

**APPLICATION**

The Basil 3700 Cage and Bottle Washer is used for thorough, efficient cleaning of cages, bottles, debris pans and miscellaneous items used in the care of laboratory animals.

**DESCRIPTION**

The Basil 3700 Cage and Bottle Washer is a heavy-duty, cabinet-type washer, equipped with a Programmable Logic Control (PLC) system. The 3700 washer can be programmed to process the following phases: Pre-Wash, Alkaline Wash, Acid Wash, First Rinse, Second Rinse, Final Rinse and Exhaust.

Washer is available with single or double (pass-through) vertical-rise doors.

**Size (W x H x D)**

Chamber load capacity:

- 48 x 31 x 34"  
(1219 x 787 x 864 mm)

Overall dimensions:

- 77-1/2 x 89-5/8 x 42-1/4"  
(1969 x 2277 x 1073 mm)

**STANDARDS**

The Basil 3700 Cage and Bottle Washer complies with the following standards as certified by UL:

- **Underwriters Laboratories, Inc. (UL):**  
UL 61010-1: 2005
- **Canadian Standards Association (CSA):** CAN/CSA - C22.2 No. 61010-1, Second Edition
- **Governing Directive for the affixing of the CE Mark:**  
Machinery Directive (2006/42/EC)
- **Conformity to other applicable directives:**
  - Electromagnetic Compatibility Directive (2004/108/EC)
  - Low Voltage Directive (2006/95/EC)



(Typical - details may vary.)

• **Standards applied to demonstrate conformity to the directives:**

- International Standard EN/IEC 61010-1, Second Edition
- International Standard EN/IEC 61326-1: 2005

**FEATURES**

**Vertical sliding door(s)** is counter-balanced for ease of operation. Space-saving door is double-wall, insulated construction with a 25 x 23" (635 x 584 mm) tempered glass observation window.

**Automatic self-cleaning screen**, inter-piped with recirculation pump, filters all solutions during any phase, automatically flushes debris to the building drain when solutions are drained. The filter is equipped with a tri-clamp connection for easy disassembly without tools.

**The Selections Checked Below Apply To This Equipment**

**HEAT**

- Steam
- VOLTAGE**
  - 208 V, 60 Hz, 3-Phase
  - 480 V, 60 Hz, 3-Phase
  - 380/400/415 V, 50 Hz, 3-Phase

Electric

- VOLTAGE**
  - 480 V, 60 Hz, 3-Phase
  - 380/400/415 V, 50 Hz, 3-Phase

**DOOR TYPE**

- Single Vertical-Rise
- Double Vertical-Rise for Pass-Through

**CONTROL LOCATION**

- Right
- Left

**OPTIONS**

- Vapor Condensator Exhaust System
- Drain Discharge Cool Down System
- Knocked Down Shipment
- Automatic Neutralizer Injection System – Time Based
- pH Neutralization and Detergent Monitoring System<sup>1</sup>
- Central Spray Header System<sup>2</sup>
- Heat Exchanger to Raise House Water Temperature 60-80°F (16-27°C)<sup>3</sup>
- Integral Impact Printer

**ACCESSORY\***

- Barrier Wall Flange Assembly
  - One for Recessing One Wall
  - Two for Recessing Two Walls

\* See SD633 for Material Handling Accessories.

**NOTES:**

- <sup>1</sup> Includes neutralizer pump.
- <sup>2</sup> Recommended for use with 48-box capacity cage rack set\* for mouse boxes or 18-box capacity cage rack set\* for rat boxes.
- <sup>3</sup> Not available for an electric heated unit.

Item \_\_\_\_\_

Location(s) \_\_\_\_\_

**Oscillating jet system** consists of 68 machined jets mounted above, below and on each side of the wash chamber. The oscillating header travels on self-lubricating plastic wheels. Mechanical drive unit operates in conjunction with the programmed cycle and is equipped with a safety clutch to prevent the oscillating header from damaging items being washed.

**Recirculated water temperature guarantee** maintains all recirculated wash and rinse water temperatures for each cycle. If selected, phase begins timing only when recirculated water temperature reaches setpoint. Timer stops if recirculated water temperature drops below setpoint during the phase, and restarts only if the operator elects to reset the timer and continue.

**Control system** monitors and automatically controls all process operations and functions. The control can retain up to 12 processing cycles in memory. Each cycle can be programmed and named according to Customer preferences. Cycle phase times, temperatures and other key process parameters are programmable. Once a cycle is started, the programmed cycle values are locked in and cannot be changed until the cycle is complete. With the double-door option a second control column is provided on the non-operating/unload end.

The control system consists of Allen-Bradley CompactLogix™ Programmable Logic Controller (PLC)<sup>1</sup> with PanelView™ Plus 6 - 600 color operator interface(s)<sup>1</sup>. Note the double-door configuration includes PanelView on the load-side and the following indicators and buttons on the non-operating/unload end: alarm light, cycle status light, silence alarm button and emergency stop button.

