



**Solvac**  
advanced solvent cleaning



## *S2 Twin sump solvent ultrasonic cleaning system*

### **Specification and Technical Data**

#### **Process Description**

SOLVAC™ S2 Low Line 1812

#### **Nominal Work Basket Dimensions**

400mm Length x 247mm Front to Back x 228mm Height

#### **Process Specification**

The SOLVAC™ S2 Low Line 1812 Series is the First Immersion Solvent Cleaning System to incorporate the technical capability of running most Non-Flammable Fluorinated Solvents, via simple temperature adjustment.

This opens up huge potentials not only in the Electronics Industry but any Precision Cleaning Application where a Solvent Process is deemed necessary.

Its unique Patented Design maximises output efficiency whilst minimising Energy and Solvent Emissions.

#### **Specific System Features**

- Low Level Safety Solvent Sensors
- High Sump Contamination Indication
- 100% Freeboard Area
- Pro-Line<sub>3</sub> Air Diffusion System

The process is fitted with the latest technology in Vapour Condensing and Freeboard Cooling 'ProLine<sub>3</sub> ADS'.

**Feature 1** The unit is fitted with Three Sets of 4-Sided Cooling and Condensing Coils

Primary Coils + 3 °C

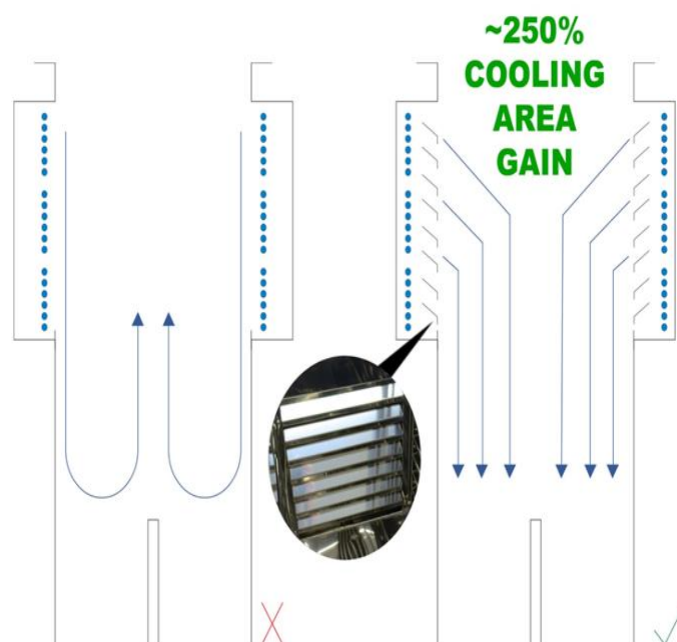
Secondary Freeboard Coils - 25 / - 30 °C

**Feature 2** State of the art Electronic Pulse Modulation System controlling and minimising energy into the vapour, massively reducing solvent losses and consuming as much as 75% less energy than any other machine in the range.

On initial heat-up mode the unit will call on the electrical heat, this power input is sufficient to quickly establish a Vapour Blanket. When the Probe senses that the Hot Vapour is Present, the PLC Pulses the sump heat maintaining a Stable Vapour Blanket, reducing input energy costs by up to 60/70%, whilst minimising solvent consumption. By adjusting the Pulse Rate of the Heaters, control on the distillate rate can be achieved.

**Feature 3** Four-sided diffusion louver banks maintaining

- 3 a Massively increased coolant surface area
- 3 b Angled louvers that target cool air into the centre of the freeboard
- 3 c The louver banks eliminate any risk of ice or water ever been allowed to splash into the process area.



## **Technical Information**

The entire process is manufactured in a High-Grade Stainless Steel. Both Internal and External Surfaces are cleaned and buffed removing all weld oxide and discolouration.

### **Water Separation / Desiccant Media**

If you are using a HFE or HFC Chemistry you will have a desiccant filter and not a water separator. The desiccant filter is made up of a basket full of molecular sieve beads, which absorb water and not solvent. These beads must be changed periodically normally between 1 and 3 week intervals.

### **Filtration**

The Rinse Sump (right hand sump) will be equipped with a 25 Micron Filtration System

### **Ultrasonics**

The boil sump (left hand sump) will be equipped with 750 Watts of Crests Transducer Technology operating at 40kHz

The rinse sump (right hand sump) will be equipped with 750 Watts of Crests Patented Ceramically Enhanced Transducer Technology operating at 132kHz

### **The Patented SOLVAC™ Sealed Compression Lid**

**Automatic Compression Lid** that seals the machine and contents by means of compression via pneumatic cylinders and soft seals. This system can further reduce solvent consumption figures by up to 50% more efficient than machines that do not have sealed lids.

### **Low Line Handling System (SWL 20KG)**

With ever increasing demands and regulations on conventional chlorinated solvents, the Precision Cleaning Industry has elected to use safer more acceptable solvents such as HFE's, HFC's.

Whilst these products do not present an issue with the environment or health and safety, commercially they are more expensive.

Crest have developed several key technical features on the SOLVAC™ Range that dramatically reduce the solvent consumption, making the cost of ownership much more attractive.

