700 SERIES
VACUUM/GRAVITY STEAM STERILIZERS
FOR HEALTHCARE APPLICATIONS

PRODUCT SPECIFICATION

PRODUCT
The Model 733HC Vacuum/Gravity Steam Sterilizer employs both gravity/downward displacement with positive pulse conditioning and pressure/vacuum pulsing for dynamic air removal. Up to 20 cycles can be easily accessed in two easy steps. Custom cycle names can be designated for each cycle and each cycle can be reconfigured for easy access. All cycle phases are sequenced and monitored by the control system, providing both audible and visual notification of deviation from certain operating parameters.

APPLICATION
For general-purpose gravity or vacuum steam sterilization of hospital instruments and supplies. The selectable temperature range is from 230°F to 275°F (110°C to 135°C) and from 219°F to 275°F (104°C to 135°C) for liquid cycles. Typical applications include wrapped and unwrapped porous and non-porous hard goods, gowns or towel packs and liquids in self-venting or unsealed containers. The liquid exhaust is microcomputer controlled for linear and consistent liquid cool down, programmable within a specified range.

KEY FEATURES

CHAMBER DIMENSIONS
26.5" (672mm) wide x 36" (920mm) high
- 39" (1000mm) 21.5 Cu Ft (616L)
- 53" (1350mm) 29.3 Cu Ft (831L)
- 61" (1550mm) 33.7 Cu Ft (955L)

SINGLE DOOR MOUNTING
- Recessed
- Cabinet

SINGLE DOOR DESIGNATIONS
- Right Hand Hinged, Left Hand Control Column
- Left Hand Hinged, Right Hand Control Column

DOUBLE DOOR MOUNTING (53" AND 61" ONLY)
- Cabinet, recessed one end
- Recessed both ends

DOUBLE DOOR DESIGNATIONS
- Control End (CE) Door—Right Hand Swing, Left Hand Control Column, Remote End (RE) door swing and column opposite.
- Control End (CE) Door—Left Hand Swing, Right Hand Control Column, Remote End (RE) door swing and column opposite.

Printer Location
- Control End (CE)
- Remote end (RE)

CONTROL PANEL LOCATION
- On Unit
- Wall Mounted

STEAM SOURCE
- House steam

LANGUAGE (SELECT ONE)
- ENGLISH
- FRENCH
- SPANISH

OPTIONS
- Uninterrupted Power Supply (UPS). Provides 115V power for up to 30 minutes to complete a cycle in process.
- Air Compressor
- Limited Access Kit
- T-DOC™ Digital Data Logging Software

INTERIOR EQUIPMENT
- Rack with three shelves
- Loading Car Qty.
- Transfer Carriage Qty.
QUALITY STATEMENT

Confidence in the Getinge Group is the most important quality criterion. This must be the hallmark of all our external and internal commitments, activities and products. Products and services supplied by Getinge must conform to the agreed terms and expectations to ensure recommendations for further business. The achievement of these quality goals is the basis for a continued competitive and successful enterprise.

STANDARDS AND CODES

The sterilizer shall comply with or meet the requirements of:

- ASME (Section VIII, Division 1) Code for Pressure Vessels
- Canadian Registration Number (CRN) Pressure Vessel Design
- Uniform Plumbing Code
- ETL Listed to UL 61010A-1 and UL61010A-2-041
- ETL Listed to IEC 61010-1 and IEC 61010-2-041
- cETL Listed to CSA C22.2 Nos. 1010.1 and 1010.2.041
- Seismic Anchoring Requirements per California Building Code (2001)
- Cycle Performance Validated to ANSI/AAMI ST8

STANDARD SAFETY FEATURES

- Steam Interlock Door Switch prevents steam from entering the chamber when the door is not sealed.
- Steam Safety Valve(s) — There are Steam Safety Relief valve(s) which ensures that the pressure in the chamber and or jacket do not over pressurize.
- Door obstruction shut-off. If the automatic door encounters an obstacle, a safety clutch stops the door movement and after a short time-out the motor is shut down.
- Analog chamber gauges. Two needle-style gauges give pressure readings in the jacket and chamber even in the event of micro-computer control system outage or power outage.
- Program check. The control system validates all user-programmed cycle parameters against safe effective cycle recommendations. A warning appears if user's attempt to program a cycle beyond recommended parameters.
- Supervisor password. A supervisor password is required to change cycle names or parameters.
- Abort alert. Aborted cycles result in a warning message that requires operator intervention before the chamber can be reopened.
- Gasket retract valve. In the event emergency access to the chamber becomes necessary the gasket may be retracted manually.
- Door safety baffle. In the unlikely event of a catastrophic door gasket failure, gasket will blow out and a baffle at the chamber mouth directs steam away from areas where operators might be working.
- Water alarm. High water levels in the drain that cannot be corrected automatically result in an audible alert.
- Audible door alarm. When the automatic door is in motion (opening or closing), an audible alarm chirps throughout the door open/close cycle.
- Door motion is totally contained within door covers so that there is no risk to operator as door slides to lock position.