The system can be connected to an integral optional printer to record process parameters, or to an external printer.

Service mode is accessible through the main control panel for service and maintenance purposes.

Security access code requires entry of a four digit access code to change cycle values.

**Automatic alkaline detergent injection system** provides timed, direct injection of alkaline detergent into the chamber sump during Alkaline Wash phase. Includes liquid detergent injection pump, detergent pickup tube, and 50' (15 m) tubing.

**Automatic acid detergent injection system** provides timed, direct injection of acid detergent into the chamber sump during Acid Wash phase. Includes liquid detergent injection pump, detergent pickup tube and 50' (15 m) tubing.

**Exhaust fan.** Washer is provided with a 1/15 Hp (50 W) fan to remove residual vapors from the wash chamber.

## CYCLE DESCRIPTION

The cage and bottle washer features 12 programmable cycles. Each cycle can be programmed with the following phases:

- **PRE-WASH** (00-99 minutes) – water remaining in chamber sump from the final rinse of the previous cycle is recirculated through the jet system under pump pressure. On completion, water is sent to the drain.
- **WASH** (00-49 minutes, 70 to 185°F [21 to 85°C]) – hot water from the house supply fills the chamber sump, and alkaline detergent is added from the supplied detergent injection pump. Detergent solution is pumped through the jet system. At the end of the phase, solution is sent to the drain.

<sup>1</sup> CompactLogix™ and PanelView™ Plus 6 - 600 are trademarks of Allen-Bradley, a Rockwell Automation Company.

- **ACID WASH** (00-49 min, 70 to 185°F [21 to 85° C]) – during Acid Wash phase, hot water fills the chamber sump and acid detergent is added from the supplied detergent injection pump. After acid recirculation has ended, cycle may be programmed to allow acid to work for up to 10 minutes, then solution is pumped through the jet system. At the end of the phase, solution is sent to the drain.
- **FIRST RINSE** (00 to 49 minutes, 70 to 185°F [21 to 85°C]) – hot water fills the chamber sump and is recirculated through the jet system under pump pressure. At the end of the phase, recirculated water is sent to the drain.
- **SECOND RINSE** – same as first rinse.
- **FINAL RINSE** (00 to 49 minutes, 70 to 185°F [21 to 85°C]) – same as first rinse, except at the end of the phase, water may be retained in the chamber sump for use as the pre-wash water in the next load.
- **EXHAUST** (00 to 99 minutes) – washer stands idle until residual vapors are removed.

## SAFETY FEATURES

Door open safety feature automatically stops washer operation if door(s) is opened during cycle. To resume operation, door(s) must be closed, alarm acknowledged and CYCLE START touch pad pressed.

**Emergency stop button(s).** Washer is equipped with an external emergency stop pushbutton at each end that automatically stops operation of the washer when pressed.

## OPTIONAL FEATURES

**Vapor Condenser Exhaust System** removes residual vapors from within the wash chamber and directs condensed vapors to the drain. This option eliminates the need for connection to the building exhaust system.

**Heat Exchanger.** An in-line, steam-to-water type heat exchanger (not available on electric heated units) can be provided to automatically raise the hot water supply temperature by approximately 60 to 80°F (16 to 27°C).

**Drain Discharge Cool Down System.** Washer can be equipped with a cold-water inlet valve, integral with the drain line. Cold water is added to the effluent during draining to help regulate the effluent temperature.

**Knocked Down Shipment.** Washer can be disassembled and shipped in sections that pass (uncrated) through a 3'-0" x 6'-8" (914 x 2032 mm) standard doorway.

**Automatic Neutralizer Injection System** provides timed, direct injection of neutralizer into the chamber sump after Acid Wash phase to neutralize the acid wash solution. Wash solution and neutralizer recirculate through the jet system after the Acid Wash phase and prior to draining. Includes liquid detergent injection pump, detergent pickup tube and 50' (15 m) of tubing.

**pH Neutralization and Detergent/Monitoring System.**

Washer can be equipped with control hardware and conductivity probes to monitor and control the pH level of drain discharge and the concentration of detergent being used. Each time the washer drains, the pH level is checked. If pH is within preset range, washer drains; if not, proper neutralizing agent is injected and solution is recirculated and tested again. If the process still fails after nine tries, an alarm sounds to indicate a problem with the system. Detergent injection may also be controlled through the main control panel. System includes all controls, one neutralizer injection pump, one detergent pickup tube, one set of 50' (15 m) tubing and conductivity and pH probes.

**Central Spray Header System.** Additional vertical spray arm, located in the center of the wash chamber, can be provided to maximize throughout of mouse and rat boxes. System is for use with cage rack accessories only. Spray arm is swung up and secured within the chamber when not in use.

