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400/500 SERIES STEAM STERILIZER WITH PACS 3500 CONTROLS INSTALLATION MANUAL 61301606087 REV C US

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Always with you

INSTALLATION MANUAL

61301606087 REV C US

JUNE 2011

PUBLICATION HISTORY

Revision	Date	Reason
A	10/2008	Initial release
B	7/2010	Updates to seismic anchor brackets, wall opening for and installation of a BSF, arrangement drawings, seismic anchorage calculations, and booster pump installation. Added clean steam option. Added procedure to flush the steam boiler.
C	6/2011	Added optional stainless steel piping, stainless steel boiler, and vacuum pump system. Updated anchoring procedure to agree with the 2007 seismic anchorage calculations.

For quality service on the 400/500 Series Steam Sterilizer and information on our service plans, contact:

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www.getingeusa.com

For locations outside the United States, contact your local Getinge representative.

NOTE

This manual contains proprietary information of Getinge USA, Inc. It shall not be reproduced in whole or in part without the written permission of Getinge USA, Inc.

This manual is intended for qualified technicians with specialized training. If you require additional help, contact the company service representative.

WARNING

POSSIBILITY OF INJURY: Misuse of equipment or bypassing its safety features may result in personal injury.

CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Misuse of equipment may result in equipment damage.

TABLE OF CONTENTS

SECTION 1 PREFACE

SECTION 2 SAFETY

SECTION 3 PACKAGING

SECTION 4 INSTALLATION INSTRUCTIONS

SECTION 5 OPTIONAL EQUIPMENT

SECTION 6 DRAWINGS

SECTION 7 TECHNICAL DATA

SECTION 8 FUNCTIONAL CHECK

INDEX

SECTION 1 PREFACE

BEFORE YOU BEGIN

Before installing the sterilizer, please read all the instructions and become familiar with the design, safety features, and operation of the sterilizer.

This manual is intended to provide the knowledge to ensure safe sterilizer installation by qualified technicians with specialized training in the installation of Getinge 400/500 Series Sterilizers. If additional help is required, contact a qualified Getinge service representative.

The following documentation is supplied:

- *User Manual (6013019401)* for the 400/500HC sterilizer or *User Manual (6013019501)* for the 400/500LS sterilizer
- *Installation Manual (61301606087)*
- *Quick Reference Poster (61301606119)* for the 400/500HC sterilizer or *Quick Reference Poster (61301606120)* for the 400/500LS sterilizer

The following documentation is available for purchase:

- *Technical Manual (61301606091)*
- *Parts Catalog (61301606092)*

NOTE

Getinge reserves the right to make changes to specifications and equipment without prior notice. The information contained in this manual is current as of the date of issue.

The 400/500LS Series Sterilizer has not been reviewed by the United States Food and Drug Administration (FDA) and is not intended for medical use.

SUMMARY OF CONTENTS

This manual is divided into eight sections:

- Section 1, "Preface" includes information regarding the intended audience, a summary of the manual's contents, advisories, and environmental impact.
- Section 2, "Safety" includes important precautions and safety features.
- Section 3, "Packaging" includes information regarding the uncrating and positioning of the sterilizer.
- Section 4, "Installation Instructions" includes information regarding the assembly and connection of the sterilizer, as well as plumbing and electrical information.
- Section 5, "Optional Equipment" includes information and drawings for all available sterilizer options.
- Section 6, "Drawings" includes arrangement drawings.
- Section 7, "Technical Data" includes product requirements and specifications.
- Section 8, "Functional Check" includes a checklist to verify the operational state of the sterilizer after installation.

ENVIRONMENTAL IMPACT ASSESSMENT

The 400/500 Series Steam Sterilizer contains stainless steel, copper, electronic, and electrical components, which can be recycled at the end of the unit's lifecycle. Most electronic and electrical components comply with the Restriction of Hazardous Substances (RoHS) Directive; however, some electrical components may contain lead. The sterilizer also contains plastic and batteries that are in the electronic boards, as well as lithium in batteries, which can NOT be recycled and should be disposed of in accordance with local and federal regulations.

DESCRIPTION OF SYMBOLS ON THE EQUIPMENT

The following symbols and definitions represent the switches, indicators, and labels found on the sterilizer.

SWITCHES

OPEN DOOR (also used to unseal the door)

CLOSE DOOR (also used to seal the door)

CLEAR ALARM

START

Directional arrows (for navigating display screens)

ENTER

Softkeys (for selecting softkey options, such as Save, Cancel, and OK)

CONTROLS OFF/ON

INDICATORS

DOOR(S) CLOSED

DOOR(S) SEALED

IN PROCESS

PROCESS COMPLETE

PROCESS FAILURE

LABELS

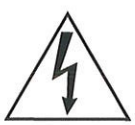
The following labels on the sterilizer alert personnel to possible hazards.

BURN HAZARD: Hot surfaces or heat-emitting area. Avoid contact. Risk of burns.

WARNING—BURN HAZARD: Steam released from the sterilizer chamber can cause serious burns. Stand away while opening the door.

WARNING: Processing a type of load other than defined in User Manual could be hazardous.

The following labels on the control box and power box alert service personnel to possible hazards.



HIGH VOLTAGE

CAUTION: To reduce the risk of electrical shock, do not remove the cover. Refer servicing to qualified service personnel.

ATTENTION: See the accompanying documents for further information.

ATTENTION: Observe precautions for handling electrostatic sensitive devices.

MANUAL CONVENTIONS

Before you begin using this manual, it is important to understand the conventions used. These conventions are established for visual ease of use.

[ALL UPPERCASE IN BRACKETS]	Softkeys on the control panel, such as [CANCEL] or [OK]
ALL UPPERCASE WITHOUT BRACKETS	Switches and indicators on the control panel, such as ENTER
>	Leads you through nested menu items and dialog box options to a final action, for example: Select SYSTEM MENU > enter password > TIME SETTINGS.
Italics	Alarm and informational messages in the display window, such as the *AIR IN SLOW* fault condition Cross reference to another manual or guide, for example: See *AAMI Standard ST79*.
PARAMETER SETTINGS  ACCESS REQUIRED	An alert that a password with appropriate access rights is necessary to proceed

SYMBOLS USED IN THIS MANUAL

The following symbols with related notes appear in this manual.

"Warning" alerts the user to the possibility of personal injury.

"Caution" alerts the user to the possibility of damage to the equipment.

"Note" alerts the user to pertinent facts and conditions.

HOW TO USE THIS MANUAL

PLAN THE INSTALLATION

Check that all installation requirements have been met:

1. Review Section 6, "Drawings" and the architect's drawing.
2. Review Section 7, "Technical Data" for steam supply and steam boiler feedwater quality recommendations.

INSTALL THE EQUIPMENT

Install the sterilizer as follows:

1. Prepare the wall for sterilizer installation. A sterilizer with a biological sealing flange (BSF) or a cross contamination barrier (CCB) requires a special wall frame.
2. Unpack the sterilizer.
3. Remove the sterilizer from the skid, then roll the sterilizer its installation site.
4. Position and level the sterilizer.
5. Connect the plumbing.
6. Connect the electrical power.
7. Install any remaining optional equipment.
8. Anchor the sterilizer.
9. Install the optional cabinet package.
10. Perform the functional check.

SECTION 2 SAFETY

The following topics are covered in this section:

PRODUCT LIABILITY

Modifications made to the sterilizer without the express approval of the manufacturer, or incorrect use of the unit will invalidate the manufacturer's product liability.

GENERAL SAFETY

The 400/500 Series Steam Sterilizer is designed to sterilize and dry, where applicable, typical health care and laboratory goods. The sterilizer includes pressure pulse gravity steam, pressure vacuum pulsing, and liquids cycles. The sterilizer is NOT intended for use other than expressly stated.

The sterilizer is designed with a number of built-in safety devices. To avoid injury, it is very important that these safety devices are not bypassed or disabled.

CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Follow the instructions in this manual to ensure safe and efficient performance of the equipment. Failure to comply with these instructions or to provide specific services could damage the equipment and void the equipment warranty.

AUTHORIZED SERVICE REPRESENTATIVE

- Read all instructions thoroughly before installation.
- Installation and service work must be performed by qualified personnel trained on this sterilizer.
- The sterilizer must be operated by personnel who are knowledgeable about the operation of the sterilizer and are trained on its use.

- Personnel must receive periodic training on the operation and maintenance of this equipment in accordance with established procedures for the workplace.

ELECTRICAL SAFETY

- Switch off the electric power before opening the electrical components. The components contain the following voltage:

Control Box	24 Vac
Power Box	115 Vac
Boiler	High voltage, three-phase For specific information on voltage, see the arrangement drawings for your model sterilizer in "Drawings" on page 6–1.

- If welding is necessary on or close to the sterilizer during installation, all wiring connected by plugs and sockets must be disconnected from all circuit boards of the control system.

HOT SURFACES AND PIPES

WARNING

BURN HAZARD: Turn OFF and lock out/tag out the steam and hot water supplies before servicing the sterilizer. Allow the steam to dissipate and let the sterilizer cool before touching any piping or surfaces.

- There are hot surfaces in the service area. Avoid touching any piping that could contain steam.
- The sterilizer uses hot water and steam which have the potential of causing burns or serious injuries. Wear personal protective equipment suitable for hot water and steam.

LOCKOUT

- Always keep the door to the service area locked.
- No personnel should be in the service area while the sterilizer is running.
- Never bypass the door limit switches of the sterilizer.

OTHER CONSIDERATIONS

- Leakage in the system must be repaired without delay.
- The sterilizer must be kept clean to ensure optimum performance.
- Do not hose down the outside of the sterilizer with water.

SAFETY FEATURES

WARNING

SHOCK HAZARD: To disconnect all power, turn OFF the sterilizer at the mains circuit breaker. CONTROLS OFF/ON does not remove primary power from the sterilizer.

NOTE

The maximum sound pressure level of the equipment that the operator is exposed to does not exceed 85 dBA.

DOOR SAFETY DEVICES

In the event that a power door (optional equipment) encounters an obstruction, actuating a door operator switch (OPEN DOOR, CLOSE DOOR, or footswitch) reverses the direction of motion. If a user does not intervene, the door motor stalls and stops within 12 seconds.

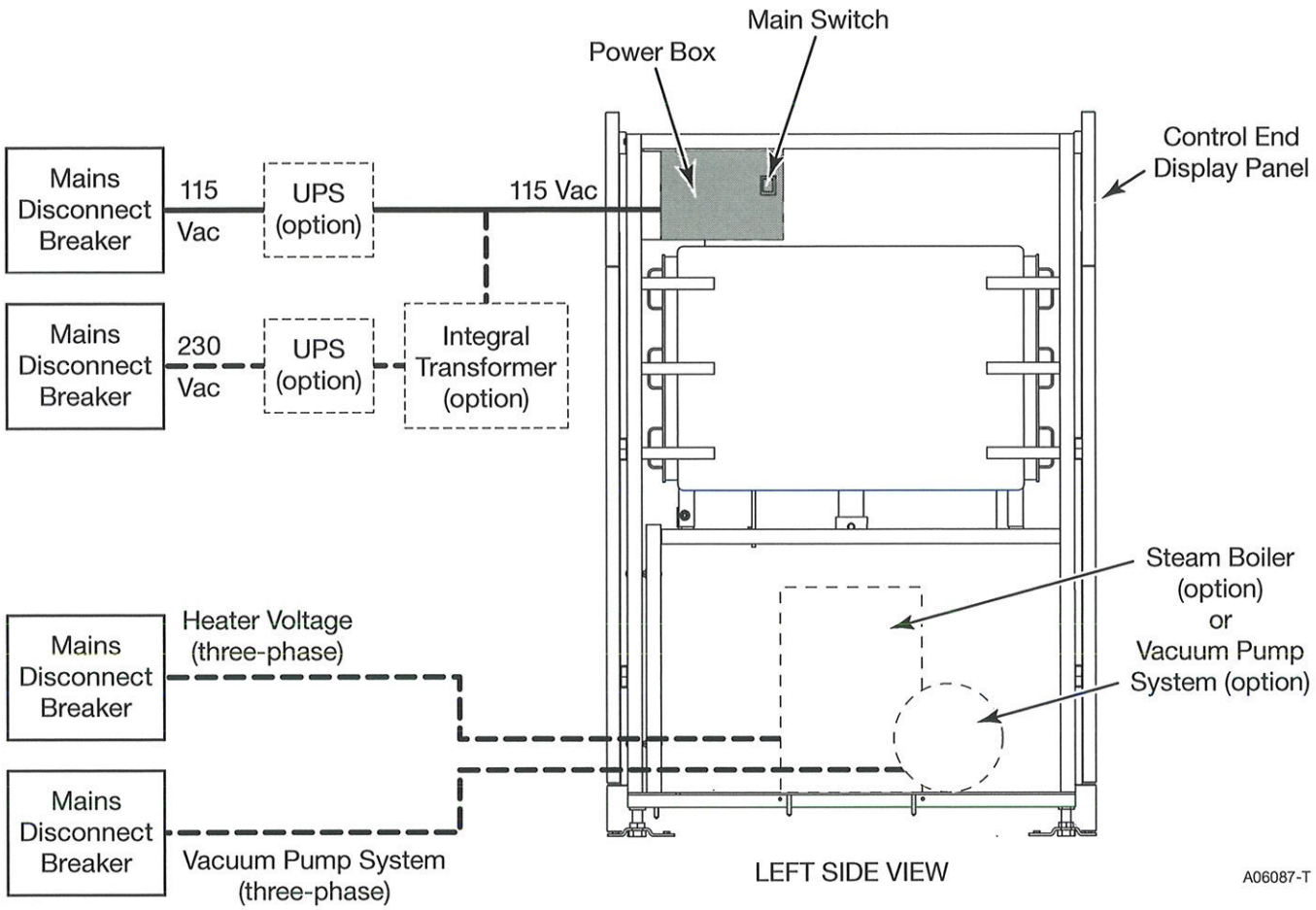
ISOLATING DEVICE

The sterilizer is fitted with a main switch on the power box. This switch removes 115 Vac primary power from the sterilizer. If the sterilizer has an optional uninterruptible power supply (UPS), the sterilizer controls continue to operate. The UPS must be turned off by pressing its power off button.

A sterilizer with a steam boiler has a three-phase heating circuit that requires a separate mains disconnect. The power switch on the boiler turns the boiler control circuits ON and OFF.

Other optional equipment, such as the booster pump, the vacuum pump, and the water saver system, also requires a separate mains disconnect. For detailed information, see the arrangement drawings in "Drawings" on page 6–1.

FIGURE 2–1. LOCATION OF THE MAIN SWITCH



NOTE
A sterilizer can have a steam boiler or a vacuum pump system but not both.

Mains Disconnect Breaker — Water Saver (option) (single-phase)

Mains Disconnect Breaker — Booster Pump (option) (single-phase)

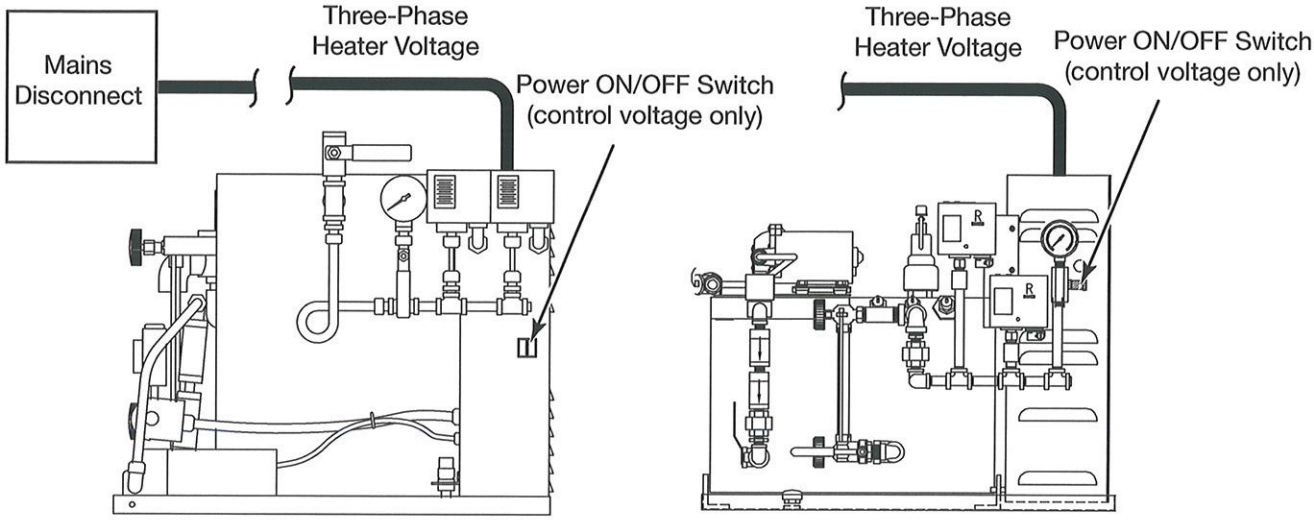
Mains Disconnect Breaker — Water Chiller (option) (single-phase)

NOTE
The CONTROLS OFF/ON switch turns the sterilizer controls ON and OFF but does not remove primary power.

The control voltage for the optional steam boiler is provided by the sterilizer power box.

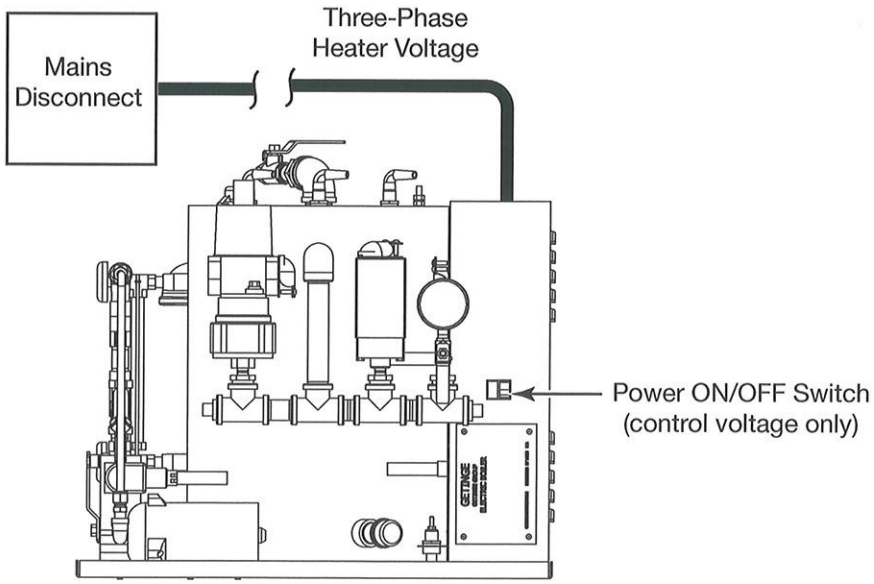
A sterilizer with a steam boiler is powered by a three-phase circuit that requires a separate mains disconnect.

FIGURE 2–2. LOCATION OF THE BOILER ON/OFF SWITCH



CAS-30C STEAM BOILER
(400 series)

GTS-30A STEAM BOILER
(500 series)



A06338-V

SSB30C STEAM BOILER
(400 or 500 series with
stainless steel piping)

SECTION 3 PACKAGING

UNCRATING SEQUENCE

The following sequence of procedures is covered in this section:

BEFORE YOU BEGIN

The Getinge 400/500 Series Sterilizer requires some assembly at installation. Only qualified Getinge service representatives or personnel trained by Getinge should install the sterilizer.

WARNING

POSSIBILITY OF INJURY: The sterilizer is top heavy and can tip easily; therefore, moving the sterilizer without mechanical assistance is not recommended. See "Attaching the Casters" on page 3–9.

POSSIBILITY OF INJURY: The sterilizer is top heavy and can be tipped easily when removed from the shipping base and left free-standing. If the sterilizer is left free-standing, bracing is required to prevent it from being accidentally tipped causing possible equipment damage or bodily injury.

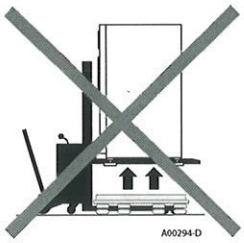
TABLE 3–1. 400/500 SERIES CRATED AND UNCRATED WEIGHTS AND UNCRATED CLEARANCE DIMENSIONS

Model	Crated Weight*	Uncrated Weight	Uncrated Width	Uncrated Height	Uncrated Length
400 Single Door	965 lb (438 kg)	855 lb (387 kg)	26 1/4 in. (711 mm)	73 1/2 in. (1867 mm)	34 in. (864 mm)
400 Double Doors	1020 lb (462 kg)	910 lb (412 kg)	26 1/4 in. (711 mm)	73 1/2 in. (1867 mm)	34 in. (864 mm)
500 Single Door	1223 lb (554 kg)	1103 lb (500 kg)	30 in. (762 mm)	73 1/2 in. (1867 mm)	46 in. (1168 mm)
500 Double Doors	1298 lb (588 kg)	1178 lb (534 kg)	30 in. (762 mm)	73 1/2 in. (1867 mm)	46 in. (1168 mm)

* If the sterilizer includes an integral steam boiler, add 204 lb (93 kg).

For detailed information, see the arrangement drawing for your model sterilizer in "Drawings" on page 6–1.

UNCRATING THE STERILIZER



CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Do not lift or position the sterilizer by means of the cross beams of the sterilizer frame. To do so could cause misalignment of the door assembly.

NOTE

If the sterilizer has a biological sealing flange or cross contamination barrier, the wall frame must be installed before the sterilizer is moved into position. See "Biological Sealing Flange (BSF) (522LS, 533LS, 544LS)" on page 5–22 or "Cross Contamination Barrier (CCB) (522LS, 533LS)" on page 5–27 for framing instructions.

1. Move the sterilizer as close to the installation site as possible.
2. Remove the outer shipping carton and the panel packages secured inside. Set the panel packages aside.
3. Remove any packaging and shipping material or tape.

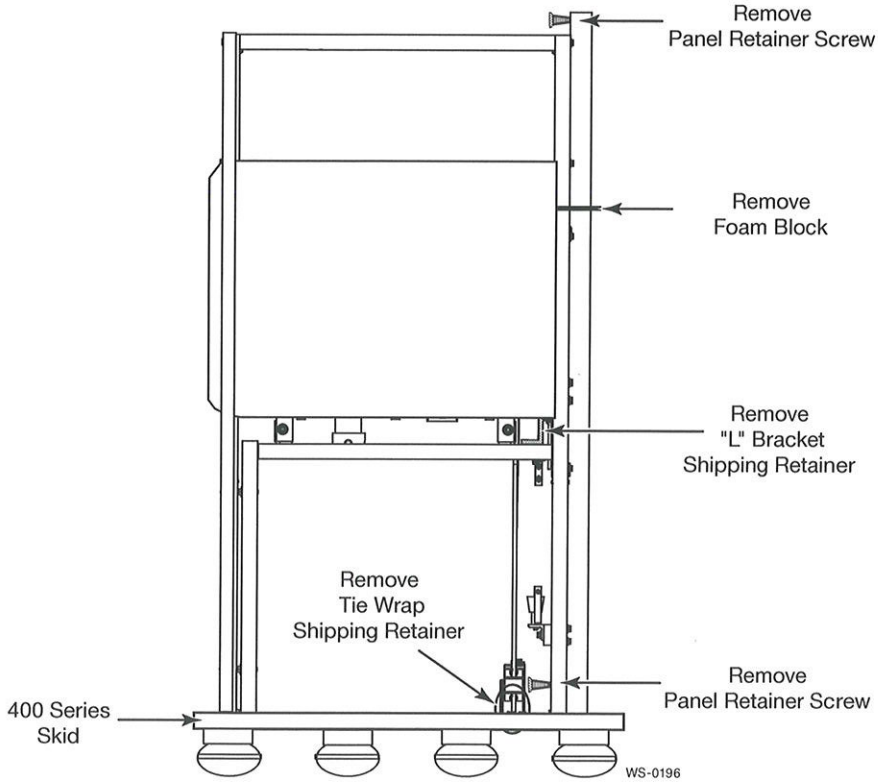
REMOVING THE SHIPPING RETAINERS

The front panel, chamber door, and counterweight have been secured for shipping purposes.

NOTE

If the sterilizer is a double-door, recessed unit, remove the front panel from the end to be inserted through the wall opening.

FIGURE 3–1. DOOR COUNTERWEIGHT SHIPPING RETAINERS



1. Remove the panel retainer screws from the back of the door panel.
2. Swing open the hinged front panel to gain access to the shipping retainers. See "Opening the Sterilizer Front Panel" on page 3–4.
3. Remove the tie wraps from either end of the door counterweight.
4. Remove the foam block located at the top of the door.

NOTE

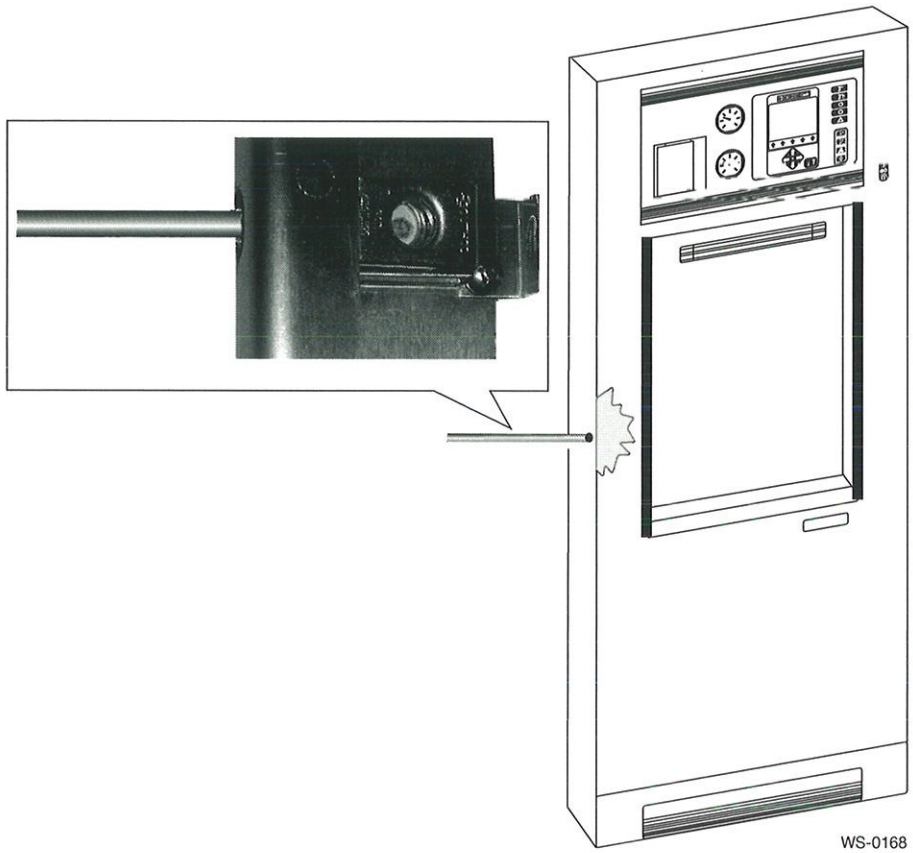
It may be necessary to lift the counterweight slightly by hand and place the cable into the pulley groove.

5. If this is a 500 series unit, remove the lag bolts from the third cross beam of the skid and remove the cross beam.

6. Remove the "L" bracket shipping retainer located under the door.
7. Open the chamber door.
8. Remove any packages, such as printer paper, from the chamber.

OPENING THE STERILIZER FRONT PANEL

FIGURE 3–2. STERILIZER LATCH RELEASE



1. Insert a blunt tool approximately 1/4 in. (6 mm) in diameter, such as a screwdriver, into the latch release on the sterilizer.
2. Gently apply pressure to the end of the tool and push it into the latch release.

   The front panel unlatches and opens slightly.
3. Open the front panel.

REMOVING THE SHIPPING SKID

Removing the shipping skid includes three processes:

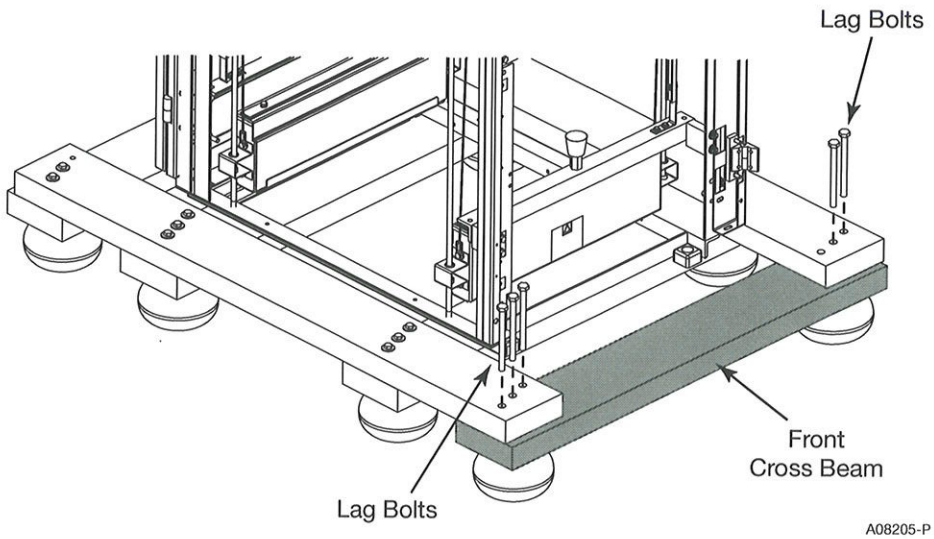
- installing the mounting brackets
- attaching the casters
- removing the skid

INSTALLING THE MOUNTING BRACKETS

The mounting brackets, locknuts, and leveling bolts are located in the shipping package included with the sterilizer.

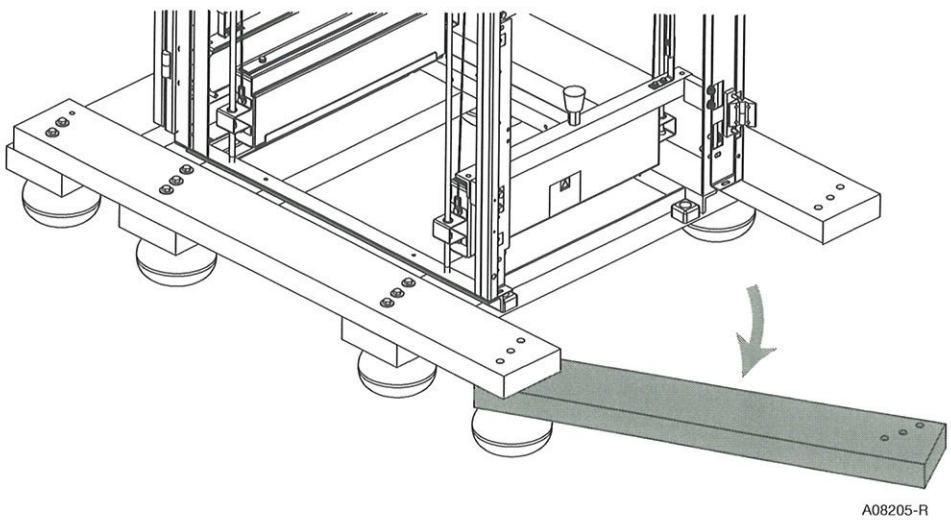
1. With the sterilizer close to the installation site, open the front panel. See "Opening the Sterilizer Front Panel" on page 3–4.

FIGURE 3–3. REMOVING LAG BOLTS FROM THE FIRST BEAM



2. Remove the lag bolts from the front cross beam of the skid.

FIGURE 3–4. SWINGING THE BEAM TO ONE SIDE

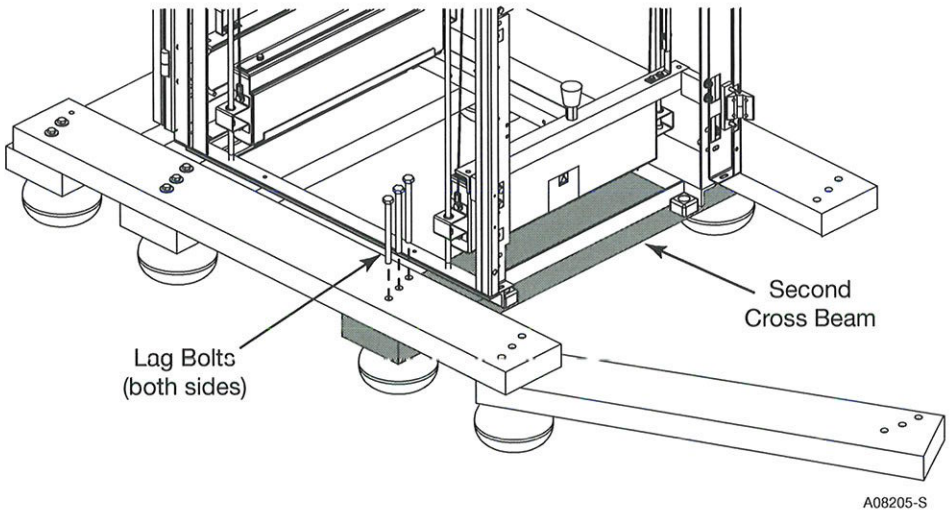


3. Swing the front cross beam to one side, keeping the end of the cross beam under one side of the skid to support the weight of the sterilizer.

NOTE

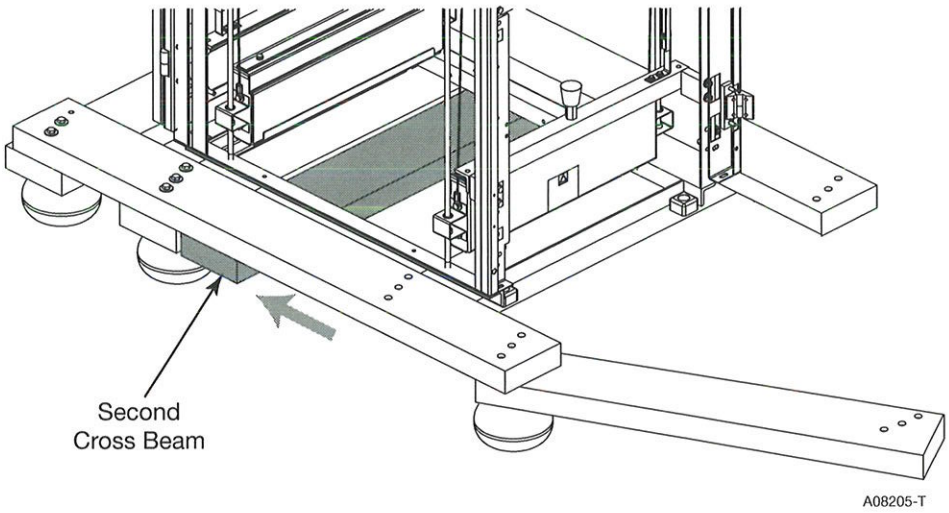
The door counterweight will drop below the frame when the second cross beam of the skid is removed. Open the chamber door slightly to raise the counterweight.

FIGURE 3–5. REMOVING LAG BOLTS FROM THE SECOND BEAM



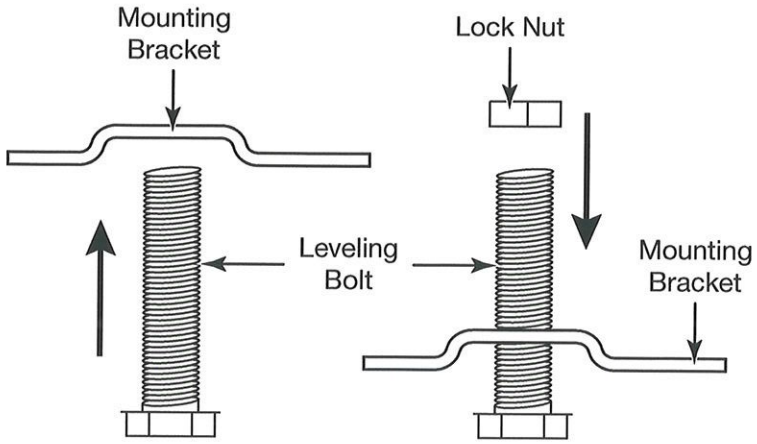
4. Remove the lag bolts from both sides of the second cross beam.