MICROCOMPUTER CONTROLS

Getinge Sterilizers employ a Hitachi 20 MHz microprocessor on a dedicated controller (CPU) with 8 MB of RAM. The control panel consists of an operator interface panel (called OP30), a thermal printer, mechanical chamber and jacket pressure gauges, status indicators, active touch sensitive switches, and controls On/Off switch. A key lock is provided to insure all door power is disconnected when entering the chamber.

Controls are located next to the door in a vertical column for convenience. If specified, the control column can be located remotely from the sterilizer with up to 32.8 feet (10 m) of cable. An RS 232 port is provided for serial communications for central data collection or remote service analysis and is ready for T-DOC™ connection. The OP30 operator interface panel is a durable 1\(^\frac{1}{4}\) VGA 5.7 inch diagonal color screen with 320x240 pixels. Below the screen are five soft keys to access other screens or displays and to make changes to cycle parameters.

A screen saver extends the life of the back lit LCD. Touching any key illuminates and reactivates the display. Push-button switches, with international symbols and descriptive words, provide door seal and seal movement and the door. Audible and visible operator feedback is provided when a selection is made or a fault message is displayed. Temperature can be set, controlled and displayed in degrees Celsius or Fahrenheit and pressure in psia, bar or kPa. Double door models have a printer at one end and complete OP30 Operator Interface display at both ends of the sterilizer for full control capabilities at either door.

The temperature of the discharge water is controlled by a temperature device to be less than 140°F (60°C). This switch also conserves water usage. The chamber drain is continuously monitored for the presence of water when the controls are on at all times. If water is detected and cannot be automatically corrected, a water in drain alarm alerts the operator.

CYCLE DOCUMENTATION

The printer documents cycle performance using special thermal paper for a permanent record. Thermal printing allows for quiet operation. At cycle completion, a cycle performance record is printed. Paper is replaced by a “drop in and quick feed” method and the printed strips can be either accumulated on an automatic take-up reel, or torn off for individual cycle storage. A last cycle duplicate print and paper feed switch is provided. The printer is located on the control panel and documents the following on a 200-dpi dot matrix printer (1.88" [47.6mm] wide print width):

- Process start time and date, sterilizer name and number, daily cycle number and total cycle count
- Cycle selected with time and temperature, with other adjustable parameters identified
- Cycle phase transition points, temperature, pressure and total cycle time
- Process fault information messages with time of occurrence.
- Parameter Check provided a calculated, numeric process lethality
- Summary verification of time at selected temperature (min/max exposure values)
- Cycle verification signature line
OP30 OPERATOR INTERFACE FEATURES

The OP30 color screen is divided into specific sections to display selection and performance information in a consistent manner. The top section identifies the time and temperature selected for the cycle. Below that is the type of cycle selected. The middle portion provides a choice of three screens to view actual, real time cycle information. “Pop-up” dialog boxes to change values appear within parameter selection screens to implement changes. Parameter Check feature is used to verify selected exposure time and exposure temperature settings are within an allowable range. If time and temperature is selected below factory recommended values, a message will be displayed. Parameters are password protected.

The three screens are:

- **Detail.** Displays real time process information in text form.

```
<table>
<thead>
<tr>
<th>00:03:00</th>
<th>275.0 F</th>
<th>00:20:00</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1 vac PREVAC1</td>
<td>00:00:00</td>
<td>01 STANDBY 01:12:44</td>
</tr>
<tr>
<td>Chamber Temp</td>
<td>84.4 F</td>
<td>Champ Press/PSIG</td>
</tr>
<tr>
<td>Jacket Temp</td>
<td>274.9 F</td>
<td>Atmosphere PSIA</td>
</tr>
<tr>
<td>Chamber PSIA</td>
<td>14.25 PSI</td>
<td>Steam Table Diff</td>
</tr>
<tr>
<td>Exp. Temp Max</td>
<td>275.6 F</td>
<td></td>
</tr>
</tbody>
</table>
```

- **Plot Graph.** Displays cycle temperature and pressure in colored graph during a cycle.

```
<table>
<thead>
<tr>
<th>00:10:00</th>
<th>135.0 C</th>
<th>00:20:00</th>
</tr>
</thead>
<tbody>
<tr>
<td>P8 grv GRAVITY1</td>
<td>00:38:15</td>
<td>02 DRYING 00:15:00</td>
</tr>
<tr>
<td>Chamber Temp</td>
<td>87.4 C</td>
<td>Chamber PSIA</td>
</tr>
</tbody>
</table>
```

- **Bar Graph.** Displays temperature and pressure in a bar graph, with a large, easy to read, time remaining to the end of the cycle (averages the last three cycles for each cycle type).

```
<table>
<thead>
<tr>
<th>Chamber Temp</th>
<th>Chamber PSIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>275.5 F</td>
<td>46.02 PSI</td>
</tr>
</tbody>
</table>
```

The lower portion of the screen provides text alarm messages and non-critical system messages, both using color displays, and soft key identifications.