**Optional integral impact printer,** with automatic paper take-up, provides a record of the complete cycle program and in-process performance data.

## CONSTRUCTION

Base, wash chamber and chamber sump are one-piece, welded, #304 stainless steel (No. 4 finish).

Chamber sump includes a mechanical float switch level control, automatic water fill and stainless steel steam coil heating for the recirculated treatment solutions. Sump capacity is 20 U.S. gal. (76 L). Steam coil is removable for cleaning or maintenance.

Washer is insulated with 2" (51 mm) thick, rigid fiberglass insulation, covered by protective stainless-steel panels.

All phases are under pressure from a 7-1/2 HP (5.6 kW) close-coupled Monobloc type pump with a mechanical seal. Pump is equipped with a direct reading pressure gauge and delivers 119 gpm (450 lpm) at 87' head pressure (2.6 bar).

Washer includes automatically actuated ball valves to control the output of the pump to the jet system or drain.

Drain, internal water and steam recirculating piping are #304 stainless steel. Recirculating valves, components and spray jets are #304 stainless steel. Interconnections are made with tri-clamps to facilitate maintenance.

One dry electrical contact is provided to activate an external exhaust fan or damper.

Washer includes a transformer for the control circuit, magnetic starters with overload protection for all pump motors and all other electrical components required for washer operation.

An internal battery backs up all cycle memory for up to two years. Should the internal battery fail, default values are saved on a built-in flash card.

Washer is inter-piped and inter-wired, requiring only one connection for each service and utility hook-up.

**Seismic Tie-Down.** Washer is built to Seismic Zone 3 and 4 requirements.

## ACCESSORY

### Barrier Wall Flange Assembly.

Stainless-steel trim flange encloses the opening between one end of the washer and the masonry wall opening.

## PREVENTIVE MAINTENANCE

A global network of skilled service specialists can provide periodic inspections and adjustments to help ensure low-cost peak performance. STERIS representatives can provide information regarding annual maintenance agreements.

**The base language of this document is ENGLISH. Any translations must be made from the base language document.**

## UTILITY REQUIREMENTS

Refer to equipment drawing 920-509-920 for further details.

### Hot Water

1" NPT

### Cold Water (applies only to units with drain discharge cool down or vapor condenser options)

#### • Unit with Vapor Condenser option only:

1/2" NPT

#### • Unit with Drain Discharge Cool Down option:

1" NPT

### Steam (steam-heated unit only)

1-1/4" NPT

### Condensate Return (steam-heated units only)

3/4" NPT

### Drain

2.5" NPT (minimum 4" [100 mm] floor drain pipe required).

### Ventilation (not required if vapor condenser option is provided)

3" (76 mm) ID, corrosion-resistant duct required.

### Electricity

#### Steam-Heated Units

208 V, 60 Hz, 3-Phase, 3-wire, 20 Amps;

480 V, 60 Hz, 3-Phase, 3-wire, 10 Amps.

380/400/415 V, 3-Phase, 50 Hz, 3-wire, 10 Amps.

#### Electric-Heated Unit

480 V, 60 Hz, 3-Phase, 3-wire, 50 Amps.

380/400/415 V, 3-Phase, 50 Hz, 3-wire, 50 Amps.

### Compressed Air

1/4" NPT; Recommended air compressor: equipment number

CK00-000-000-006. (Refer to SD574 for further information.)

*NOTE: BSPT fittings are available upon request.*

## CUSTOMER IS RESPONSIBLE FOR COMPLIANCE WITH APPLICABLE LOCAL AND NATIONAL CODES AND REGULATIONS.

## Engineering Data

### Crate Information (unit with knocked down option)

#### (W x H x D)

**Crate A** - 48 x 80 x 96"

(1220 x 2032 x 2439 mm),

1945 lb (882 kg)

**Crate B** - 41 x 72 x 61"

(1042 x 1829 x 1550 mm),

1400 lb (635 kg)

### Assembled unit (without knocked down option):

48 x 92 x 84"

(1220 x 2337 x 2134 mm)

2500 lb (1134 kg)