FIGURE 3–6. MOVING THE CROSS BEAM BACK



5. Use a mallet to hammer the second cross beam back until it touches the cross beam behind it.

FIGURE 3–7. MOUNTING BRACKET ASSEMBLY



a. Thread the leveling bolts through the 1" opening in the mounting bracket.

Be sure the anchoring orientation is correct.

b. Thread the lock nut over the leveling bolt. Do NOT tighten the lock nut.

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6. At each corner of the sterilizer:

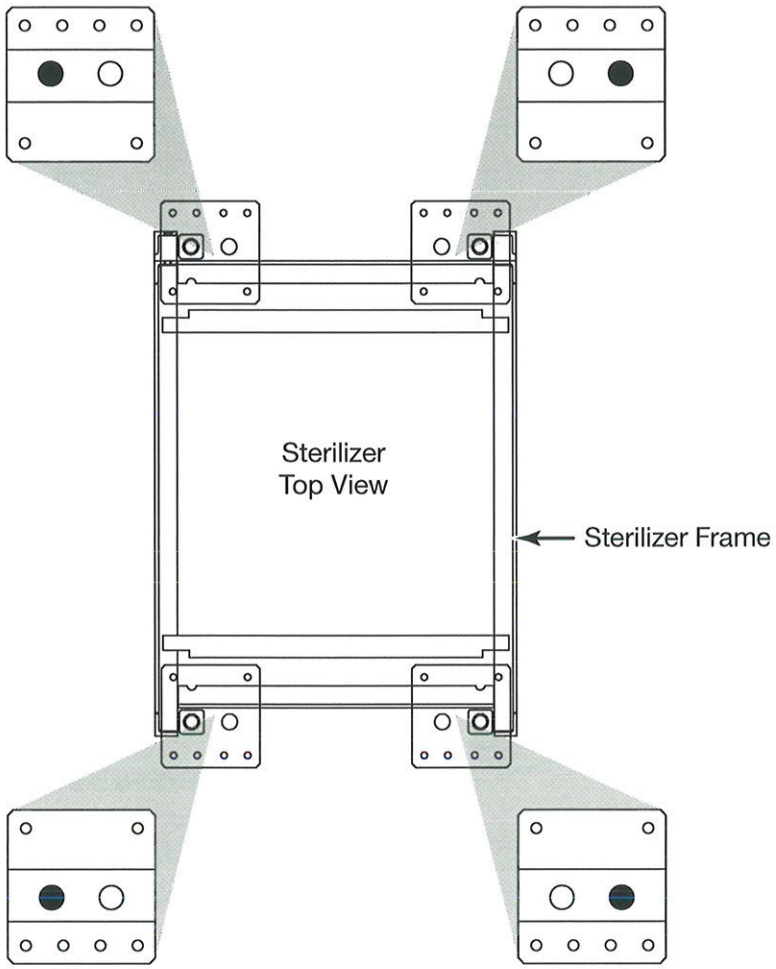
   a. Assemble the mounting bracket and the leveling bolt (Figure 3–7).

NOTE

All four mounting brackets are identical; however, the correct opening for the leveling bolt depends upon where the bracket is used. At each corner of the sterilizer, be sure to use the correct opening in the mounting bracket. In Figure 3–8 on page 3–8, the correct openings are indicated by the large, filled circles.

FIGURE 3–8. MOUNTING BRACKET ORIENTATION

The large, filled circles indicate
the locations of the leveling bolts.



b. From the underside of the sterilizer frame, thread the leveling bolt through the weld nut in the frame until the mounting bracket is high enough to clear the casters.

See Figure 3–9 on page 3–9 for a view of the sterilizer with the mounting brackets and casters installed.

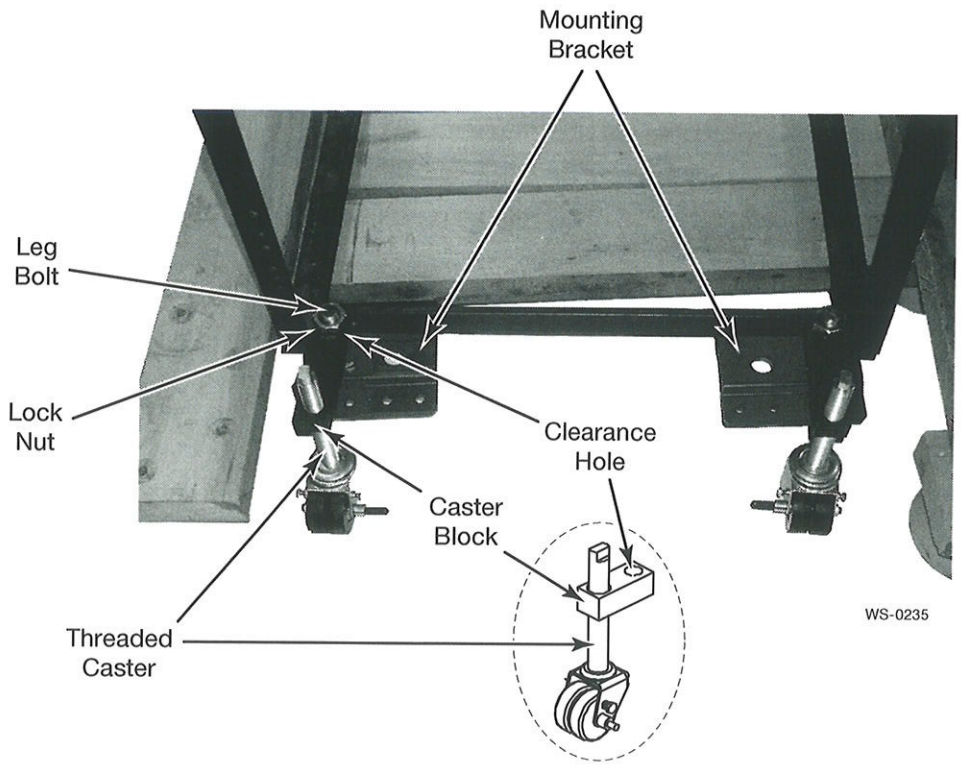
ATTACHING THE CASTERS

NOTE

Getinge service representatives have casters available for their use. Casters are available for purchase from Getinge USA, Inc.

Removable casters and mounting blocks (PN 61301603327) provide a convenient method of lifting the sterilizer for removal of the shipping skid. After the skid is removed, the casters are used to roll the sterilizer into the installation location.

FIGURE 3–9. CASTERS AND MOUNTING BRACKETS INSTALLED



1. Attach the casters to the mounting blocks.
2. Slide the 1 in. (25 mm) clearance hole in the caster block over the exposed leg bolt.
3. Lock the caster assembly in place with a locknut.
4. Using a 1/2 in. (12 mm) wrench, turn the casters down evenly on all four corners, raising the skid above floor level.

NOTE

Be sure the mounting brackets clear the casters.

5. Remove the skid:
   a. Remove the lag bolts attaching the sterilizer to the frame and allow the skid to rest on the floor.
   b. Disassemble and remove the skid.

WARNING
POSSIBILITY OF INJURY: Use caution when moving the sterilizer. It is extremely top and front heavy.

6. Raise the casters to minimize the sterilizer height.

NOTE
With the caster stems turned fully into the caster blocks, the sterilizer will pass into the recommended wall opening.

7. With the front panel open, move the sterilizer into the permanent site.

SECTION 4 INSTALLATION INSTRUCTIONS

INSTALLATION SEQUENCE

The following sequence of procedures is covered in this section:

BEFORE YOU BEGIN

CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Follow the instructions in this manual to ensure safe and efficient performance of the equipment. Failure to comply with these instructions or to provide specific services could damage the equipment and void the equipment warranty.

NOTE

Before installing the sterilizer, be sure the location is prepared for water, electrical power, steam, and waste as outlined on the arrangement drawings. For detailed information, see Section 6, "Drawings".

Review the technical requirements for standard and optional equipment outlined in this section and in Section 5, "Optional Equipment".

UTILITY REQUIREMENTS

NOTE

Unions must be used for the steam supply, cold water supply, and pressure relief valve connections to the sterilizer.

The following utility connections, as specified on the arrangement drawings in "Drawings" on page 6–1, are required:

- manual shutoff valves, pressure gauges, and steam trap (supplied by the customer) for the water and steam supplies at the sterilizer site
- steam supply (S); the steam source may be either an integral steam boiler or a facility steam supply
- cold water supply (CW); a backflow preventer (supplied by the customer) must be installed as required by local codes
- 115 Vac electrical supply (E); conveniently accessible fused disconnect switches (supplied by the customer) are required in all electrical supply lines at the sterilizer site
- drain (D)
- pressure relief valve vents (SV)

The following utility connections may be required:

- hot water supply (HW) for an integral steam boiler; treated hot water supply (HW) for a stainless steel boiler

  For detailed information, see "Steam Boiler Feedwater Quality" on page 7–3.

- three-phase electrical supply (K); required if an integral steam boiler or vacuum pump is used

  For detailed information, see "Steam Boiler" on page 5–1 or "Vacuum Pump System" on page 5–31.

- dedicated fused disconnects; required for each optional booster pump, water saver, and water chiller

  For detailed information, see "Booster Pump Package" on page 5–10, "Water Saver System" on page 5–16, and "Water Chiller" on page 5–16.

- compressed air (AS); only on a unit with a biological sealing flange (BSF) or a cross contamination barrier (CCB)

POSITIONING AND LEVELING

CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Care should be taken to avoid possible surface damage to the floor of the installation site when maneuvering the sterilizer into position.

POSITIONING

Permanent positioning is determined by the configuration of the model you are installing. Compliance with arrangement drawing specifications is essential to provide proper access areas and cabinet panel installation.

NOTE

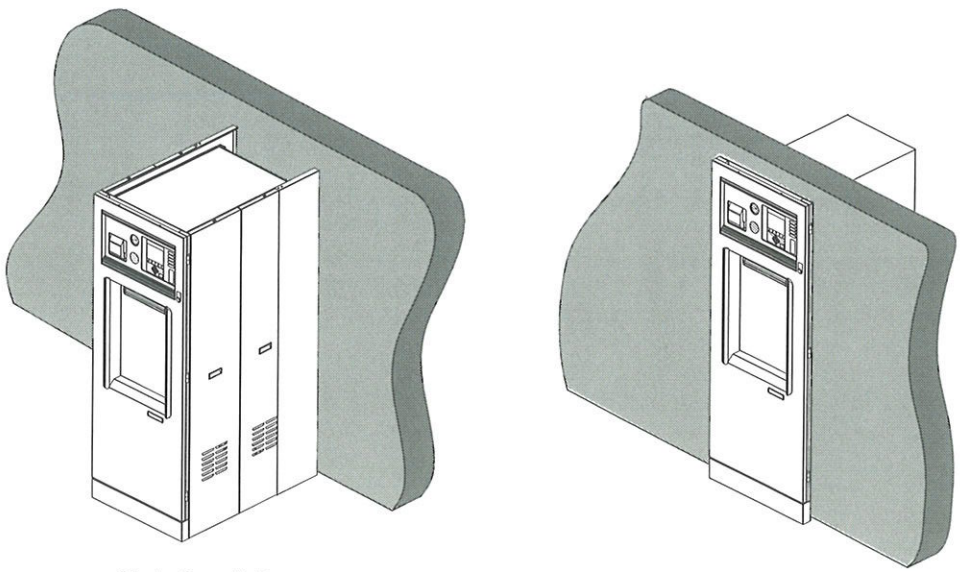
For Cabinet Models (Single Door)—The side panels extend from the rear edge of the face panel to approximately 4 in. (101.6 mm) beyond the back of the sterilizer. If the cabinet is to be against the wall, the distance from the wall to the back of the face panels must be maintained.

For Recessed Models—Remove and discard the top cabinet brackets prior to installation.

Refer to "Cabinet Packages" on page 5–32 to see the various panels and bracket installation configurations for the 400/500 Series Steam Sterilizer single- and double-door units.

A single-door unit may be freestanding or recessed into a wall.

FIGURE 4–1. SINGLE-DOOR INSTALLATION



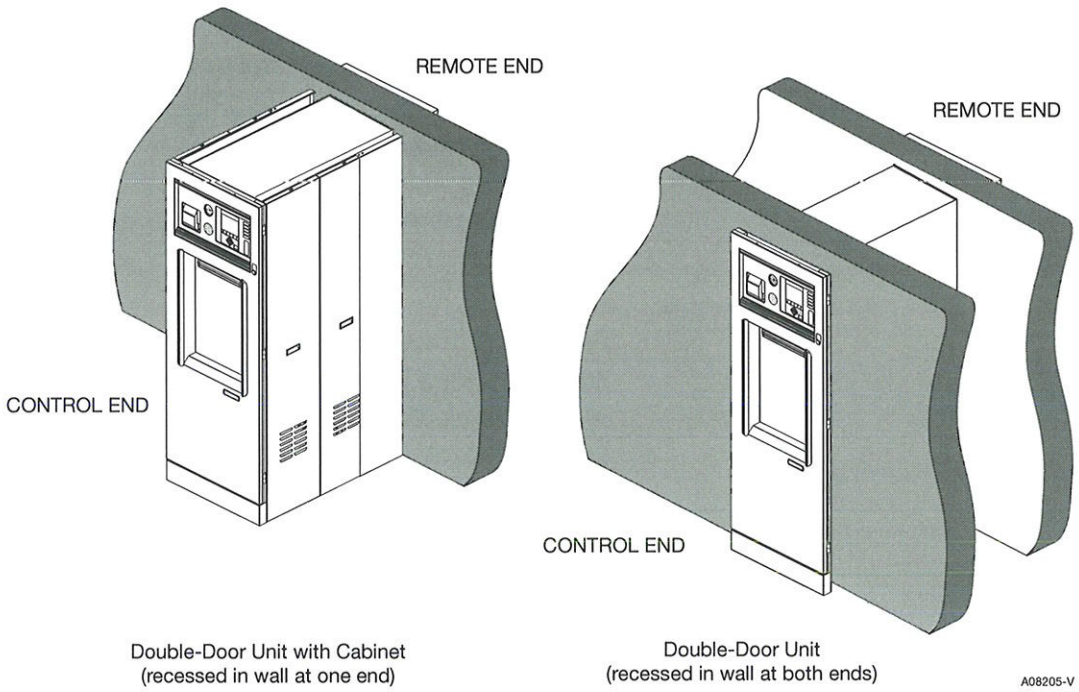
Single-Door Unit with Cabinet

Single-Door Unit Recessed in Wall

A08205-U

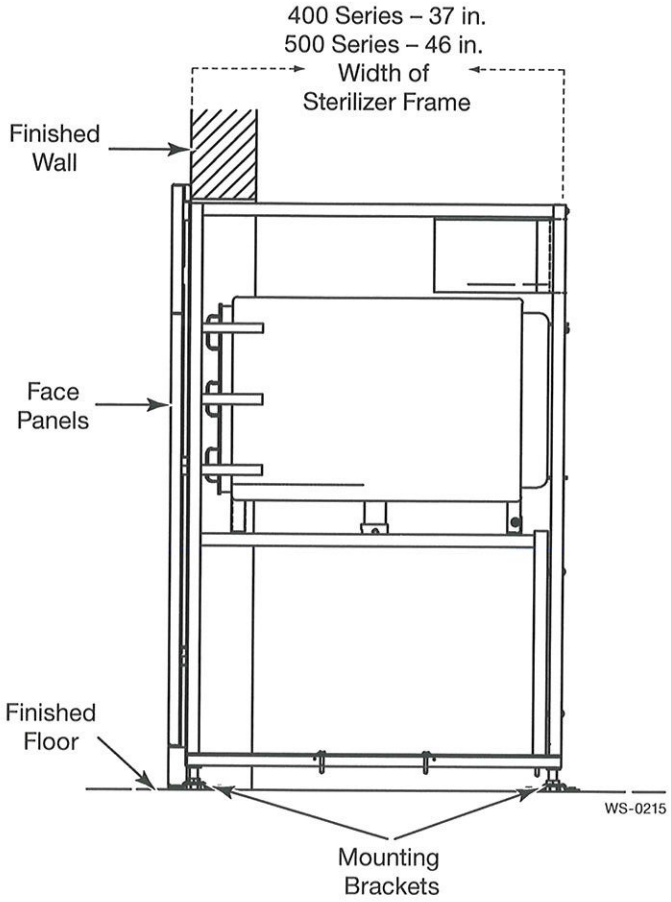
A double-door unit may be recessed into a wall at one end or both ends. Compliance with the arrangement drawing specifications is essential.

FIGURE 4–2. DOUBLE-DOOR INSTALLATION



1. Roll the sterilizer into its permanent location using casters or a narrow pallet jack.
2. When the unit is in place, use the casters to level and raise the sterilizer into position.
3. Use wood blocks or an equivalent to block all four corners of the frame.
4. Raise the casters, remove the locknuts, and remove the caster blocks.
5. Lower the mounting brackets.
6. Remove the wood blocks.
7. Thread the locknuts, removed in step 4, over the leveling bolts.

FIGURE 4–3. SIDE VIEW OF UNIT



8. From the underside of the sterilizer frame, rotate the leveling feet until the unit is at least 3 in. (76 mm) from the bottom of the frame to the floor. The 3 in. measurement is required for installation of the face panels.

NOTE

If a loading car and transfer carriage will be used to load goods in the sterilizer, the tracks inside the chamber must match the height of the top plate of the transfer carriage. Standard height of the top plate of a transfer carriage is 38 3/8 in. (975 mm) above the floor.

LEVELING

Once the sterilizer is positioned, check the alignment and leveling of the frame. The unit must be level to run properly and align with the loading car.

1. Place a spirit level on the floor inside the chamber or vertically against the chamber wall and level the unit from side-to-side with the adjustable legs.

2. Place the level vertically against the door gasket head ring and level the unit from front-to-back with the adjustable legs.

3. Check that the height adjustment is correct for installation of the face panels and for use of a loading car and transfer carriage.

4. Tighten the locknuts on the leveling feet.

5. Install the face panels.

INSTALLING THE BIOLOGICAL SEALING FLANGE

If the sterilizer has a biological sealing flange, see "Biological Sealing Flange (BSF) (522LS, 533LS, 544LS)" on page 5–22 for installation instructions.

INSTALLING THE CROSS CONTAMINATION BARRIER

If the sterilizer has a cross contamination barrier, see "Cross Contamination Barrier (CCB) (522LS, 533LS)" on page 5–27 for installation instructions.

ANCHORING

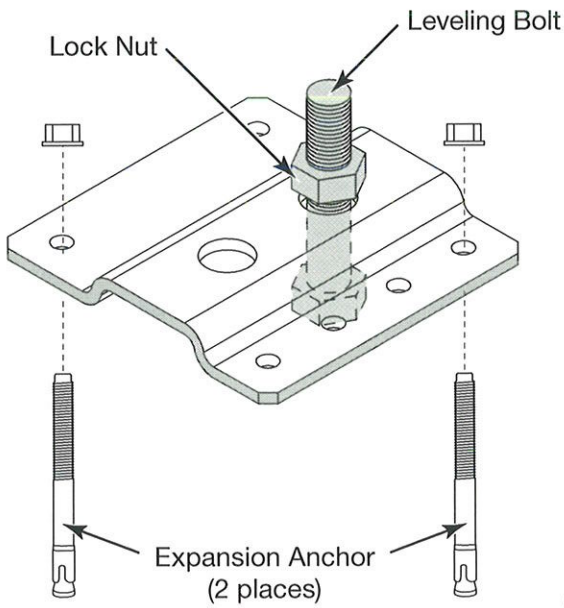
NOTE

The seismic anchoring specifications recommended for this sterilizer are in compliance with the seismic anchoring codes set forth by the state of California. The seismic anchoring specifications are available from your Getinge representative.

It is recommended that permanent anchoring of the sterilizer to the floor be done after the unit has been checked by a qualified Getinge USA service representative.

1. When the sterilizer is positioned correctly, align the mounting brackets. See "Mounting Bracket Orientation" on page 3–8.

FIGURE 4–4. ANCHORING THE MOUNTING BRACKETS



NOTE

The positions of the leveling bolt and the expansion anchors are for the purposes of illustration only. For the correct positions at EACH corner of the sterilizer, see the appropriate arrangement drawing.

2. Drill the holes for the anchors.

NOTE

Although each mounting bracket has 6 anchoring holes, ONLY TWO are used AND each sterilizer model uses a DIFFERENT set of holes. Make sure that you anchor the sterilizer using the correct set of anchoring holes. To determine the correct set, see the arrangement drawing (Section 6, "Drawings") and the seismic anchorage calculations for the sterilizer model you are installing.

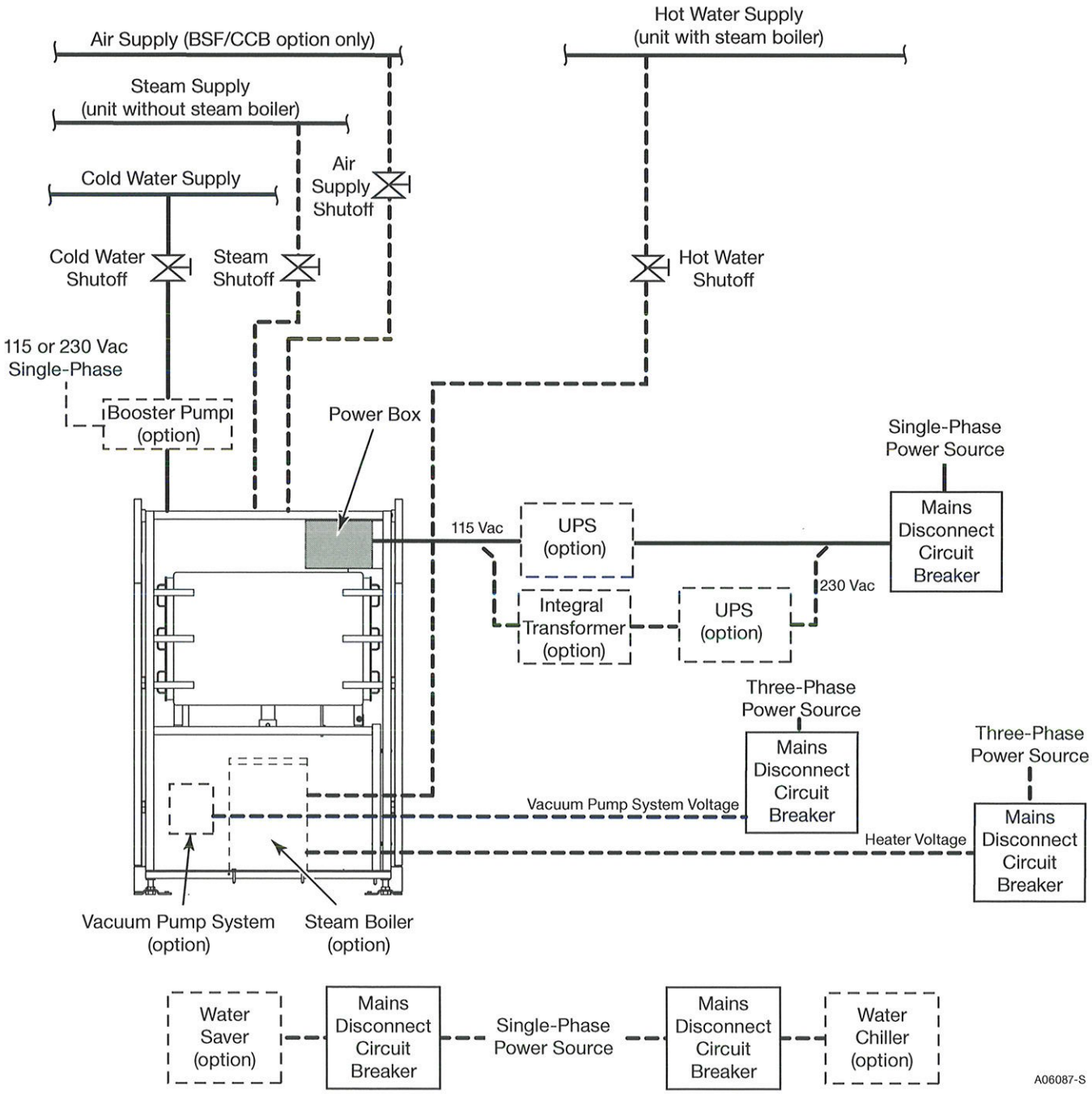
3. Install the anchors and secure the brackets with the anchoring hardware. For the requirements to satisfy seismic anchoring codes, see the seismic anchorage calculations for the sterilizer model you are installing.

4. At each bracket, tighten the locknut on the 1 in. leveling bolt to lock the mounting bracket. This is necessary to maintain the height and leveling of the sterilizer.

UTILITY CONNECTIONS

The sterilizer requires steam, cold water, and electrical supplies as specified on the arrangement drawings. A sterilizer with an integral steam boiler requires a hot water supply, instead of steam, as well as a three-phase electrical supply.

FIGURE 4–5. UTILITY CONNECTIONS



CONNECTING THE PLUMBING

STEAM BOILER

If the sterilizer has an integral steam boiler, see "Connecting the Plumbing" on page 5–3 for the location of the hot water and drain connections.

CONNECTING OPTIONAL EQUIPMENT

WATER SAVER (MP-129F)

If a water saver system is shipped with the sterilizer, see *MP–129 (E and F) Water Saver: Installation Manual (61301605429)* for installation instructions.

WATER CHILLER

If a Getinge Water Chiller is shipped with the sterilizer, see *Water Chiller: User-Technical-Installation Manual (61301606615)* for installation instructions.

BOOSTER PUMP PACKAGE

If a booster pump is shipped with the sterilizer, the booster pump must be installed before connecting the cold water supply to the sterilizer. See "Booster Pump Package" on page 5–10 for installation instructions.

STERILIZER CONNECTIONS

NOTE

Unions must be used on the steam, cold water, and pressure relief valve connections.

All service connections must conform with local codes. Refer to the appropriate arrangement drawing in Section 6, "Drawings" for supply line pipe sizes and specification requirements for the installation site.

Pressure gauges should be installed in the steam and water supply lines to monitor the incoming pressure. Since some sterilizer malfunctions may be caused by inadequate steam or water pressure, pressure gauges in the supply lines may be useful in servicing the sterilizer.

The steam supply to the sterilizer must meet the steam quality specification on the arrangement drawing. Install a steam separator, MP-106 Steam Conditioning Package, or a thermodynamic steam trap to improve the quality of the steam. For more information, see "Steam Supply Quality" on page 7–1.

The supply line connections on the sterilizer are tagged for identification.

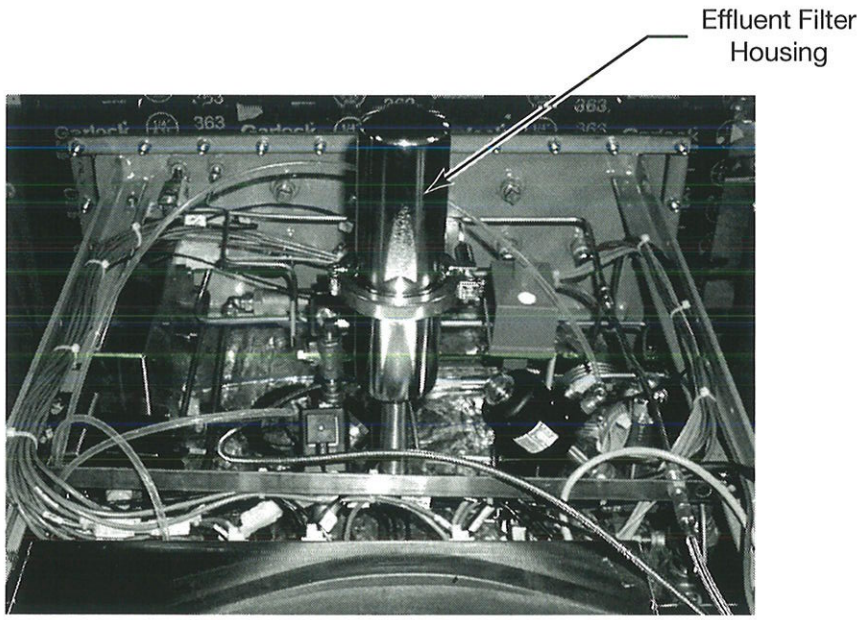
1. Connect the following utilities to the sterilizer:
   - steam supply
   - cold water supply
   - hot water supply—steam boiler units only
   - drain—route the sterilizer drain line to the customer-supplied drain line connection point
   - pressure relief—connect the outlet of the pressure relief valve to the appropriate discharge location in accordance with local codes
   - air supply—BSF and CCB units only

EFFLUENT FILTER (544LS)

CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Do not assemble the effluent filter before the sterilizer is in its permanent location. When fully assembled, the filter housing is higher than the top of the biological sealing flange. It will not clear the wall opening and might be damaged during positioning of the sterilizer.

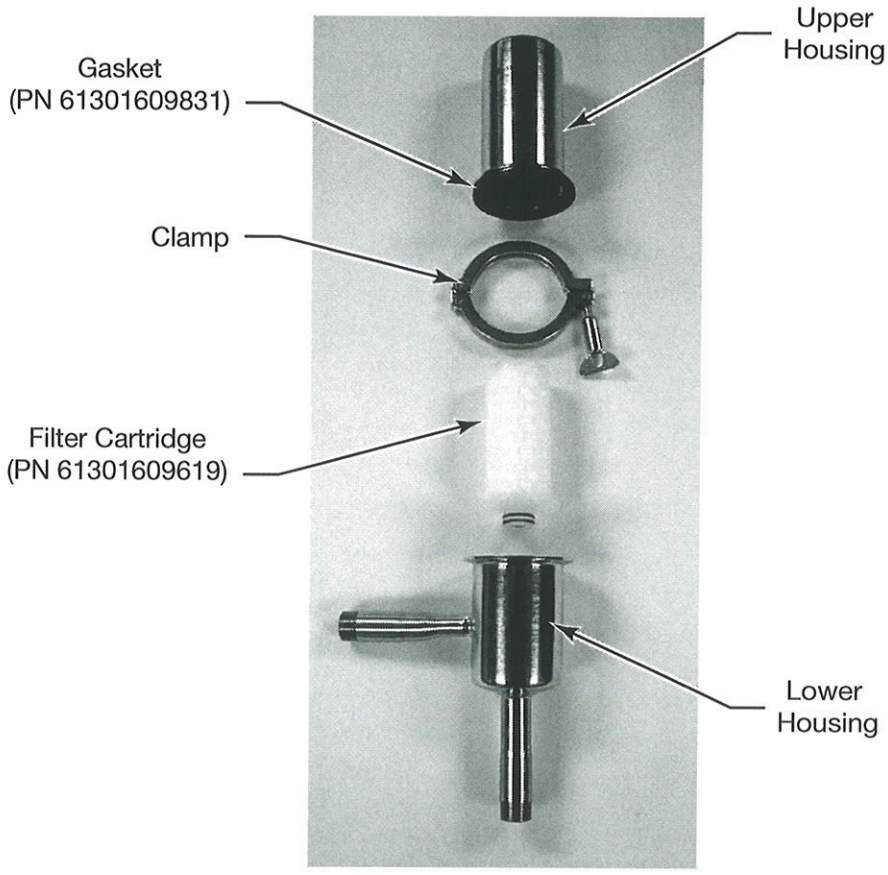
FIGURE 4–6. EFFLUENT FILTER LOCATION



UPPER PIPING (as viewed from non-containment side)

SUPP 05-01A

FIGURE 4–7. EFFLUENT FILTER ASSEMBLY



1. Cut open the plastic bag at the O-ring end of the filter cartridge.
2. Slide back, but do not remove, the plastic bag so the O-ring is exposed.
3. Wet the O-ring with pyrogen-free distilled water.
4. Firmly hold the filter cartridge by the upper and lower ends.
5. Slightly turn the filter cartridge to insert it into the lower housing.
6. Turn the filter cartridge all the way until it stops.
7. Check that the filter cartridge is seated firmly.
8. Remove the plastic bag from the filter cartridge.
9. Place the gasket between the upper and lower housing.
10. Install the clamp around the upper housing, gasket, and lower housing.
11. Tighten the clamp.

CONNECTING THE ELECTRICAL POWER

CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Check that the power box circuit breaker switches are in the OFF position to ensure that the power supply does not energize the sterilizer components prior to the performance of required adjustments and testing.

WIRING OF OPTIONAL EQUIPMENT

STEAM BOILER

If the sterilizer has an integral steam boiler, see "Connecting the Electrical Power" on page 5–6 for the location of the heater connections.

UNINTERRUPTIBLE POWER SUPPLY (UPS)

If an uninterruptible power supply (UPS) is shipped with the sterilizer, see "Uninterruptible Power Supply (UPS)" on page 5–17 for electrical connections. The UPS must be installed and wired correctly before connecting electrical power to the sterilizer.

WALL MOUNT DISPLAY

If the sterllizer has a remotely-located control panel, see "Wall Mount Display" on page 5–18 for the mounting and connection procedures.

VACUUM PUMP SYSTEM

If the sterilizer has a vacuum pump system, see "Vacuum Pump System" on page 5–31 for the three-phase power connection procedure.

ELECTRICAL SUPPLY

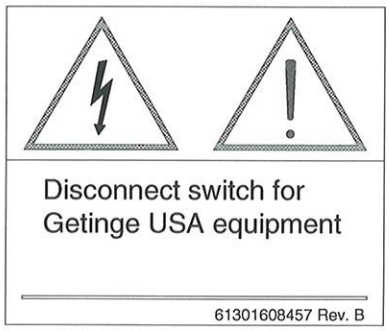
CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Electrical power MUST NOT be supplied to the sterilizer until the required adjustment and electrical performance tests are performed by a qualified Getinge USA service representative.

It is the responsibility of the customer to complete all electrical connections in accordance with the National Electrical Code and all applicable local codes.

A permanently connected, dedicated electrical supply with conveniently accessible disconnect switch (supplied by the customer) is required for each sterilizer. Where both single-phase and three-phase supplies are required, two disconnect switches can be used located as close as possible to each other. Disconnect switches must be located as close to the sterilizer as possible and within easy reach of the operator.

FIGURE 4–8. GETINGE USA LABEL



WS-0229

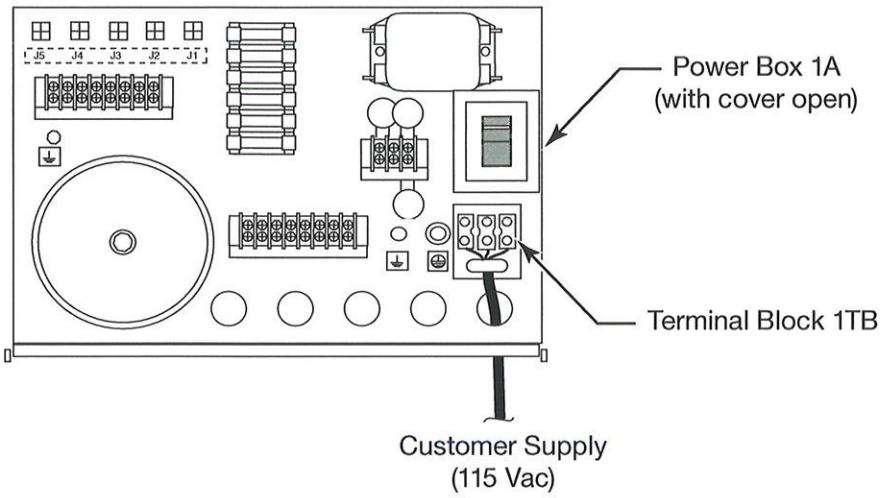
All disconnect switches need to be properly labeled as the disconnecting devices for the specified sterilizer. Affix the Getinge USA label (PN 61301608457) supplied with the sterilizer to each disconnect switch enclosure and indicate the sterilizer ID on the label.

