SA-Series™

Solvent Precision Cleaning Systems

The SA-Series solvent cleaning system offers two distinct advantages over other cleaning systems:

Solvent Flexibility

The system can be configured for either flammable or non-flammable solvents. It can be used with the new engineered solvents (HFC, HCFC, HFE, PFC, nPB and others) *and* it is designed for safe use of low flash point solvents such as isopropyl alcohol, acetone and cyclohexane. This feature allows unparalleled process flexibility.

Low Emissions

Properly equipped, the SA-Series is designed to meet the most stringent SCAQMD requirements for solvent emissions. That means less waste of expensive solvents and minimum operator exposure.

Solvent efficiency is achieved through:

- Sealed Load Lock™ loading chamber (patented)
- PLC-controlled process automation
- Superheated vapor drying to eliminate dragout
- On-board water chilled condenser
- Subcooled freeboard coils
- Airtight design

Designed to handle all your cleaning needs using a wide range of solvents with reduced solvent consumption.

Forward Technology
a Crest Group Company

SA-Series™

Design Features

Sealed Loading Chamber:
A PLC-controlled Load Lock™ access chamber allows for part insertion and removal without vapor emission or operator exposure.

High Reflux Rate:
System distillation rate operates at one tank volume per hour. This achieves a greater concentration of contaminants in the boil sump and reduces solvent disposal requirements.

True Superheat™ Drying:
Achieves temperatures of 50°F above solvent boiling point for shorter drying time. Superheat also reduces dragout and vapor emissions.

Vapor Boost:
In addition to superheated vapor drying, the SA-Series provides additional heat during work load insertion to prevent vapor zone collapse. This vapor boost capacity is programmable, allowing for flexible workload masses.

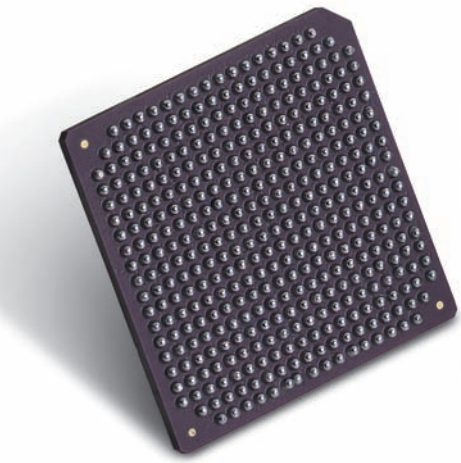
Indirect Heating:
Ensures that the system cannot reach excessive solvent degrading temperatures, even under fault conditions. Competitive systems using direct heating cannot achieve superheat in the vapor zone.

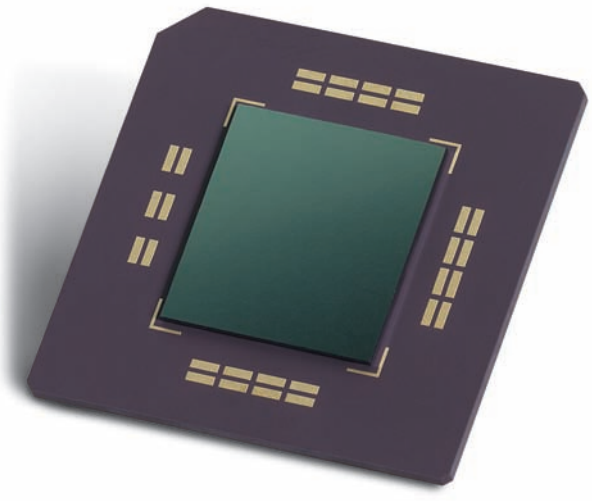
Sealed Upper Enclosure:
A fully sealed top enclosure minimizes vapor zone disturbance and subsequent solvent losses due to downdrafts.

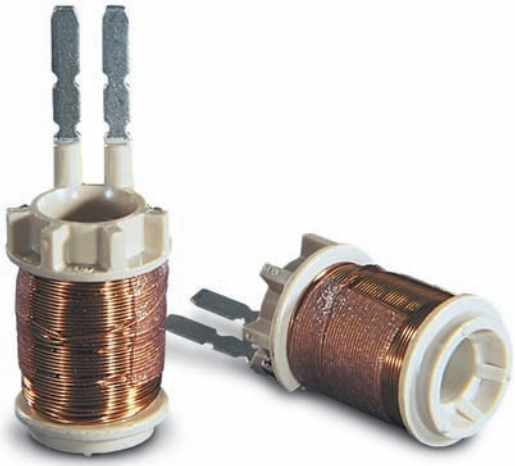
Automated Parts Handling:
The vertical lift has a 75 lb. load capacity and variable speed operation. The lift controls the rate of part travel through the vapor zone to ensure adequate drying and minimal solvent dragout. Automatic operation ensures ease of use and no operator exposure.