One of these features is to hermetically seal the machines whilst the process is cleaning components.

Normal Robotic Handling Systems require that the system is open, due to the robot arm constantly entering the cleaning system via the upper lid enclosure.

To overcome this issue Crest have developed a Low-Line Transfer System, capable of processing a basket both vertically and horizontally under a sealed lid. This means that the machine is only open to the work shop environment for seconds whilst being loaded or unloaded from the process.

The System consists of a carriage arrangement which retains the basket. The system is operated by both pneumatics and stepper drive motor.

It is estimated that up to 90% of all fugitive losses escape via the upper lid being open when the vapour is on the primary condensing coils.



A PLC and associated HMI allows multiple function programs to be installed.

The system should be especially designed to work under both low pressure and vacuum, together being manufactured in solvent resistant components.

### **Typical Cycle Function**

- (A) Basket loaded into freeboard position.
- (B) Lids close and seal.
- (C) Basket descends into cleaning sump.
- (D) Basket ascends and transfers to rinse sump.
- (E) Basket ascends into the vapour area for secondary rinsing.
- (F) Basket returns to load freeboard position for removal after the sealed lids have opened.

<b>1 General</b>	<b>S2</b>
<b>1.1 Revision</b>	<b>V1.0</b>
<b>1.2 System Type</b>	<b>S2 1812 LL</b>
<b>1.3 Voltage</b>	<b>415V three phase, 50A</b>
<b>1.4 Solvent</b>	<b>Vapourwash 701-12 (non-flammable solvent)</b>
1.4.1 Total solvent capacity	160 litres
<b>1.5 Basket</b>	
1.5.1 External Dimensions	400mm(w) x 247mm(f-b) x 279mm(h)
1.5.2 Supplied Quantity	2
<b>1.6 Control</b>	
1.6.1 HMI	High Resolution full colour B&R touch screen.
1.6.2 Status strip	24V tricolour LED strip showing system status
1.6.3 Mechanical buttons	Lid Open/Close, Cycle Start, Control Reset, E-Stop
1.6.4 PLC connection	Front panel mounted Ethernet port
<b>1.7 Services</b>	
1.7.1 Air Inlet	1/2" socket. 5 bar CDA
1.7.2 Fill point	Externally mounted 3/4" valve.
1.7.3 Drains	Internal 3/4" valves.
1.7.4 Water separator	1/2" solvent drain and water take off valves.
<b>1.8 Frame</b>	
1.8.1 Construction	40mm x 40mm x 3mm 304 brushed stainless steel box section, with 304 stainless steel brushed finish panels.
1.8.2 Castors	4 Heavy Duty locking castors

<b>2 Wash Sump</b>	
<b>2.1 Tank</b>	
2.1.1 Tank Size	500mm(w) x 350mm(f-b) x 330mm (d)
2.1.2 Solvent Capacity	74.5 litres
2.1.3 Low level protection	Ultrasonic level sensor
2.1.4 Full level Sensor	Ultrasonic level sensor
2.1.5 Temperature measurement	'K' type thermocouples
2.1.6 Overtemp Cutout	0-120°C Mechanical thermostat
<b>2.2 Sealing lid</b>	<b>Single pneumatically sealed lid over wash and rinse sump</b>
<b>2.3 Heat</b>	
2.3.1 Number of heaters	3
2.3.2 Heater output (per heater)	1Kw low watts density cartridge heater
2.3.3 Heater Length	500mm
<b>2.4 Ultrasonics</b>	
2.4.1 Frequency	40Khz
2.4.2 Wattage	750 watts
2.4.3 Transducer type	Bonded Transducers

<b>3 Rinse Sump</b>	
<b>3.1 Tank</b>	
3.1.1 Tank Size	500mm(w) x 350mm(f-b) x 380mm (d)
3.1.2 Solvent Capacity	76.4 litres
3.1.3 Low level protection	Ultrasonic level sensor
3.1.4 Temperature measurement	'K' type thermocouples
<b>3.2 Sealing lid</b>	<b>Single pneumatically sealed lid over wash and rinse sump</b>
<b>3.3 Heat</b>	
3.3.1 Number of heaters	1
3.3.2 Heater output (per heater)	1Kw low watts density cartridge heater
3.3.3 Heater Length	500mm
<b>3.4 Filtration</b>	
3.4.1 Pump model	Little Giant TE5
3.4.2 Filter type	Stainless steel housing for 10" wound cartridge
3.4.3 Filter size (micron)	10 micron wound cartridge
3.4.4 Filter Location	Internal
<b>3.5 Ultrasonics</b>	
3.5.1 Frequency	132Khz
3.5.2 Wattage	750 watts
3.5.3 Transducer type	Bonded Transducers

<b>4 Hoist</b>	
4.1 Capacity	20kg
4.2 Vertical movement	Motor driven lift with rotary encoder positioning and proximity top limit sensor
4.3 Horizontal movement	Pneumatically driven automatic basket transfer system

<b>5 Refrigeration</b>	
5.1 Louvres	4 sided ProLine3
5.2 Primary coil temperature	Operating down to 0°C
5.3 Freeboard coil temperature	Operating between -20°C and -30°C

For further information regarding this product please contact us at:



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