

Total Solution with Ultrasonic for All Applications

We are striving to work for Optimal Ultrasonic
Solutions of Welding and Cleaning Methods



GLOBAL LEADER

We hope to become global leader in the world.

How are you?

We are really appreciated at your attention on our company, Durasonic and our product.

Durasonic had developed and commercialized BLT Transducer for the first time in Korea and has been focusing on ultrasonic industry such as precision cleaning, welding, spray, screen using ultrasonic. As the result of our efforts we became advanced company in Asia.

We are developing innovative products continuously through expanding research center to become leading company from chaser. We will maximize our effort of all our employees and lead them to develop together by creating autonomous working environment.



Company History

2010 ~ Present

- 2018 · Developed and commercialized Ultrasonic welding machine
- 2017 · Expanded R&D Center
- 2016 · Awarded by Gyeonggi-do Governor's Commendation
- 2015 · Awarded for the honor of a stone pagoda tower industry
- 2015 · Awarded for USD 20M export in Trade day
- 2015 · Awarded by director of medium and small-sized enterprises Administration
- 2015 · Sale office in Vietnam
- 2013 · Global Small and Powerful Enterprise Development Project
- 2012 · Sale office in Thailand
- 2011 · Awarded for USD 5M export in Trade day
- 2011 · Appointed as ATC by Ministry of Knowledge Economy
- 2010 · Converted to R&D Center from Department
- 2010 · Industry academy agreement with Korea Polytech University

2000 ~ 2009

- 2009 · Moved Headquarter to the current address
- 2009 · Industry academy agreement with Sungkyunkwan University
- 2009 · Awarded by Gyeonggi-do Governor's Commendation
- 2009 · Awarded for USD 3M export in Trade day
- 2008 · Industry academy agreement with HanYang University
- 2007 · Named as DURASONIC CO.,LTD.
- 2006 · Registered Trademark as Durasonic
- 2005 · Developed automatic lens cleaning machine and IPA recycling machine
- 2004 · Appointed as the supplier of ultrasonic cleaning machine for Japan CANON
- 2004 · ISO14001
- 2003 · CE MARK (Megasonic Unit)
- 2002 · Patent registration in Europe (Ultrasonic Transducer)
- 2002 · Patent registration (Ultrasonic Transducer)

1990 ~ 1999

- 1998 · Contracted for Agency in North America and Europe
- 1993 · Exported Ultrasonic transducer
- 1991 · Developed and commercialized Ultrasonic transducer
- 1990 · Founded in IL SAN Suntech

Qualification Control (Certification)



