

TECHNOtalk

Vol. VII Ultrasonic Cleaning

2003

GlobalTech AquaSonic® Ultrasonic Cleaning Systems



JNJ's GlobalTech AquaSonic cleaning systems incorporate a culmination of process controls to provide the ultimate cleaning solutions for today's SMT stencil cleaning demands. We have combined state of the art pulse and sweep ultrasonic generation with our AquaSonic aqueous cleaning chemistries to guarantee a clean stencil every time. Whether your stencil apertures include BGA's, Micro BGA's, flip chips, QFP's, or any other type of standard, fine pitch or ultra fine pitch device, our AquaSonic ultrasonic cleaners will thoroughly clean every aperture 100%, leaving them completely free of residue. We offer a complete line of ultrasonic cleaning equipment ranging from our AQS-3500 Manual UltraSonic Stencil Cleaner to our AQS-7500 Fully Automatic UltraSonic Stencil Cleaner. Our cleaners are complemented by our recirculation and filtration systems and our line of aqueous cleaning chemistries.

Our cleaners are complemented by our recirculation and filtration systems and our line of aqueous cleaning chemistries.

A Comparison of Cleaners

Model	AQS-3500	AQS-7000	AQS-7500
Ultrasonic Cleaning	YES	YES	YES
PLC Control	N/A	YES	YES
Stainless Steel Construction	YES	YES	YES
Total 29" Cleaning	YES	YES	YES
Stencil Lift and Lower	-	YES	YES
Stencil Tank Transfer	-	-	YES
Type of Rinsing	Immersion	Spray	Spray
Hands-Off Rinse	YES	YES	YES
Air Knife Dry	-	YES	YES
Air Gun Dry	YES	-	-
Hands-Off Dry	YES	YES	YES
Heater Control Package	Optional	YES	YES
Overflow Protection	YES	YES	YES
Auto Fill	-	Optional	Optional
Variable Ultrasonic Power Control	Optional	YES	YES
Sweep & Pulse Ultrasonics	YES	YES	YES
SCAQMD Approved Chemistry	Available	Available	Available
Non-VOC Chemistry	Available	Available	Available
5 micron Filtration	YES	YES	YES
Pump to Drain	YES	YES	YES
Solder Trap	YES	YES	YES

JNJ INDUSTRIES

AquaSonic® Aqueous Chemistries

AquaSonic AQP has been certified by the South Coast Air Quality Management District as a Clean Air Solvent

AquaSonic Aqueous Cleaners for Solder Paste & Flux (AQP) and Surface Mount Applications (SMA) are extremely effective when used in ultrasonic cleaning systems or manual applications. These environmentally safe chemistries are ion free, contain no CFC's or HCFC's, are non-flammable and non-hazardous. AQP is VOC Free and has been certified as a clean air solvent by the SCAQMD. SMA's unique blend of select detergents and solvents offer aqueous cleaning that does not require heating. Our Spray Cleaner Solution (SCS) is formulated to offer safe, non-flammable cleaning in aqueous spray cleaning equipment.

JNJ...Supplying total process solutions with our AquaSonic cleaning machines and aqueous chemistries!



Are aqueous cleaning chemistries available in handwipes?

YES - The perfect choice for hand wiping, our AquaSonic Aqueous Cleaner for Surface Mount Applications is a unique blend of select detergents and solvents formulated to offer safe, non-flammable cleaning. Used in dilution, SMA effectively cleans uncurd surface mount device (SMD) epoxies/adhesives and solder pastes from stencils and misprinted assemblies. It is an ideal cleaning agent for electronics manufacturers who want (1) to clean both SMD epoxies/adhesives and solder pastes in one cleaning process, (2) to reduce or eliminate VOC emissions, (3) to reduce odor in the workplace, (4) to reduce or eliminate flammable or combustible solvents, and (5) to improve operator safety.



AQS-7500



AQS-7500 Fully Automatic Ultrasonic Stencil Cleaner

Features and Specifications

- 49 Ultrasonic Transducers**
 - 2000 Watts of cleaning power
 - Piezoelectric type
 - Wired in parallel
 - Lifetime warranty
- Generator**
 - Neptune™ Series featuring integral pulse and sweep
- Heated Wash**
 - 4000 Watts
 - 50° F to 150° F
- 3 Stage System**
 - Wash
 - Rinse
 - Air dry in rinse chamber
- Tank Capacity**
 - 40 gallons
- 40 Rinse Spray Nozzles**
 - 20 on each side
 - Adjustable pressure valve
 - Fixed angle
 - Removable for service
- Air Knives**
 - One on each side
 - Air curtain
 - Regulated & filtered
 - Adjustable angle
- PLC Control**
 - Store 10 programs
 - Automatic operation & set up
- Shipping Weight**
 - 1200 lbs.