Navigating the various screens is accomplished by use of soft keys, directional arrows to move the cursor and change values, and the Enter key. Up to 20 factory recommended cycles are available. Time and temperature can be changed using a quick edit feature. Each change prompts operator acceptance by the use of a Yes/No acknowledgement and a “Save” soft key.

For Supervisor access, an alpha-numeric display provides levels of access for individual operators and service. Using the soft key labeled “Setup” provides the ability to:

- select operating screens
- print the last cycle
- adjust system menu for setting the calendar and to establish users
- establish passwords for each operator
- access the “about” selection to identify the model and system software number.
- choose language, date format, and temperature and pressure measurement
- adjust parameters through password access
The supervisor can also select a Utilities Control feature, which provides a seven-day timer for programmed startup and shutdown of the sterilizer. The Utilities Control system shuts off water and steam to the unit to conserve energy. Cycles running beyond the programmed shutoff time will be completed.

The factory recommended cycles are:

**MODEL 733HC (20 cycles total)**

- 4 Gravity cycles of 30 minutes exposure at 250°F (121°C) with 30 minutes dry time.
- 3 Gravity cycles of 10 minutes exposure at 275°F (135°C) with 30 minutes dry time.
- 8 Vacuum cycles of 3 minutes exposure at 275°F (135°C), with the following applications:
  - 3 minutes minimum Dry time for a load of linen.
  - 16 minute minimum Dry time for mixed loads of wrapped instrument and linens.
- 1 Gravity Flash cycle for unwrapped non-porous items of 3 minutes exposure at 275°F (135°C) with 10 second dry time.
- 1 Bowie-Dick Test cycle of 3.5 minutes exposure at 273°F (134°C) with zero dry time.
- 1 Vacuum Leak Test cycle run at 268°F (131°C).
- 2 Liquid** cycles at 250°F (121°C), with one at 30 minutes and one at 45 minutes exposure.

*Note: Selection of time and temperatures other than factory recommendations require user verification of the cycle efficacy. Factory recommended cycles were validated to ANSI/AAMI ST8.*

*Steam sterilization by the unwrapped (Flash) method is employed when time does not permit the use of the preferable, wrapped sterilization procedure. Implantables should never be sterilized by the unwrapped method.

**The liquid cycle, if used, is not intended for the sterilization of liquids used directly for patient contact.

**PERFORMANCE**

When installed and connected to specified utility services, the system provides accurate and repeatable performance. During the timed exposure phase, the temperature will be controlled by the chamber sensor at 0.9°F (0.5°C) above the set point (± 0.2°C). Temperature selectivity is in 0.1°F (0.1°C) increments. Timing functions are selectable in one-second increments, and accuracy is within 0.04%. Temperature is controlled by a time proportioning continuous algorithm, called Proportional Integral (PI). A battery with a 10 year life holds programmed cycle values in memory. In the event of a power interruption, current cycle status is stored for up to 1 minute.

**CYCLE PROGRESSION**

- **Gravity/Wrapped Goods (pressure pulse preconditioning)**
  a. Conditioning — steam flows into the chamber for a timed period, followed by a series of positive pressure pulses to remove chamber air.
  b. Heat-Up — to selected temperature.
  c. Exposure — selected chamber temperature is attained and timed.
  d. Exhaust — chamber vented to atmospheric pressure.
  e. Dry — filtered air is drawn through chamber for the duration of time selected (either Gravity or Vacuum Dry is selectable; Vacuum Dry is recommended).
  f. Cycle Complete — signaled by a tone, display message and light.

- **Pervac/Wrapped Goods (Vacuum/Pressure Pulsing Preconditioning)**
  a. Conditioning – steam flows into the chamber for a time period, followed by a series of pressure/vacuum pulses to remove chamber air.
  b. Heat up — to selected temperature.
  c. Exposure — selected chamber temperature is attained and timed.
  d. Exhaust — chamber vented to below atmospheric pressure.
  e. Dry — a vacuum is created for the duration of the time selected, filtered air is admitted at the end of the drying time; chamber to atmospheric pressure.
  f. Cycle Complete — signaled by a tone, light and display message.