ISO 9001
ISO 14001



CE-Ultrasonic Generator
CE-Multisonic

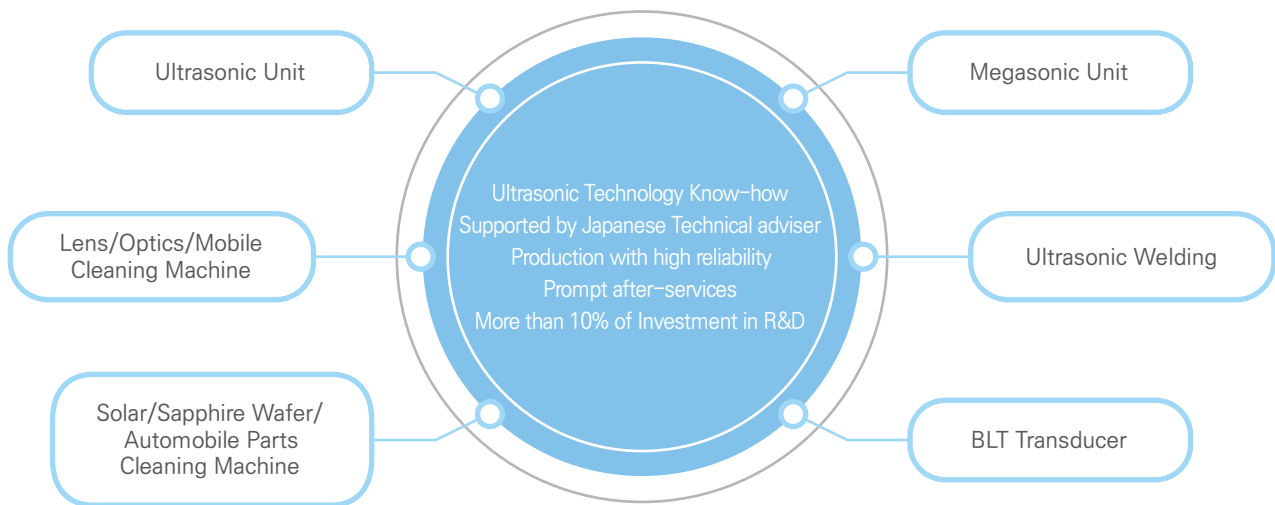


NRTL



INNO BIZ

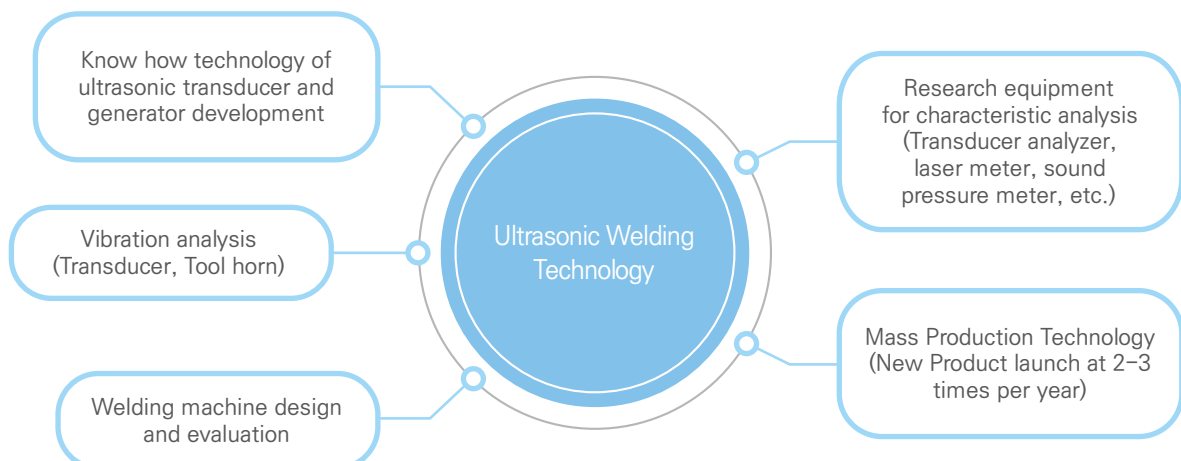
Business Sector



Strength and Competitiveness

- Possessed unique technology related with ultrasonic and secured product excellence
 - Deliver ultrasonic units and cleaning machines to specialized company in more than 10 countries including U.S.A, Europe, and Japan.
 - Deliver Megasonic units to semiconductor equipment manufacturer at domestic and abroad.
- Secured nano-sized cleaning technology through megasonic unit development of semiconductor and OLED
- Various test capability at the nation's largest Cleaning R&D center
- Developed cleaning machine for Solar wafer, successfully set up in Japan and domestic successfully, and verified quality.
- R&D center possesses diverse inspection equipments such as ultrasonic 3D sound pressure measurement, impedance analyzer, laser amplitude analyzer, optical microscope for ultrasonic research
- Patent related with ultrasonic at domestic and abroad
- Technology development through foreign technical advisors

Technology

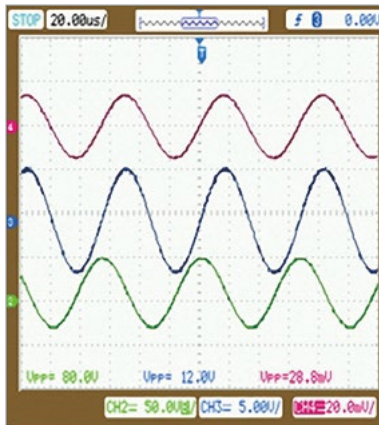


Design and Analysis

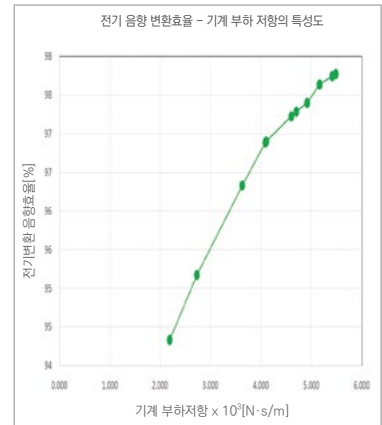
Durasonic has been developed transducer development and production to offer stable production environment by delivering high quality product for 30 years. By the day, we have secured related ultrasonic technology and produced fine product through various inspection.