Stainless Steel Construction:
All components which contact solvent, including tanks, solvent plumbing, heating coils and cooling coils are made of 316 stainless steel. All structural components, including framing, covers and countertops are constructed of 300-series stainless steel.

Spill Containment Tray:
Capable of holding more than 100% of tank liquid volume including plumbing. Although a plumbing failure is unlikely, without a spill containment tray, costly clean-up and recovery can result.







Additional Features

- Extended freeboard
- Sub-zero freeboard cooling
- Programmable logic controller (PLC)
- Touch screen operator interface
- Removable access panels
- Meets all NFPA standards (applicable when using flammable solvents)

System Options

Remote Fill & Drain Cart:
This portable unit allows safe, efficient transfer of solvents. Multiple cleaning systems to be serviced with a single cart.

Ultrasonics:
Ultrasonic transducers may be bottom bonded on one or both sumps. Sweep frequency transducers are available in a variety of frequencies. A high sweep rate utilizing ceramically enhanced transducers will ensure excellent cavitation of most solvents.

Recirculation Filtration:
Micron or submicron filtered recirculation is available on one or both immersion sumps.

Distillate Flush:
As an additional cleaning step, a low pressure distillate flush of the parts can be added.

Low Flashpoint Solvent Package:
Allows the safe use of low flashpoint solvents such as IPA, acetone and cyclohexane, and includes flammable vapor detection and fire suppression systems and FM certification.

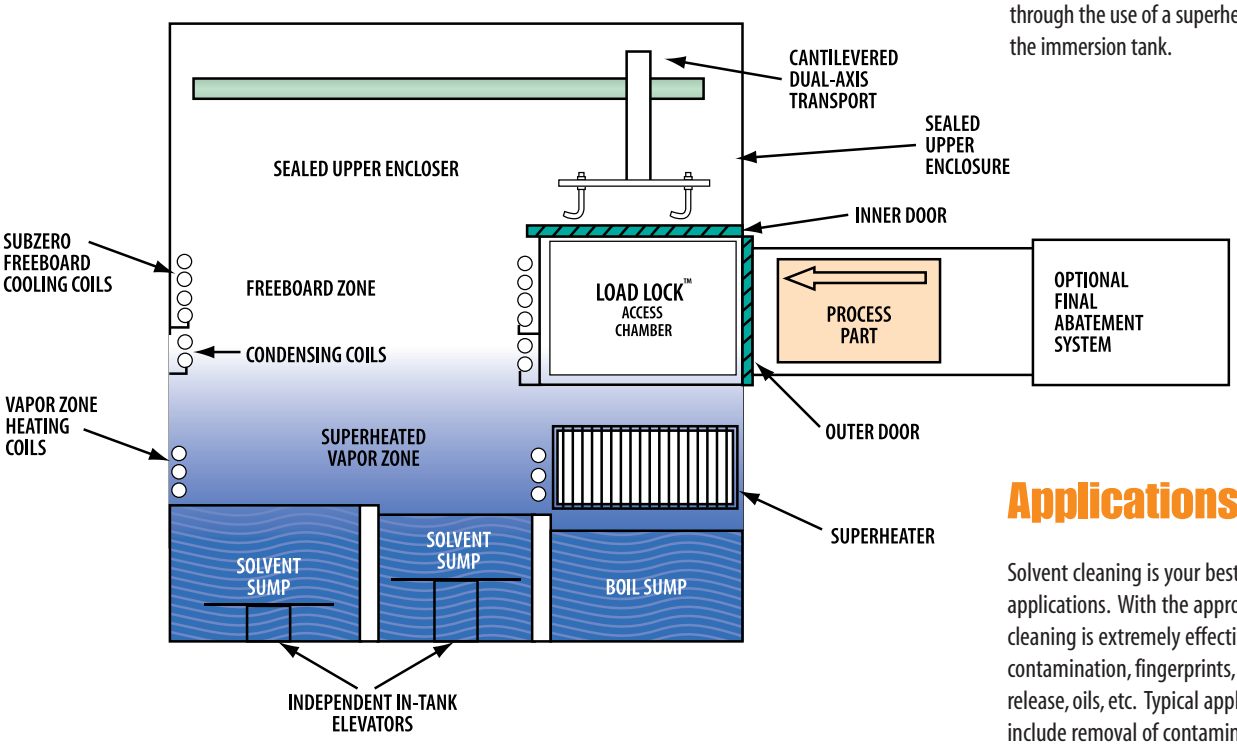
Operation

Parts enter the system through the Load Lock™ access chamber and are automatically transported to the process chamber. The parts are then lowered through the freeboard area, the superheated vapor zone and into the immersion sump. In the immersion sump, the parts may be vertically oscillated or cleaned with ultrasonics. In addition, the system may be configured to allow parallel parts load processing.