- **Gravity/Unwrapped Goods (3 minutes for nonporous items)**
  a. Conditioning — steam flows into chamber for a timed period to remove air.
  b. Heat-Up — to selected temperature.
  c. Exposure — selected chamber temperature is attained and timed.
  d. Exhaust — Chamber vented to atmospheric temperature.
  e. Dry — filtered air is drawn through chamber for the duration of time selected.
  f. Cycle Complete — signaled by a tone, light and display message.

- **Liquids**
  a. Conditioning — steam flows into chamber for a timed period to remove air.
  b. Heat-Up — to selected temperature.
  c. Exposure — selected chamber temperature is attained and timed.
  d. Exhaust — an adjustable linear exhaust.
  e. Cycle Complete — signaled by a tone, light and display message.
CONSTRUCTION

The chamber is constructed of an inner shell reinforced by a series of "U" channels that form the outer jacket of the chamber. The gasket ring and backhead (on single door models) are formed and welded to the chamber body. Chamber material is 5mm (0.197”) thick and door material is 6mm (0.236”) thick, and both are constructed of 316 stainless steel. The jacket material is also 316 stainless steel. The interior chamber finish is polished to a high luster finish. All pressure vessel construction meets ASME code requirements for working pressures up to 45 psig (310 kPa). The gasket ring holds a continuous, one-piece silicone gasket, 0.63” (16mm) in diameter. The body assembly is thermally insulated with 1.5” fiberglass insulation and is double thick between the jacket “U” channels.

A steam baffle is provided to prevent condensation from wetting the load. An extra threaded opening permits passage of thermocouple leads to monitor interior and load temperatures. Steam connection to the chamber and jacket are 316 stainless steel. A manual gasket retract valve is provided for emergency chamber access. When rack and shelves are supplied, shelf adjustments will be approximately every 2.5” (63.5mm). Individual rack supports and shelves are easy to remove for cleaning.

HINGED DOOR

The door operation is powered by an electric motor and is actuated by a switch. The open motion is in two steps. First, a slide to clear the door locking pins, then it swings open. The door will stop automatically if an obstruction is encountered. In an emergency, the power door can be opened manually by a qualified technician. At the beginning of the cycle, steam pressure behind the gasket automatically seals the door and retracts automatically at the end of the cycle. Sealing is positive and consistent. The gasket is recessed for added protection and long life. Once the cycle begins and the chamber is pressurized, the door cannot be opened. A safety switch prevents steam from entering the chamber when the door is not in the closed and sealed position. The door is insulated with fiberglass insulation and covered with a stainless steel panel.

PANELING

The control panel and paneling is constructed of nominal 0.050” (1.27 mm) 300 series #3 brushed finished stainless steel and is hinged for easy access to electronic components. The trim panels are built-in to fit within a recessed wall or optional cabinet. When specified, the cabinet model will be made of the same material. The control column can be wall mounted.

WARRANTY

Getinge USA, Inc. warrants that each sterilizer is carefully tested, inspected and leaves the factory in proper working condition, free from visible defects. Sterilizers are warranted for one year from the start of the warranty, including parts and labor (excluding expendable parts). The ASME pressure vessel is further warranted to the original owner against structural failure for a period of 15 years from the date of initial operation. See warranty pamphlet for complete details.

ENVIRONMENTAL IMPACT

Getinge steam sterilizers are designed and constructed with our environment in mind. To aid in the conservation of natural resources, and in recognition of prevailing Environmental Policies, particularly ISO 14001, Getinge steam sterilizers are more than 90% (by weight) recyclable.

Under normal operation, Getinge steam sterilizers produce no harmful byproducts. The steam sterilization process, in and of itself, produces nothing more than hot drain water.
**VIEW: PLAN**  
(CABINET)

**VIEW: FRONT**

---|---|---|---|---|---|---  
39" | 3"-1 1/4" (946) | 2"-3 3/8" (695) | 4"-1 1/4" (1251) | 4"-4 5/8" (1377) | 5"-0" (1524)  
53" | 4"-3 1/4" (1314) | 2"-5 1/16" (757) | 5"-3 1/4" (1607) | 5"-6 5/8" (1692) | 6"-0" (1829)  
61" | 4"-11 1/4" (1454) | 2"-3 3/8" (695) | 5"-11 1/4" (1810) | 6"-2 5/8" (1900) | 7"-0" (2154)  