Standard Load Test

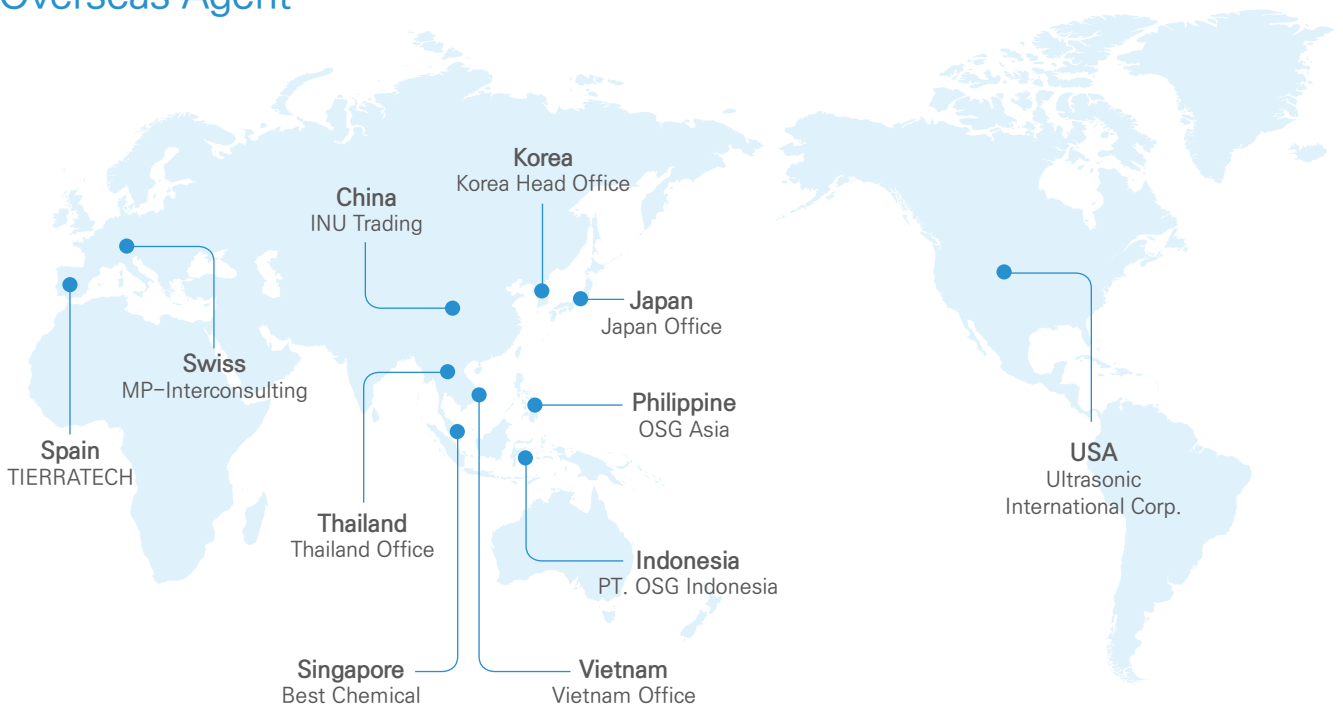


Vibration Velocity Measurement



Character Analysis

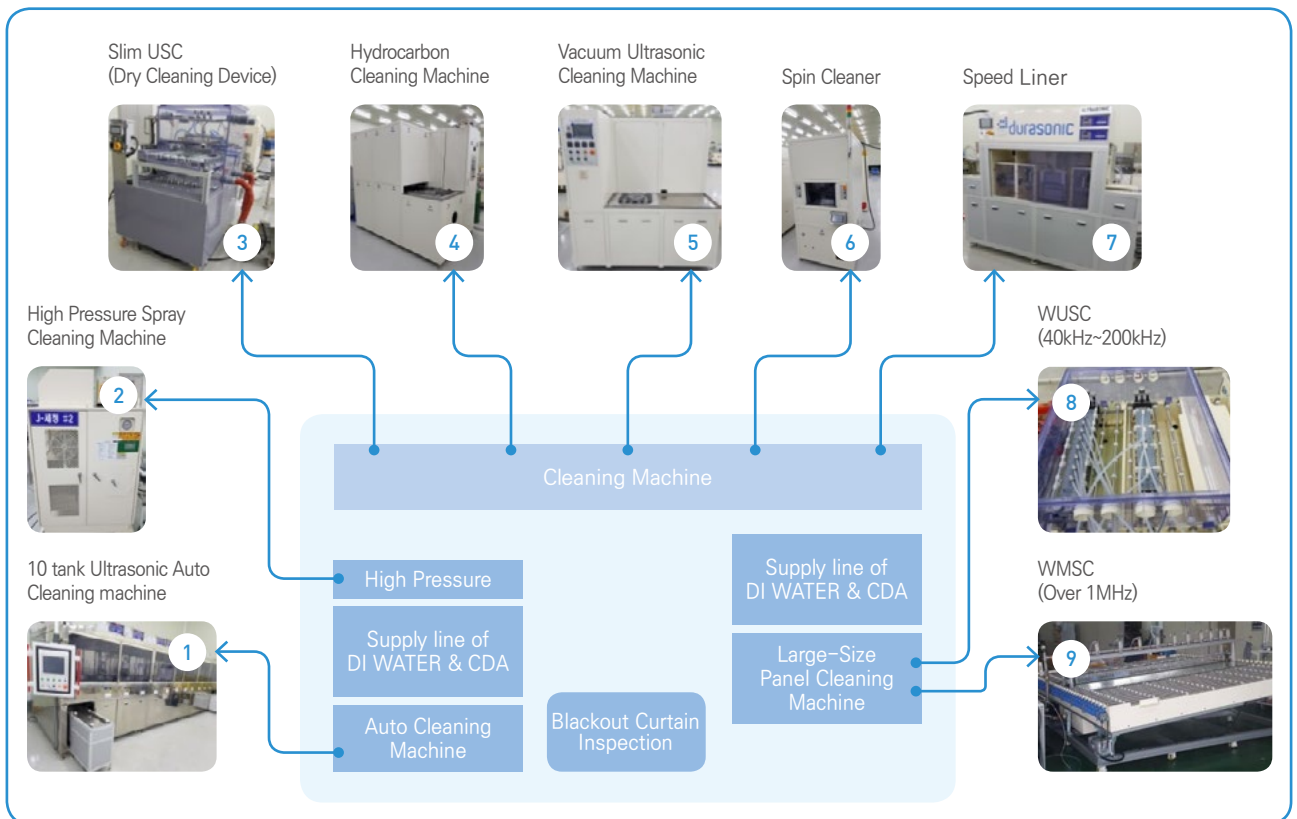
Overseas Agent



R&D Center



Main Inspection Equipment



Transducer



Transducer & Booster



Product	Frequency (kHz)	Admittance (mS)	Capacitance (pF)	Output (W)	Booster Tighten (N·m)
7015-4PLC	14.8±0.2	250±50mS	19,000±10%	2,000	110
6015-4PLC	14.8±0.2	150±50mS	10,500±10%	1,500	100
5020-4PLC	19.7±0.2	200±50mS	11,000±10%	700	80
5020-4PSC	19.7±0.3	150±50mS	11,000±10%	700	80
5020-6PSC	19.3±0.2	250±50mS	19,000±10%	2,400	80
5015-6PSC	14.9±0.2	250±50mS	19,000±10%	2,400	80
3820-6PSC	19.8±0.3	250±50mS	11,000±10%	700	80

Ultrasonic Welding Machine

DURASONIC D9800



FEATURES

- D9800, Plastic Welding
- Welding Mode : Time, Energy, Max Power, Depth
- 10.4" VGA Touch Screen
- Digital Amplitude Set-up
- 200 welding recipes can be set up
- High Welding Performance
- USB Interference (Data output in excel form)
- Performed by graph for the welding result
- LED light

Specification		
Output	2500W	
Frequency	20kHz	
Input Power	Single Phase AC 220V x 50/60Hz	
Rated Current	12A	
Pressure Stroke	120mm	
Machine	Size	710(L) x 602(W) x 1,155~1,455(H)mm
	Weight	120kg
AMP	Size	310(L) x 470(W) x 230(H)mm
	Weight	10kg
Pressure	0 ~ 200 Kgf	
Output Regulation	Possible	
Body Height Adjustment	280mm	
Min. Weldtime	Control Per 0.05/0.01 sec	
Distance from frame to horn	250mm	

DURASONIC D9810



FEATURES

- D9810, Metal Welding
- Weld mode : Time, Pressure, Energy
- 10.4" VGA Touch Screen
- Digital Amplitude Set-up
- Preset for welding recipe
- Tilting control device at Anvil parts for microscopic set up
- High Welding Performance
- Equipped with load cell and indicator
- Performed by graph for the welding result