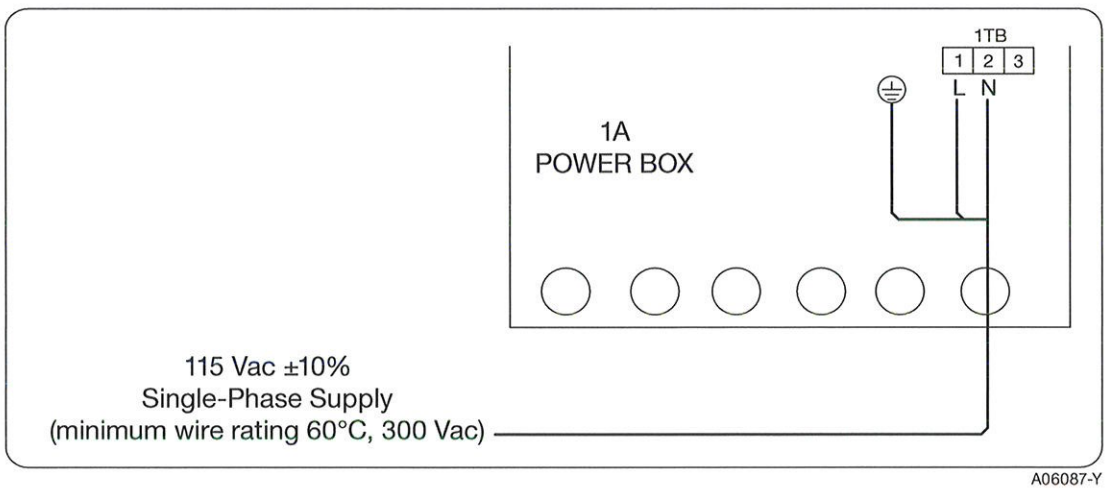
NOTE

See the appropriate arrangement drawing in Section 6, "Drawings" for recommended breaker and fusing.

115 VAC INSTALLATION

FIGURE 4–9. CONNECTING THE POWER SOURCE (115 VAC)



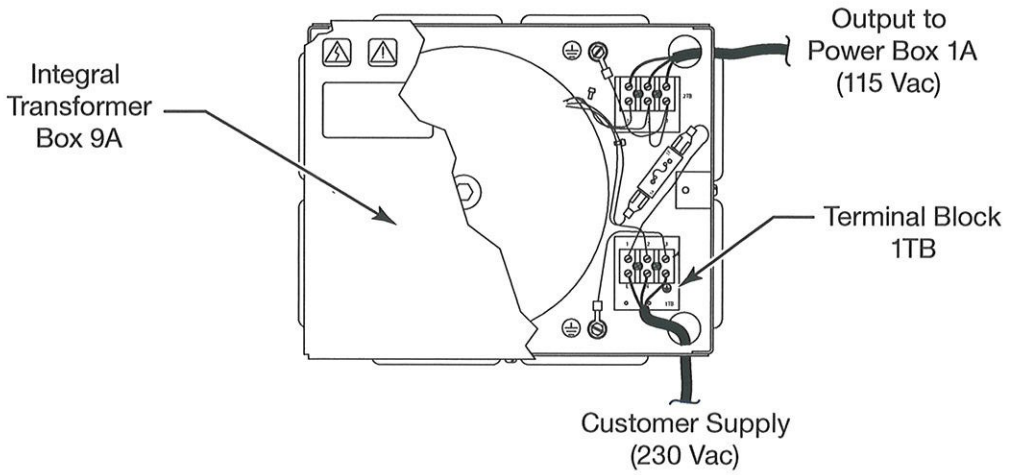


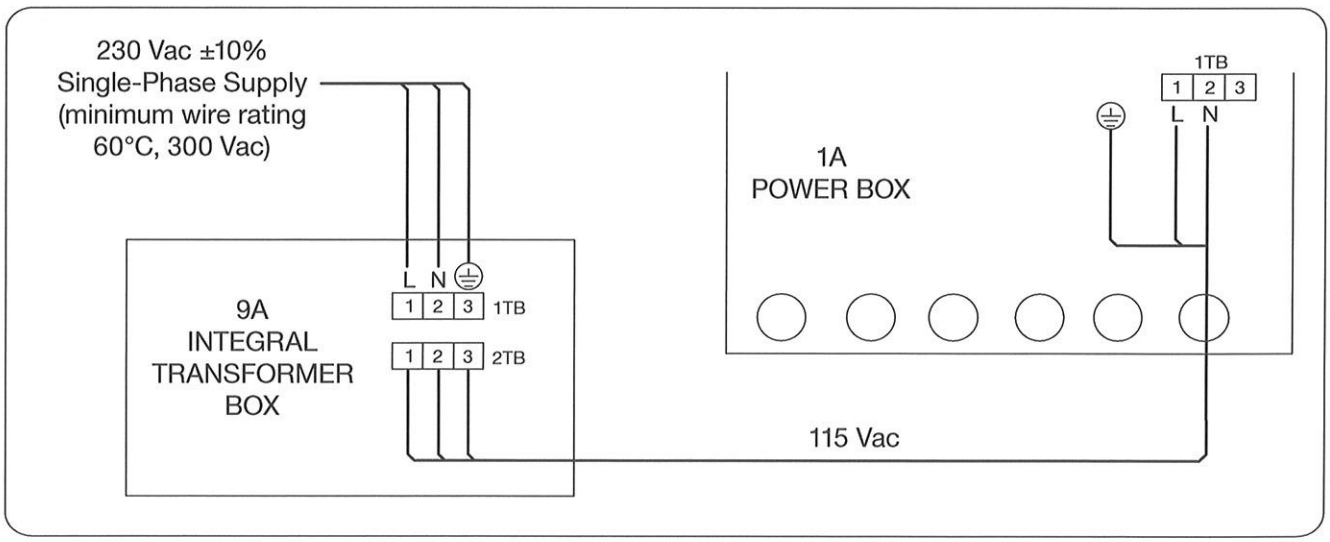
1. Open the cover of the power box 1A.
2. Route the control voltage source cable through one of the knockouts in the back or side of the box.
3. Connect the 115 Vac, 50/60 Hz supply circuit to terminals L (hot), N (neutral), and protective earth ground on terminal block 1 TB.
4. Close the power box.

230 VAC INSTALLATION

The integral transformer 9A is a factory-installed option used to step down the 230 Vac customer supply to the 115 Vac required by the sterilizer.

FIGURE 4–10. CONNECTING THE POWER SOURCE (230 VAC)





A06087-V

1. Connect the 230 Vac, 50/60 Hz, single-phase supply circuit to terminals L (hot), N (neutral), and protective ground on terminal block 1TB inside the integral transformer box.

NOTE

If the installation includes a UPS (230 Vac model), see "Uninterruptible Power Supply (UPS)" on page 5–17 for electrical connections.

INSTALLING THE PANELS

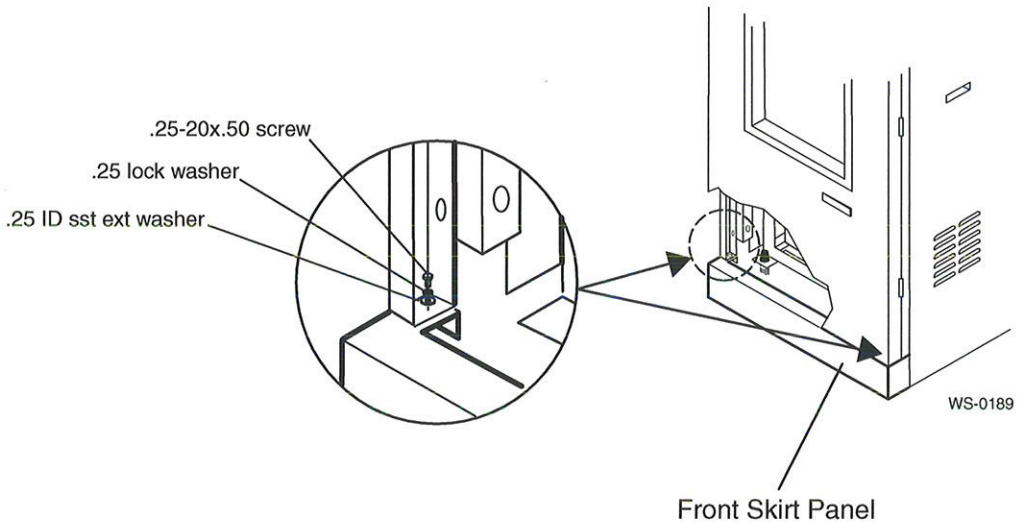
LOWER FRONT PANEL (MANUAL DOOR)

NOTE

If this unit is equipped with the power door option, do the steps in "Lower Front Panel and Footswitch (Power Door Option)" on page 4–17.

Ensure the lower front panel is mounted flush with the sides of the sterilizer.

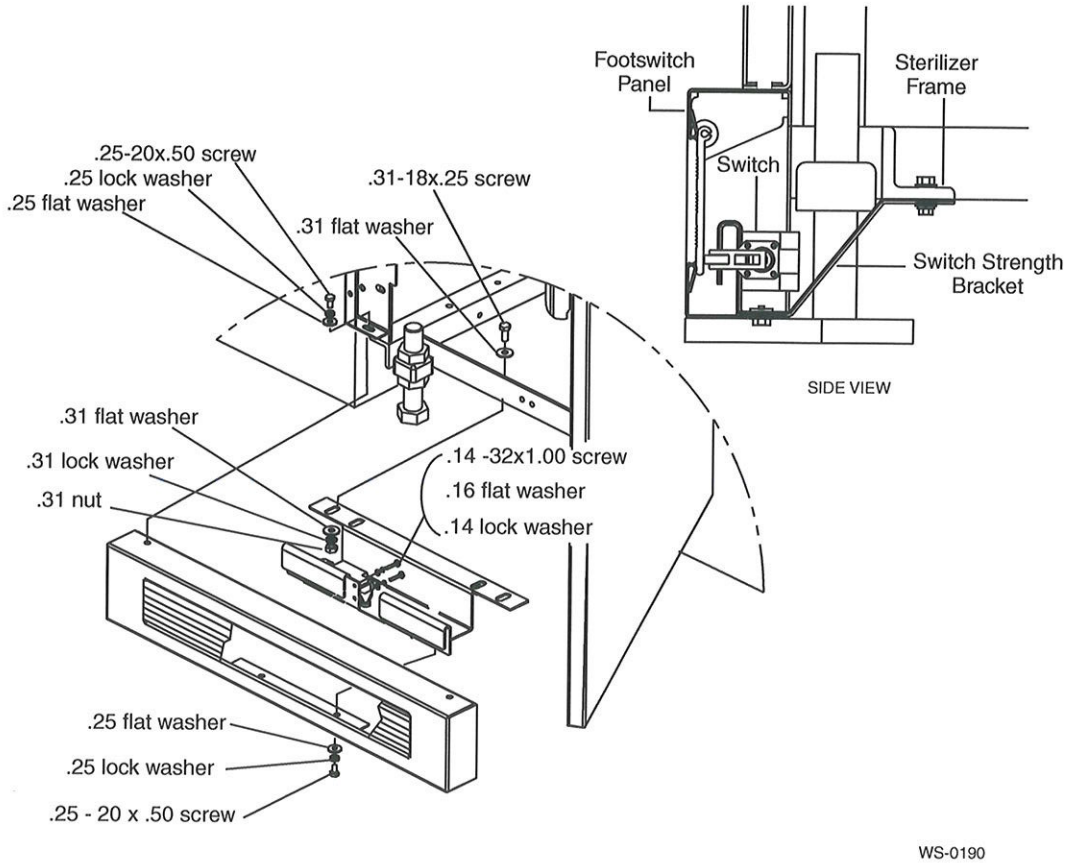
FIGURE 4–11. INSTALLING THE LOWER FRONT PANEL



1. Using the hardware provided, install the lower front panel on the lower frame of the sterilizer.

LOWER FRONT PANEL AND FOOTSWITCH (POWER DOOR OPTION)

FIGURE 4–12. FOOTSWITCH BRACE



Before installing the panel, the switch strength bracket must be installed to protect the switch from possible damage. The switch strength bracket and all necessary hardware should be in the shipping package.

1. Open the front panel. See "Opening the Sterilizer Front Panel" on page 3–4.
2. Open the sterilizer door to allow access.
3. Slide the footswitch under the door frame to the front of the sterilizer.
4. Attach the footswitch to the switch strength bracket.
5. Attach the switch strength bracket to the footswitch panel.
6. Slide the lower front panel with the components attached into place.
7. Attach the lower front panel to the sterilizer making sure the panel is mounted flush with the sides of the sterilizer. See Figure 4–11.
8. Attach the footswitch brace to the sterilizer frame.

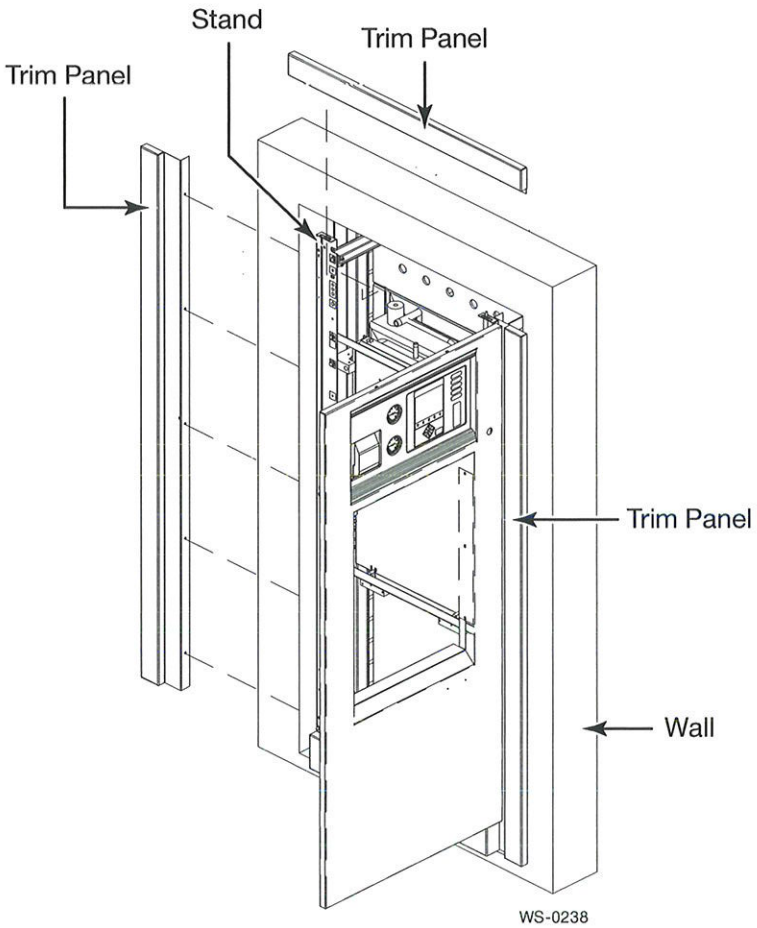
CABINET PACKAGE

If the unit has a cabinet package, see "Cabinet Packages" on page 5–32 for the installation and adjustment procedure.

TRIM PANELS (500 SERIES STERILIZER WITH BSF OR CCB)

Install the trim panels to the sides and top of the sterilizer frame. Refer to Figure 4–13 or Drawing 61301608562 while performing the following steps.

FIGURE 4–13. STERILIZER TRIM PANELS



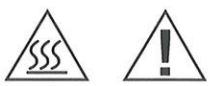
1. Hold the trim panel in place.
2. Locate and mark the hole locations on the upright angles of the stand.
3. Drill 1/4 in. (6 mm) holes at the marked locations.
4. Attach trim panels to the stand using the hardware provided with the trim panels.

SECTION 5 OPTIONAL EQUIPMENT

Your installation may include optional equipment. Follow the appropriate installation instructions from the following list:

STEAM BOILER

SPECIFICATIONS



WARNING

BURN HAZARD / SHOCK HAZARD: Injury or death may occur if this equipment is not properly installed and operated. The boiler must be grounded using the grounding means provided and be wired in accordance with the National Electrical Code (NEC) by a qualified person after reviewing the installation and operating instructions for the boiler.

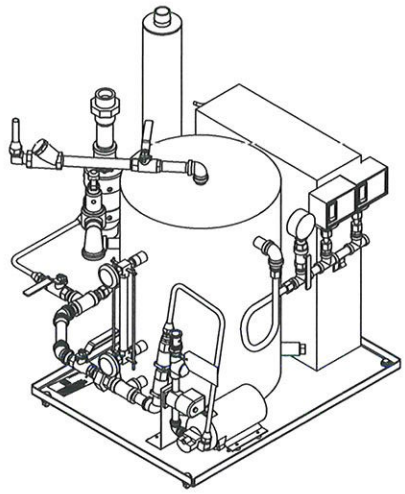
The following utility connections, as specified on the arrangement drawing, are required for a sterilizer with an integral steam boiler:

- Manual shut-off valve, strainer, and pressure gauge in the hot water supply line.
- Separate three-phase electrical service for the heating circuit.

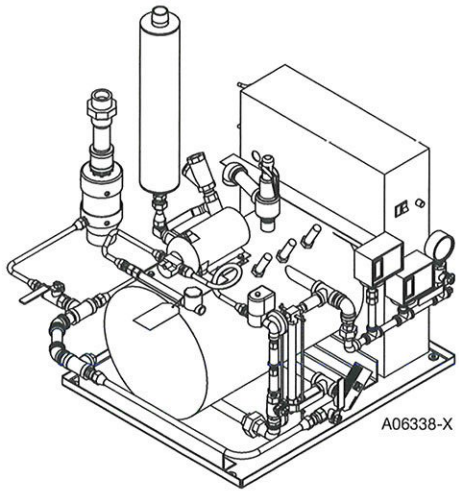
For detailed information on electrical requirements, hot water (pressure, flow, and quality), and connection sizes, see the appropriate arrangement drawing in Section 6, "Drawings".

BOILER MODELS

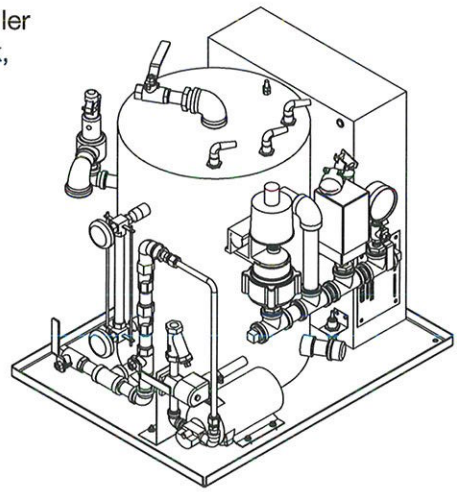
FIGURE 5–1. STEAM BOILER MODELS



CAS-30C Steam Boiler
(vertical boiler tank,
brass piping)



GTS-30A Steam Boiler
(horizontal boiler tank,
brass piping)



SSB30C Steam Boiler
(stainless steel piping)

The sterilizer may be equipped with one of the following:

- CAS-30C Steam Boiler with a vertical boiler tank (400 series sterilizer)
- GTS-30A Steam Boiler with a horizontal boiler tank (500 series sterilizer)
- SSB30C Steam Boiler with a vertical boiler tank (400 or 500 series sterilizer with stainless steel piping)

CONNECTING THE PLUMBING

The steam boiler is shipped mounted to the sterilizer with the steam output and drain line connected to the sterilizer. The hot water supply and pressure relief valve vent are supplied by the customer.

NOTE

Use unions on the hot water supply and pressure relief valve connections.

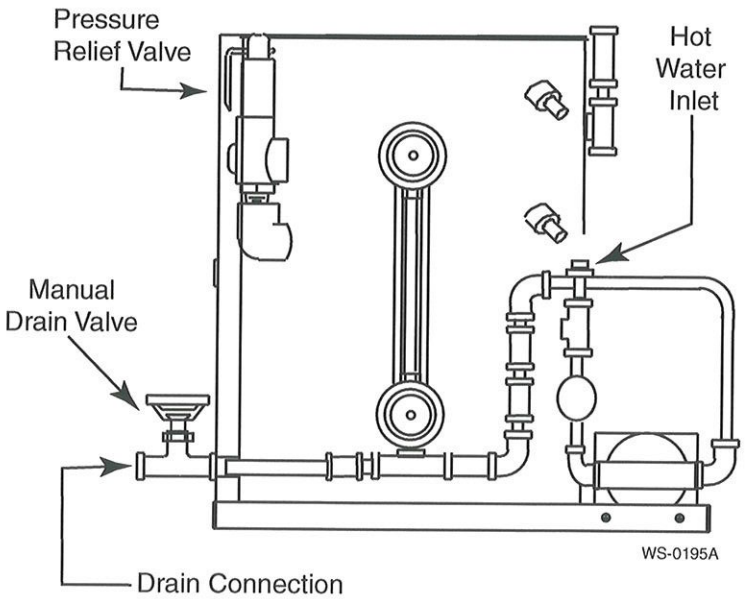
It is recommended that the pressure relief valve be piped to a vented manifold outside the equipment service area per ASME code.

Follow the appropriate instructions for the steam boiler:

- "Connecting a CAS-30C Steam Boiler"
- "Connecting a GTS-30A Steam Boiler" on page 5–4
- "Connecting a SSB30C Steam Boiler" on page 5–5

CONNECTING A CAS-30C STEAM BOILER

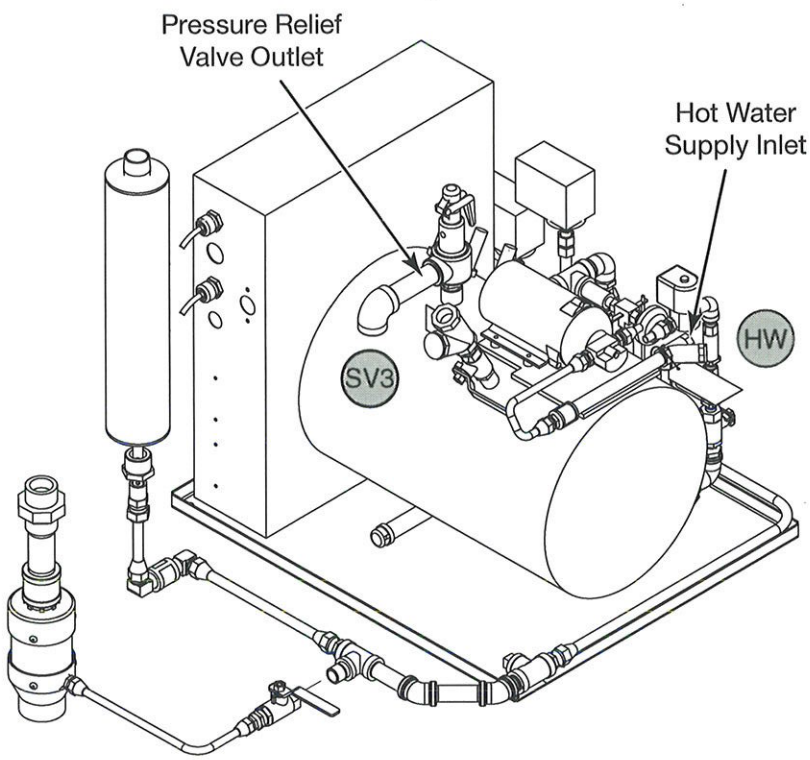
FIGURE 5–2. CAS-30C STEAM BOILER PLUMBING CONNECTIONS



1. Connect the hot water supply to the water inlet.

CONNECTING A GTS-30A STEAM BOILER

FIGURE 5–3. GTS-30A STEAM BOILER PLUMBING CONNECTIONS



See Arrangement Drawing HS4083
for Utilities Requirements

HW Hot Water

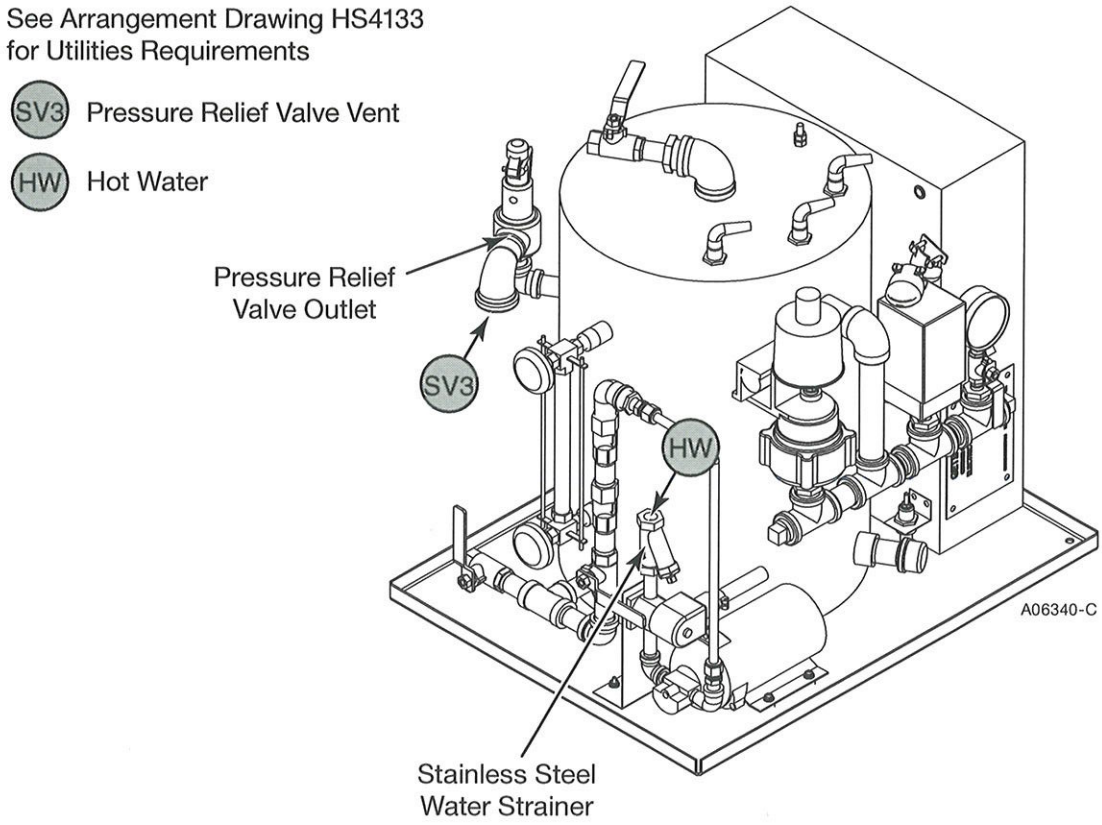
SV3 Pressure Relief Valve Vent

CB-18

1. Connect the hot water (HW) supply to the water strainer on the boiler.
2. Connect the outlet of the pressure relief valve (SV3) to a vent system.

CONNECTING A SSB30C STEAM BOILER

FIGURE 5–4. SSB30C STEAM BOILER PLUMBING CONNECTIONS



1. Connect the hot water (HW) supply to the water strainer on the boiler.

2. Connect the outlet of the pressure relief valve (SV3) to a vent system.

CONNECTING THE ELECTRICAL POWER

The steam boiler requires a separate three-phase electrical service for the heating circuit. The sterilizer provides the 115 Vac required for the boiler control circuits. For detailed information, see the appropriate arrangement drawing in Section 6, "Drawings".

- See Figure 5–5 for the GTS-30A Steam Boiler.
- See Figure 5–6 on page 5–7 for the CAS-30C and the SSB30C Steam Boiler.

FIGURE 5–5. GTS-30A STEAM BOILER ELECTRICAL CONNECTIONS

See arrangement drawing for current ratings and wire sizes.

Be sure wires are clean and bright to ensure good electrical contact.

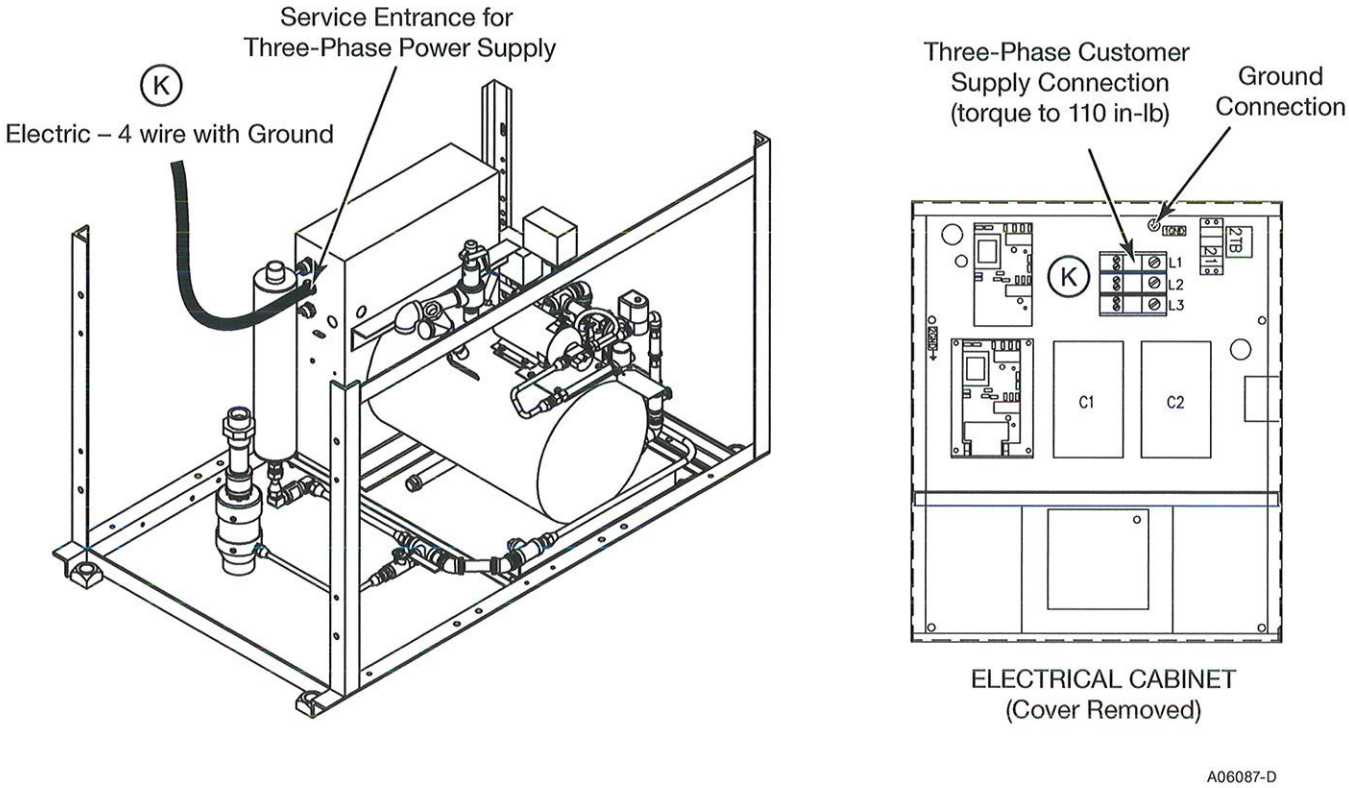
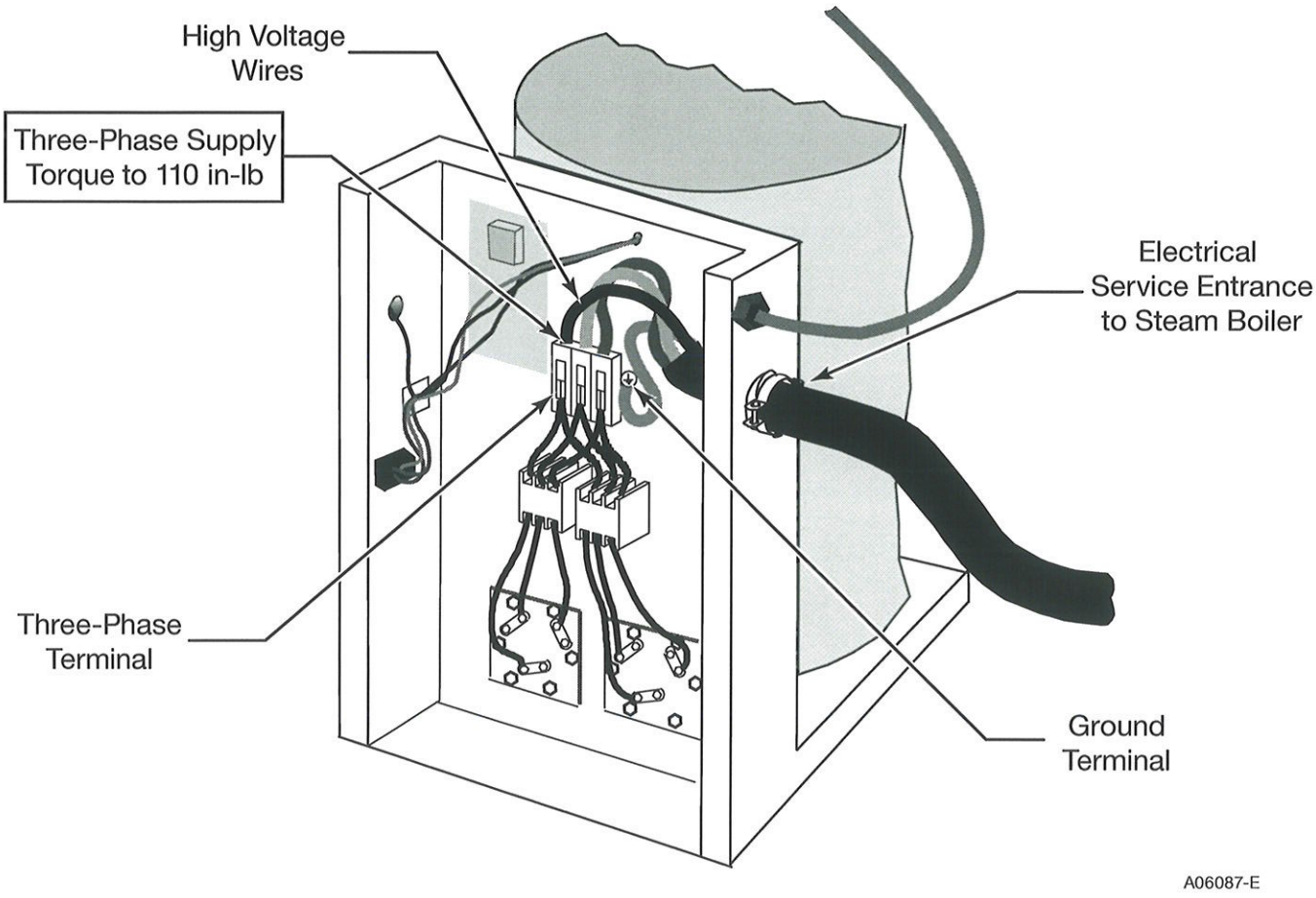


FIGURE 5–6. CAS-30C AND SSB30C STEAM BOILER ELECTRICAL CONNECTIONS

See arrangement drawing for current ratings and wire sizes.

Be sure wires are clean and bright to ensure good electrical contact.



1. Remove the access cover from the steam boiler cabinet.
2. Connect L1, L2, and L3 to the three-phase terminal. Torque the terminals to 110 in-lb.
3. Connect the ground wire to the ground terminal. The ground terminal is located adjacent to the three-phase terminal.