**VIEW: SIDE**

**NOTES:**
1. IF TWO OR MORE STERILIZERS ARE INSTALLED SIDE BY SIDE, ALLOW 1'-8" (457) CLEARANCE BETWEEN SIDES OF FACE PANELS.
2. TO INSTALL A REMOTELY LOCATED CONTROL PANEL, SEE DRAWING NO. HS4086A.
3. CAREFUL LENGTH FROM STERILIZER TO REMOTE CONTROL PANEL SHALL NOT EXCEED 32 FEET (9754).
4. CLEARANCES SHOWN ARE MINIMUM FOR EQUIPMENT FUNCTION AND SERVICING.
5. STERILIZER/LY COLUMN (SHOWN) OR LY DOOR/RH COLUMN (SHOWN) SHOWN.
6. DIMENSIONS ARE FEET-INCHES (MILLIMETERS).
7. ALL DIMENSIONS GIVEN ARE FROM FINISHED SURFACES.
8. ITEM NO. ROOM NO.  

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**700 SERIES ROUGHING-IN DRAWING, STEAM STERILIZER, SINGLE DOOR**

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**SERVICE CF 4/19/02**  
**MARKETING TRM 4/19/02**  
**ENGRS KNU 4/18/02**  
**CHECK TDL 4/18/02**  
**DRAWN BY TDL 4/18/02**  
**SCALE 1"=5/16"**

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This drawing was made using AutoCAD software. Changes should be made to the database and not to this tracing. The filename is: HS4089X1-6 This plot made: 12/19/03

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**GETING USA, INC. 1777 East Henrietta Road Rochester, NY 14623-3133**

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**SIZE c SHEET 1 OF 8 PART NO. HS4089 K**
CONSTRUCTION

The chamber is constructed of an inner shell reinforced by a series of "U" channels that form the outer jacket of the chamber. The gasket ring and backhead (on single door models) are formed and welded to the chamber body. Chamber material is 5mm (0.197") thick and door material is 6mm (0.236") thick, and both are constructed of Stainless Steel, Type SA240 Gr. 316Ti. The jacket material is also 316Ti. The interior chamber finish is polished to a high luster finish. All pressure vessel construction meets ASME code requirements for working pressures up to 45 psig (310 kPa). The gasket ring holds a continuous, one-piece silicone gasket, 0.63" (16mm) in diameter. The body assembly is thermally insulated with 1.5" fiberglass insulation and is double thick between the jacket "U" channels.

A steam baffle is provided to prevent condensation from wetting the load. An extra threaded opening permits passage of thermocouple leads to monitor interior and load temperatures. Steam connection to the chamber and jacket are 316L material. A manual gasket retract valve is provided for emergency chamber access. When rack and shelves are supplied, shelf adjustments will be approximately every 2.5" (63.5mm). Individual rack supports and shelves are easy to remove for cleaning.

HINGED DOOR

The door operation is powered by an electric motor and is actuated by a switch. The open motion is in two steps. First, a slide to clear the door locking pins, then it swings open. The door will stop automatically if an obstruction is encountered. In an emergency, the power door can be opened manually by a qualified technician. At the beginning of the cycle, steam pressure behind the gasket automatically seals the door and retracts automatically at the end of the cycle. Sealing is positive and consistent. The gasket is recessed for added protection and long life. Once the cycle begins and the chamber is pressurized, the door cannot be opened. A safety switch prevents steam from entering the chamber when the door is not in the closed and sealed position. The door is insulated with fiberglass insulation and covered with a stainless steel panel.

PANELING

The control panel and paneling is constructed of nominal 0.050" (1.27 mm) 300 series #3 brushed finished stainless steel and is hinged for easy access to electronic components. The trim panels are built-in to fit within a recessed wall or optional cabinet. When specified, the cabinet model will be made of the same material. The control column can be wall mounted.

WARRANTY

Getinge USA, Inc. warrants that each sterilizer is carefully tested, inspected and leaves the factory in proper working condition, free from visible defects. Sterilizers are warranted for one year from the start of the warranty, including parts and labor (excluding expendable parts). The ASME pressure vessel is further warranted to the original owner against structural failure for a period of 15 years from the date of initial operation. See warranty pamphlet for complete details.

ENVIRONMENTAL IMPACT

Getinge steam sterilizers are designed and constructed with our environment in mind. To aid in the conservation of natural resources, and in recognition of prevailing Environmental Policies, particularly ISO 14001, Getinge steam sterilizers are more than 90% (by weight) recyclable. Under normal operation, Getinge steam sterilizers produce no harmful byproducts. The steam sterilization process, in and of itself, produces nothing more than hot drain water.