Specification		
Output	2500W	800W
Frequency	20kHz	40kHz
Input Power	Single Phase AC 220V x 50/60Hz	
Rated Current	12A	3.5A
Machine	Size	380(L) x 580(W) x 650(H)mm
	Weight	110 kg
AMP	Size	310(L) x 470(W) x 230(H)mm
	Weight	10kg
Pressure	0 ~ 400Kgf	0 ~ 130Kgf
Output Regulation	Possible	Possible
Operation	Ø100 PNEUMATIC ACTUATOR	Ø50 PNEUMATIC ACTUATOR
Max. Stroke	50mm	30mm
Min. Weldtime	Control Per 0.05/0.01 sec	Control Per 0.05/0.01 sec

Gun-type Welding Machine

DURASONIC D9801-40, 35



		Specification	
Output		800W	1000W
Frequency		40kHz	35kHz
Input Power		Single Phase AC 220V x 50/60 Hz	
Rated Current		3.5A	4.5A
Machine	Size	Ø50 x 250	
	Weight	1kg	
AMP	Size	170(L) x 380(W) x 230(H)mm	
	Weight	7kg	
Output Regulation		Possible	
Operation		Switch type	

DURASONIC D9801-30



		Specification	
Output		1500W	
Frequency		30kHz	
Input Power		Single Phase AC 220V x 50/60 Hz	
Rated Current		6.8A	
Machine	Size	Ø50 x 250	
	Weight	1kg	
AMP	Size	170(L) x 380(W) x 230(H)mm	
	Weight	7kg	
Output Regulation		Possible	
Operation		Switch type	

Ultrasonic Welding Machine

OPERATION SCREEN

Durasonic ultrasonic welding machine provide new level of ultrasonic welding. User can obtain best welding result on various product through intuitive operation and user prompt without expert knowledge and systematic education by combining High function of ultrasonic structural element, high quality factor, and latest control solution.



Ultrasonic Unit – Generator

D9500



D9500L



FEATURES

Variable SWEEP & BURST FUNCTION MM Method(Multi modulation)

- **Various Frequency**
20KHz ~ 160KHz
- **Communication**
External control facilitated by loading communication functions as the basic specifications
- **High Output Power**
Maximum power up to 2,400 Watt (D9500L)
- **Multiple Display Screen**
Output/Frequency/Operating time can be seen through the display screen (7 segments)
- **No adjustment is required upon exchange of transducer**
Generator adjustment is not required when transducer is changed.
- **Powerful Cavitation**
Power cavitation which changes the water level by optimum frequency and automatic output control
- **Status Screen**
Operation set-up and status can be displayed on LCD screen
- **MM Function**
Uniform distribution of sound pressure is enabled by MM (multi modulation) function

Model		D9500	D9500L
Power Source		AC200V ~ 240V ± 10% ø1 50/60 Hz 2.4kVA	AC200V ~ 240V ± 10% ø1 50/60 Hz 3.6kVA
MAX. Power		1,200Watt	2,400Watt
Frequency		28kHz, 40kHz	
Operation Mode (Normal)		Digital PLL / MM : SWEEP, BURST(9 STEP CONTROL) DISPLAY	
DISPLAY	Setting / Status LCD(16x2)	Status Display	
	Operation	Operation By Numeric(Power / Frequency / Operation Time)	
External Control		Signal Port : Power Control / Display(0~10VDC), On/Off(Contact)	
		RS 422 : Power, Mode, Operating time, Alarm etc.	
Ambient Environment		5 ~ 40°C, 80% RH	
Size		320(W) x 405(L) x 130(H)	350(W) x 450(L) x 155(H)
Weight		7.6kg	10.7kg

Multisonic Unit – Transducer

MULTISONIC



Model	MULTISONIC					
Frequency(kHz)	Multisonic 25			Multisonic 40		
		25	75	125	35	105
Power	150 ~ 1,000Watt(Variable)					
Power Source	200 ~ 240VAC Ø1, 50/60Hz					
Led Indicator	8 Elements LED-BAR					
Dimension	350(W) x 485(L) x 150(H) mm					
Net Weight	About 16kg					

FEATURES

- **3 kinds of frequency mode**
Strong and precise cleaning in stages
- **Precise control by internal CPU**
Precise frequency and output control
- **External control**
Output can be controlled through approval voltage (0~10V)
- **FM mode**
Uniform cleaning through restraining standard wave

Ultrasonic Unit – Generator

DURAMEGA 600



Model	DURAMEGA 600
Frequency	750kHz / 1MHz / 1.5MHz
Oscillation	PLL
Output Power	Max. 600Watt
Output Tuning	10 ~ 100%, Constant power control 5-Power level Selection(24VDC)
Input	200 ~ 240 vac, 50/60Hz
Display	LCD(Blue back Light) : Fre'Q, Output, Status
Alarm	3 Ready / RS485
Dimension(mm)	355(W) x 485(L) x 150(H)

MQ SERIES



Model	DURAMEGA MQ Series		
Power Adjustment	Automatic Adjustment		
Oscillation Method	PLL		
Function	Automatic Frequency Tracking		
	Soft Start (2 second)		
Alarm	Error Detection (LINE OPEN/SHORT, Load Error)		
External Control	Control By RS422 Port		
Input	100 ~ 120VAC, 200 ~ 220VAC		
Max Power	300 Watt(Max)		
Dimension(mm)	210(W) x 250(L) x 125(H)		
Frequency	1MHz	2MHz	3MHz

Ultrasonic Unit – Transducer

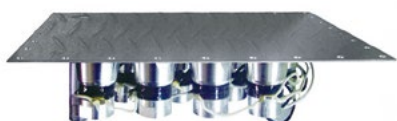
BLT TRANSDUCER



IMMERSIBLE TYPE



PLATE TYPE



FEATURES

- **Easy Installation**
Easy installation and detachment inside of bath
- **Diversified Transducer Frequency**
Diversified Transducer Frequency (28KHz, 40KHz, 80KHz, 132KHz, 200KHz)
- **Excellent Durability**
Excellent durability and long life due to chrome plating treatment of transducer
- **Diversified Shapes**
Flexible hose Type / Bulk Head Type / Plate Type

RECOMMENDED SPECIFICATION

Size	300W	600W	900W	1,200W	1,500W	2,400W	3,000W
Standard Size	170x260	270x310	270x350	270x430	310x430	430x550	480x610
Effective Size	170x220	270x270	270x310	270x390	310x390	430x500	480x560

Ultrasonic Unit – Duratop

FEATURES

- Controlling functions with a microprocessor
- Powerful cleaning power and durability with BLT transducer
- Adjusting ultrasonic output in three steps
- Degassing function for dissolved gas in water
- Excellent appearance and durability by plastic injected.