The **AQS-7500** is a fully automatic stencil cleaner for the removal of solder paste, flux, and adhesives from stencils and screens, PCB's, and related parts and accessories. This unit incorporates a two tank design with automatic wash, rinse, and dry features. Stencils up to 31" square can be fully submerged and cleaned. The control package is a PLC operating system with a touch screen operator interface panel. The PLC can store up to 10 individual cleaning profiles. It has dual solder traps and a recirculation pump with a 5-micron filter, that is also used as the power pump to drain system. The fully automatic stencil lift and tank transfer system allows for "one button" operation of a complete cleaning cycle. It comes standard with a 4000 watt wash tank heater, a cover for the wash and rinse tanks, a stencil holder that holds up to 3 stencils, and a SelectaWipe dispenser.

The control package is a PLC operating system with a touch screen operator interface panel. The PLC can store up to 10 individual cleaning profiles. It has dual solder traps and a recirculation pump with a 5-micron filter, that is also used as the power pump to drain system. The fully automatic stencil lift and tank transfer system allows for "one button" operation of a complete cleaning cycle. It comes standard with a 4000 watt wash tank heater, a cover for the wash and rinse tanks, a stencil holder that holds up to 3 stencils, and a SelectaWipe dispenser.

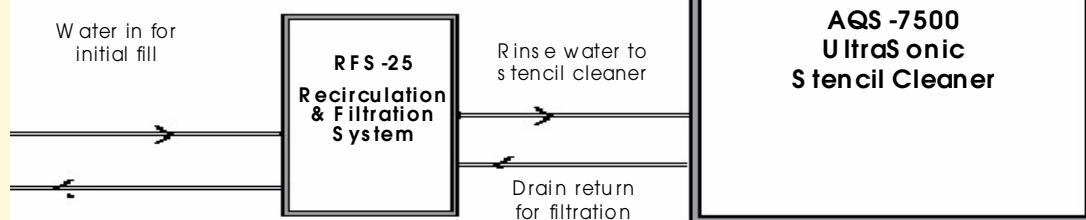
RFS-25 Recirculation and Filtration System

Features and Specifications

- Closed Loop Operation
- 25 Gallons of Rinse Water
- Stainless Steel Construction
- 3 Stage Filtration:
 - 5-Micron Polypropylene & Stainless Steel
 - 10-Micron Polypropylene & Stainless Steel
 - 10-Micron Activated Carbon Composite
- Zero Discharge Operation
- Low Level Protection
- Timing Circuit for Recirculation Filter
- Ease of Operation
- Power Pump to Waste Collection Point
- Automatic Operation - Supply on Demand

Our **RFS-25** Recirculation and Filtration System is built to the highest standards. This closed-loop system offers minimum downtime, eliminates wastewater discharge, and reduces water usage and energy costs from 50-90%. The RFS-25 is a system that was designed to hold a reservoir of water to rinse residual contaminants after being cleaned in an ultrasonic cleaner. The system will deliver clean filtered water to the ultrasonic cleaner on demand for the duration of the rinse cycle. After the rinse cycle has ended, the rinse water will drain back into the reservoir. The RFS-25 will then recirculate and filter the reservoir contents in a closed loop circuit for approximately 6 minutes to filter out any contaminants that have drained back into the tank from the cleaning machine. The system is also designed to run a recirculation and filtration cycle if it has been left idle for 6 hours or more. This canned cycle is meant to prevent bacteria from growing in the tank when it is left unused for an extended period of time.

Recirculation and Filtration is the most environmentally friendly way of handling aqueous waste stream.



RFS-20 Recirculation and Filtration System is available for the AQS-3500 Ultrasonic Stencil Cleaner

AQS-3500 Manual Ultrasonic Stencil Cleaner

Features and Specifications

- 28 Ultrasonic Transducers**
1200 Watts of cleaning power
Piezoelectric type
Wired in parallel
Lifetime warranty
- Generator**
Neptune™ Series featuring
integral pulse & sweep
- Heated Wash Option**
4000 Watts
50° F to 150° F
- 2 Stage System**
Wash
Rinse
- Shipping Weight**
700 lbs.
- Wash Tank Capacity**
25 gallons
- Rinse Tank Capacity**
18 Gallons
- Air Dry**
Hand Held Spray Nozzle
- Operating Modes**
Manual, Switch Activated
- Cycle Times**
Digitally Controlled
Infinitely Adjustable
- Temperature Control**
Digital Control
Push-button Adjustments



AQS-3500

The **AQS-3500** is a manual stencil cleaner. This unit is a two tank design that utilizes integral pulse and sweep ultrasonic generation

for optimal cleaning performance. The cleaner has a power pump to drain unit that is integrated with a 5-micron filter and a drain trap with a stainless steel mesh filter. Accommodates stencils up to 29" x 29". It comes standard with an ergonomically designed control panel that utilizes electromechanical switches and digital timers to control the machine functions. An optional heater system provides wash tank heating for use with chemistries requiring heat. Many of the features that come standard on the AQS-3500 are expensive options from other manufacturers.