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TABLE A: PLUMBING CONNECTIONS & UTILITIES

<table>
<thead>
<tr>
<th>CONNECTION</th>
<th>PIPE SIZE TO UNIT</th>
<th>PRESSURE RANGE DYNAMIC AT UNIT</th>
<th>FLOW RATE MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>S= Steam 1&quot; (25) NPT female see note 4</td>
<td>1 1/4&quot;(32) NPT</td>
<td>50–70 psig (3.5–4.9 kg/cm²)</td>
<td>300 lbs./Hr (136 kg/Hr)</td>
</tr>
<tr>
<td>CW= Cold water 1&quot; (25) NPT female see note 1</td>
<td>1-1/4&quot;(32) NPT</td>
<td>40–70 psig (2.8–4.9 kg/cm²)</td>
<td>11 gpm (1.4 m³/Hr)</td>
</tr>
<tr>
<td>D= Drain 2&quot; (51) OD T</td>
<td>See note 2</td>
<td>Not applicable</td>
<td>See note 2</td>
</tr>
<tr>
<td>SV(T)ocket = Sterilizer vessel pressure relief valve vent 3/4&quot; (19) NPT female</td>
<td>See note 4</td>
<td>Not applicable</td>
<td>See note 4</td>
</tr>
</tbody>
</table>

AS = Air Supply
A dry filtered, oil-less compressed air supply connection is 1/2" NPT at location indicated. A compressor for this purpose is available from Getinge/ Castle (p/n 61301601462) at extra cost. Air quality will be clean, dry instrument quality.

TABLE B: ELECTRICAL CONNECTIONS & UTILITIES

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>CONDUIT TRADE SIZE</th>
<th>UTILITY</th>
<th>MAX CURRENT (AMPS)</th>
<th>BREAKER/FUSING RECOMMENDED</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>E = Customer interface Box (230V is optional)</td>
<td>1/2&quot; (13)</td>
<td>115V~, 50/60 Hz, 1 Phase</td>
<td>12 A</td>
<td>15 A</td>
<td>7 W/Hr</td>
</tr>
<tr>
<td>K = JUNCTION BOX VACUUM PUMP UNITS (733LS) ONLY (OPTIONAL)</td>
<td>1/2&quot; (13)</td>
<td>240V~, 60Hz, 3 Phase (4 wire w/ground)</td>
<td>7.8 A</td>
<td>10 A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>480V~, 60Hz, 3 Phase (4 wire w/ground)</td>
<td>3.9 A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TABLE C: OPERATING ENVIRONMENTAL CONDITIONS

<table>
<thead>
<tr>
<th>TEMPERATURE</th>
<th>PRESSURE</th>
<th>RELATIVE HUMIDITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>10°C (50°F) to 40°C (104°F)</td>
<td>Atmospheric from 0–6500 ft. (2000m)</td>
<td>10 to 90% non-condensing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VOLTAGE FLUCTUATIONS (Main supply)</th>
<th>OVERVOLTAGE CATEGORY</th>
<th>POLLUTION DEGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>not to exceed ±10% of the nominal voltage</td>
<td>III</td>
<td>2</td>
</tr>
</tbody>
</table>

700 SERIES ROUGHING-IN DRAWING

SERV CE 4/19/02 MARKETING TKM 4/19/02 ENGRC JJK 4/18/02 CHECK TOL 4/18/02 DRAWN BY TL 4/11/02 SCALE NTS

GETINGE USA, Inc.
1777 East Henrietta Road
Rochester, NY 14623-3133

PART NO. HS4089

SIZE C SHEET 3 OF 8
The supervisor can also select a Utilities Control feature, which provides a seven-day timer for programmed startup and shutdown of the sterilizer. The Utilities Control system shuts off water and steam to the unit to conserve energy. Cycles running beyond the programmed shutoff time will be completed.

The factory recommended cycles are:

**MODEL 733HC (20 cycles total)**
- 4 Gravity cycles of 30 minutes exposure at 250°F (121°C) with 30 minutes dry time.
- 3 Gravity cycles of 10 minutes exposure at 275°F (135°C) with 30 minutes dry time.
- 8 Vacuum cycles of 3 minutes exposure at 275°F (135°C), with the following applications:
  - 3 minutes minimum Dry time for a load of linen.
  - 16 minute minimum Dry time for mixed loads of wrapped instrument and linens.
- 1 Gravity Flash* cycle for unwrapped non-porous items of 3 minutes exposure at 275°F (135°C) with 10 second Dry time.
- 1 Bowie-Dick Test cycle of 3.5 minutes exposure at 273°F (134°C) with zero dry time.
- 1 Vacuum Leak Test cycle run at 268°F (131°C).
- 2 Liquid** Cycles at 250°F (121°C), with one at 30 minutes and one at 45 minutes exposure.

Note:
Selection of time and temperatures other than factory recommendations require user verification of the cycle efficacy. Factory recommended cycles were validated to ANSI/AAMI ST8.