Model	Duratop 3540	Duratop 4040	Duratop 7040
Transducer	Industrial BLT Type		
Time Range	1~99min (Digital)		
Temp. Range	Ambient~70°C (Digital)		
Frequency	40 KHz		
Housing Material	SUS 304 + PP		
Bath Capacity	5.7 L	10.7 L	20.7 L
Bath Dimensions	300(W) x 155(D) x 150(H)	300(W) x 240(D) x 150(H)	500(W) x 300(D) x 150(H)
Overall Dimensions	385(W) x 255(D) x 270(H)	385(W) x 345(D) x 270(H)	590(W) x 405(D) x 275(H)
Tray Dimensions	240(W) x 120(D) x 100(H)	250(W) x 200(D) x 100(H)	440(W) x 250(D) x 100(H)
Required Power	350 watt	400 watt	700 watt
Net Weight	6.1 kg	7.3 kg	11.8 kg
Voltage	Available from 100 to 240V, 50/60Hz		
Accessory	Lid, Power Cable, Hose (1m), Instruction Manual		

Bench – Top Cleaner

FEATURES

- Custom made, 28kHz ~ 1Mhz Frequency and 600 ~ 2400Watt available
- Generator with timer
- Bath Material : STS 304 standard
- Option : Heater, Frame, Electric control etc



Power Frq	Size	600W	1,000W	1,200W	1,500W	2,400W	3,000W
28kHz ~ 1MHz	Overall Size	310x360x410	390x410x490	390x480x510	410x510x560	520x600x610	560x610x660
	Internal size	260x360x360	330x350x380	330x420x400	410x510x500	450x540x540	550x570x590

Tublar Unit

FEATURES

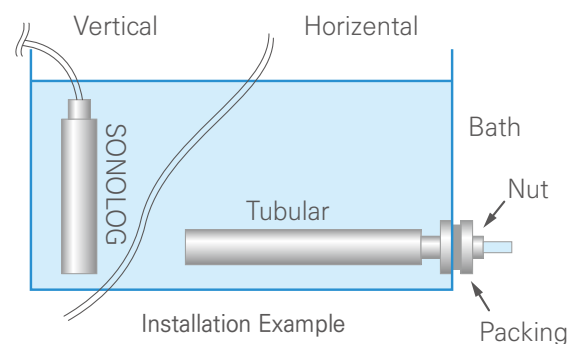
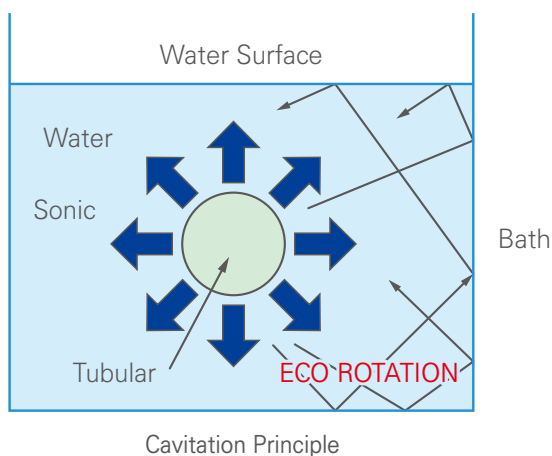
- Cavitation produced all around the tube
- Ultrasonic produced all around of tubular.
 - Leading to multipath reflection
- Uniform ultrasonic regardless of water level
- Simple installation
Flexible hose & Bulk-head type SUS316 Standard
- Application
Vacuum Cleaning, Chemical treatment
Degassing treatment, Concentraion treatment



Flexible Hose Type



Bulk-Head Type

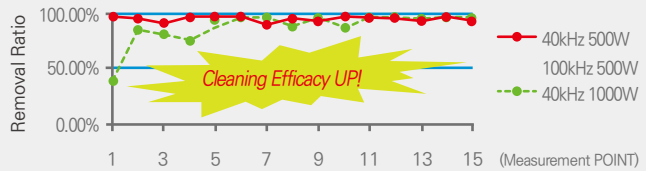


DUplexer

FEATURES

[Simultaneous multiplex ultrasonic cleaning] which operates basic frequency and harmonics at same time.

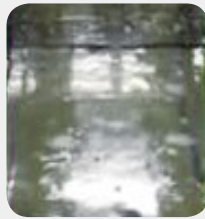
- Various size of contaminant can be removed through single cleaning operation.
- Uniform cleaning effect can be obtained through lots of cavitation.
- Uniform cleaning ability without different result according to the height can be obtained by restraining standing wave



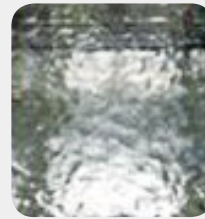
PERFORMANCE COMPARISON



25kHz



84kHz



25kHz + 84kHz

Model	SMS 28 Series		SMS 40 Series	
	SMS2880	SMS28125	SMS40/150	SMS40/160
Frequency	28+80	28+125	40+105	40+160
Max. Output	Fundamental Wave : MAX 1kW Harmonics : MAX 1kW TOTAL : 2kW			
Output Adjustment	0%, 10% ~ 100%			
User Control	Front Panel Switch, I/O signal, serial communication			
Display	4.3" GLCD : Status, 2 FND : Output, Time, Frequency			
External On/Off	On, Off - External control			
Operation Confirm	Front - US LED, Back - Point of contact			
Alarm	Overload, Overheat, Transducer mal-function			

Megasonic Unit – Transducer

BATH TYPE



Model	ULMB-1200	ULMB-1800	ULMB-3000
Frequency	750kHz / 1MHz		
Application	For 6 wafer	For 8 wafer	For 12 wafer
Output Power	1,200 Watt	1,800 Watt	3,000 Watt
Effective Area	140 x 175	210 x 175	280 x 350
Dimension(mm)	247 x 286 x 62	318 x 286 x 62	464 x 433 x 62
Transducer Element	P.Z.T. Transducer		
Material of plate	SUB 316L		

SHOWER TYPE



FEATURES

- Ultrasound driven running water removes contaminants on glass and silicon wafer.
- Continuous supply of running water prevents from recontamination.
- High frequency vibration removes submicron particle without damaging.
- Particles less than 0.2 micron can be removed.

