''	15'' x 12'' x 10''	15'' x 12'' x 18''	24'' x 12'' x 28''
	Vapor Chamber	10'' x 8'' x 16''	15'' x 12'' x 20''	15'' x 12'' x 28''	24'' x 12'' x 28''
Total Solvent Cap. (Lit)	440 V, 3 Ph / 50 Hz with four wires	7.5	28	51	81
U/s Power Output		250w	500w	750w	1000w

## **MULTI STAGE PLC CONTROLLED AUTOMAION SYSTEM**



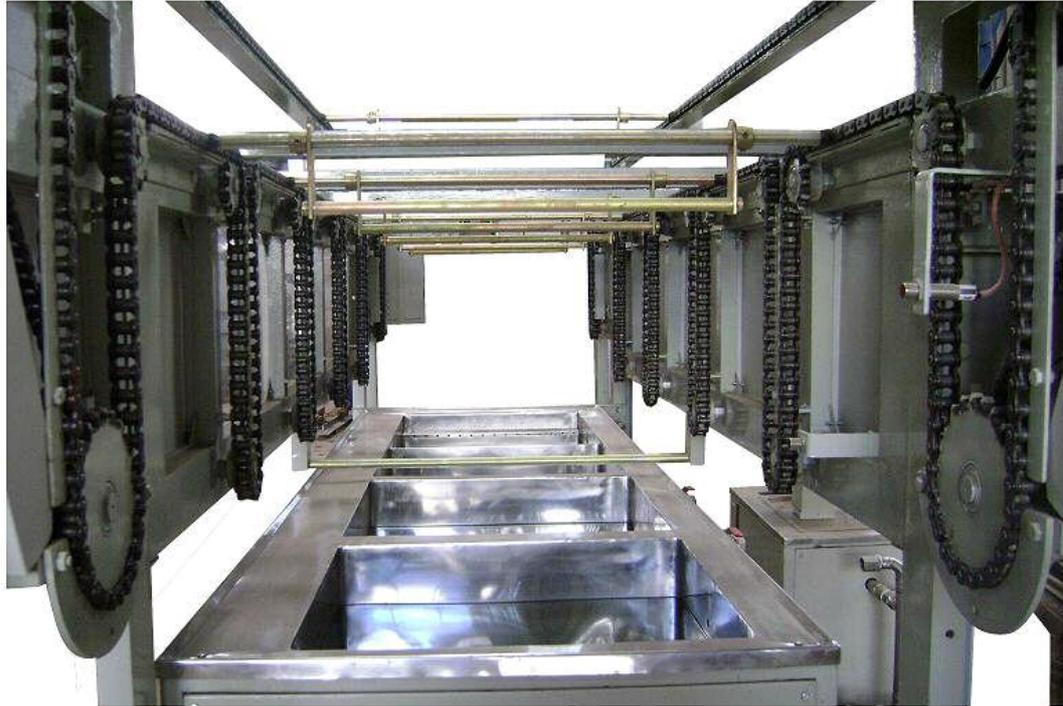
### **Let Design A Cleaning Systems For Your Specific Needs.**

Highclean engineers will customize a cleaning system to handle your specific cleaning application. We have the know-how to provide the perfect system for your cleaning process -- big or small, no matter what your budget.

We provide custom designed aqueous cleaning equipment to meet and/or exceed the quality requirements of the customer's cleanliness specifications. We design and build large multistage systems, modular cleaning systems and rotating platform spray systems.

We'll complete a thorough analysis of your cleaning process, considering the items to be cleaned, the contaminant to be removed, where the cleaning step fits into the overall process, throughput, and more. We will then recommend the ideal process for your facility, spelling out exactly how best to achieve and surpass cleaning specifications.

Integrated materials handling can be incorporated to automate the process and reduce operator intervention. Machines are manufactured from bright annealed and electro polished stainless steel. Many industrial applications are suited to cleaning using water-based detergents in multi-stage ultrasonic systems.



INSIDE VIEW OF MULTISTAGE PLC CONTROLLED AUTOMATION SYSTEM.

#### We Define For You:

- \* Multi-stage
- \* Modular
- \* Rotating spray systems
- \* Drying - a range of options
- \* Fully programmable operation
- \* Integrated handling
- \* The ideal wash/rinse/dry (or any combination) for your application; including tank sizes
- \* The best temperature for the bath and how to achieve and maintain this temperature.
- \* The time necessary to clean each part/batch and how to meet you production quantity requirements
- \* The ideal solution for your process



### **The Ideal Combination Which We Provide Is :**

#### **1.Pre cleaning tank (Injection flood wash)**

A very high-pressure spray of liquid is introduced within the process liquid to create a strong turbulence causing effective mass transfer between the chemical (detergent) and the contaminant (oil). Subsequently saponification and emulsification processes are carried out

#### **2.Ultrasonic cleaning.**

Ultrasonic power is created by Piezo electric crystals suitably bonded and excited by a high frequency signal create an alternate pressure effect in the liquid which dislodges minute particles. This effect tears apart the solution and produce cavitation bubbles. When these bubbles collapse, during the compression mode of the cycle, high pressure mechanical effects are created blasting away the solid soil from the surface. While Ultrasonic cavitations aids in the solvency of the oil and fat in the cleaning media and the cavitation power helps in dislodging the solid soil.

#### **3.Rinsing**

The carry over chemicals on the surface of the components are removed in the rinsing station .To achieve a quick dissolution of the carry over chemicals the water is heated. Many a time this process is done twice at different stations.

#### **4.Top Air Wiper**

The left over water after the cleaning is removed in this stage itself from the Component.

### 5. Drying Hot air blow

The components are dried in this station by a blast of hot air at around 100 deg.