*Steam sterilization by the unwrapped (Flash) method is employed when time does not permit the use of the preferable, wrapped sterilization procedure. Implantables should never be sterilized by the unwrapped method.

**The liquid cycle, if used, is not intended for the sterilization of liquids used directly for patient contact.

**PERFORMANCE**

When installed and connected to specified utility services, the system provides accurate and repeatable performance. During the timed exposure phase, the temperature will be controlled by the chamber sensor at 0.9°F (0.5°C) above the set point (± 0.2°C). Temperature selectivity is in 0.1°F (0.1°C) increments. Timing functions are selectable in one-second increments, and accuracy is within 0.04%. Temperature is controlled by a time proportioning continuous algorithm, called Proportional Integral (PI). A battery with a 10 year life holds programmed cycle values in memory. In the event of a power interruption, current cycle status is stored for up to 1 minute.

**CYCLE PROGRESSION**

- **Gravity/Wrapped Goods (pressure pulse preconditioning)**
  - a. Conditioning — steam flows into the chamber for a timed period, followed by a series of positive pressure pulses to remove chamber air.
  - b. Heat-Up — to selected temperature.
  - c. Exposure — selected chamber temperature is attained and timed.
  - d. Exhaust — chamber vented to atmospheric pressure.
  - e. Dry — filtered air is drawn through chamber for the duration of time selected (either Gravity or Vacuum Dry is selectable, Vacuum Dry is recommended).

- **Prevac/Wrapped Goods (Vacuum/Pressure Pulsing Preconditioning)**
  - a. Conditioning – steam flows into the chamber for a time period, followed by a series of pressure/vacuum pulses to remove chamber air.
  - b. Heat up — to selected temperature.
  - c. Exposure — selected chamber temperature is attained and timed.
  - d. Exhaust — chamber vented to below atmospheric pressure.
  - e. Dry — a vacuum is created for the duration of the time selected, filtered air is admitted at the end of the drying time; chamber to atmospheric pressure.
  - f. Cycle Complete — signaled by a tone, light and display message.

- **Gravity/Unwrapped Goods (3 minutes for nonporous items)**
  - a. Conditioning — steam flows into chamber for a timed period to remove air.
  - b. Heat-Up — to selected temperature.
  - c. Exposure — selected chamber temperature is attained and timed.
  - d. Exhaust — Chamber vented to atmospheric pressure.
  - e. Dry — filtered air is drawn through chamber for the duration of time selected.
  - f. Cycle Complete — signaled by a tone, light and display message.

- **Liquids**
  - a. Conditioning — steam flows into chamber for a timed period to remove air.
  - b. Heat-Up — to selected temperature.
  - c. Exposure — selected chamber temperature is attained and timed.
  - d. Exhaust — an adjustable linear exhaust.
  - e. Cycle Complete — signaled by a tone, light and display message.

**UNIT WEIGHTS AND CRATED MEASUREMENTS TABLE**

<table>
<thead>
<tr>
<th>UNIT SIZE</th>
<th>CRATED WEIGHT</th>
<th>UNCRATED WEIGHT</th>
<th>LENGTH</th>
<th>WIDTH</th>
<th>HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>39&quot; SINGLE DOOR</td>
<td>2352 LBS(1069 kg)</td>
<td>2132 LBS(969 kg)</td>
<td>7'-1&quot; (2159mm)</td>
<td>4'-0&quot;(1219mm)</td>
<td>6'-10&quot;(2083mm)</td>
</tr>
<tr>
<td>53&quot; SINGLE DOOR</td>
<td>2606 LBS(1185 kg)</td>
<td>2368 LBS(1085 kg)</td>
<td>7'-1&quot; (2159mm)</td>
<td>4'-0&quot;(1219mm)</td>
<td>6'-10&quot;(2083mm)</td>
</tr>
<tr>
<td>53&quot; DOUBLE DOOR</td>
<td>3100 LBS(1409 kg)</td>
<td>2880 LBS(1309 kg)</td>
<td>7'-1&quot; (2159mm)</td>
<td>4'-0&quot;(1219mm)</td>
<td>6'-10&quot;(2083mm)</td>
</tr>
<tr>
<td>61&quot; SINGLE DOOR</td>
<td>2694 LBS(1225 kg)</td>
<td>2474 LBS(1125 kg)</td>
<td>7'-9&quot; (2362mm)</td>
<td>4'-0&quot;(1219mm)</td>
<td>6'-10&quot;(2083mm)</td>
</tr>
<tr>
<td>61&quot; DOUBLE DOOR</td>
<td>3111 LBS(1414 kg)</td>
<td>2891 LBS(1314 kg)</td>
<td>7'-9&quot; (2362mm)</td>
<td>4'-0&quot;(1219mm)</td>
<td>6'-10&quot;(2083mm)</td>
</tr>
<tr>
<td>CONTROL TOWER</td>
<td>NA</td>
<td>170 LBS(77 kg)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>
The OP30 color screen is divided into specific sections to display selection and performance information in a consistent manner. The top section identifies the time and temperature selected for the cycle. Below that is the type of cycle selected. The middle portion provides a choice of three screens to view actual, real-time cycle information. "Pop-up" dialog boxes to change values appear within parameter selection screens to implement changes. Parameter Check feature is used to verify selected exposure time and exposure temperature settings are within an allowable range. If time and temperature is selected below factory recommended values, a message will be displayed. Parameters are password protected.