SPOT TYPE



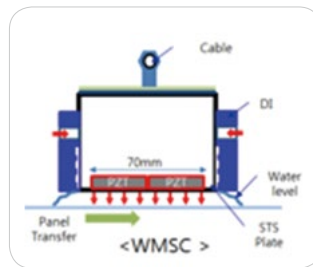
Model	MQS450K-100	MQS450K-40	MQS1M-40	MQS1.5M-40	MQS3M-40
Frequency	450kHz		1,000kHz	1,500kHz	3,000kHz
Rated Output	100W	40W			
Flow Rate	3~4L / min	0.9~1.5L / min			
Length	Ø60x135mm	Ø25x80mm	Ø25x80mm	Ø25x92mm	29x35x92mm
Exhaust hole	Ø8mm	Ø4mm			
Nozzle Type	PP, ceramic	PP, ceramic	PP, PCTFE, PTFE, quartz glass	PP, PCTFE, PTFE, quartz glass, ceramic	
Tube	Outside diameter Ø13	Outside diameter Ø6			
Vibration Plate	Tantalum		Tantalum, Special ceramic		
Environment	5 ~ 40 °C, Humidity : 10 ~ 85 %				

WMSC (Wet MegaSonic Cleaner)

FEATURES

Cleaning unit for FPD Panel (LCD, OLED, Glass)

- Method for direct cleaning on upper part of panel surface by installing at the upper part
- OLED of over 8 generation production through uniform sound pressure and cleaning capability
- Fast water curtain formation at initial injection of glass
- High removal efficiency by large megasonic area
- High cleaning efficiency through direct eject of glass megasonic (under 1 μ m of particle)
- G2~G10.5 line cleaning unit of large Glass (OLED/LCD line)



RECOMMENDED SPEC. DEPENDING ON GLASS SIZE

Panel Size	G 2 (460mm)	G 4 (730mm)	G 6 (1500mm)	G 7 (1870mm)	G 8 (2200mm)	G 8 (2500mm)	G 10.5 (2940mm)	G 10.5 (3370mm)
Specification	1Mhz 600Watt	1Mhz 1200Watt	1Mhz 2400Watt	1Mhz 3000Watt	1Mhz 600Watt	1Mhz 3600Watt	1Mhz 4000Watt	1Mhz 4000Watt
Generator/ Electricity	1pc / 6A	2pcs / 12A	4pcs / 24A	5pcs / 30A	5pcs / 30A	5pcs / 30A	8pcs / 48A	8pcs / 48A
PZT q'ny(1Mhz)	6	10	20	24	30	34	42	48
DI Supply (Gap 4.5mm)	25·SLPM	35·SLPM	65·SLPM	85·SLPM	95·SLPM	100·SLPM	130·SLPM	160·SLPM
Cleaning Area	480mm	750mm	1520mm	1890mm	2220mm	2520mm	2960mm	3390mm

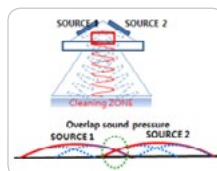
* WMSC needed quantity is recommended depending on glass transfer speed.

* Recommended : 1set / 3,000 – 4,000 speed(mm/min)

Duratwin

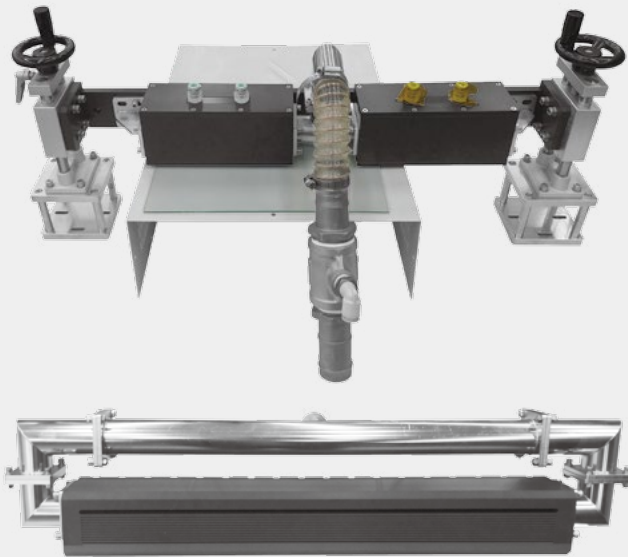
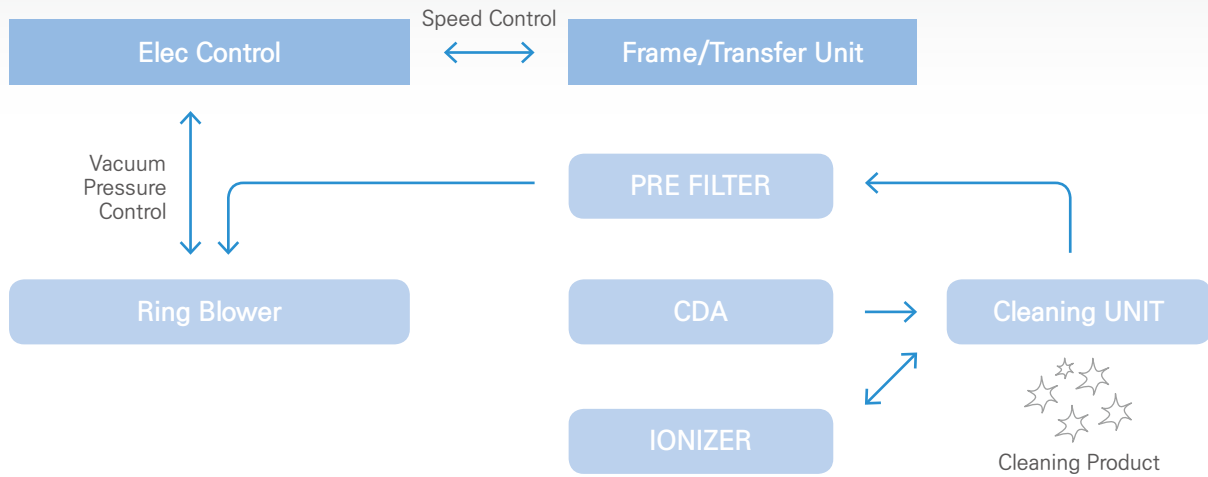
FEATURES