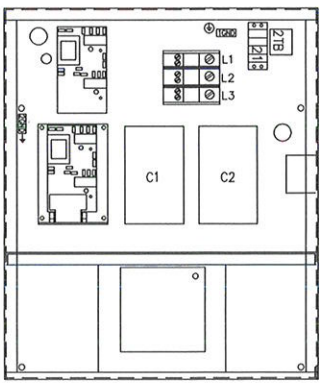
CHECKING THE HEATER CIRCUIT CONNECTIONS

CAUTION

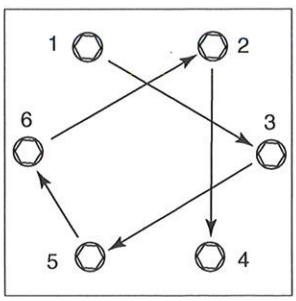
POSSIBILITY OF DAMAGE TO EQUIPMENT: The element flange bolts, element terminals, contactor terminals and customer three-phase supply terminals must be tightened to the specifications shown.

- See Figure 5–7 for the GTS-30A Steam Boiler.
- See Figure 5–8 on page 5–9 for the CAS-30C and the SSB30C Steam Boiler.

FIGURE 5–7. GTS-30A STEAM BOILER TORQUE SPECIFICATIONS



ELECTRICAL CABINET



FLANGE BOLT TIGHTENING SEQUENCE
(Heating elements not shown for clarity)

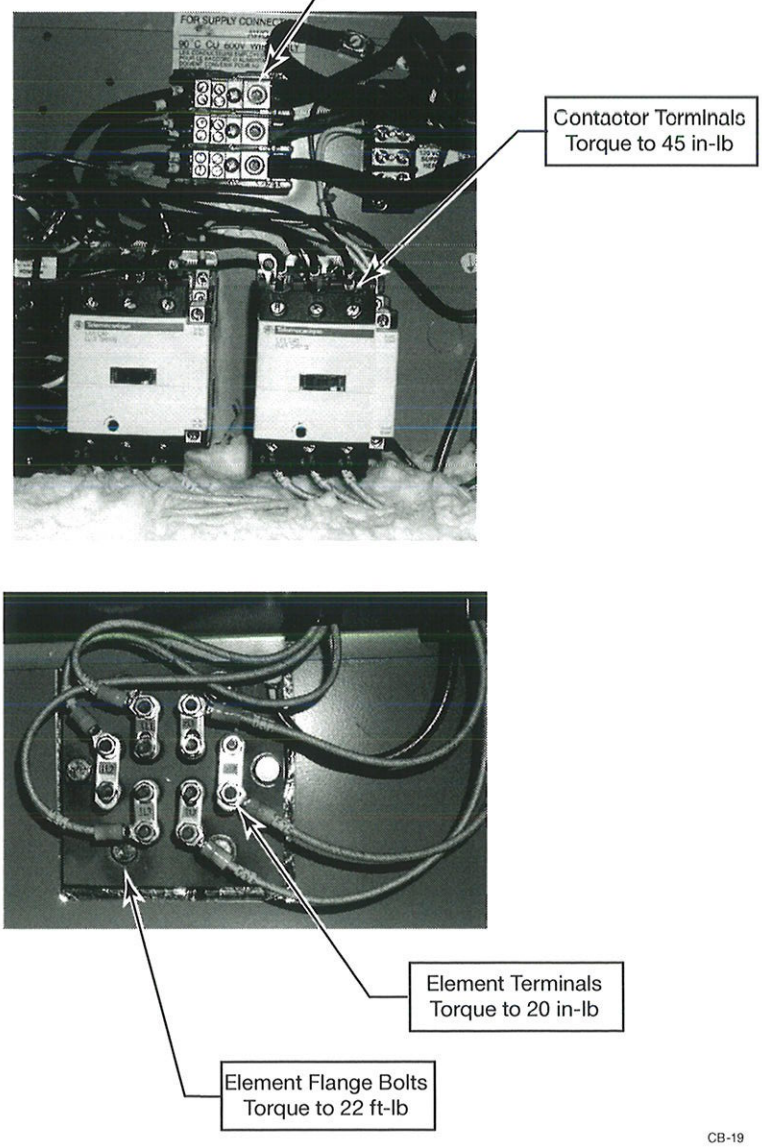
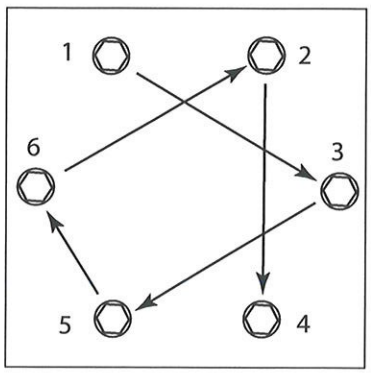
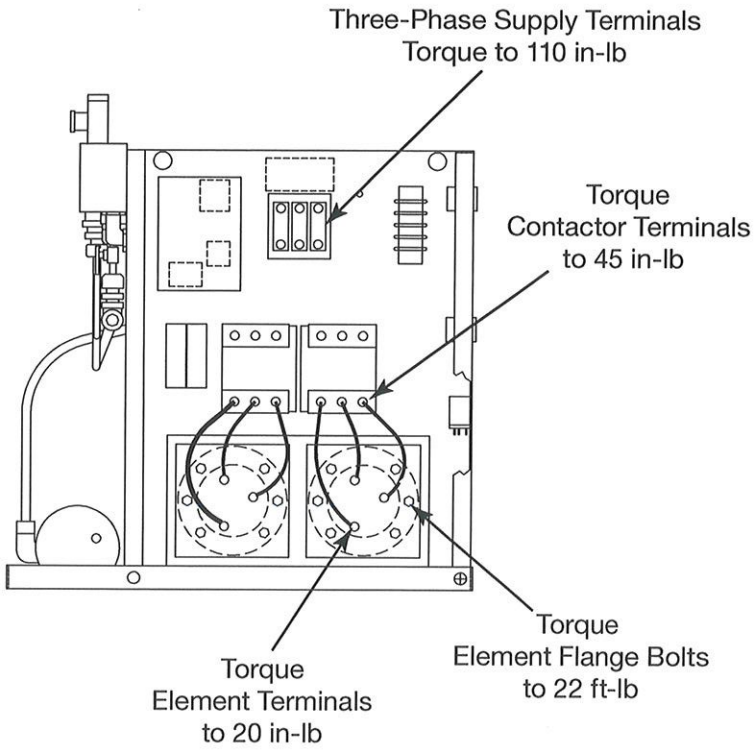


FIGURE 5–8. CAS-30C AND SSB30C STEAM BOILER TORQUE SPECIFICATIONS



FLANGE BOLT TIGHTENING SEQUENCE
(heating elements not shown for clarity)



1. Check the torque of the three-phase supply terminals. Tighten connections to 110 in-lb.
2. Check the torque of the contactor terminals. Tighten connections to 45 in-lb.
3. Check the torque of the heating element terminals. Tighten terminals to 20 in-lb.
4. Check the torque of the heating element flange bolts. Tighten the bolts to 22 ft-lb in the correct sequence.

FLUSHING THE STEAM BOILER

After the completion of the installation, but BEFORE the first use of the sterilizer, flush the steam boiler to remove scale and sediment.

1. Open the drain on the steam boiler.
2. Turn the steam boiler ON.

   The steam boiler fills automatically.
3. After one minute, close the drain.
4. Allow the steam boiler to heat.

5. Blow down the steam boiler manually. See the procedure "Blowing Down a Steam Boiler Manually" in the *User Manual*.

BOOSTER PUMP PACKAGE

A booster pump package is available for sterilizer installations where the cold water supply pressure is at least 20 psig dynamic but less than 40 psig dynamic. When energized, the pump increases the cold water supply pressure to the sterilizer, providing the dynamic pressure required for normal sterilizer operation. For detailed information, see the appropriate arrangement drawing for the plumbing and electrical connections in Section 6, "Drawings".

NOTE

A booster pump is not a replacement for an inadequate cold water supply. A booster pump cannot compensate for a water pressure that is LESS than 20 psig at the maximum flow rate.

The booster pump must be installed before connecting the cold water supply to the sterilizer.

The customer must provide a location for installing the pump and interface (I/F) box and the fastening hardware for mounting the pump and interface box.

PLUMBING CONNECTIONS

The following plumbing connections (provided by the customer) are required:

- plumbing connection between the discharge orifice of the booster pump and the inlet orifice of the water supply strainer attached to the sterilizer; this connection must include a pressure gauge
- plumbing connection between the suction orifice of the booster pump and the customer's water supply; a union is recommended for this connection
- shutoff valve in the water supply line at the sterilizer site

ELECTRICAL CONNECTIONS

The following electrical connections (provided by the customer) are required:

- electrical supply as indicated on the arrangement drawing
- electrical connection to the booster pump interface box per code requirements
  - for UL/CSA Installation—electrical connection between the booster pump interface box and the fused disconnect in the power box supply line of the sterilizer; an additional fused disconnect may

be installed in the supply line to the booster pump interface box if desired

- for IEC installation—electrical connection between the booster pump interface box and the transformer (supplied by Getinge USA and installed by the customer) in the power box supply line of the sterilizer

INSTALLATION

Figure 5–9 through Figure 5–14 show a typical installation of the booster pump package. The actual configuration depends on the desired location of the pump and its interface (I/F) box, as well as the particular structure of the sterilizer and the sterilizer site.

FIGURE 5–9. TYPICAL BOOSTER PUMP INSTALLATION

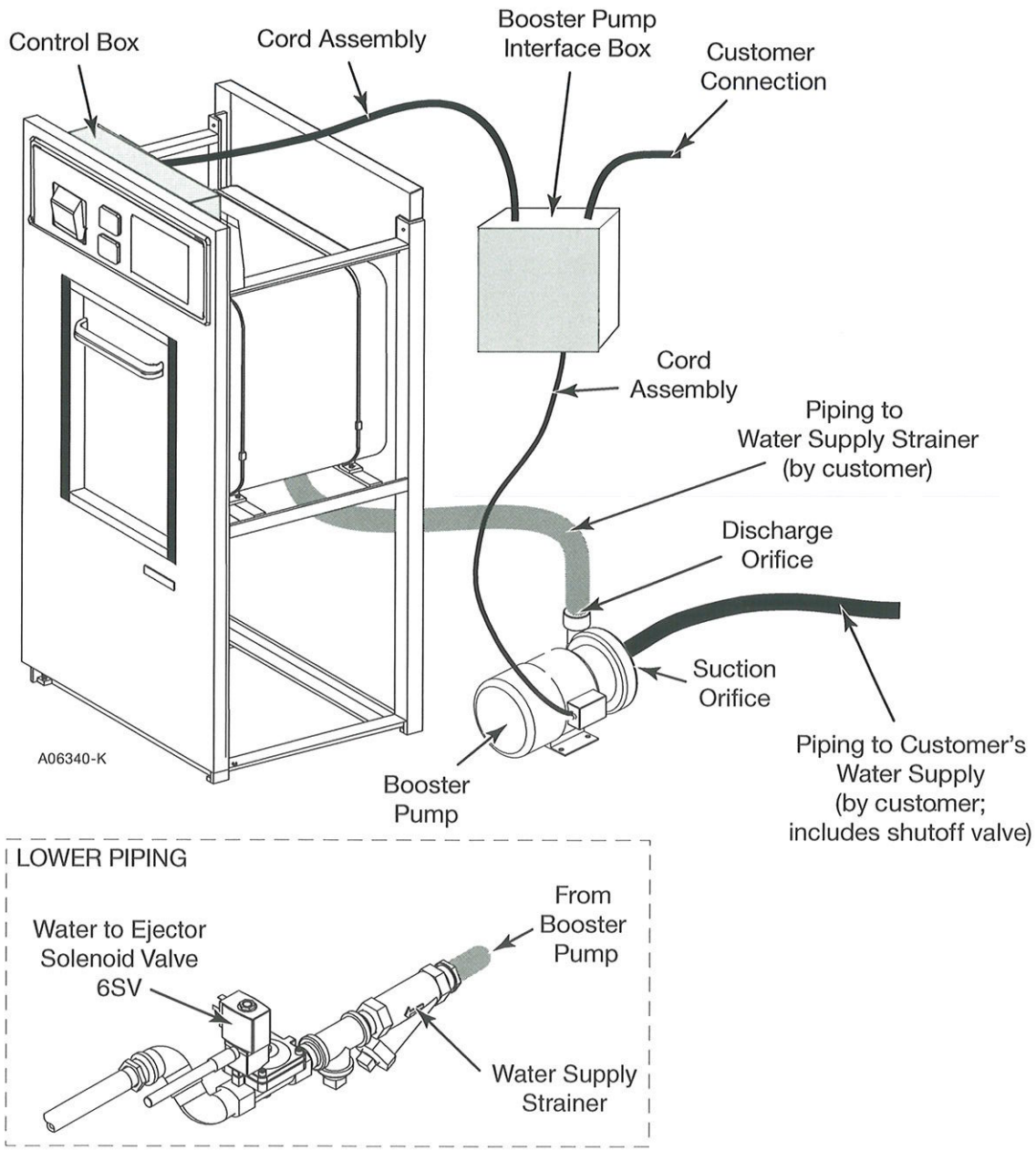
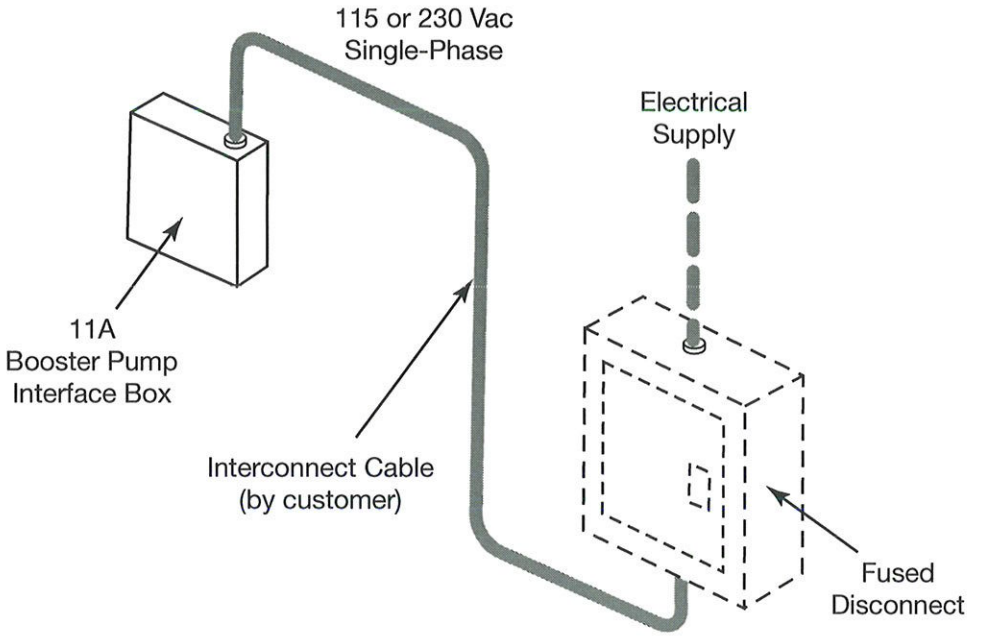
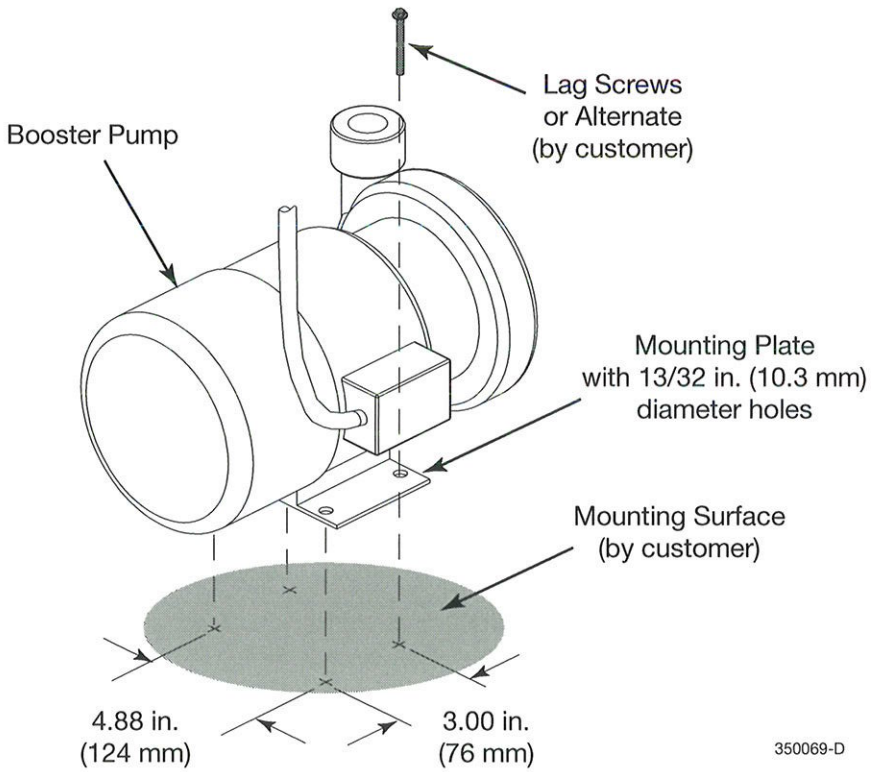


FIGURE 5–10. TYPICAL INTERFACE BOX INSTALLATION



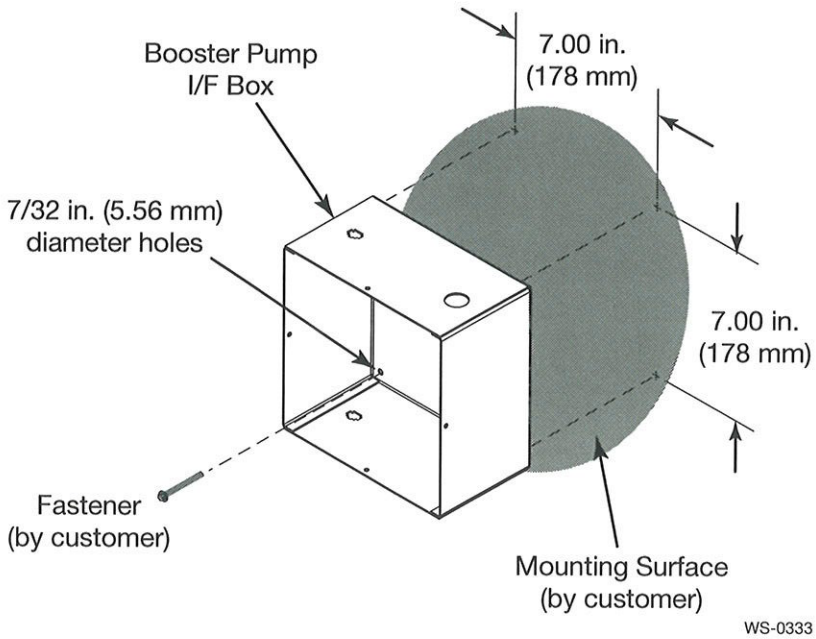
MOUNTING THE BOOSTER PUMP AND INTERFACE BOX

FIGURE 5–11. MOUNTING THE BOOSTER PUMP



1. Fasten the booster pump to its mounting surface.

FIGURE 5–12. MOUNTING THE INTERFACE BOX



2. Fasten the interface box to its mounting surface.

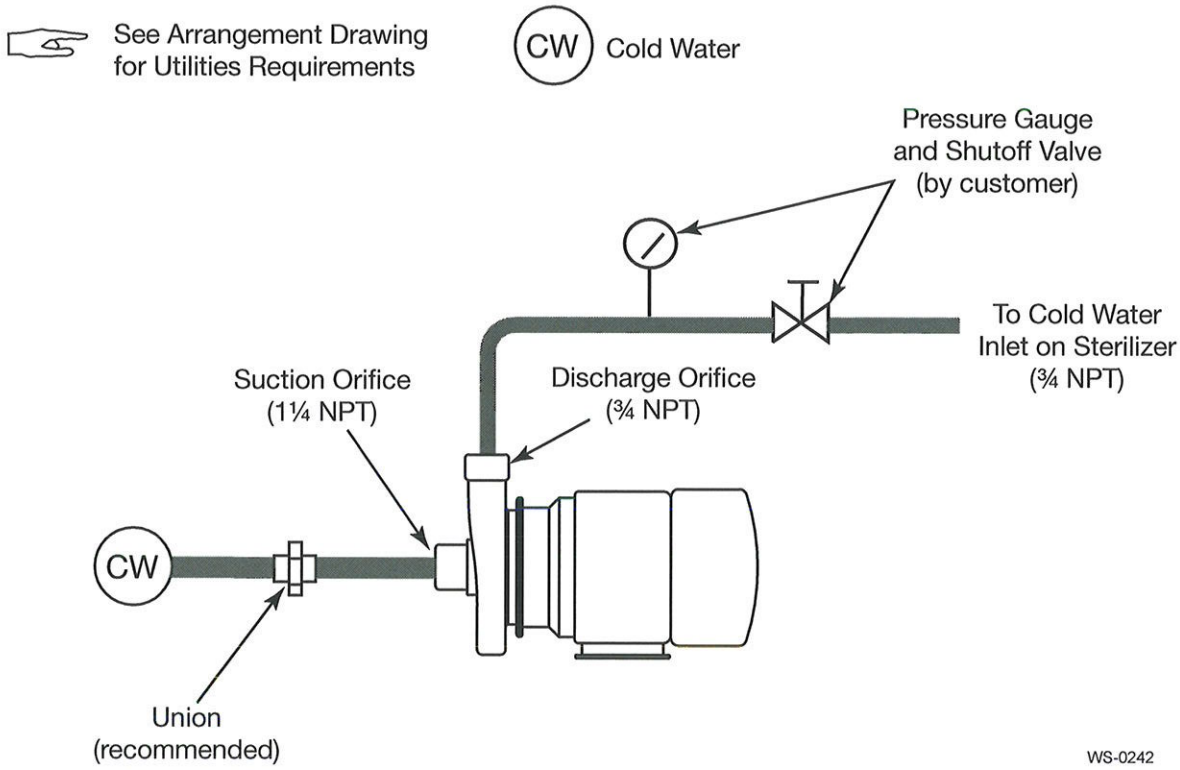
CONNECTING THE PLUMBING

NOTE

The customer must provide a pressure gauge in the plumbing connection between the pump discharge orifice and the sterilizer water strainer.

The customer must provide a shutoff valve in the water supply line to the sterilizer.

FIGURE 5–13. BOOSTER PUMP PLUMBING CONNECTIONS



1. Connect the plumbing between the ¾ NPT pump discharge orifice and the ¾ NPT inlet orifice at the sterilizer water supply strainer.

NOTE

The pipe size of the cold water supply line should be sufficient to achieve a pressure of 20 psig at the maximum flow rate listed on the arrangement drawing for the sterilizer.

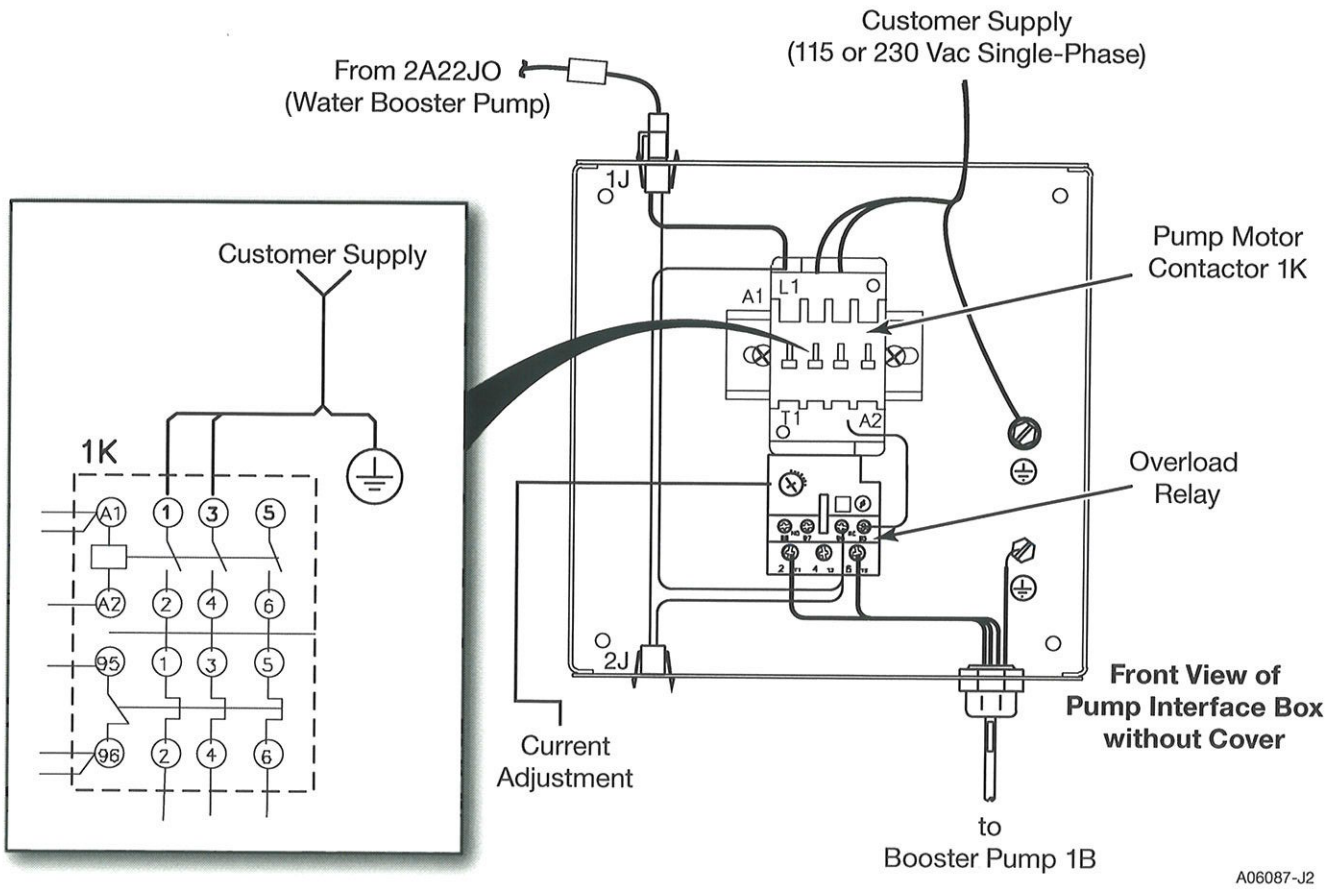
2. Connect the water supply line to the 1¼ NPT pump suction orifice.

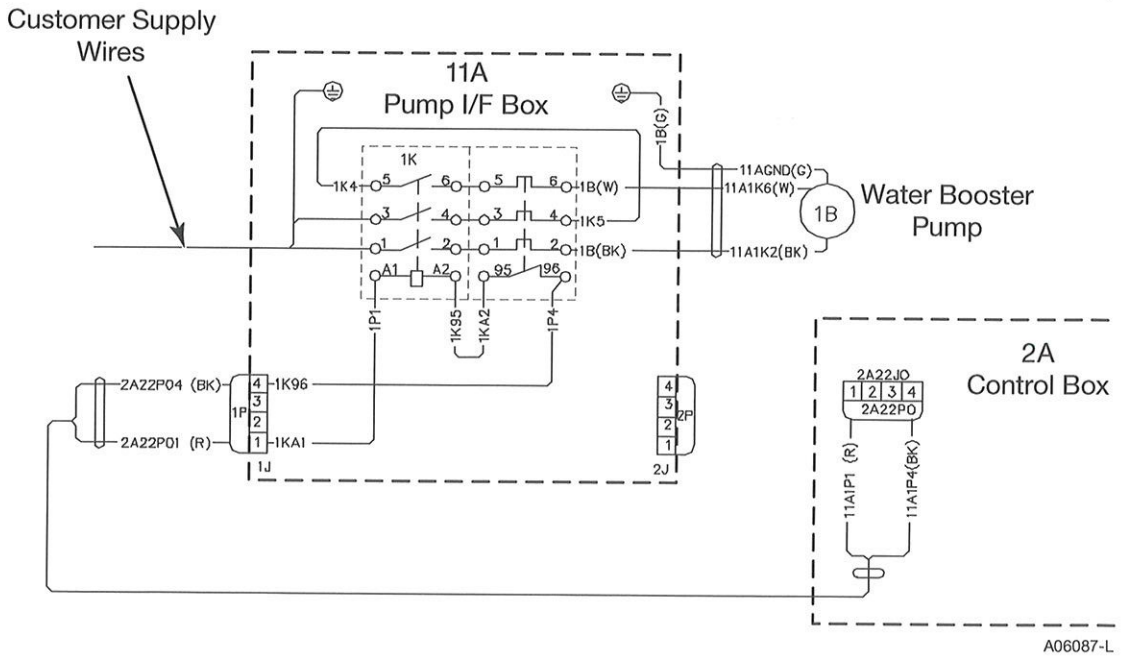
CONNECTING THE ELECTRICAL POWER

CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Route the cord so that it does not touch any hot steam lines or sterilizer surfaces.

FIGURE 5–14. BOOSTER PUMP ELECTRICAL CONNECTIONS





1. Connect the booster pump interface box to the booster pump.

2. Using the cord provided (PN 61311601245), connect 11A1J on the pump interface box (11A) to 2A22JO on the control box (2A).

3. Connect the electrical supply (provided by the customer) to the booster pump interface box as follows:
   a. Connect Line (L) to 1K relay terminal 1 (L1).
   b. Connect Neutral (N) to 1K relay terminal 3 (L2).
   c. Connect Protective Earth Ground (G) to the PE Ground screw inside the box.
4. Install the overload relay inside the interface box and connect the wires.
5. Set the overload relay current adjustment to match the current stamped on the rating plate.

WATER SAVER SYSTEM

The MP-129F Water Saver is an add-on system that incorporates a water ejector with a pump and a water reservoir to recirculate the water that creates the vacuum necessary for part of the sterilization cycle.

The customer must provide a proper drainage system, cold water supply, and electrical service for the water saver system.

For information regarding the installation of the water saver, see *MP–129 (E and F) Water Saver: Installation Manual (61301605429).*

WARNING
POSSIBILITY OF INJURY: Turn off all electricity, water, and steam to the sterilizer before starting the installation of the water saver. Touching live electrical connections or exposure to live steam could cause serious injury.

WATER CHILLER

The Getinge Water Chiller is an optional addition to a water saver. It is intended for use at locations where the cold water supply is too warm to cool the water in the water saver's reservoir tank.

The customer must provide electrical service for the Water Chiller.

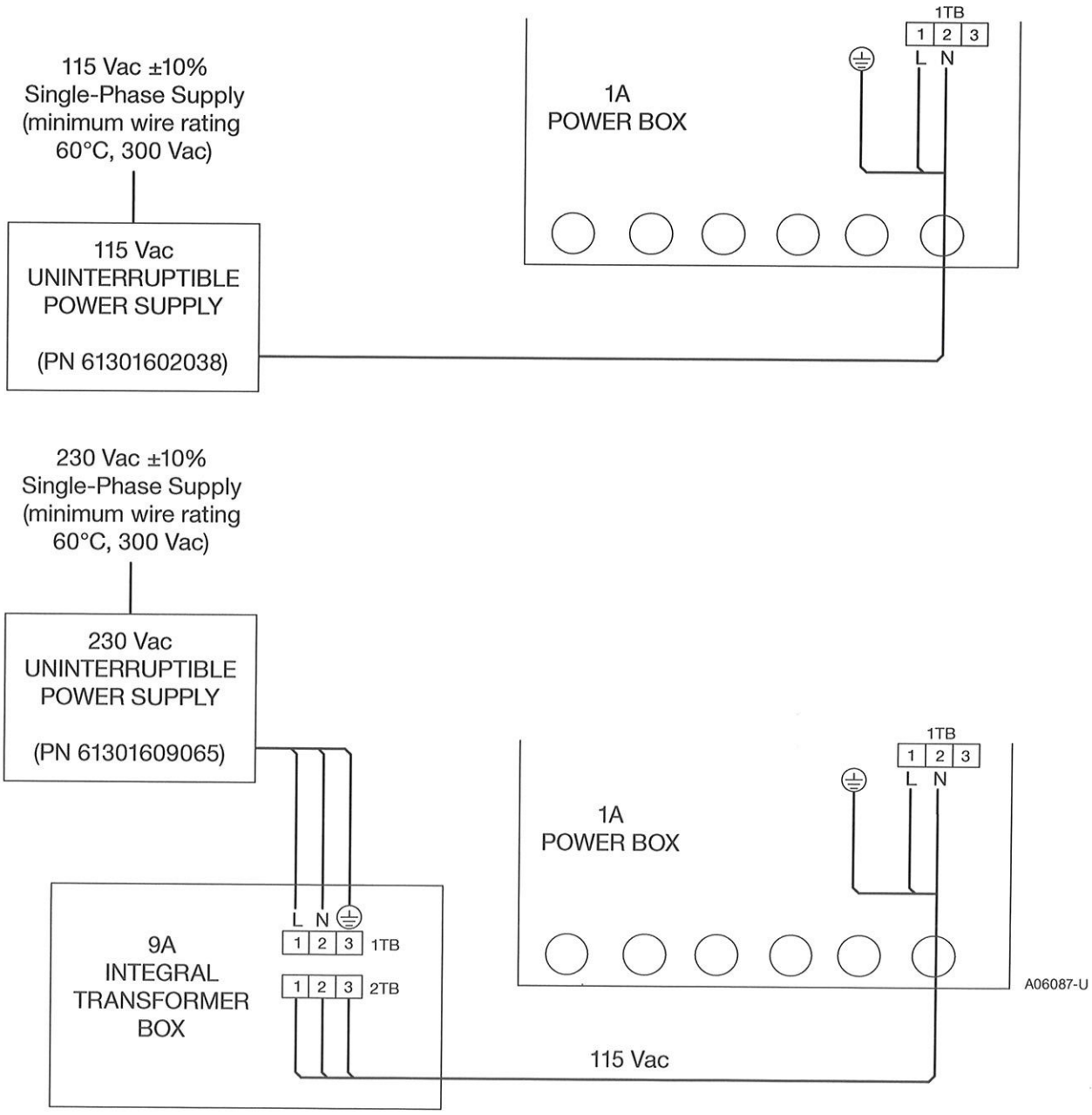
For information regarding the installation of the Getinge Water Chiller, see *Water Chiller: User-Technical-Installation Manual (61301606615).*

WARNING
POSSIBILITY OF INJURY: Turn off all electricity, water, and steam to the sterilizer before starting the installation of the Getinge Water Chiller. Touching live electrical connections or exposure to live steam could cause serious injury.

UNINTERRUPTIBLE POWER SUPPLY (UPS)

Install the UPS as instructed in *UPS: Installation Manual (61301605360)*.

FIGURE 5–15. UPS WIRING DIAGRAMS



- If the customer supply is 115 Vac, connect the UPS to the 1A power box.
- If the customer supply is 230 Vac, connect the UPS to the 9A integral transformer box.