The three screens are:

1. Exposure Time
2. Exposure Temp
3. Drying Time

The lower portion of the screen provides text alarm messages and non-critical system messages, both using color displays, and soft key identifications.

Navigating the various screens is accomplished by use of soft keys, directional arrows to move the cursor and change values, and the Enter key. Up to 20 factory recommended cycles are available. Time and temperature can be changed using a quick edit feature. Each change prompts operator acceptance by the use of a Yes/No acknowledgement and a "Save" soft key.

For Supervisor access, an alpha-numeric display provides levels of access for individual operators and service. Using the soft key labeled "Setup" provides the ability to:

- select operating screens
- print the last cycle
- adjust system menu for setting the calendar and to establish users
- establish passwords for each operator
- access the "about" selection to identify the model and system software number.

- choose language, date format, and temperature and pressure measurement
- adjust parameters through password access

SETUP

SELECT

CYCLE

PARAMETER

Exposure Time Exposure Temp Drying Time

P1 vac PREVAC1
00:03:00 275.0 F 00:20:00

00:00:00 00:12:44

UNSEAL

Chamber Temp
84.4 F

Cham Press/PSIG
0.00 PSI

Jacket Temp
274.9 F

Atmosphere PSIA
14.25 PSI

Chamber PSIA
14.25 PSI

Steam Table Diff
-13.28 PSI

Exp. Temp Max
275.6 F

• Detail.

Displays real-time process information in text form.

SETUP

SELECT

CYCLE

PARAMETER

Exposure Time Exposure Temp Drying Time

P8 grv GRAVITY1
00:10:00 135.0 C 00:20:00

00:38:15 00:15:00

MORE

Chamber Temp 87.4 C

Chamber PSIA 0.34 PS

I

TIME

00:5

0

275.5 F 46.02 PSI

• Plot Graph.

Displays cycle temperature and pressure in colored graph during a cycle.

SETUP

SELECT

CYCLE

PARAMETER

Exposure Time Exposure Temp Drying Time

P14 f 3 FLASH3+
02 EXPOSURE
00:03:00 275.0 F 00:00:10

00:06:46 00:02:00

MORE

Chamber Temp

275.5 F

Chamber PSIA

46.02 PSI

REMAINING TIME

2

275.5 F 46.02 PSI

• Bar Graph.

Displays temperature and pressure in a bar graph, with a large, easy to read, time remaining to the end of the cycle (averages the last three cycles for each cycle type).
Door motion is totally contained within door covers so that audible door alarm. When the automatic door is in motion, water alarm. High water levels in the drain that cannot be corrected automatically result in an audible alert.

Operator intervention is required before the chamber can be reopened.

In the event of door gasket failure, gasket will blow out and a baffle at the chamber mouth directs steam away from areas where operators might be working.

Steam Interlock Door Switch prevents steam from entering the chamber when the door is not sealed.

Abort alert. Aborted cycles result in a warning message to change cycle names or parameters.

Abort cycles can be reopened.

Supervisor password. A supervisor password is required to change cycle names or parameters.

Abort alert. Aborted cycles result in a warning message to change cycle names or parameters.

Confidence in the Getinge Group is the most important quality criterion. This must be the hallmark of all our external and internal commitments, activities and products. Products and services supplied by Getinge must conform to the agreed terms and expectations to ensure recommendations for further business.

Cycle verification signature line

Parameter Check provided a calculated, numeric process efficiency estimate. This min/max exposure value is the basis for process efficiency calculation. The occurrence of the min/max exposure value is the basis for process efficiency calculation. The process lethality calculation is based on the total cycle time.

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COMPLETE SOLUTIONS FOR INFECTION CONTROL

Getinge is the world’s leading provider of solutions for effective cleaning, disinfection and sterilization in the healthcare and life science sectors. We are dedicated to helping our customers provide better care at a lower cost. We do this by offering well-thought-through and customized solutions. This means that we are with our customers all the way from architectural planning and education to traceability and support – with complete solutions, long-term commitment and global presence.

Getinge – Always with you.

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