- Cleaning for precise processed good : Appropriated to clean for Wafer, HDD, precise processed good
- Sub-micron : Sub-micron Excellent clean for sub-micron contaminant
- To clean by irradiating ultrasonic directly installed from the top of Wafer
- Transfer ultrasonic energy equally on cleaning area through applying overlap sound pressure by 2 set of transducer
- Nozzle on cleaning side will be made of Quartz in order to avoid metal remains after cleaning.



DRY USC

세정컨셉



USC Nozzle



Controller

FEATURES

- 3um or more Particle removal rate About 90%
- Improved particle removal rate due to various high-speed vibration jets generated in pressure slit
- Pressure is separated from Vacuum, pressure is CDA injected, Vacuum is sucked by Ring Blower
- It is better than Blower circulation method in terms of particle management by using CDA.
- Periodic filter replacement is unnecessary.

Mobile 3D Cover Glass Cleaning System

FEATURES

13-Bath Peeling Auto Machine

- Suitable for glass cutting, before polishing, Cover glass 5 ~ 15.1 "Full automatic cleaning optimization
- Cleaning system by ultrasonic washing and rinsing and drying process of multi-stage type
- Hot air drying and MIR drying, no drying stains
- Provide optimal program according to user environment



Eyeglasses Cleaning System

FEATURES

17-Tank Auto Cleaning Machine

- Automatic cleaning system for optics and lenses
- Ultrasonic Cleaning (Detergent) – Ultrasonic Rinse (RO)
 - Ultrasonic Rinse (DI) – Ultrasonic IPA Immersion
 - IPA Steam Drying
- Cassette type, loading / unloading chain conveyor type
- Optimized system configuration, efficient detergent and wastewater management



MLCC Cleaning System after polishing

FEATURES

- Ceramic Capacitor Parts Cleaner
- Loading/Unloading Robot transfer system application
- Loading → Shower → Ultrasonic Cleaning → Rinse Shower → Dewatering and Drying Process → Unloading Full Automation System
- Camera monitoring system inside equipment



Solar Wafer Cleaning System

FEATURES

Final Cleaning Machine

- After pre-cleaning, the wafers are placed in the prepared cassette for cleaning, rinsing and drying.
- Washing and drying of wafers by multi-bath, ultrasonic washing and rinsing in several stages
- Full automatic wafer cleaning
- Apply optimal cleaning process according to user environment



Sapphire Wafer Cleaning System

FEATURES

- Sapphire wafer 2 to 8 "cleaning
- Ultrasonic Cleaning – Rinse – Dry, Auto cleaning process
- Hot air drying method, MIR drying method



Automotive Parts Cleaning System

RACK BAR CLEANING EQUIPMENT

OIL, CHIP, and others of rack bar can be removed.
Transferring system by robot and dry by air blow.