WALL MOUNT DISPLAY

NOTE

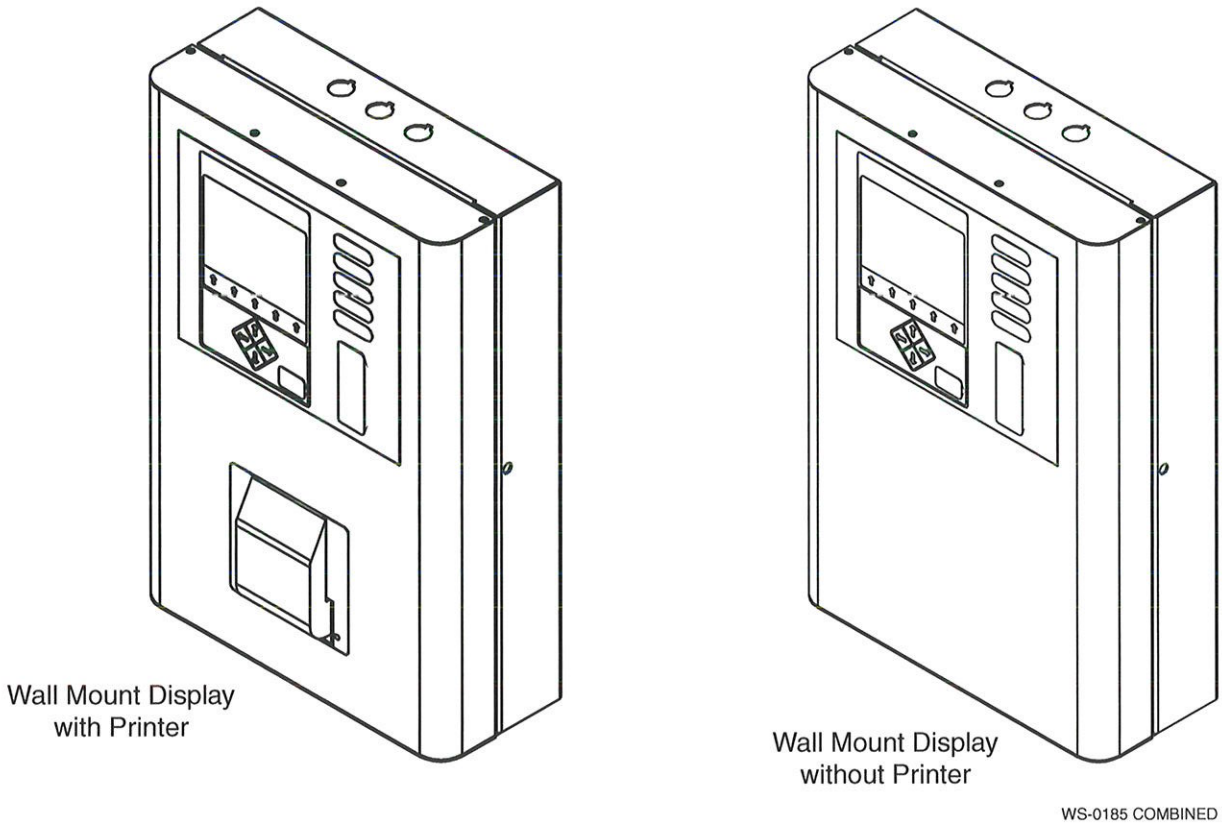
For detailed information, see the arrangement drawings for your model sterilizer in Section 6, "Drawings".

Due to the variety of possible mounting situations, the customer must provide the hardware to mount the wall mount display. For details, see "400/500/700/800 Series Wall Mount Display" on page 6–22.

To install the wall mount display:

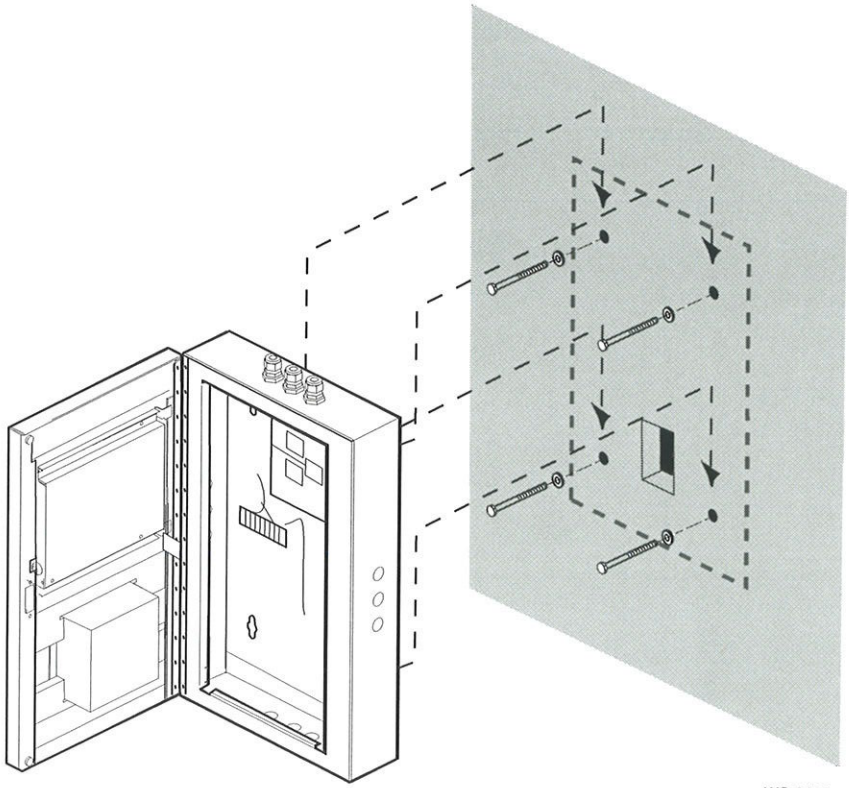
1. Mount the display unit. See "Mounting the Display Unit" on page 5–19.
2. Make the electrical connections at the sterilizer. See "At the Sterilizer" on page 5–19.
3. Make the electrical connections at the wall mount display. See "At the Wall Mount Display" on page 5–21.

FIGURE 5–16. WALL MOUNT DISPLAY



MOUNTING THE DISPLAY UNIT

FIGURE 5–17. ATTACHING THE WALL MOUNT DISPLAY



1. Open the hinged cover of the wall mount display unit.

NOTE

If a right hand door swing is desired, remove the hinge and the latch and reassemble them on the opposite side.

2. Using the mounting holes in the box as a guide, mark the location of the mounting holes and opening for the electrical cables.

3. Drill the mounting holes and attach the wall mount display to the wall.

CONNECTING THE ELECTRICAL POWER

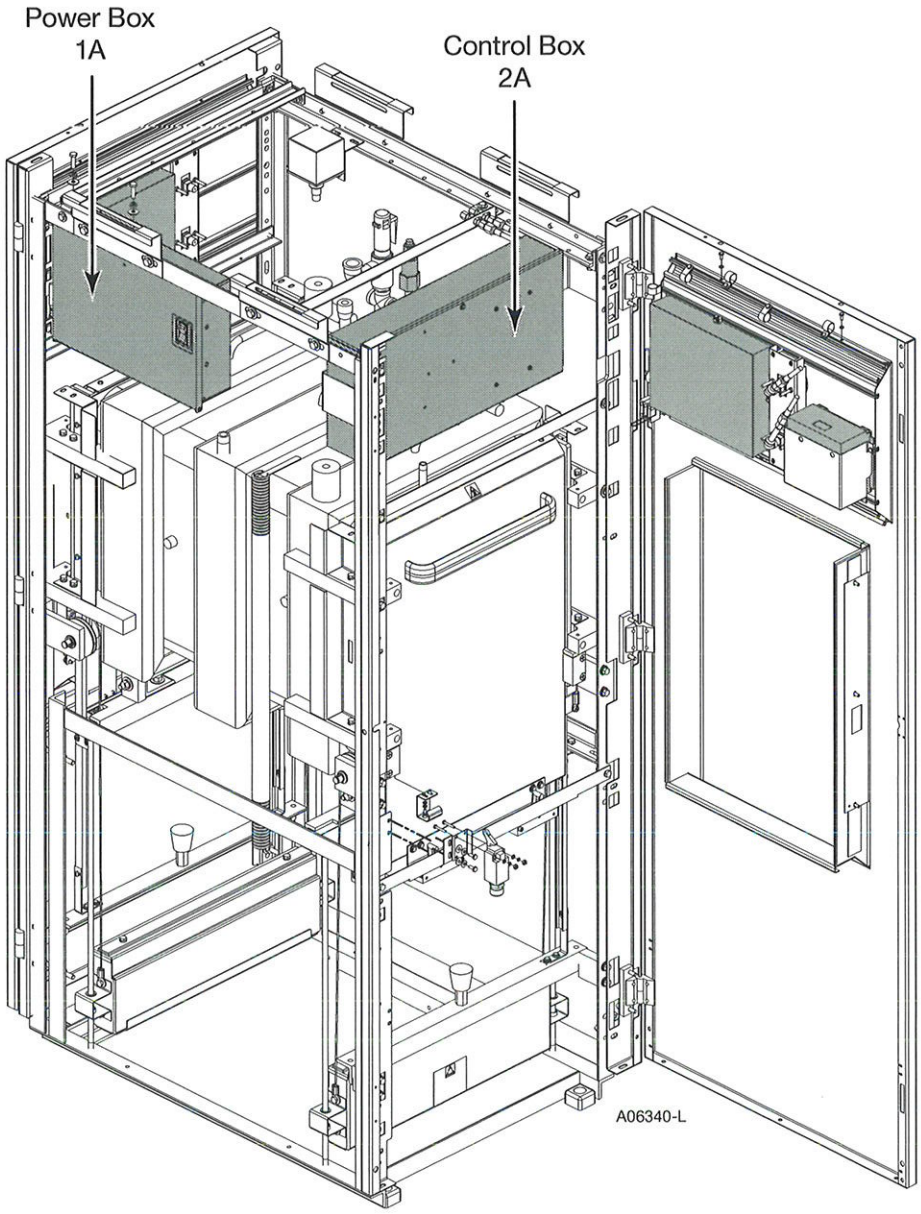
AT THE STERILIZER

1. Identify the interconnecting cables:
   - Control Box to Display Panel — 8 conductor cable
   - Control Box to Printer (CE only) — 3 conductor cable with red, black, and white wires labeled
   - Power Box to Printer (CE only) — 3 conductor cable with black, white, and green/yellow wires

NOTE

Cables must be routed from the control box and power box located on the sterilizer to the wall mount display.

FIGURE 5–18. LOCATION OF CONTROL BOX AND POWER BOX



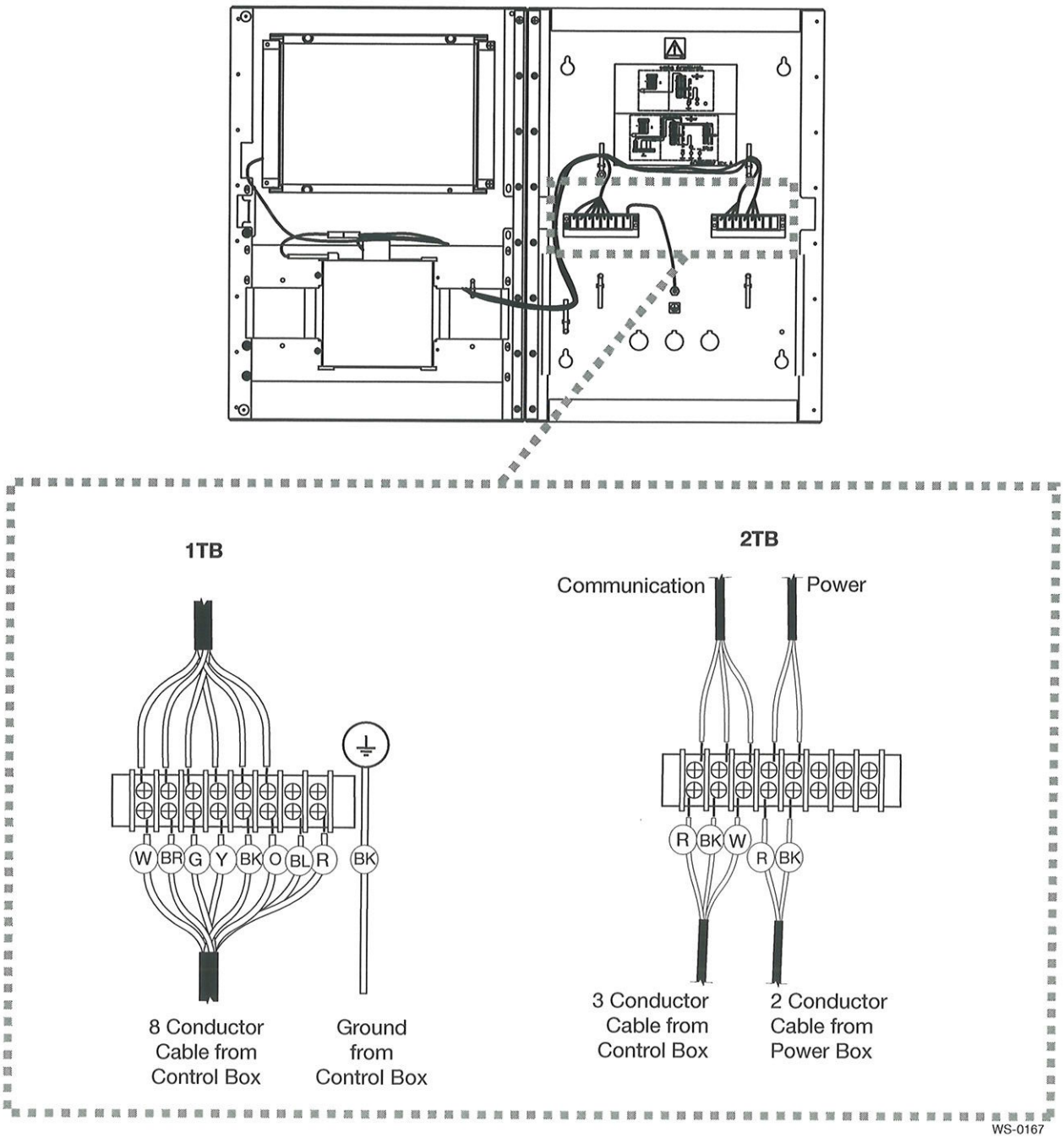
CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Route the cables to prevent wires and insulation from contact with hot surfaces, piping, and sharp edges.

2. Route the cables to the wall mount display. Conduit is not required unless specified by local codes.

AT THE WALL MOUNT DISPLAY

FIGURE 5–19. WIRING DIAGRAM



1. Make the connections:
   - Connect the 8 conductor cable from the Control Box (J-3) to terminal block 1TB of the wall mount display.
   - Connect the 3 conductor cable from the Control Box (J-10) to terminal block 2TB of the wall mount display.
   - Connect the 2 conductor cable from the Power Box (3P) to terminal block 2TB of the wall mount display.

BIOLOGICAL SEALING FLANGE (BSF) (522LS, 533LS, 544LS)

The biological seal consists of three components: a wall frame, a sealing gasket, and a set of sealing gasket retaining bars.

If the sterilizer has a biological sealing flange, the wall at the customer site may need modifications.

NOTE
A rough opening in the wall of 76.25 in. (1937 mm) high by 38.5 in. (978 mm) wide is necessary for the biological sealing flange.

For installation details, refer to the appropriate arrangement drawing in Section 6, "Drawings".

A vented sump is included with a sterilizer that has a biological sealing flange. It can be used when a direct connection to the drain is required. This sump can provide for the containment of biohazardous waste drained from the sterilizer chamber to a dedicated containment drain or kill tank (provided by the customer) and is vented to prevent the flow of effluent back into the sterilizer. A retentive filter in the vent prevents the escape of micro-organisms from the sump.

PREPARING THE WALL FOR A BSF INSTALLATION

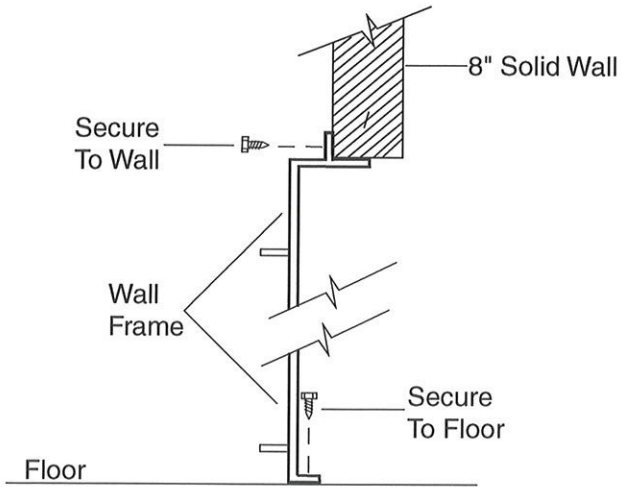
If the sterilizer has a biological sealing flange, an 8 in. (203 mm) thick block wall is necessary at the wall opening for installation of the wall frame.

NOTE

Install the wall frame with the threaded studs toward the sterilizer body.

Seal any gaps between the wall or floor and the wall frame using grout or RTV.

FIGURE 5–20. INSTALLING THE WALL FRAME



WS-0210

INSTALLING THE BSF WALL FRAME

1. Create an opening in the wall of 76.25 in. (1937 mm) high by 38.5 in. (978 mm) wide.
2. Install the wall frame with the threaded studs toward the sterilizer body.
3. Secure the top and sides of the frame to the wall; secure the bottom of the frame to the floor.
4. Seal any gaps between the wall or floor and the wall frame using a suitable grout or RTV.

INSTALLING THE BSF

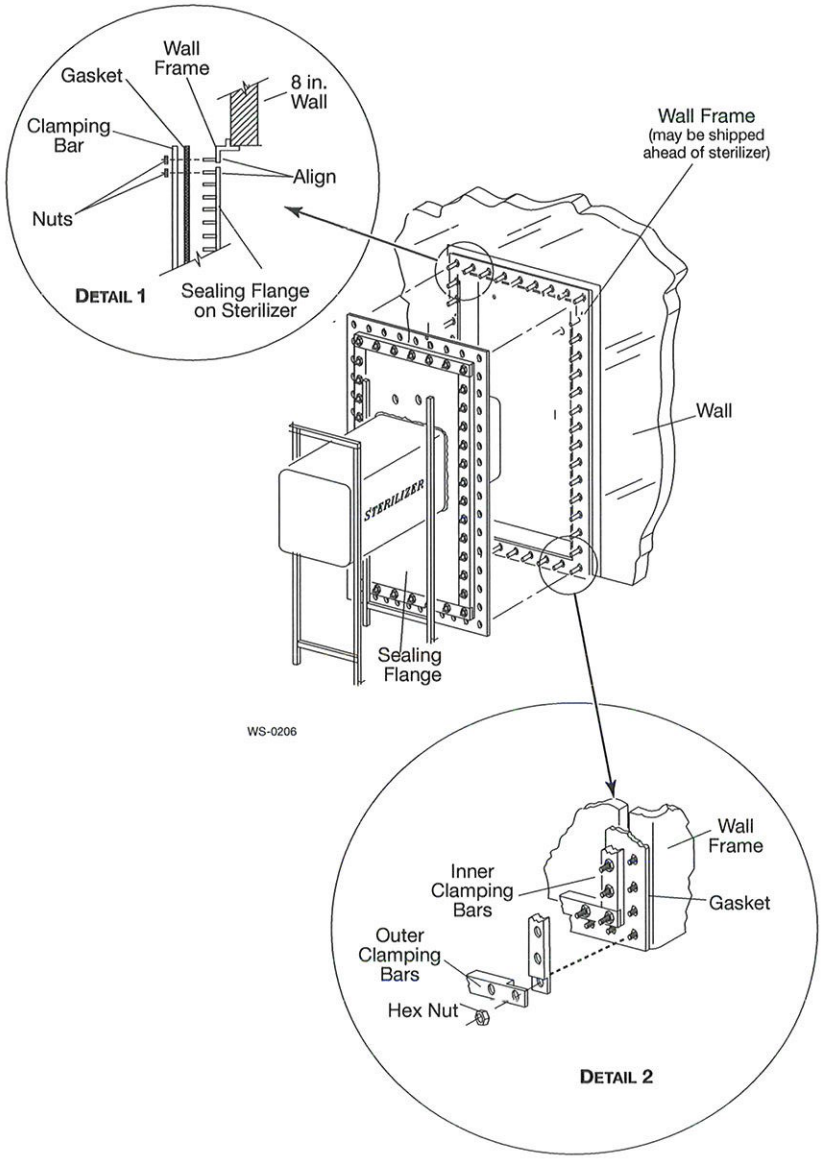
NOTE

All pass-through wiring uses Condulet® boxes to maintain seal integrity.

Piping includes a vented sump box and air tank reservoir.

If the sterilizer is a double-door, recessed unit, remove the front panel from the end to be inserted through the wall opening.

FIGURE 5–21. INSTALLING THE BIOLOGICAL SEALING FLANGE



CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Gasket sealing surfaces must be clean for the gasket to seal properly.

POSSIBILITY OF DAMAGE TO EQUIPMENT: Do not use RTV on the sealing flange gasket.

1. Check that the wall frame is clean and free of nicks and burrs.
2. Check that the sealing flange gasket is clean and not damaged.
3. Using a mild detergent, clean the following sealing surfaces:
   - gasket
   - wall

4. Move the sterilizer into position, aligning the sealing flange and the wall frame as shown in Detail 1 of "Installing the Biological Sealing Flange" on page 5–24.

5. Slide the sealing flange gasket over the frame studs.

CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Be sure to apply motor oil to the studs before installing the nuts. Without the oil, a stud may break when tightening the nut.

6. With the gasket firmly in place, install the outer clamping bars as shown in Detail 2 of "Installing the Biological Sealing Flange" on page 5–24. Secure as follows:
   a. Apply two drops of motor oil to each stud.
   b. Install a hex nut on each stud.
   c. Tighten each nut to 10 in-lb.
   d. In increments of 10 in-lb, tighten each nut to 35–45 in-lb.

7. Prepare all cord assemblies that pass through the sealing flange Condulet® boxes:

FIGURE 5–22. PREPARING THE CONDUCTOR

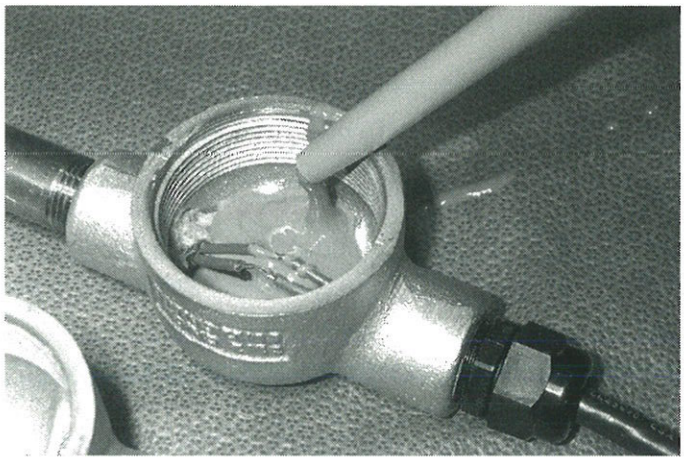
NOTE

Depending upon the site's biological safety level (BSL) environment, it may not be necessary to do step a and step b. Consult with the site's safety officer.

   a. Strip at least 3/4 in. (19 mm) of insulation from each cord and conductor so the bare wire is completely exposed on each conductor.

b. With a soldering iron, tin each exposed conductor to prevent any potential migration of airborne biological agents through the insulation and through the conductor strands.

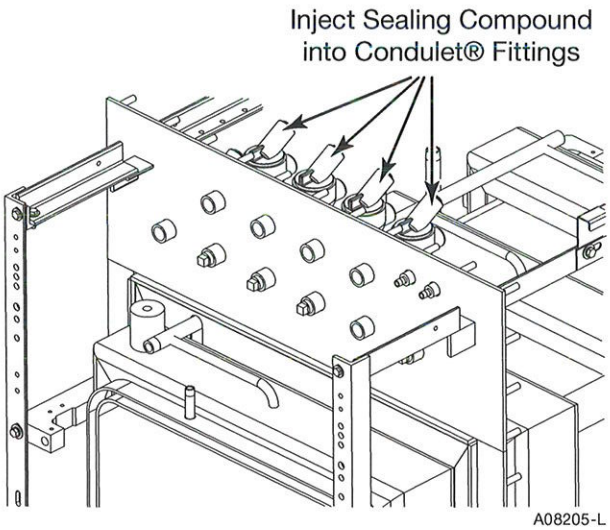
FIGURE 5–23. SEPARATING THE CONDUCTORS



c. Using a wooden stick or other nonmetal tool, separate the conductors to allow the sealing compounds to flow around each conductor.

   No dam is required for horizontal installations unless it is desired to keep compound out of adjacent fittings. A dam may be created by packing paper towel material into the nipple around the cords.

FIGURE 5–24. SEALING THE CONDULET® FITTINGS

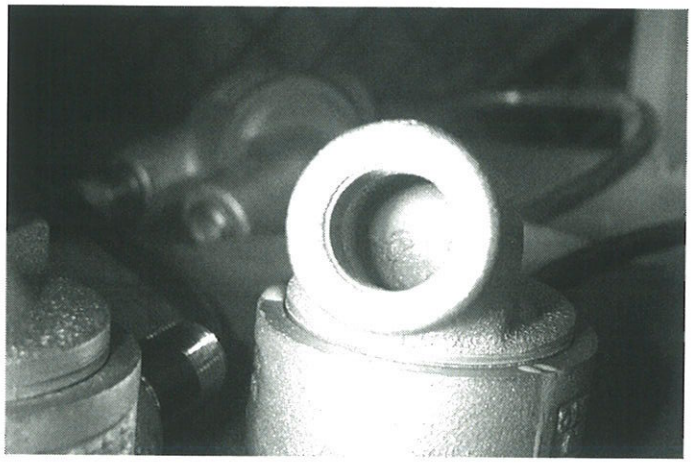


d. Prepare the SpeedSeal™ compound according to the manufacturer's instructions.

e. With the top of the Condulet® box removed, fill the Condulet® box with SpeedSeal™ compound, allowing the sealant to flow around the conductors.

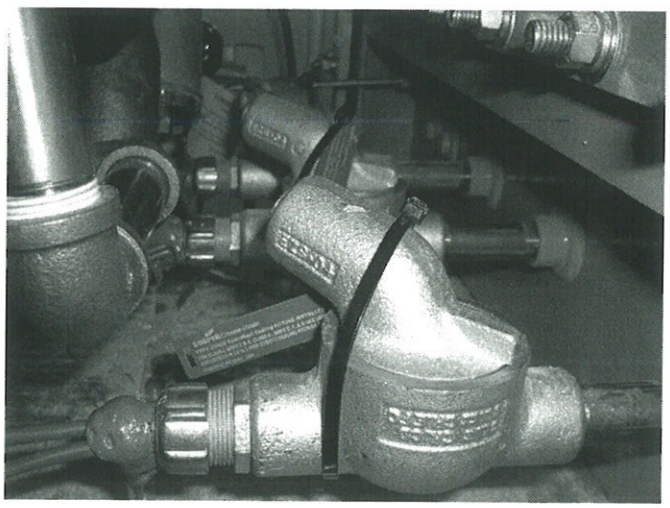
f. With the top plug removed, quickly screw on the Condulet® cover before the sealant expands.

FIGURE 5–25. SCREWING IN THE FITTINGS PLUG



g. When the sealant expands into the neck of the Condulet® cover, screw in and tighten the sealing fittings plug.

FIGURE 5–26. ATTACHING THE NAMEPLATE



h. Attach the red nameplate to the Condulet® box, using the plastic tie wrap provided with the sealing compound.

8. Install the trim panels to the sides and top of the sterilizer frame. See "Trim Panels (500 Series Sterilizer with BSF or CCB)" on page 4–18.

9. Install the lower front panel. See "Installing the Panels" on page 4–16.

CROSS CONTAMINATION BARRIER (CCB) (522LS, 533LS)

The cross contamination barrier (CCB) consists of a stainless steel barrier that is secured to the sterilizer sealing flange and to the framed wall

opening. If the sterilizer has a cross contamination barrier, the wall at the customer site may need modifications.

NOTE

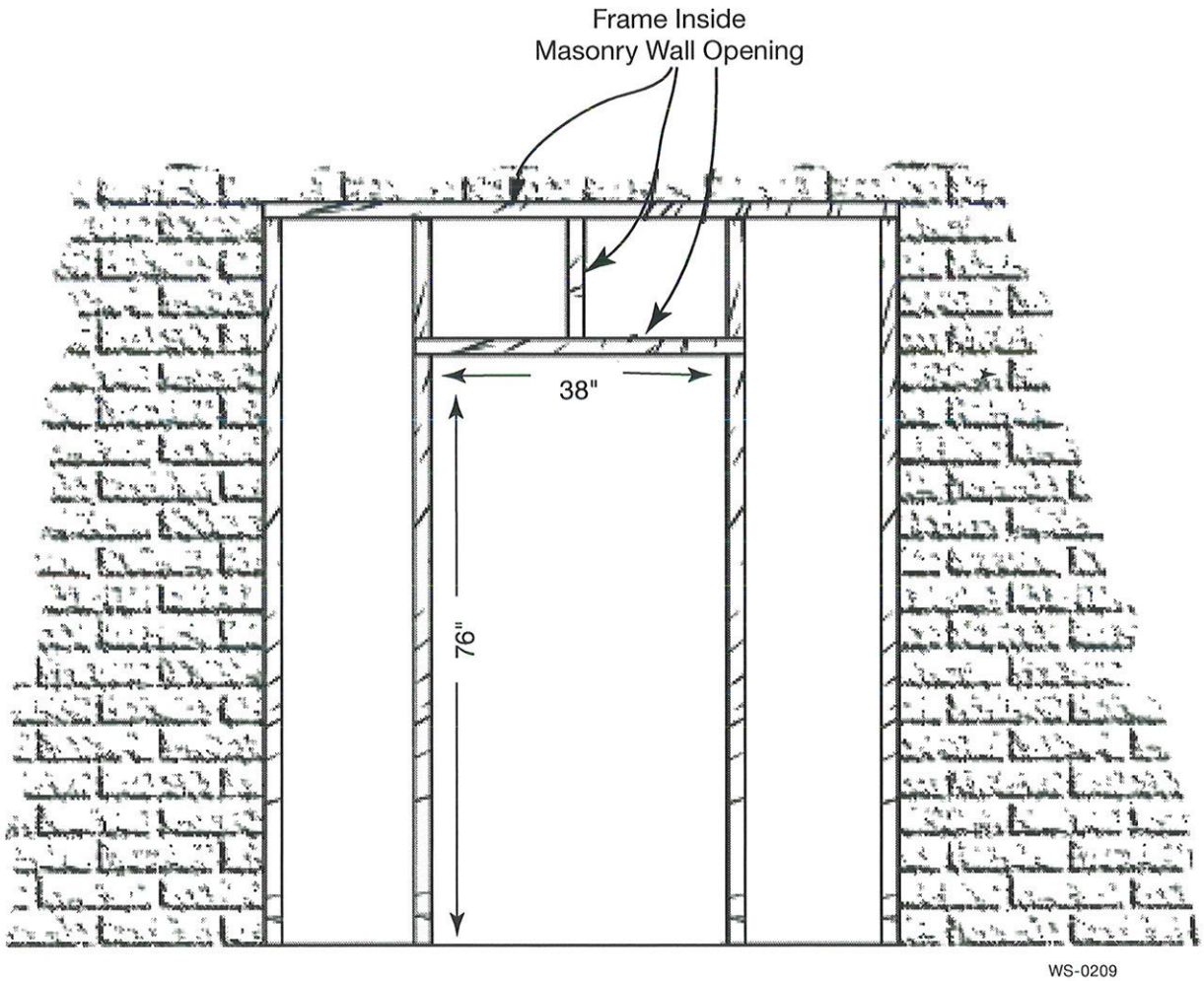
A rough opening in the wall of 76 in. (1930 mm) high x 38 in. (965 mm) wide is necessary for the cross contamination barrier.

Refer to the appropriate arrangement drawing in Section 6, "Drawings", for installation details.

PREPARING THE WALL

Construction of a wood, metal or block frame is necessary before the sterilizer is installed. The actual cross contamination barrier is attached to the sterilizer and adjusted when the unit is positioned.

FIGURE 5–27. TYPICAL WALL FRAME INSTALLATION FOR CROSS CONTAMINATION BARRIER



INSTALLING THE CCB WALL FRAME

1. Construct a frame leaving an opening of 76 in. (1930 mm) x 38 in. (965 mm).

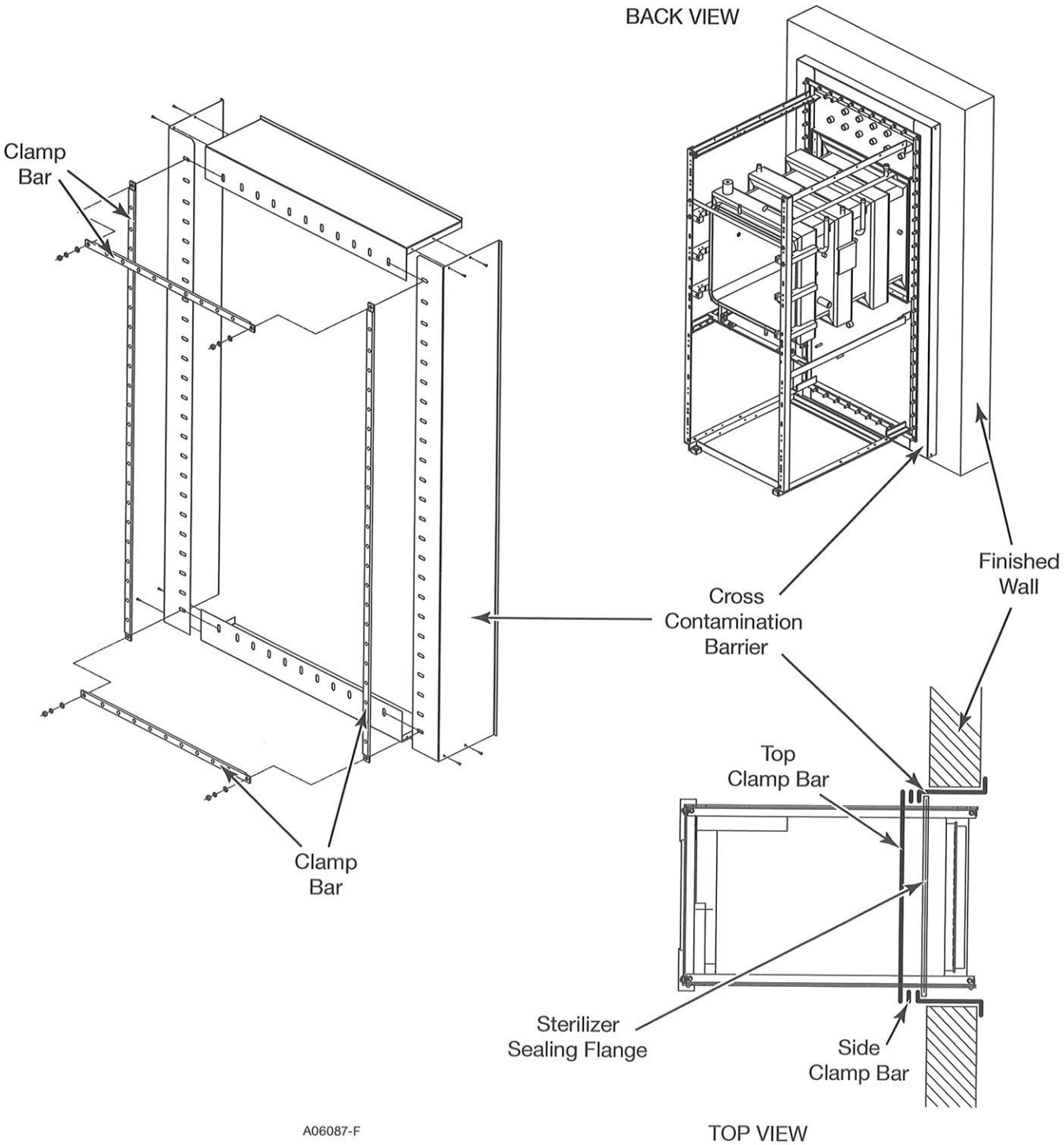
INSTALLING THE CCB

NOTE

Pass-through wiring uses standard compression type grommets.

Seal all cracks and holes with grout or RTV as necessary.