The vaporization and condensation of the solvent act as a driving force to move solvent throughout the system. This process, known as the reflux cycle, ensures that the dirtiest solvent is concentrated in the boil sump—which is never reached by the parts. The condensed distillate gravity drains into the immersion sump and cascades into the boil sump.

The final rinse is achieved in the superheated solvent vapor. Any liquid solvent remaining on the parts in the vapor zone will flash due to the superheat, allowing dry parts to emerge.

The SA-Series is available in two basic configurations—single or double sump, each with optional features. The need for a separate dryer is eliminated through the use of a superheated vapor zone above the immersion tank.



Applications

Solvent cleaning is your best choice for most cleaning applications. With the appropriate chemistry, solvent cleaning is extremely effective at removing particle contamination, fingerprints, organic films, mold release, oils, etc. Typical applications for the SA-Series include removal of contaminants from:

Disk Drive:
Slider debonding, spacers, disk media and hardware.

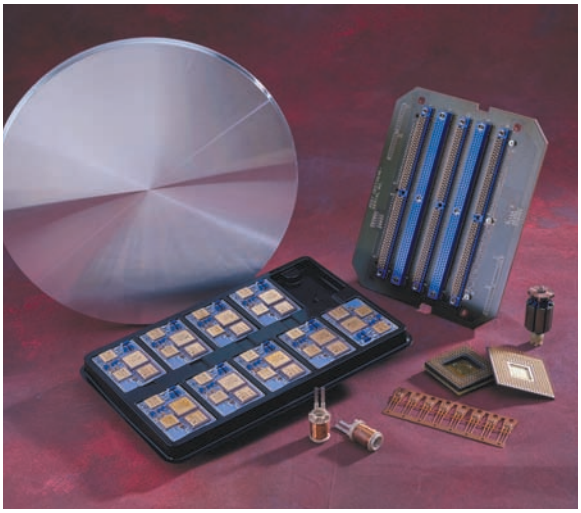
Medical:
Medical electronics, pacemakers, implants, prosthesis, etc.

Optics:
Precision laser optics, fiber optics, precision instrument optics, and other lenses and optics.

Precision Metal:
Sputtering targets, molds, gyroscopes, bellows, etc.

Electronics:
Cleaning and defluxing of complex electromechanical components, flip chips, fuel injectors, etc.

Chemical Processing:
High purity valves and fittings, instrumentation, sensors, etc.



Forward Technology equipment sets the industry standard for precision cleaning and drying. Let us use our extensive experience to answer your precision cleaning and drying challenges.

Specifications

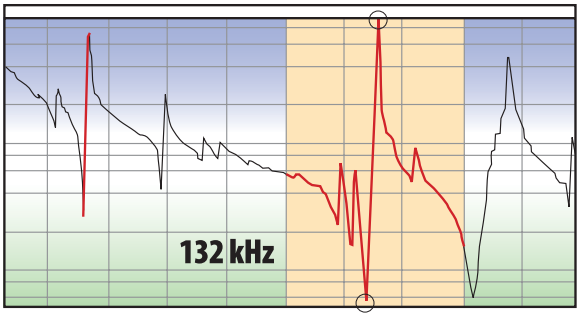
	Model 1/241818	Model 2/181212	Model 2/241818
System Dimensions (W x L x H)	60″ x 84″ x 120″	48″ x 78″ x 88″	60″ x 96″ x 120″
Total Solvent Volume	75 Gallons	50 Gallons	105 Gallons
Tank Size	24″ x 18″ x 18″	18″ x 12″ x 12″	24″ x 18″ x 18″
Maximum Basket Size (W x L x D)†	22″ x 16″ x 16″	16″ x 10″ x 10″	22″ x 16″ x 16″

†Note: Maximum basket sizes are given for systems with bottom bonded ultrasonics. Specifications subject to change without notice.

Safety Features

(Applicable when using flammable solvents)

- Intrinsically safe devices used in high vapor concentration areas of machine.
- Monitored nitrogen purge of submersible transducers.
- Warning device at 15% of lower flammable limit (LFL).
- Additional warning, automatic shutdown, electrical isolation, and accelerated tank cool-down of equipment at 25% of LFL.
- Fire detection by thermal sensors that activate on high temperature or high rate of change in temperature.
- Fire suppression by means of integral CO_2 system.



Crest Patented Ceramically Enhanced Ultrasonics

Ceramically stacked high frequency transducers are designed to meet the needs of high-tech applications where requirements are submicron cleaning. Both general and critical cleaning applications benefit from this technological advancement.

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