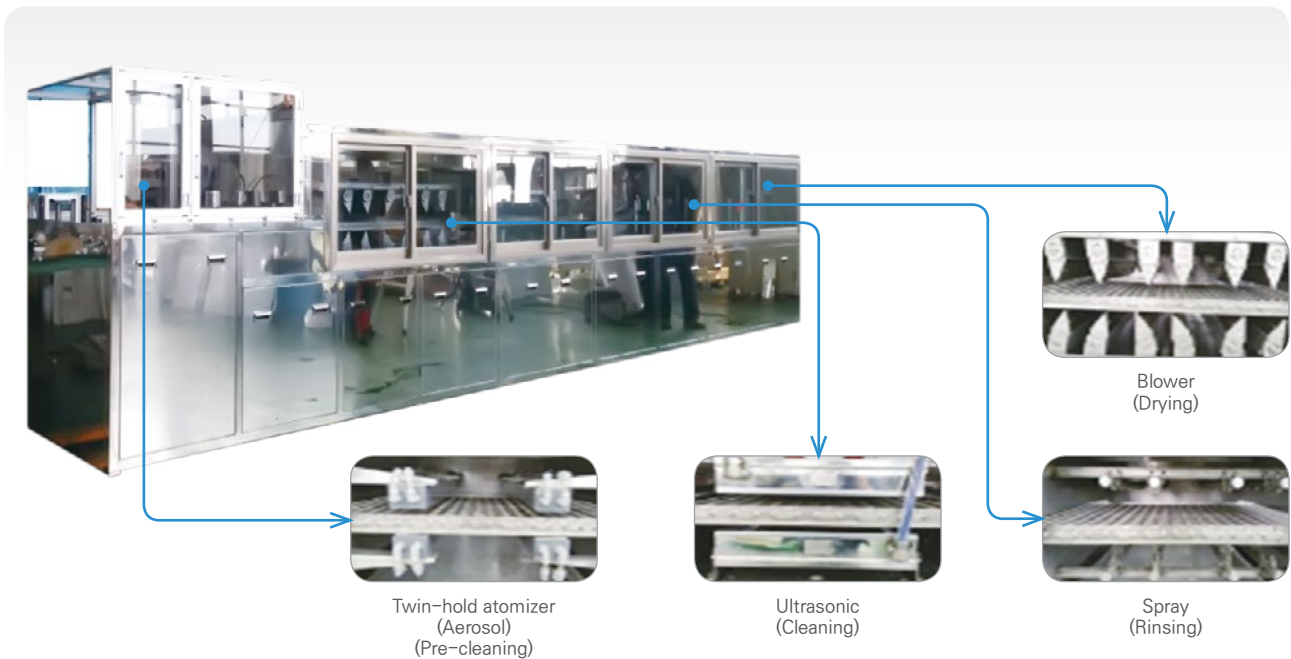


IMPELLER WATERJET CLEANING EQUIPMENT

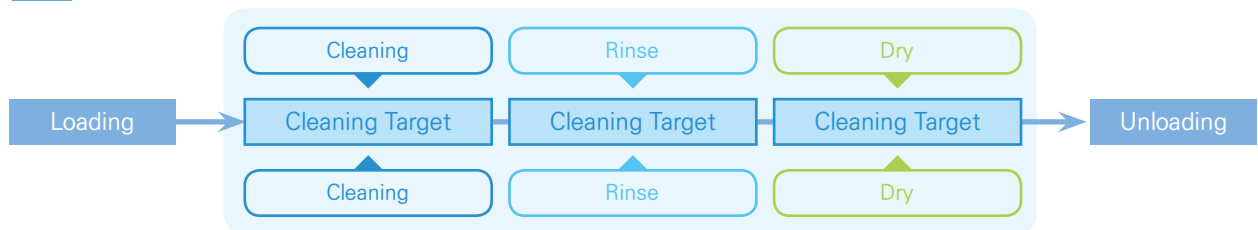
Main process is cleaned by primary and secondary high pressure spray, air drying, and brush process.



Speedliner <IN LINE>



CLEANING FLOW



Hydrocarbon Cleaning System

FEATURES

Hydrocarbon Ultrasonic Cleaner

- Metal parts, automobile parts, electronic parts, etc. can be cleaned
- Excellent dispersibility, no cleaning stain
- Waste water treatment is not required and simple waste liquid treatment is provided by the regenerator
- Economical cleaning system with low loss of detergent
- Vacuum regeneration provides a high recovery rate

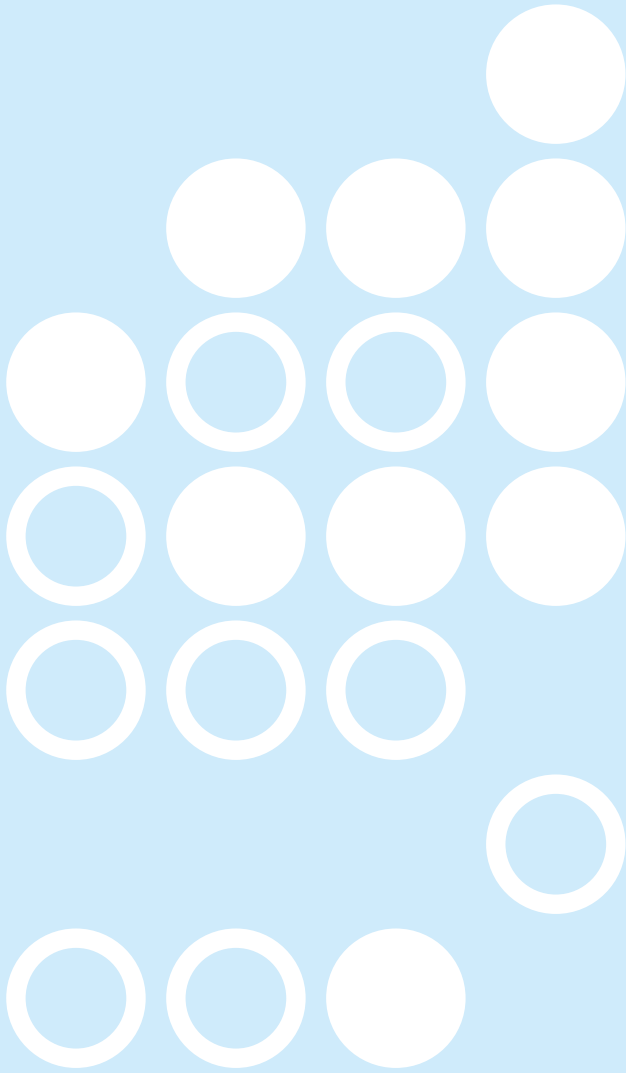


Cleaning Detergent

Detergent can remove effectively various contaminants on metal surfaces with spray, immersion, or ultrasonic after processes. It is excellent detergent in terms of anti-corrosive properties and corrosion resistance regarding non metal material such as iron or aluminum.

구분	Cleaning Method	Product	Color	Cleaning Temperature	Features
Water-Soluble	Ultrasonic	DS-2019F	Blue Transparent	High Temperature (over 50°C)	<ul style="list-style-type: none"> - Aluminum, Nonferrous metal use - Processing oil, antirust oil cleaning - Excellent cleaning performance at dilution concentration of Vol.5~10%
	Ultrasonic and spray	WR-170	No color Transparent	High Temperature (over 50°C)	<ul style="list-style-type: none"> - Increase of cleaning power when heated at high temperature (60°C) - Fewer bubbles in high pressure spray cleaning
Water Insoluble	Ultrasonic	M CLEAN 200	No color Transparent	Room Temperature	<ul style="list-style-type: none"> - Excellent cleaning performance and fast drying speed - Grease, wax, anti-rust oil, heavy pollution etc. - Almost no residue after washing





Durasonic Co., Ltd.

578-13, Cheongbukjungang-ro, Cheongbuk-eup,
Pyeongtaek-si, Gyeonggi-do, 17794, Korea

Tel. +82-31-684-5489 Fax. +82-31-684-5490

E-mail. hsyang@durasonic.com

shshin@durasonic.com

jwchoi@durasonic.com

www.durasonic.com