FIGURE 5–28. INSTALLING THE CROSS CONTAMINATION BARRIER



1. Move the sterilizer into position, aligning the sterilizer with the framed wall opening.
2. Secure the cross contamination barrier to the sealing flange on the sterilizer, installing the side clamp bars first.
3. Secure the cross contamination barrier to the framed wall opening.
4. Seal all cracks and holes with grout or RTV as necessary.
5. For a 500 Series unit, install the trim panels to the sides and top of the sterilizer frame. See "Trim Panels (500 Series Sterilizer with BSF or CCB)" on page 4–18.
6. Install the lower front panel. See "Installing the Panels" on page 4–16.

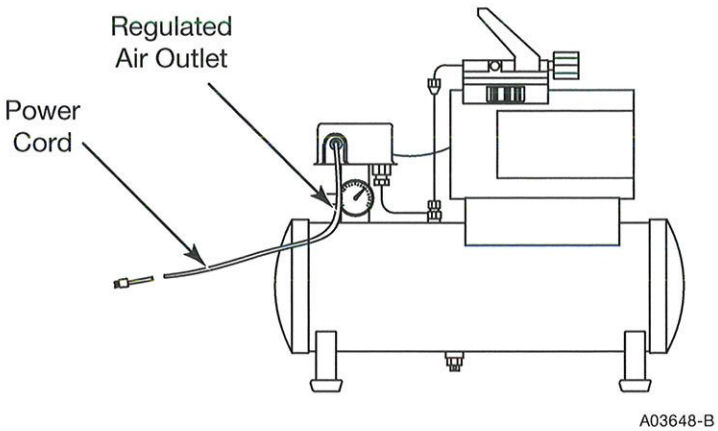
UNIDIRECTIONAL DOOR GASKET PIPING (LS UNIT WITH BSF OR CCB)

A unidirectional double-door unit located in a biohazardous environment requires compressed air to the door gasket piping. The compressed air ensures the doors remain sealed in the event of a loss of the steam supply.

AIR COMPRESSOR

The customer must provide a location for the compressor and mounting hardware.

FIGURE 5–29. AIR COMPRESSOR



1. Mount the compressor. See the arrangement drawing "Air Compressor" on page 6–24.
2. Connect a 1/2 in. NPT air supply line from the regulated outlet of the compressor to the air connection on the sterilizer.
3. Plug the compressor power cord into a 115 Vac outlet.

VACUUM PUMP SYSTEM

The vacuum pump system package requires a three-phase power source for the pump motor. The required voltage is indicated on the rating plate on the contactor box.

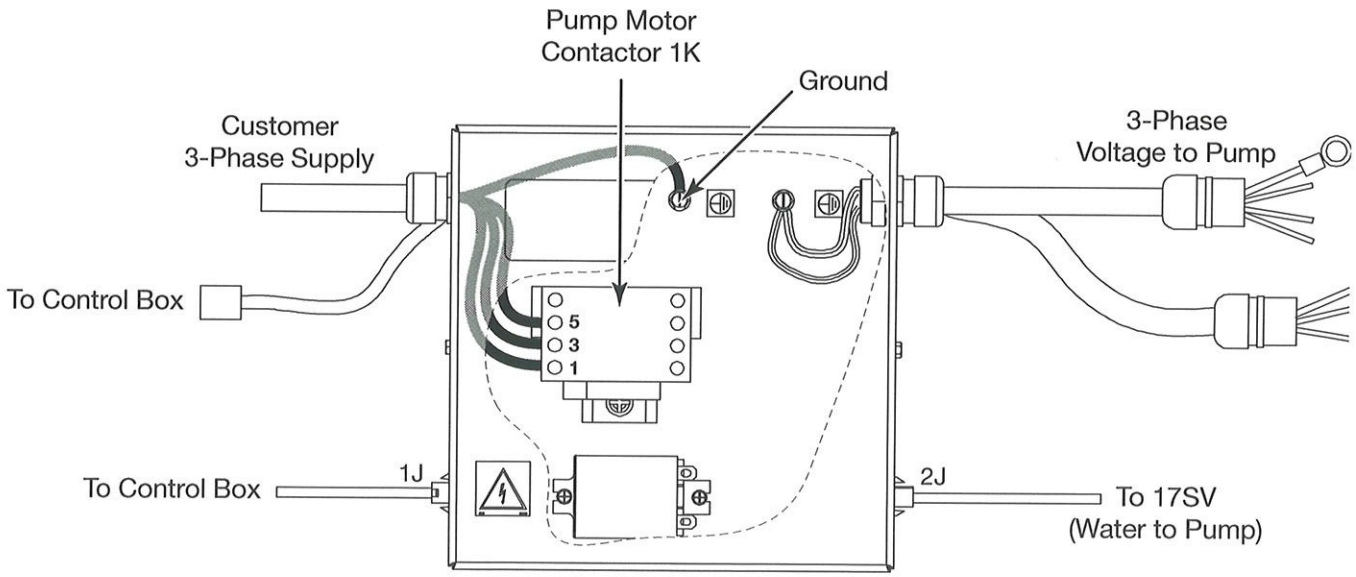
The sterilizer is shipped with the vacuum pump system installed in the sterilizer piping and the vacuum pump contactor box connected to the sterilizer controls. For detailed information, see the appropriate arrangement drawing in Section 6, "Drawings".

NOTE

Remove the strain relief at the customer supply and use liquid-tight strain relief or conduit for connecting to this box.

Verify that the customer's three-phase supply and the overload relay match the rating stamped on the rating plate.

FIGURE 5–30. VACUUM PUMP SYSTEM CONTACTOR



FRONT VIEW OF BOX
WITH COVER CUT OUT

1. Open the cover of the contactor box.

2. Connect the three-phase supply to terminals 1, 3, and 5 of contactor 1K.

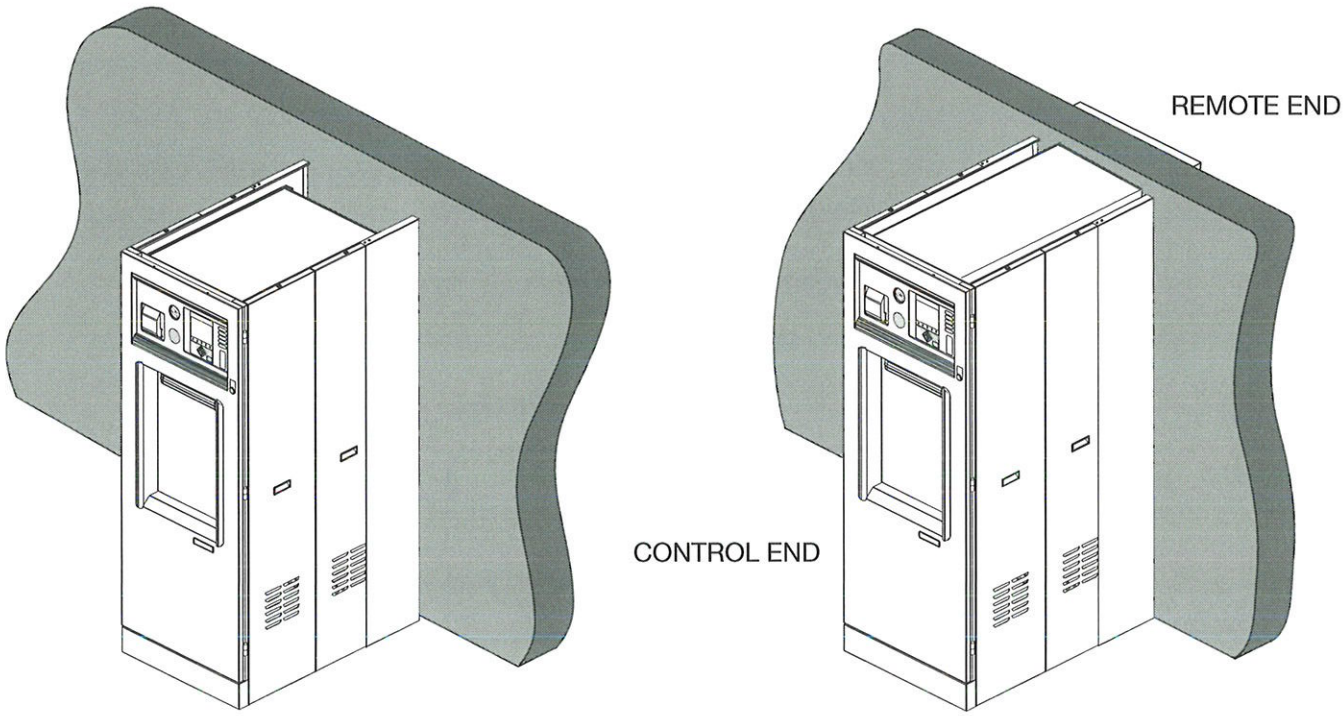
CABINET PACKAGES

A cabinet package is available for a sterilizer that is recessed in a wall at one end.

NOTE

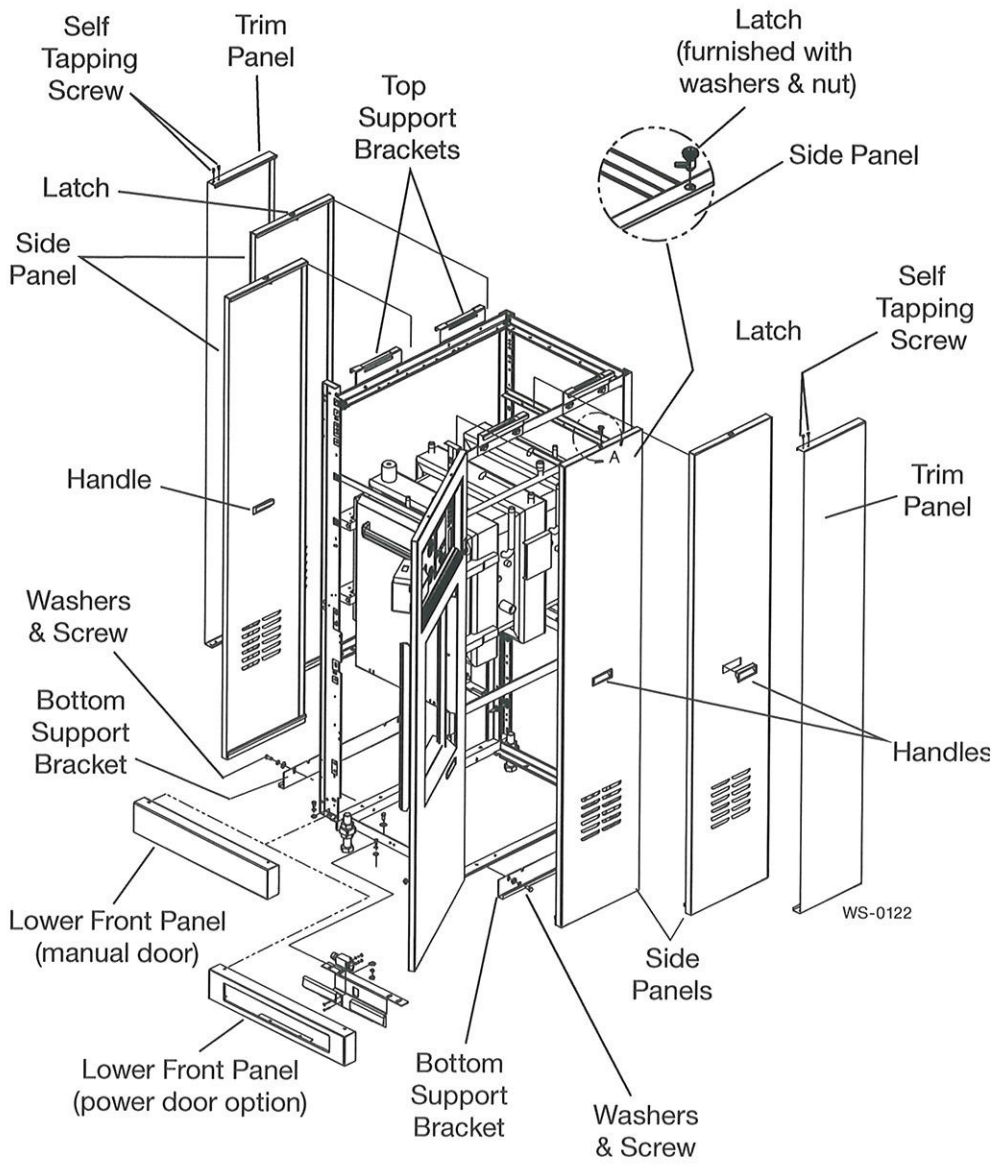
For recessed models, remove and discard the top cabinet brackets prior to installation.

FIGURE 5–31. SINGLE-DOOR AND DOUBLE-DOOR UNITS



SINGLE-DOOR UNIT

FIGURE 5–32. 400/500 SERIES SINGLE-DOOR CABINET ASSEMBLY



NOTE

Be sure the support brackets are flush with the front door panel.

Hardware items such as screws, nuts, and washers are shipped in a cloth bag.

Be sure the side panel is flush with the front door panel.

1. Attach the bottom support brackets to the lower frame.
2. Insert the handles into the side panels.
3. Lift the side panel over the top support bracket.
4. Slide the bottom of the side panel into the bottom support bracket.

5. Slide the trim panel onto the second side panel.
6. Lift the side panel, with the trim panel attached, over the top support bracket.
7. Slide the bottom of the side panel into the bottom support bracket.

CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Do not drill any holes into the panels. Self-tapping screws hold the panel in place by the pressure created when the screw is tightened against the metal panel.

8. Adjust the width of the trim panel and secure the trim panel to the side panel using self tapping screws.
9. With the side panels in place, attach the panels to the top support brackets with an adjustable compression latch.
10. Attach the lower front panel:
    - See "Lower Front Panel (Manual Door)" on page 4–16 for installation of the lower front panel.
    - See "Lower Front Panel and Footswitch (Power Door Option)" on page 4–17 for installation of the lower front panel with the power door option.

DOUBLE-DOOR UNIT

FIGURE 5–33. 400 SERIES DOUBLE-DOOR CABINET ASSEMBLY

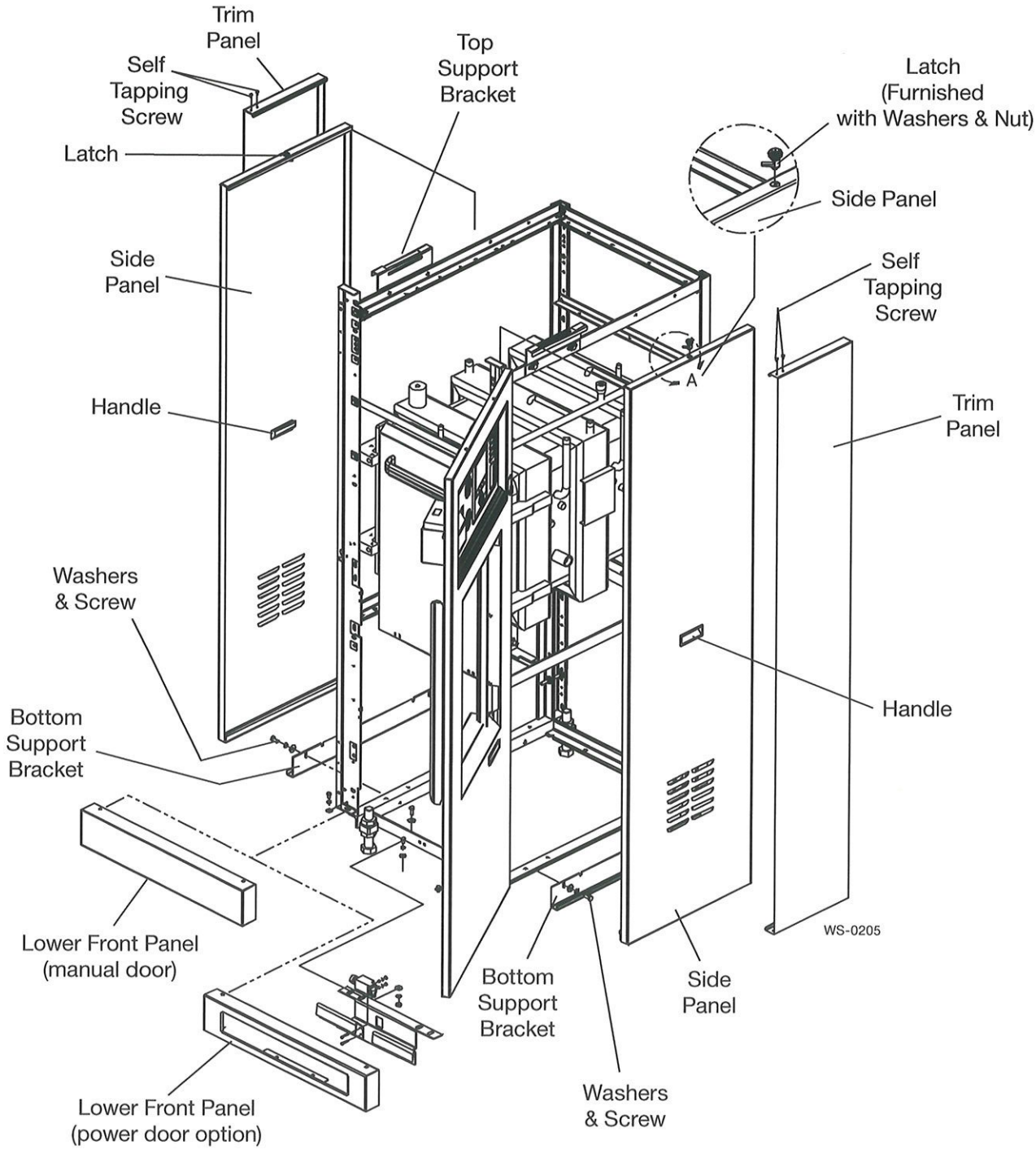
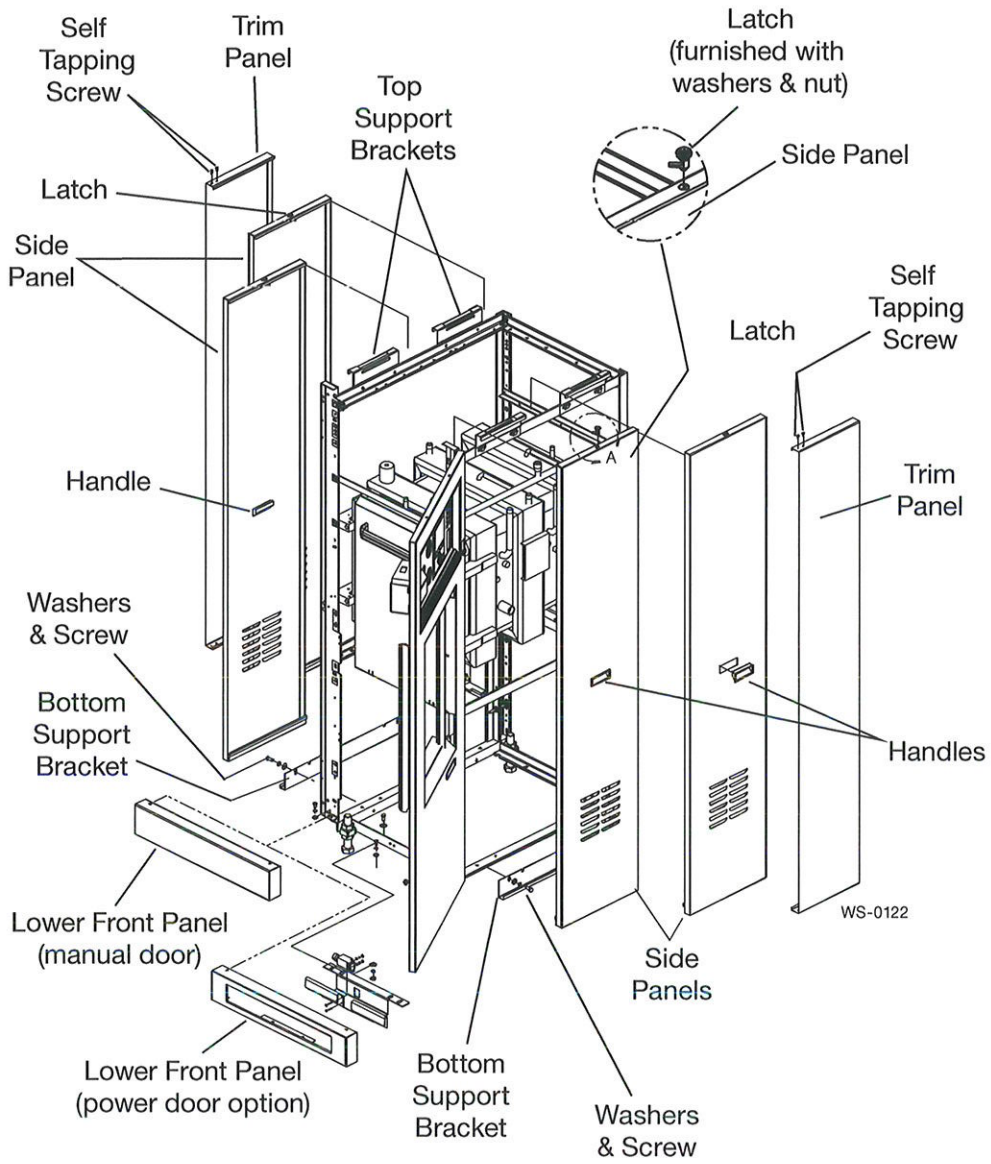


FIGURE 5–34. 500 SERIES DOUBLE-DOOR CABINET ASSEMBLY



NOTE

Be sure the support brackets are flush with the front door panel.

Hardware items such as screws, nuts, and washers are shipped in a cloth bag.

Be sure the side panel is flush with the front door panel.

1. Attach the bottom support brackets to the lower frame.
2. Insert the handles into the side panels.
3. Slide the trim panel onto the side panel.

4. Lift the side panel, with the trim panel attached, over the top support bracket.

5. Slide the bottom of the side panel into the bottom support bracket.

CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Do not drill any holes into the panels. Self-tapping screws hold the panel in place by the pressure created when the screw is tightened against the metal panel.

6. Adjust the width of the trim panel and secure the trim panel to the side panel using self tapping screws.

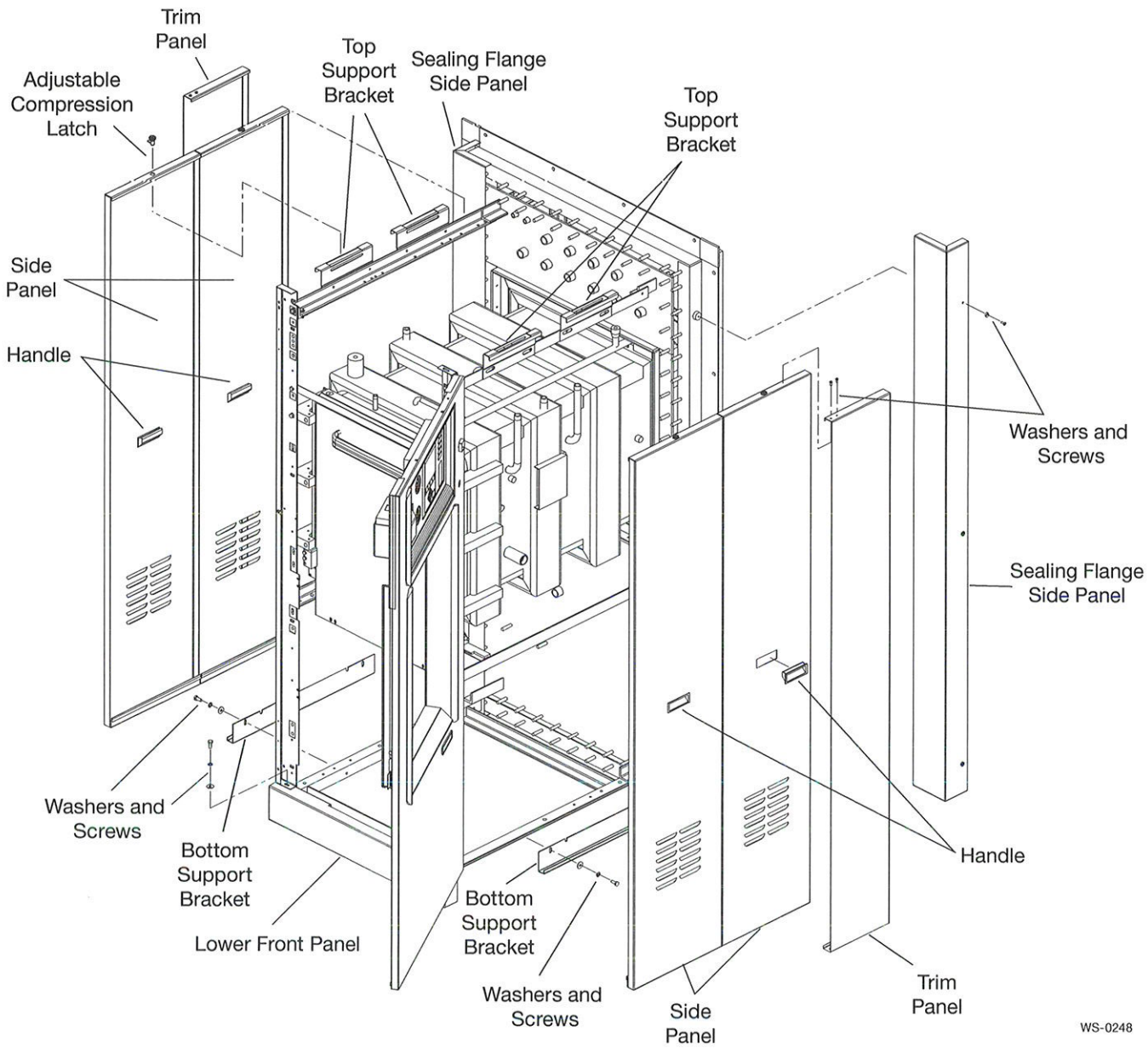
7. With the side panels in place, attach the panels to the top support brackets with an adjustable compression latch.

8. Attach the lower front panel:

   - See "Lower Front Panel (Manual Door)" on page 4–16 for installation of the lower front panel.
   - See "Lower Front Panel and Footswitch (Power Door Option)" on page 4–17 for installation of the lower front panel with the power door option.

UNIT WITH A BIOLOGICAL SEALING FLANGE OR A CROSS CONTAMINATION BARRIER

FIGURE 5–35. 500 SERIES CABINET PACKAGE WITH BSF OR CCB



NOTE

Be sure the support brackets are flush with the front door panel.

Hardware items such as screws, nuts, and washers are shipped in a cloth bag.

Be sure the side panel is flush with the front door panel.

1. Attach the bottom support brackets to the lower frame.
2. Attach the side panel of the BSF or CCB to the wall frame using screws and washers.
3. Insert the handles into the side panels.
4. Lift the side panel over the top support bracket.
5. Slide the bottom of the side panel into the bottom support bracket.
6. Slide the trim panel onto the second side panel.
7. Lift the side panel, with the trim panel attached, over the top support bracket.
8. Slide the bottom of the side panel into the bottom support bracket.

CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Do not drill any holes into the panels. Self-tapping screws hold the panel in place by the pressure created when the screw is tightened against the metal panel.

9. Adjust the width of the trim panel and secure the trim panel to the side panel using self tapping screws.
10. With the side panels in place, attach the panels to the top support brackets using an adjustable compression latch.
11. Attach the lower front panel. See "Lower Front Panel (Manual Door)" on page 4–16.

CABINET CONFIGURATIONS

Figure 5–36, Sheet 1 through Figure 5–36, Sheet 3 show the various panels and bracket installation configurations for the standard 400/500 Series Steam Sterilizer, single- and double-door units.

Figure 5–37 and Figure 5–38 show the panels and bracket configurations for the 500 Series Sterilizer with a biological sealing flange or a cross contamination barrier.

NOTE

For recessed models, remove and discard the top cabinet brackets prior to installation.