AQS-7000 Semi Automatic Ultrasonic Stencil Cleaner

Features and Specifications

- 49 Ultrasonic Transducers**
2000 Watts of cleaning power
Piezoelectric type
Wired in parallel
Lifetime warrant
- Generator**
Neptune™ Series featuring
integral pulse & sweep
- Heated Wash**
4000 Watts
50° F to 150° F
- 3 Stage System**
Wash
Rinse
Air dry in rinse chamber
- Shipping Weight**
1200 lbs.
- 40 Rinse Spray Nozzles**
20 on each side
Adjustable pressure valve
Fixed angle
Removable for service
- Air Knives**
One on each side
Air curtain
Regulated & filtered
Adjustable angle
- Tank Capacity**
40 gallons
- PLC Control**
Store 10 programs
Automatic operation
Automatic setup



AQS-7000

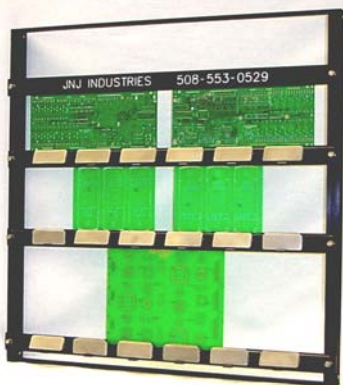
The **AQS-7000** is a semi automatic stencil cleaner for the removal of solder paste, flux, and adhesives from stencils and screens, PCB's, and related parts and accessories. This unit is a two tank design, with automatic wash, rinse, and dry features that can clean fully submerged stencils up to 31" square. The control package is a PLC operating system with a touch screen operator interface panel. The AQS-7000 has dual solder traps and a 5-micron recirculation filter, that is also used as a power pump to drain system. The pneumatic lift assembly automatically raises and lowers stencils from both the wash and rinse tanks, making it fast and easy for operators to load and unload stencils. The system relies on the operator positioning the stencil over the appropriate tank prior to initiating the cycle.

Contact JNJ for detailed specification sheets on AquaSonic products.

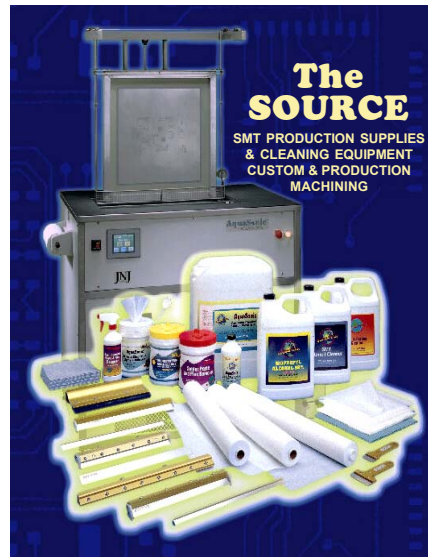
JNJ...Your complete source!

Quick and Complete Cleaning of PCBs & Stencil Foils with JNJ's Adjustable Quick-Frame

Quick-Frame is an instantly adjustable frame/rack assembly that holds PCBs or frameless stencil foils for quick, complete cleaning in batch cleaning systems. Our standard Quick-Frame can accommodate printed circuit boards of various sizes and shapes, and is designed to fit into any basket or machine that holds up to a 29" X 29" stencil. Quick-Frame includes three sliding adjustable cross bars, that are equipped with several spring-loaded clips that firmly clamp the PCB in place - additional bars can be added to create multiple rows of board holding capability, especially useful when processing smaller PCB's. Fabricated from rugged aluminum for light weight, rigidity and stability, Quick-Frame's 29" x 29" OD framework features slide blocks located inside the tubular



extrusions that easily slide into any position along the frame. These allow for positioning the cross bars that are used to secure the PCB or stencil foil. The cross bars are then locked into place with easy turn stainless steel lock knobs. Optionally, Quick-Frame's unique design will accommodate any stencil foil up to 25" x 25", regardless of the hole diameter along the perimeter of the foil.



JNJ manufactures high quality electronic screen and stencil printing accessories and cleaning products. We are well-known for our SMT production supplies for all OEM stencil printing machines, ultrasonic cleaning machines, custom and production machining services and tooling plate assemblies. Our printer components line features both JNJ designed and OEM specific squeegee blades and holders. We are the recognized experts in understencil wiping rolls - our OEM and custom SmartRolls® fit every printer worldwide. For cleaning, maintenance, rework, and polishing, our SmartWipes® line of wiper products are offered in presaturated wipes and flat dry wipes. JNJ's GlobalTech® division provides advanced formulations of environmentally responsible chemicals and solvents - GlobalTech products are formulated for the rigorous cleaning requirements of any workplace. Our commitment is not only to provide the highest quality products possible, but to make them available to you for fast delivery through a network of local, national and international distributors.

JNJ INDUSTRIES

290 Beaver Street
Franklin, MA 02038

800-554-9994 or 508-553-0529

Fax: 508-553-9973 * e-mail: equipsales@jnj-industries.com

www.jnjultasonics.com

The Industry Standard in Quality and Performance

JNJ's commitment is not only to provide the highest quality products possible, but to make them available to you for fast delivery through a network of local, national and international distributors.

**SMT PRODUCTION SUPPLIES & EQUIPMENT
CUSTOM & PRODUCTION MACHINING**