### Noise level:

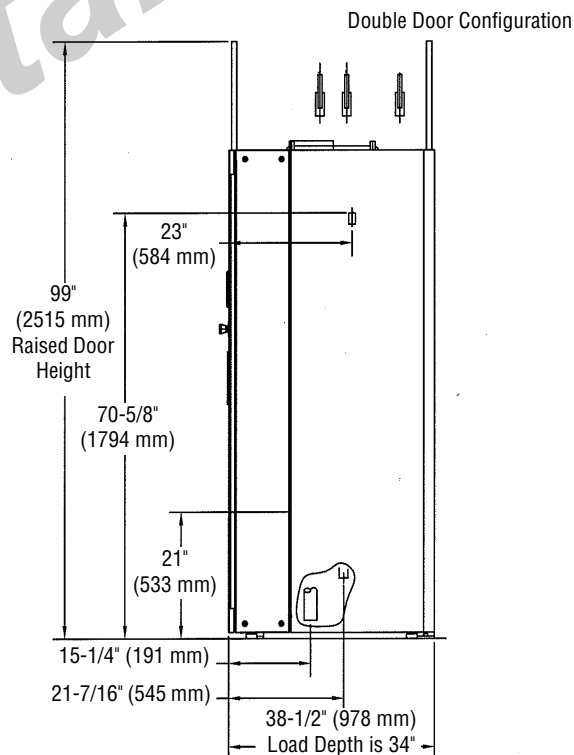
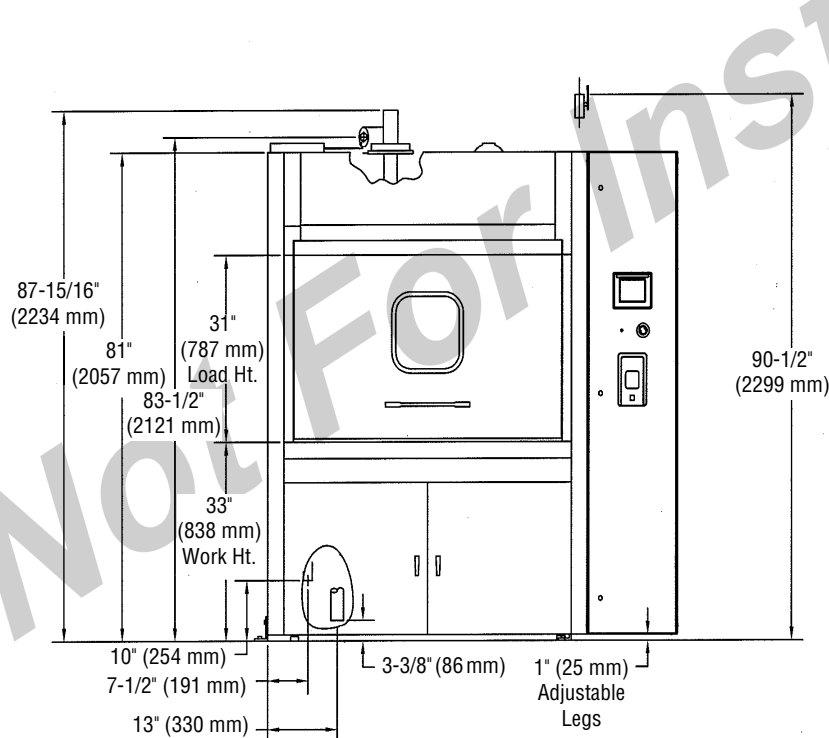
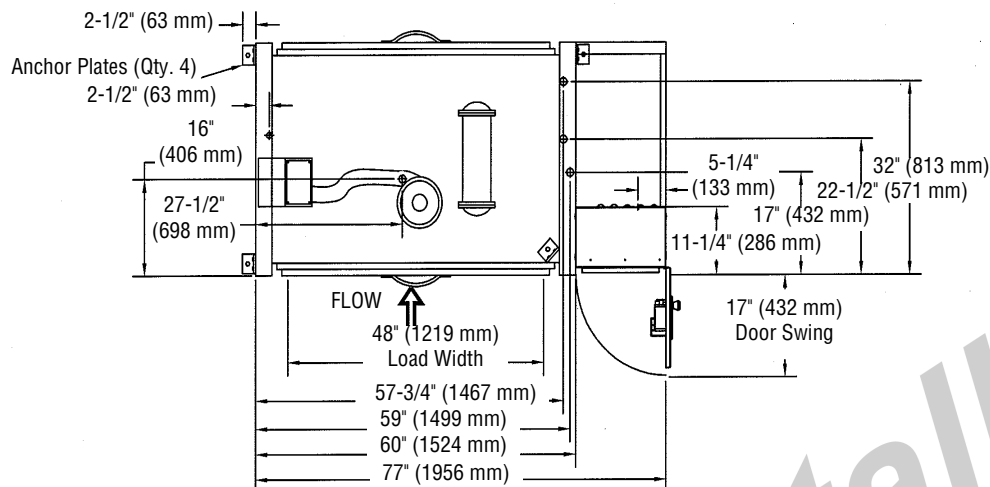
71.2dB(A)

**Operating Weight:** 2100 lb (953 kg)

**Hot Water Consumption:** 20 gal (76 L) per treatment, 60 to 100 gal per cycle (220 to 378 L) depending on cycle selection

**Heat Loss:** 8000 btu/hr (2360w), unit without vapor condenser option

**Request Equipment Drawing 920-509-920 for Installation Details**



**For Further Information, contact:**



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