FIGURE 5–36, SHEET 1. BASIC CABINET PACKAGE

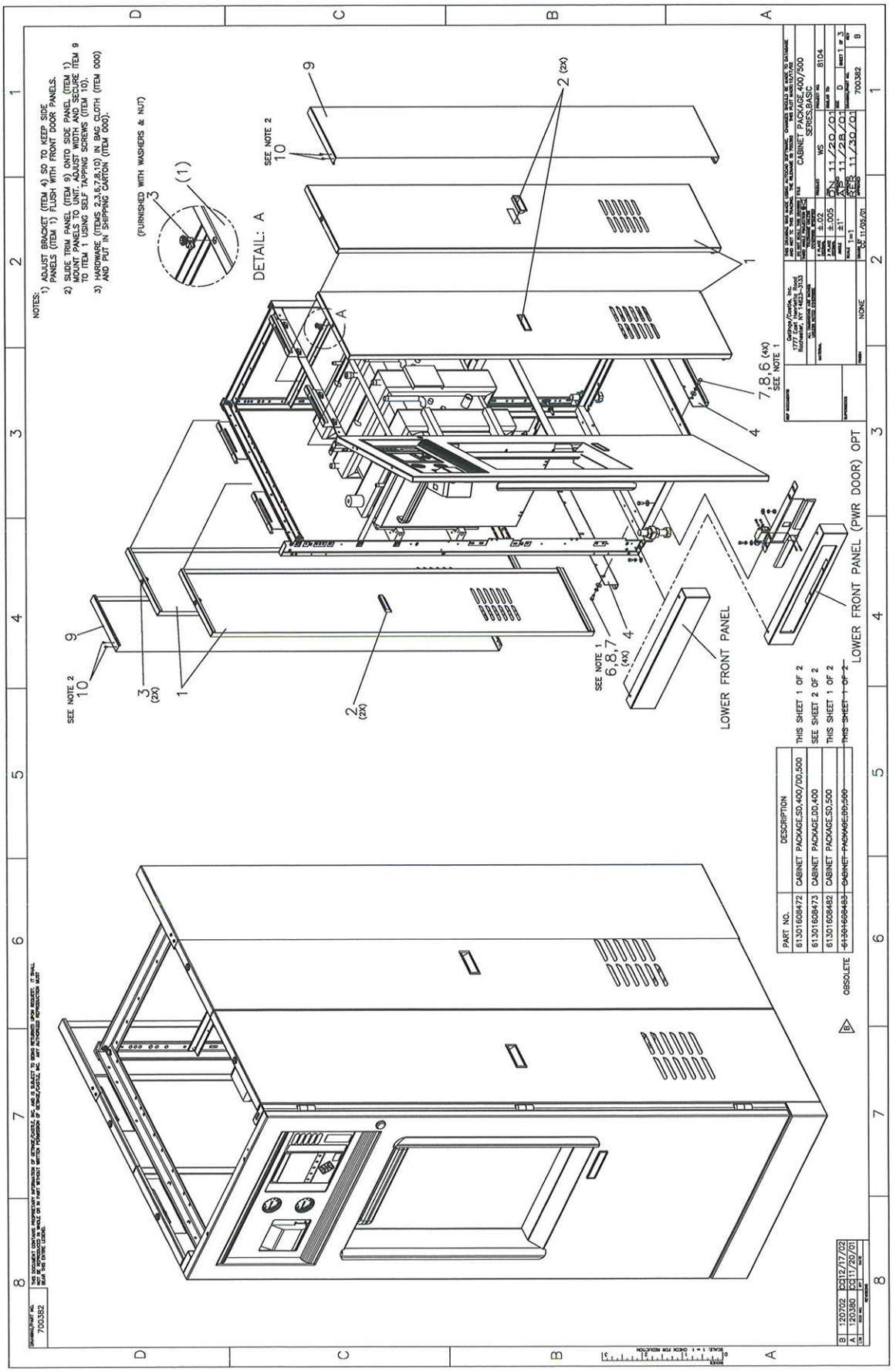


FIGURE 5–36, SHEET 2. BASIC CABINET PACKAGE

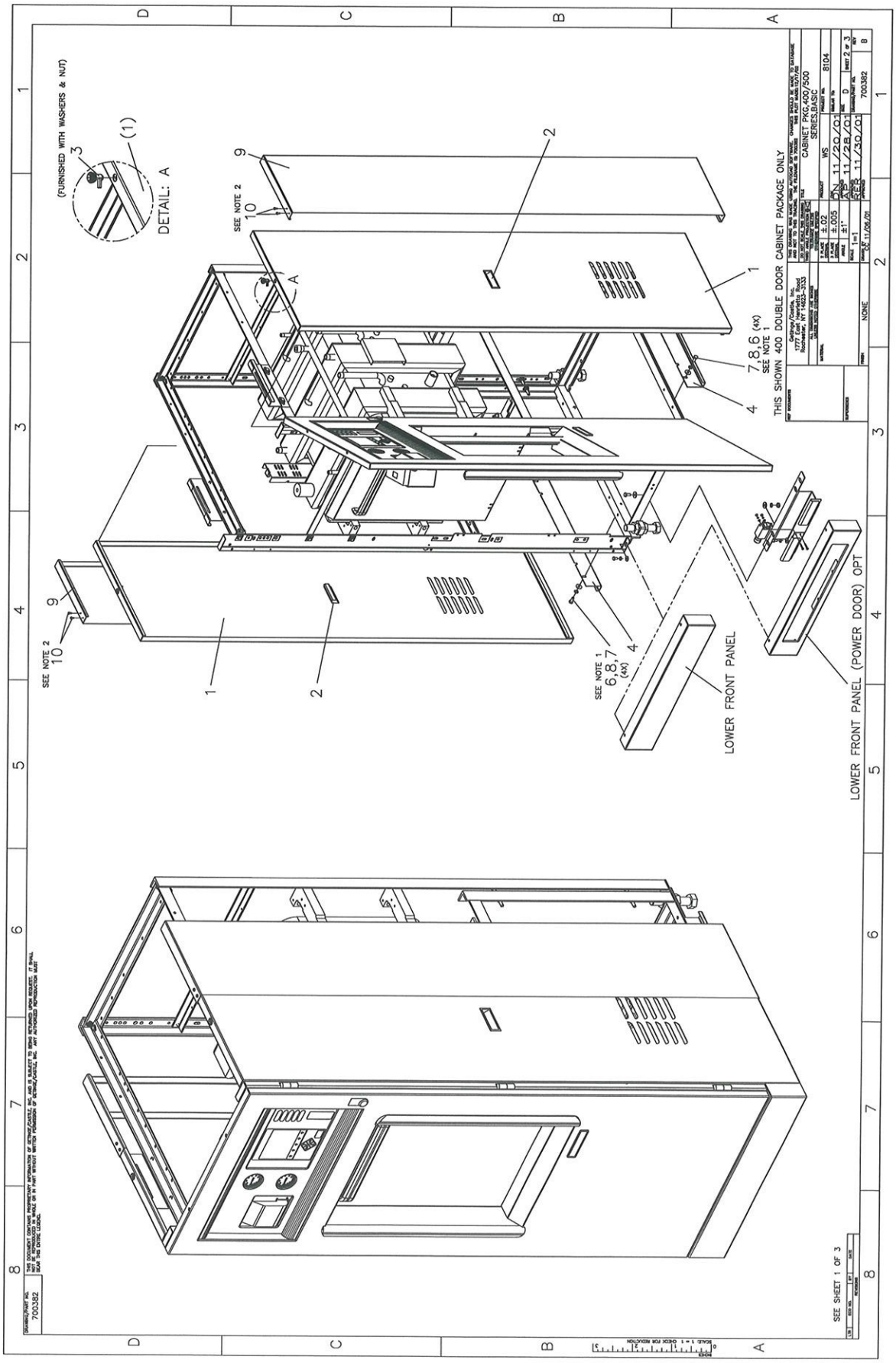


FIGURE 5–36, SHEET 3. BASIC CABINET PACKAGE

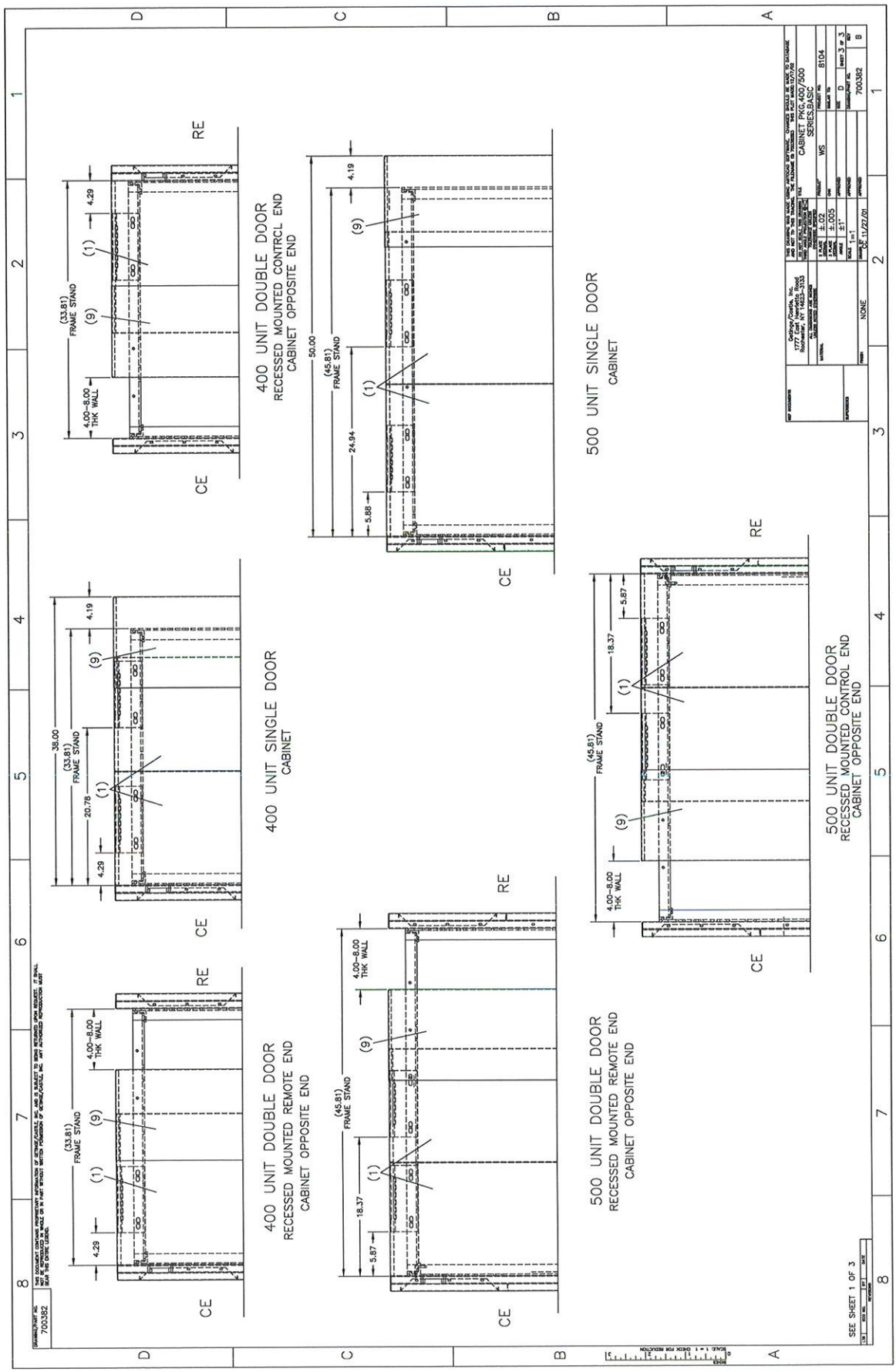


FIGURE 5–37. BIOLOGICAL SEALING FLANGE PACKAGE

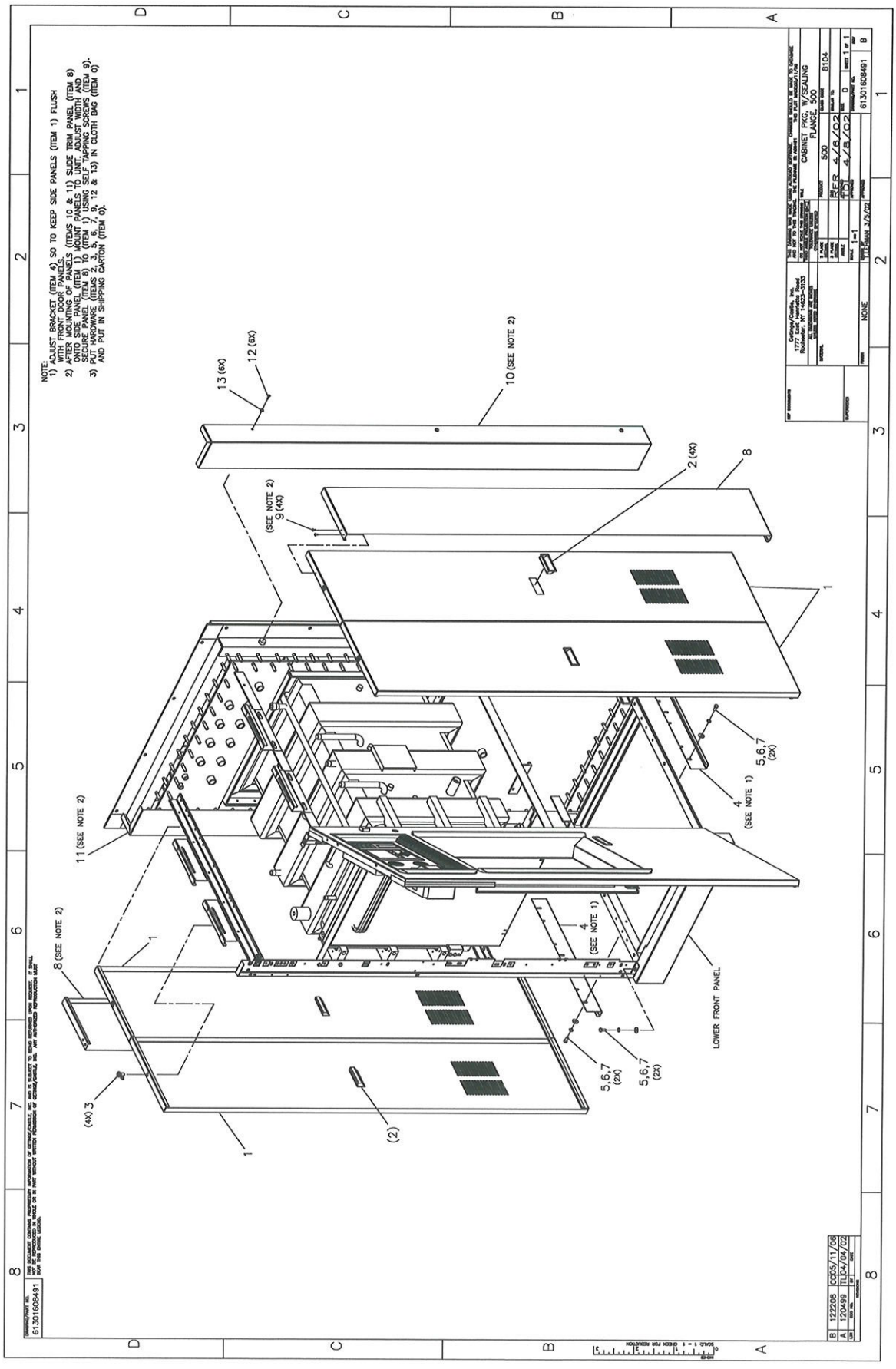


FIGURE 5–38. CROSS CONTAMINATION BARRIER PACKAGE

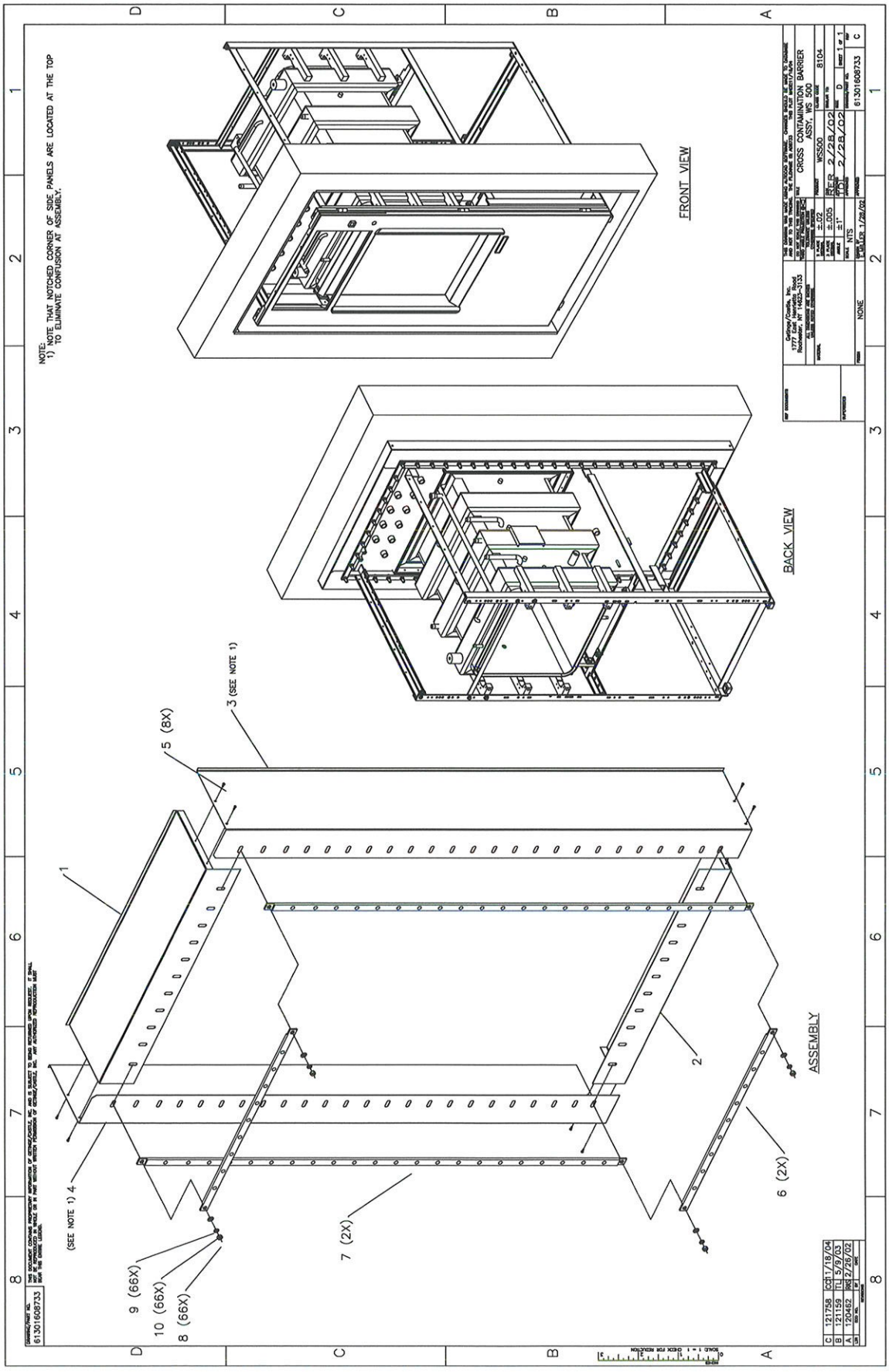
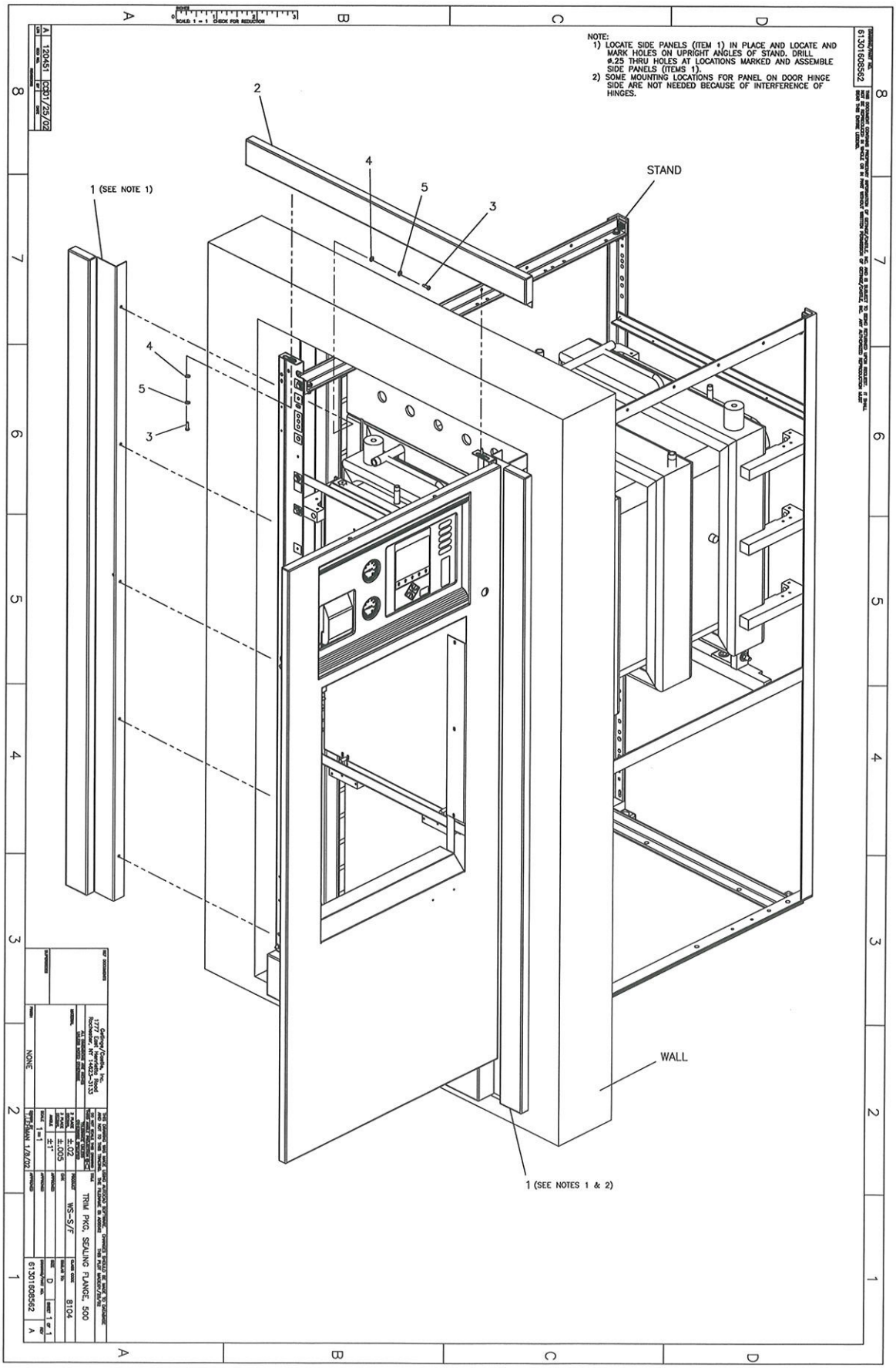


FIGURE 5–39. TRIM PANEL PACKAGE



SECTION 6 DRAWINGS

For technical data, utility requirements, and pertinent notes, refer to the drawings listed below.

LIST OF DRAWINGS

NOTE

"SP" DRAWINGS SUPERSEDE "HS" DRAWINGS: Some special orders have an arrangement drawing specific to the sterilizer being installed. These drawings are indicated by an "SP" prefix and are included in the package of manuals supplied with the sterilizer. If a sterilizer has an associated "SP" drawing, install the sterilizer according to the requirements listed on the "SP" drawing. Do not use the standard "HS" drawing.

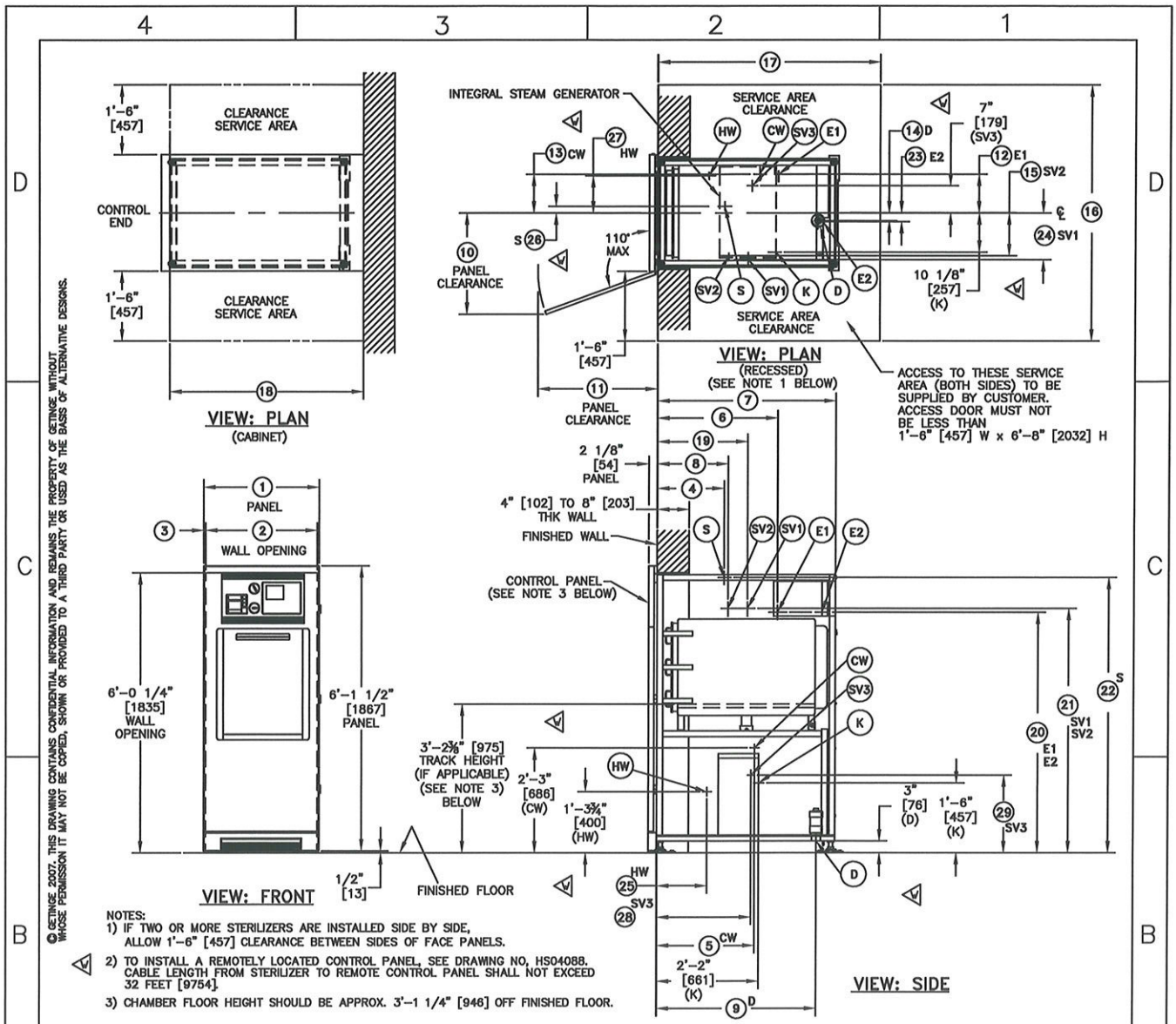
TABLE 6–1. ARRANGEMENT DRAWINGS

TABLE 6–1. ARRANGEMENT DRAWINGS (CONTINUED)

Drawing	Drawing No.	Page
400/500/700/800 Series Wall Mount Display	HS-4088	6–22
400/500/700/800 Series Wall Mount Display, Notes		6–23
Air Compressor	HS-4064	6–24

ARRANGEMENT DRAWINGS

FIGURE 6–1, SHEET 1. 400/500 SERIES STEAM STERILIZER WITH SINGLE DOOR, BRASS PIPING



NOTES:
1) IF TWO OR MORE STERILIZERS ARE INSTALLED SIDE BY SIDE, ALLOW 1'–6" [457] CLEARANCE BETWEEN SIDES OF FACE PANELS.
2) TO INSTALL A REMOTELY LOCATED CONTROL PANEL, SEE DRAWING NO, HS04088. CABLE LENGTH FROM STERILIZER TO REMOTE CONTROL PANEL SHALL NOT EXCEED 32 FEET [9754].
3) CHAMBER FLOOR HEIGHT SHOULD BE APPROX. 3'–1 1/4" [946] OFF FINISHED FLOOR.

UNIT	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑲	⑳	㉑	㉒	㉓
400 (SD)	2'–2 1/4" [711]	2'–1" [635]	5/8" [16]	1'–3 3/4" [400]	2'–1 7/8" [657]	1'–7" [483]	2'–10" [863]	1'–5" [432]	2'–10" [863]	2'–0" [610]	2'–4" [711]	8" [203]	8 1/8" [206]	1/2" [13]	6" [152]	5'–0" [1524]	3'–9" [1143]	3'–2" [965]	1'–10" [559]	5'–3" [1600]	5'–2" [1575]	5'–7" [1702]	3" [76]
500 (SD)	2'–6" [762]	2'–5" [737]	1/2" [13]	1'–4 3/4" [425]	2'–6" [768]	2'–7" [787]	3'–10" [1168]	1'–6" [457]	2'–11" [889]	2'–2" [660]	2'–6" [762]	10" [254]	9 1/8" [232]	1 1/4" [32]	7" [178]	5'–6" [1676]	4'–9" [1448]	4'–2" [1270]	1'–11" [584]	5'–2" [1575]	5'–3" [1600]	5'–11" [1803]	5" [127]

UNIT	㉔	㉕	㉖	㉗	㉘	㉙
400 (SD)	8" [203]	1'–0 3/4" [324]	2 5/16" [59]	9" [229]	2'–1" [635]	1'–8' [508]
500 (SD)	9" [229]	1'–6 3/4" [476]	1 3/4" [44]	10 1/4" [260]	1'–6" [457]	1'–6 3/4" [476]

UNIT SIZE	HEAT LOSSES BTU/HR [KCal/HR]				
	CONTROL AREA	RECESS AREA		CABINET MODEL	
		W/O STM GEN	WITH STM GEN	W/O STM GEN	WITH STM GEN
400 SINGLE DOOR	1111 [280]	2583 [651]	4631 [1167]	3694 [931]	5742 [1447]
500 SINGLE DOOR	1534 [387]	4296 [1083]	6343 [1598]	5830 [1469]	7877 [1985]

REV LTR	REVISION/ECO NO.	DATE DD-MM-YY	REVISED BY	CHECKED BY
W	130007	13/06/11	CC	AP
V	122988	05/05/10	RR	AP
U	122779	11/11/08	TL	AP
T	122670	03/06/08	TL	AP
S	122270	10/12/06	AP	RER

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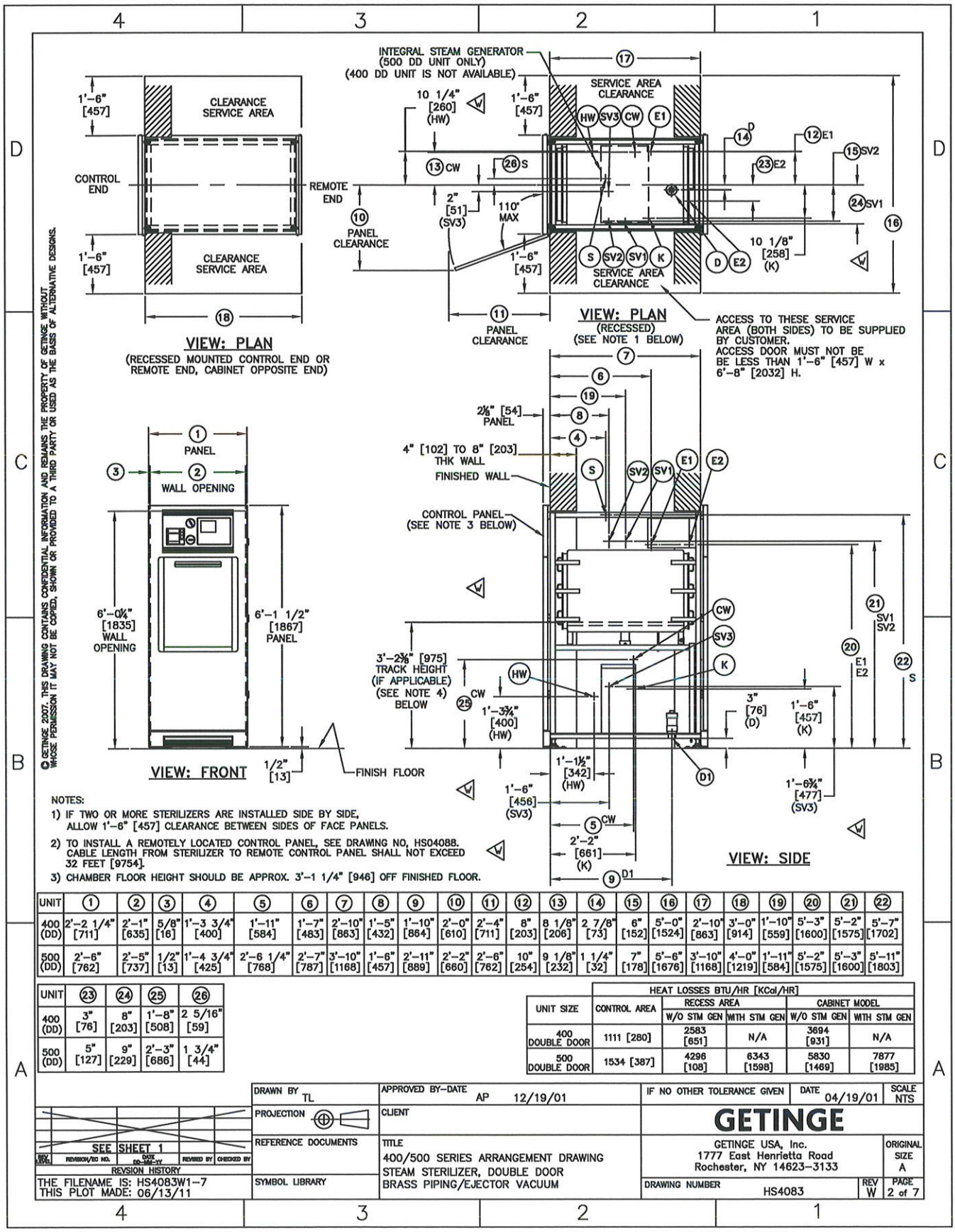
PROJECTION	CLIENT	GETINGE	
REFERENCE DOCUMENTS	TITLE 400/500 SERIES ARRANGEMENT DRAWING STEAM STERILIZER, SINGLE DOOR BRASS PIPING/EJECTOR VACUUM	GETINGE USA, Inc. 1777 East Henrietta Road Rochester, NY 14623–3133	ORIGINAL SIZE A
SYMBOL LIBRARY		DRAWING NUMBER HS4083	REV W PAGE 1 of 7

FIGURE 6–1, SHEET 2. 400/500 SERIES STEAM STERILIZER WITH DOUBLE DOORS, BRASS PIPING



UNIT	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑲	⑳	㉑	㉒
400 (DD)	2'–2 1/4" [711]	2'–1" [635]	5/8" [16]	1'–3 3/4" [400]	1'–11" [584]	1'–7" [483]	2'–10" [863]	1'–5" [432]	1'–10" [864]	2'–0" [610]	2'–4" [711]	8" [203]	8 1/8" [206]	2 7/8" [73]	6" [152]	5'–0" [1524]	2'–10" [863]	3'–0" [914]	1'–10" [559]	5'–3" [1600]	5'–2" [1575]	5'–7" [1702]
500 (DD)	2'–6" [762]	2'–5" [737]	1/2" [13]	1'–4 3/4" [425]	2'–6 1/4" [768]	2'–7" [787]	3'–10" [1168]	1'–6" [457]	2'–11" [889]	2'–2" [660]	2'–6" [762]	10" [254]	9 1/8" [232]	1 1/4" [32]	7" [178]	5'–6" [1676]	3'–10" [1168]	4'–0" [1219]	1'–11" [584]	5'–2" [1575]	5'–3" [1600]	5'–11" [1803]

UNIT	㉓	㉔	㉕	㉖
400 (DD)	3" [76]	8" [203]	1'–8" [508]	2 5/16" [59]
500 (DD)	5" [127]	9" [229]	2'–3" [686]	1 3/4" [44]

UNIT SIZE	HEAT LOSSES BTU/HR [KCal/HR]				
	CONTROL AREA	RECESS AREA		CABINET MODEL	
		W/O STM GEN	WITH STM GEN	W/O STM GEN	WITH STM GEN
400 DOUBLE DOOR	1111 [280]	2583 [651]	N/A	3694 [931]	N/A
500 DOUBLE DOOR	1534 [387]	4296 [108]	6343 [1598]	5830 [1469]	7877 [1985]

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PROJECTION	CLIENT	GETINGE		
REFERENCE DOCUMENTS	TITLE 400/500 SERIES ARRANGEMENT DRAWING STEAM STERILIZER, DOUBLE DOOR BRASS PIPING/EJECTOR VACUUM	GETINGE USA, Inc. 1777 East Henrietta Road Rochester, NY 14623–3133		ORIGINAL SIZE A
SYMBOL LIBRARY		DRAWING NUMBER HS4083	REV W	PAGE 2 of 7

SEE SHEET 1

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FIGURE 6–1, SHEET 3. 400/500 SERIES STEAM STERILIZER, BRASS PIPING, PLUMBING AND ELECTRICAL CONNECTIONS

NOTICE: Work by others

Safe and efficient operation of this product is dependent upon the owner/user providing the services specified herein as well as any other normally accepted electrical, mechanical or plumbing interface between user's supply and this product. Getinge USA will not assume responsibility for problems that result from non–compliance with the above conditions. The following conditions and services are required by Getinge USA equipment and are to be provided by others.

TABLE A: PLUMBING CONNECTIONS & UTILITIES

(Refer to notes 1–6 on sheet 4)

required for	ON UNIT CONNECTION	PIPE SIZE TO UNIT	PRESSURE RANGE DYNAMIC AT UNIT	FLOW RATE MAX
all units	CW= Cold water 3/4" NPT female	3/4" NPT see note 1c	40–70 psig [2.8–4.9 kg/cm²]	5 gpm [1.2 m³/Hr]
all units	D= Drain 1 1/2" [38] ODT	See note 3	Not applicable	See note 3
all units	SV1 (Chamber) SV2 (Jacket) = Sterilizer vessel pressure relief valve vent 3/4" NPT female	See note 5	Not applicable	See note 5
Units installed in a facility that has steam source	S= Steam (House Supply) 3/4" NPT female see note 4 & 11	3/4" NPT	40–50 psig [2.8–3.5 kg/cm²]	170 lbs/Hr [77 kg/Hr]
Units sold with an optional factory installed steam boiler	HW= Hot water 3/8" NPT female see note 2	1/2" NPT	20–50 psig (min.) [1.4–3.5 kg/cm²]	0.4 gpm [.09 m³/Hr]
Units sold with an optional factory installed steam boiler	SV3=Steam Boiler pressure relief valve vent 1" NPT female (Sussman) 3/4" NPT female (Chromalox)	See note 5	Not applicable	See note 5
Units sold with an optional factory installed Biological Sealing Flange or Cross–Contamination Barrier	AS= Compressed Air dry , filtered, oil–less (BSF/CCB only) see sheets 5 & 6	1/4" NPT	70–100 psig dynamic [4.9–7.0 kg/cm²]	1 SCFM [1.7 cu. m/Hr]

TABLE B: ELECTRICAL CONNECTIONS & UTILITIES

(Refer to note 7 on sheet 4)

required for	SERVICE	CONDUIT SIZE	UTILITY NOMINAL VOLTAGE	UTILITY VOLTAGE RANGE	MAX. CURRENT NOMINAL VOLTAGE	Breaker/Fusing Recommended	Consumption
all units (Domestic–US)	E1= Power Box	1/2" [13]	115V, 50/60 Hz, 1~	104 – 126V	12 A	15 A	250 W/Hr
	OPTIONAL – connections required for optional equipment listed below						
all units (International)	E2= Integral Transformer Box	1/2" [13]	230V, 50/60Hz, 1~	207 – 253V	5 A	15 A	N/A
Units sold with optional factory installed steam boiler	K= Electric 4 WIRE WITH GROUND (for units with optional factory installed carbon steel steam boiler)	1 1/4" [32]	208V, 50/60Hz, 3~	188 – 216V	84 A	100 A	N/A
		1" [25]	240V, 50/60Hz, 3~	217 – 250V	73 A	100 A	
		1" [25]	380V, 50Hz, 3~	374 – 432V	46 A	60 A	
		1" [25]	415V, 50Hz, 3~	374 – 432V	42 A	60 A	
		3/4" [19]	480V, 60Hz, 3~	432 – 500V	36 A	50 A	
		3/4" [19]	600V, 60Hz, 3~	540 – 625V	29 A	40 A	

OPERATING ENVIRONMENTAL CONDITIONS

TEMPERATURE: 50°F [10°C] TO 104°F [40°C]
RELATIVE HUMIDITY: 10% – 90% NON – CONDENSING
ATMOSPHERIC PRESSURE: 0 – 6500 FEET [0–2000 METERS] ELEVATION, (SPECIAL SOFTWARE NEEDED FOR HIGHER ELEVATIONS)
POLLUTION DEGREE: 2

SEE SHEET 1

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PROJECTION | CLIENT | GETINGE

REFERENCE DOCUMENTS | TITLE: 400/500 SERIES ARRANGEMENT DRAWING STEAM STERILIZER BRASS PIPING/EJECTOR VAC

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Rochester, NY 14623–3133

ORIGINAL SIZE A

DRAWING NUMBER HS4083 | REV W | PAGE 3 of 7

FIGURE 6–1, SHEET 4. 400/500 SERIES STEAM STERILIZER, BRASS PIPING, NOTES TO ARCHITECTS AND CONTRACTORS

NOTES TO ARCHITECTS & CONTRACTORS

1) Cold water:
   a) Cold water quality: Use potable water with a hardness of 0.5–10 grains/gal [8–170 ppm].
   b) Back–syphonage protection is required by others. Check local plumbing code and install backflow preventer. (Examples: Vacuum breaker, dual–check or reduced pressure type).
   c) An optional water booster pump is available to achieve satisfactory performance where:
      * Water pressure is at least 20 psig [1.4 kg/cm²] dynamic but less than specified 40 psig [2.8 kg/cm²].
      * Required backflow preventer lowers the water pressure below the minimum specified.
      * The optional booster pump requires mechanical electrical and plumbing hook–up by customer. A separate electrical service to the water booster pump junction box is necessary. Water line size will increase. Contact your local Getinge USA representative for site specific Utility Data.
   d) For optional Water Saver see Getinge USA drawing HS03472 (standard ejector piping ONLY).
2) Hot water to be supplied only when integral steam boiler is selected.
   a) Water quality information: For optimum results, the feed water supply should be tested prior to initial startup. If the mineral content exceeds the following recommended limits, various external treatment processes (water softener, RO, etc.) may be used to correct the problem. Routine manual blow–down or automatic blow–down option lowers concentrations of impurities and maintains the pH level above 7.0.
   b) Feedwater quality:

HARDNESS	0.5 – 5.0 GRAINS/GALLON [8–85 ppm]
RESISTIVITY	NOT TO EXCEED 50 KOHMS/CM
TEMPERATURE	100°F – 150°F [38°C – 65°C]
TOTAL DISSOLVED SOLIDS	150 PPM MAX.
pH	6.8 – 7.5

3) It shall be the customer's responsibility to provide a proper drainage system in accordance with applicable local codes. Temperature of drain water will not exceed 140°F [60°C] under normal operating conditions. If cold water supply is cut–off, temperature may exceed 200°F [93°C].
4) It shall be the customer's responsibility to provide condensate free steam between 97% and 100% saturated vapor.
5) Getinge USA recommends piping all vessel pressure relief valves to a vented manifold outside the equipment service area. Caution must be exercised not to reduce the discharge capacity of the relief valve. Recommended piping practices for relief valve piping can be found in ASME Boiler and Pressure Vessel Code Section VIII, Div. I, UG–135. Check local codes for special requirements.
6) All customer connections to sterilizer must be labeled. For safety, all shutoff valves must be reachable when standing on the floor at the equipment (i.e. water, steam, compressed air).
7) Electrical Supply:
   a) It shall be the customer's responsibility to complete all electrical connections in accordance with the National Electrical Code and all applicable local codes.
   b) A dedicated, permanently connected electrical supply with conveniently accessible disconnect switch (supplied by customer) is required for each sterilizer service indicated in Table B. Where both single phase and 3 phase supply is required, two disconnect switches can be used, yet shall be properly labeled and located as close as possible to each other and the sterilizer. Refer to the Getinge USA Installation Manual for specific instructions.
   c) For standard 115VAC units, 115VAC supply is required at "E1". For units with the optional 230V to 115V step–down transformer (integral with sterilizer), 230VAC supply is required at "E2" (and no connection at "E1").
8) For 500LS units equipped with biological sealing flange or cross contamination barrier (optional), see this drawing sheet 5 & 6.
9) Double Door units, recessed into two walls, require partial dis–assembly of unit to allow installation into fixed walls.
10) Optional Wall Mounted Control Panel, see drawing no. HS04088. Cable length to sterilizer not to exceed 32 ft [9754].
11) For Seismic Force information and loaded weights see sheet 7 of 7.

UNIT WEIGHTS AND CRATED MEASUREMENTS TABLE

UNIT SIZE	MAX. WEIGHT UNLOADED CRATED	MAX. WEIGHT UNLOADED UNCRATED	CRATED MEASUREMENTS LENGTH	WIDTH	HEIGHT
400 SINGLE DOOR	965 LBS [438 Kg]	855 LBS [387 Kg]	4'–5 1/2" [1359]	3'–4 3/4" [1035]	6'–7" [2007]
400 DOUBLE DOOR	1020 LBS [462 Kg]	910 LBS [412 Kg]			
500 SINGLE DOOR	1223 LBS [554 Kg]	1103 LBS [500 Kg]	5'–2 3/4" [1594]	3'–7 3/4" [1111]	6'–7" [2007]
500 DOUBLE DOOR	1298 LBS [588 Kg]	1178 LBS [(534 Kg]			

FOR INTEGRAL STEAM BOILER ADD 204LBS [93Kg] TO MAX WEIGHT.

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PROJECTION	CLIENT	GETINGE		
SEE SHEET 1	REFERENCE DOCUMENTS	TITLE 400/500 SERIES ARRAGEMENT DRAWING STEAM STERILIZER BRASS PIPING/EJECTOR VAC	GETINGE USA, Inc. 1777 East Henrietta Road Rochester, NY 14623–3133	ORIGINAL SIZE A
REV LTR / REVISION/ECO NO. / DATE DD–MM–YY / REVISED BY / CHECKED BY			DRAWING NUMBER HS4083	REV W
REVSION HISTORY	SYMBOL LIBRARY			PAGE 4 of 7
THE FILENAME IS: HS4083W1–7 THIS PLOT MADE: 06/13/11				

FIGURE 6–1, SHEET 5. 500 SERIES STEAM STERILIZER WITH BIOLOGICAL SEALING FLANGE, BRASS PIPING

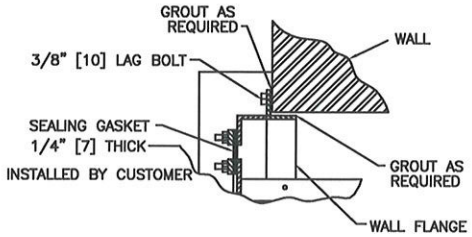
INFORMATION ON THIS PAGE IS FOR MODEL 522/533 STEAM STERILIZER WITH BIOLOGICAL FLANGE (BSF) ONLY

NOTES:

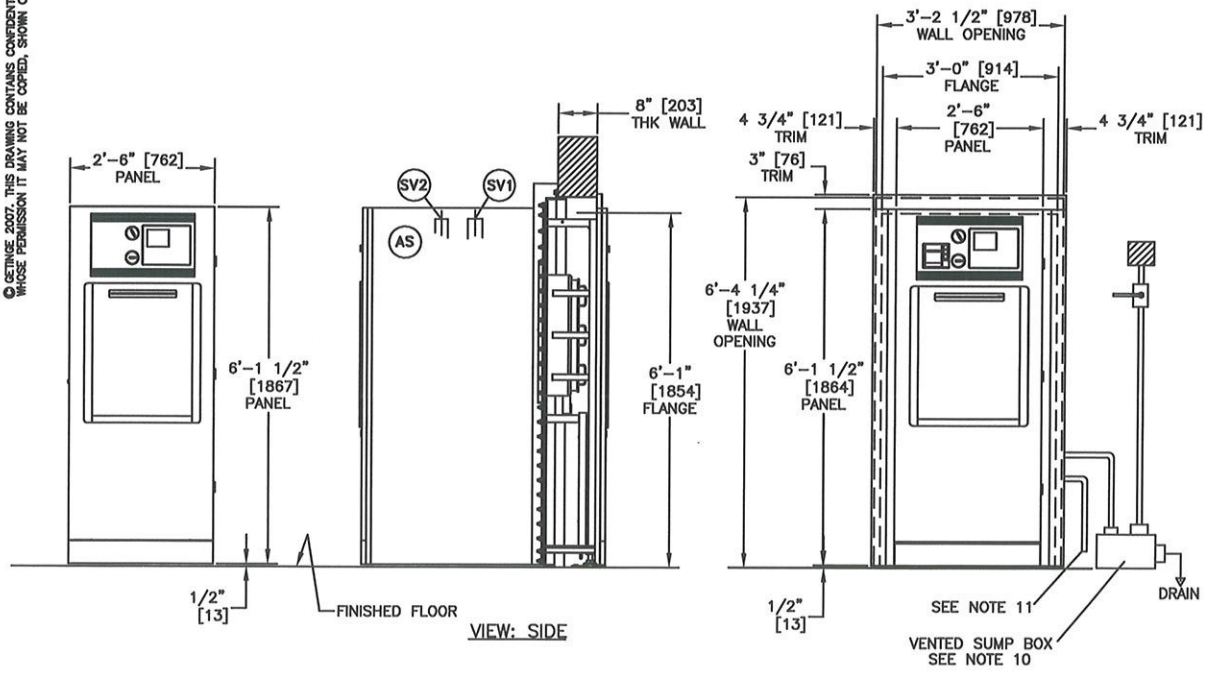
1) FOR SERVICE LOCATIONS, SPECIFICATIONS, AND ARCHITECT NOTES SEE SHEET 3 & 4. BIOLOGICAL FLANGE IS 500 SERIES ONLY.
2) FOR BIOLOGICAL FLANGE UNITS, CONTROLS ARE SWITCHED DEPENDING ON REQUESTED END FOR BIOLOGICAL FLANGE. IF (BFCE) IS REQUESTED, CONTROLS W/PRINTER ARE ON B/F END. IF (BFRE) IS REQUESTED, CONTROLS W/PRINTER ARE ON THE END OPPOSITE OF THE B/F. SERVICE LOCATIONS REMAIN THE SAME, AS INDICATED ON SHEET 2.
3) WALL FLANGE (SUPPLIED BY GETINGE) CAN BE SHIPPED AHEAD OF STERLIZER. WALL SHOULD BE BUILT BY CUSTOMER TO DIMENSIONS SPECIFIED FOR TIGHT FIT. SEE TYPICAL INSTALLATION.
4) SEE INSTALLATION INSTRUCTIONS P/N 61301608205 FOR MORE DETAIL.
5) DIMENSIONS ARE FEET–INCHES [MILLIMETERS].
6) FOR MOUNTING OF CABINET AND TRIM PACKAGE SEE GETINGE USA DRAWING P/N 61301608483 & 61301608562.
7) BIOLOGICAL FLANGE UNITS INCLUDE A UNIDIRECTIONAL DOOR SEAL AIR RETENTION TANK AS SHOWN.. SERVICE REQUIREMENTS FOR THE DOOR SEAL RETENTION SYSTEM ARE AS FOLLOWS::

   (AS)— A DRY, FILTERED, OIL–LESS COMPRESSED AIR SUPPLY (70–100 PSIG DYNAMIC, USAGE <1SCFM) IS REQUIRED FOR THIS SYSTEM. CONNECTION IS 1/4" NPT AT LOCATION INDICATED. A COMPRESSOR FOR THIS PURPOSE IS AVAILABLE FROM GETINGE USA (P/N 61301601462) AT EXTRA COST. AIR QUALITY WILL BE CLEAN, DRY INSTRUMENT QUALITY.

8) IF THE UNITS RECESSED AT THE END OPPOSITE THE BIOLOGICAL FLANGE, REFER TO SHEET 2 FOR DIMENSIONAL INFORMATION.
9) NOT USED
10) CHAMBER DRAIN PIPING WILL BE CONSIDERED TO BE CONTAMINATED AND A METHOD AND MEANS OF DECONTAMINATION FOR THIS PIPING HAS NOT BEEN PROVIDED FOR DISASSEMBLY/SERVICING.
11) 1/2" [13] OD TUBING (JACKET) CAN BE PIPING TO SANITARY SEWER.



TYPICAL INSTALLATION



DRAWN BY TDL	APPROVED BY–DATE AP 12/19/01	IF NO OTHER TOLERANCE GIVEN	DATE 12/19/01 SCALE NTS
PROJECTION	CLIENT	GETINGE	
REFERENCE DOCUMENTS	TITLE 500 SERIES ARRANAGEMENT DRAWING, STEAM STERILIZER, BIOLOGICAL FLANGE, BRASS PIPING	GETINGE USA, Inc. 1777 East Henrietta Road Rochester, NY 14623–3133	ORIGINAL SIZE A
SEE SHEET 1		DRAWING NUMBER HS4083	REV W PAGE 5 of 7
REVSION HISTORY			
THE FILENAME IS: HS4083W1–7 THIS PLOT MADE: 06/13/11	SYMBOL LIBRARY		

FIGURE 6–1, SHEET 6. 500 SERIES STEAM STERILIZER WITH CROSS CONTAMINATION BARRIER, BRASS PIPING

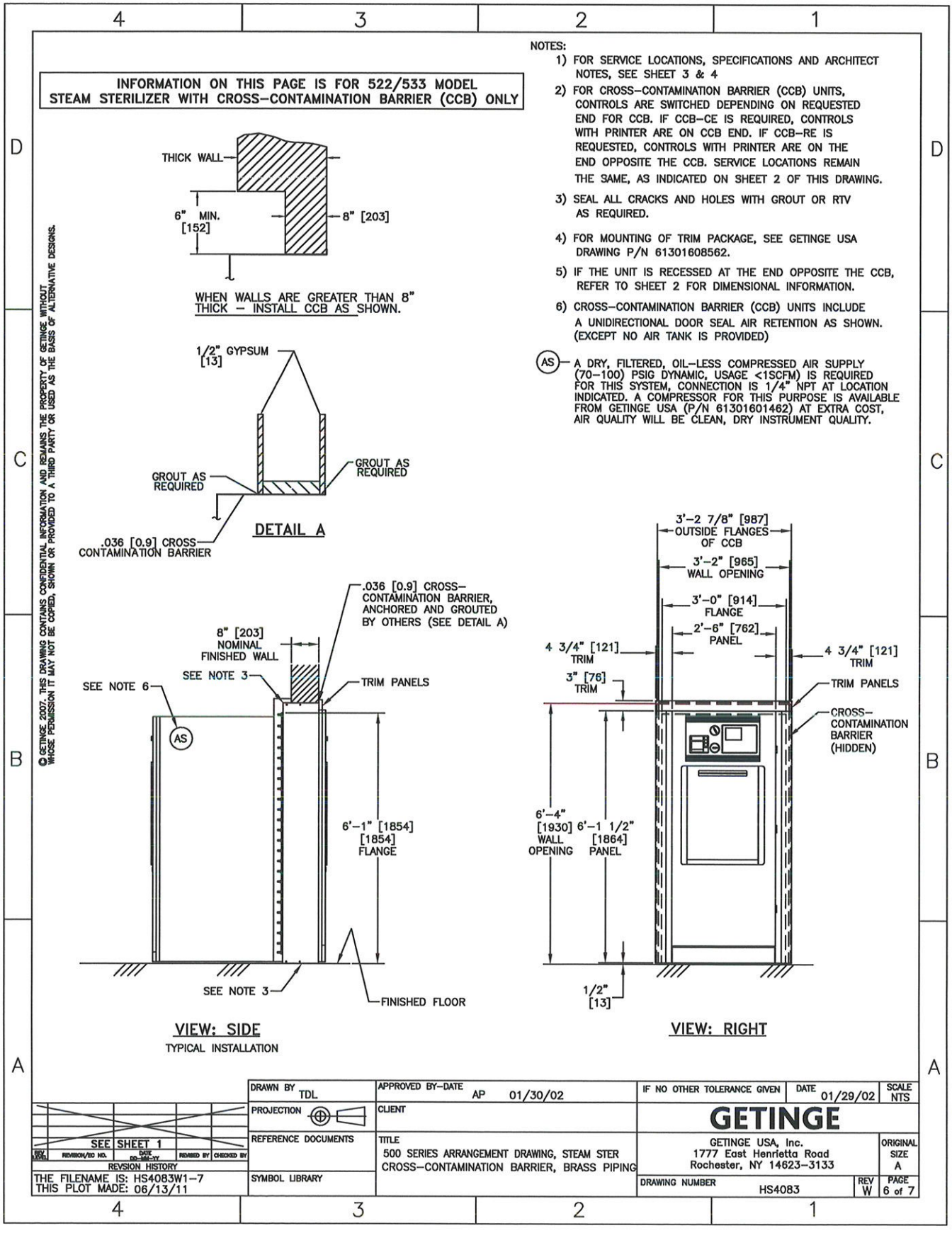


FIGURE 6–1, SHEET 7. 400/500 SERIES STEAM STERILIZER, SEISMIC ANCHOR INFORMATION

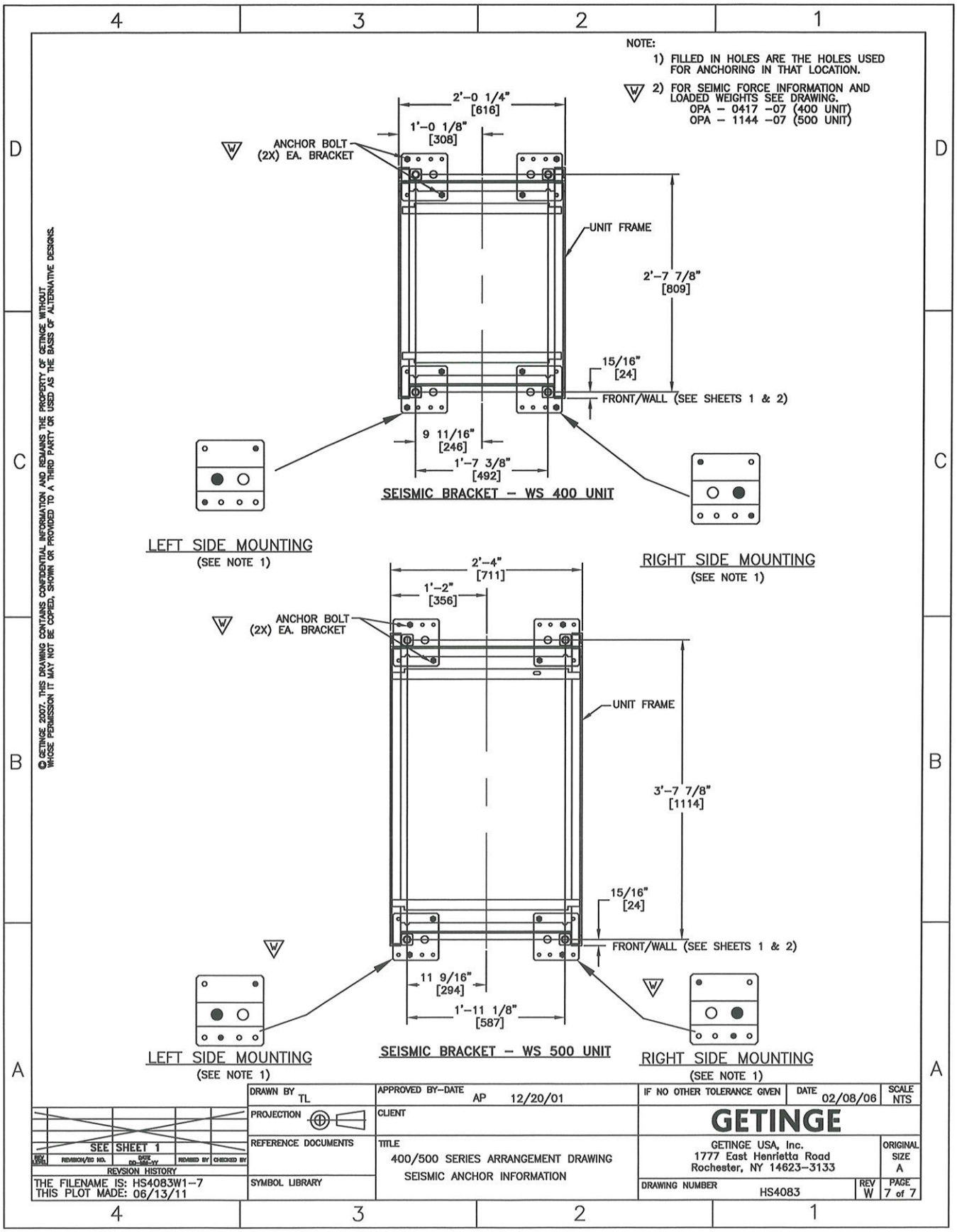
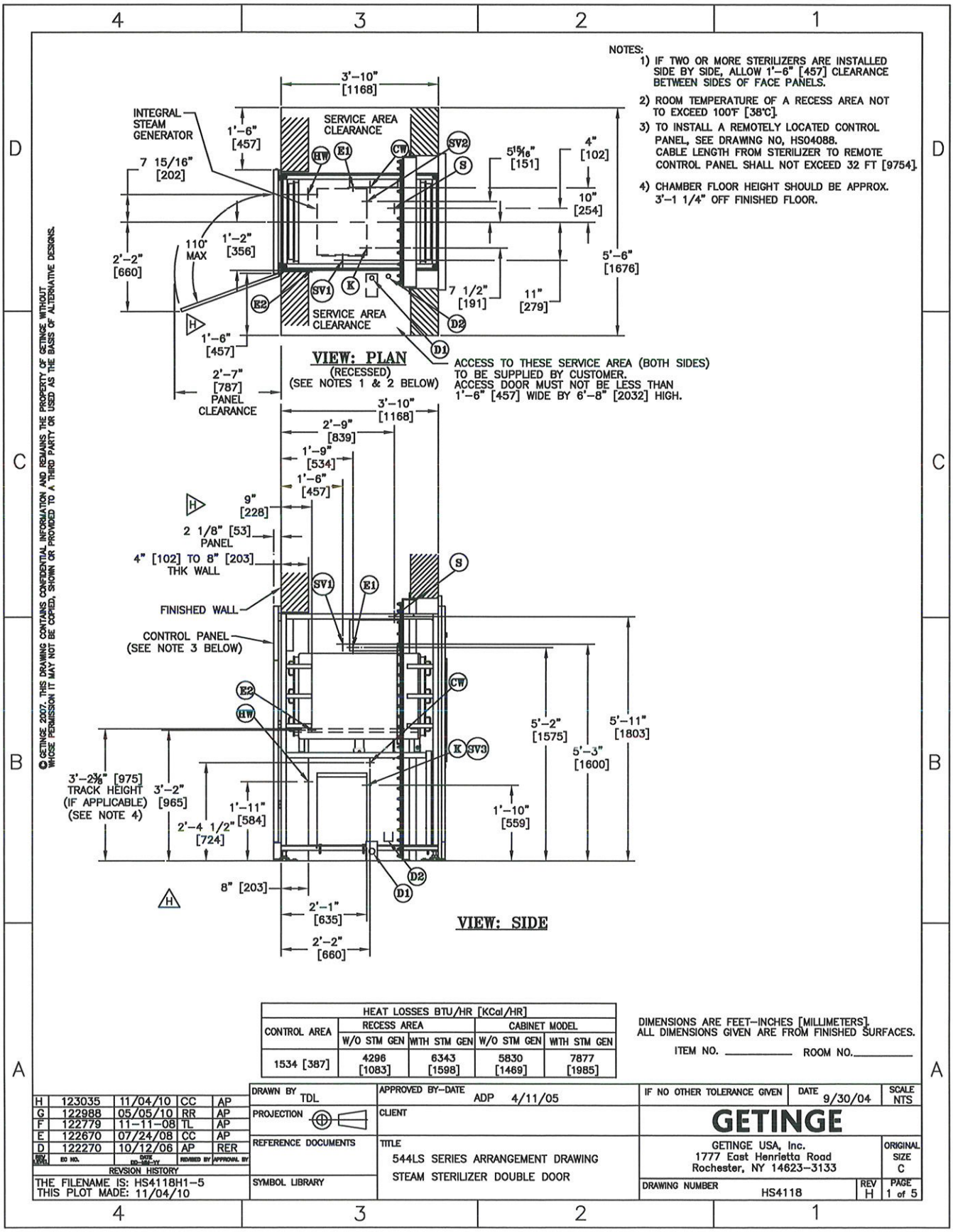


FIGURE 6–2, SHEET 1. 544LS STEAM STERILIZER, DOUBLE DOORS



HEAT LOSSES BTU/HR [KCal/HR]				
CONTROL AREA	RECESS AREA		CABINET MODEL	
	W/O STM GEN	WITH STM GEN	W/O STM GEN	WITH STM GEN
1534 [387]	4296 [1083]	6343 [1598]	5830 [1469]	7877 [1985]

DIMENSIONS ARE FEET–INCHES [MILLIMETERS].
ALL DIMENSIONS GIVEN ARE FROM FINISHED SURFACES.

ITEM NO. _____ ROOM NO._____

REV LEVEL	ED NO.	DATE DD–MM–YY	REVISED BY	APPROVAL BY
H	123035	11/04/10	CC	AP
G	122988	05/05/10	RR	AP
F	122779	11–11–08	TL	AP
E	122670	07/24/08	CC	AP
D	122270	10/12/06	AP	RER

REVISION HISTORY

THE FILENAME IS: HS4118H1–5
THIS PLOT MADE: 11/04/10

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APPROVED BY–DATE ADP 4/11/05
IF NO OTHER TOLERANCE GIVEN
DATE 9/30/04
SCALE NTS
PROJECTION
CLIENT
REFERENCE DOCUMENTS
TITLE
544LS SERIES ARRANGEMENT DRAWING
STEAM STERILIZER DOUBLE DOOR
SYMBOL LIBRARY

GETINGE

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

ORIGINAL SIZE C

DRAWING NUMBER HS4118
REV H
PAGE 1 of 5

FIGURE 6–2, SHEET 2. 544LS STEAM STERILIZER, BIOLOGICAL SEALING FLANGE

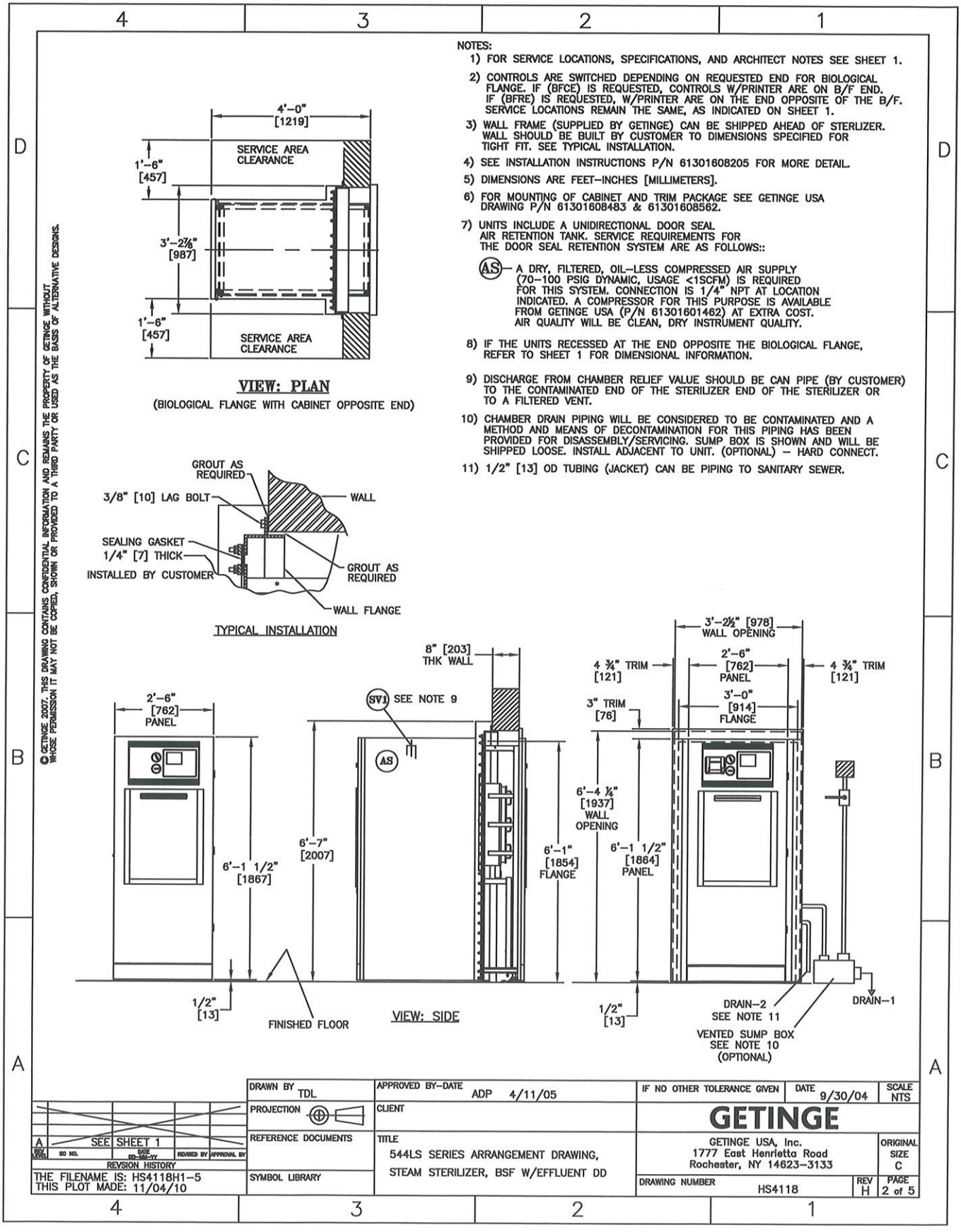

FIGURE 6–2, SHEET 3. 544LS STEAM STERILIZER, SEISMIC ANCHOR INFORMATION

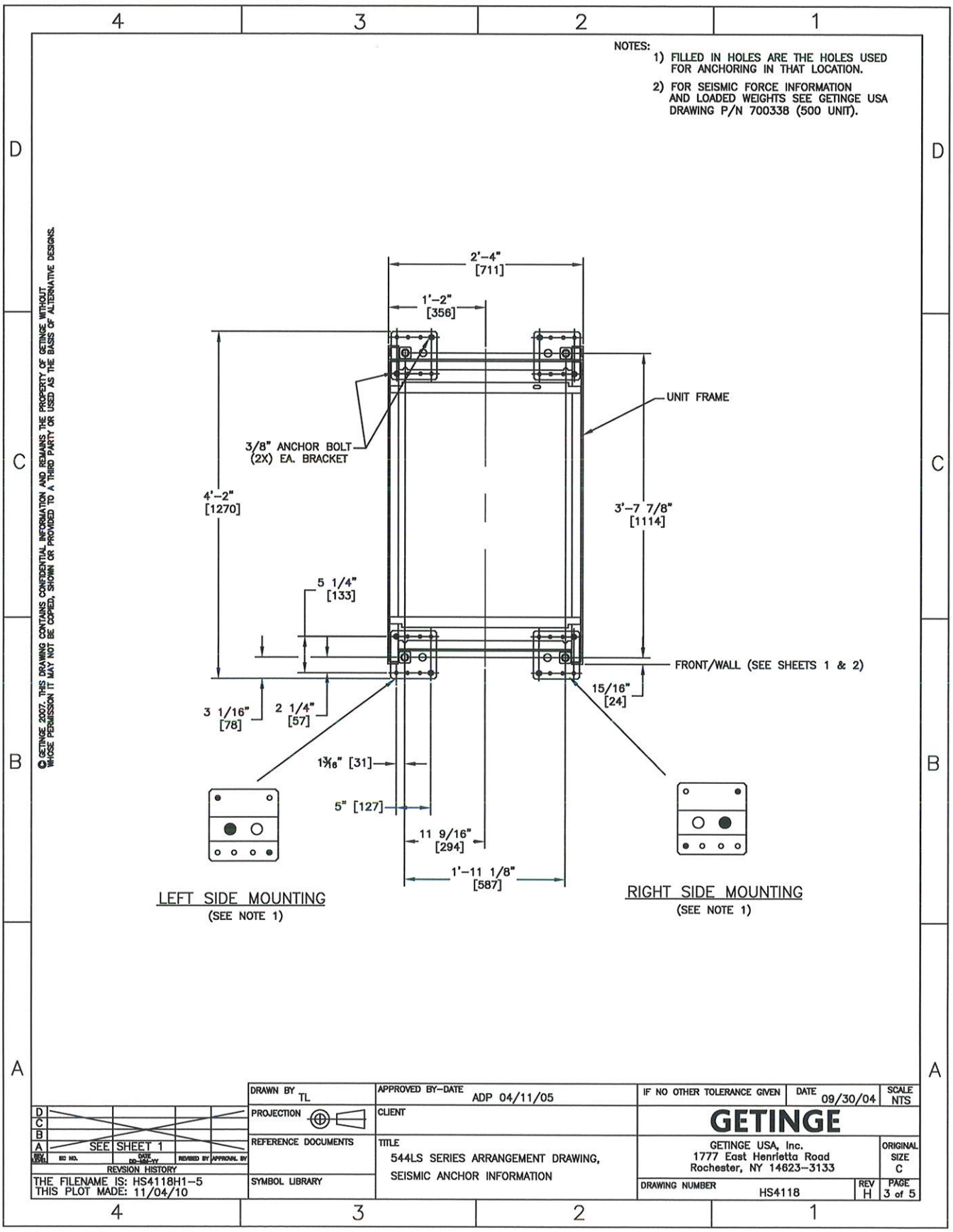

FIGURE 6–2, SHEET 4. 544LS STEAM STERILIZER, PLUMBING AND ELECTRICAL CONNECTIONS

NOTICE: Work by others

Safe and efficient operation of this product is dependent upon the owner/user providing the services specified herein as well as any other normally accepted electrical, mechanical or plumbing interface between user's supply and this product. Getinge USA will not assume responsability for problems that result from non–compliance with the above conditions. The following conditions and services are required by Getinge USA equipment and are to be provided by others.

TABLE A: PLUMBING CONNECTIONS & UTILITIES
(Refer to notes 1–6 on sheet 5)

ON UNIT CONNECTION	PIPE SIZE TO UNIT	PRESSURE RANGE DYNAMIC AT UNIT	FLOW RATE MAX
S= Steam 3/4" NPT female see note 4	3/4" NPT	40–50 psig [2.8–3.5 kg/cm^2]	96 lbs/Hr [44 kg/Hr]
CW= Cold water 3/4" NPT female see note 1	3/4" NPT	40–70 psig [2.8–4.9 kg/cm^2]	6 gpm [1.4 m^3/Hr]
D1 = Chamber Drain 1 1/2" [38] ODT	See note 3	Not applicable	See note 3
D2 = Jacket Drain 1/2" [13] ODT	See note 3	Not applicable	See note 3
HW= Hot water 3/8" NPT female see note 2	1/2" NPT	20–50 psig (min.) [1.4–3.5 kg/cm^2]	0.4 gpm [.09 m^3/Hr]
SV1 = Sterilizer jacket pressure relief valve vent 3/4" NPT female	See note 5	Not applicable	See note 5
SV2=Steam Boiler pressure relief valve vent 1" NPT female (Sussman) 3/4" NPT female (Chromalox)	See note 5	Not applicable	See note 5
AS= Compressed Air dry , filtered, oil–less (BSF/CCB only) (see sheets 5 & 6)	1/4" NPT	70–100 psig dynamic [4.9–7.0 kg/cm^2]	1 SCFM [1.7 cu. m/Hr]

TABLE B: ELECTRICAL CONNECTIONS & UTILITIES
(Refer to note 7 on sheet 5)

SERVICE	CONDUIT SIZE	UTILITY NOMINAL VOLTAGE	UTILITY VOLTAGE RANGE	MAX. CURRENT NOMINAL VOLTAGE	Breaker/Fusing Recommended	Consumption
E1= Power Box	1/2" [13]	115V, 50/60 Hz, 1~	104 – 126V	12 A	15 A	N/A
OPTIONAL – connections required for optional equipment listed below						
E2= Integral Transformer Box	1/2" [13]	230V, 50/60Hz, 1~	207 – 253V	5 A	15 A	N/A
K= Electric (optional) 4 WIRE WITH GROUND (for units with Integral Steam)	1 1/4" [32]	208V, 50/60Hz, 3~	188 – 216V	84 A	100 A	N/A
	1" [25]	240V, 50/60Hz, 3~	217 – 250V	73 A	100 A	
	1" [25]	380V, 50Hz, 3~	374 – 432V	46 A	60 A	
	1" [25]	415V, 50Hz, 3~	374 – 432V	42 A	60 A	
	3/4" [19]	480V, 60Hz, 3~	432 – 500V	36 A	50 A	
	3/4" [19]	600V, 60Hz, 3~	540 – 625V	29 A	40 A	

DRAWN BY TL	APPROVED BY–DATE ADP 4/11/05	IF NO OTHER TOLERANCE GIVEN	DATE 9/30/04	SCALE NTS
PROJECTION	CLIENT	GETINGE		
REFERENCE DOCUMENTS	TITLE 544LS SERIES ARRANGEMENT DRAWING STEAM STERILIZER	GETINGE USA, Inc. 1777 East Henrietta Road Rochester, NY 14623–3133		ORIGINAL SIZE C
SYMBOL LIBRARY		DRAWING NUMBER HS4118	REV H	PAGE 4 of 5

SEE SHEET 1

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THE FILENAME IS: HS4118H1–5
THIS PLOT MADE: 11/04/10

FIGURE 6–2, SHEET 5. 544LS STEAM STERILIZER, NOTES TO ARCHITECTS AND CONTRACTORS

NOTES TO ARCHITECTS & CONTRACTORS

1) Cold water:
   a) Cold water quality: Use potable water with a hardness of 0.5–10 grains/gal [8–170 ppm].
   b) Maximum temperature requirement is 80°F [27°C]. Optimal vacuum efficiency is at or below 70°F [21°C], 60°F [16°C] for optional LS vacuum pump.
   c) Back–syphonage is required by others. Check local plumbing code and install backflow preventer. (Examples: Vacuum breaker, dual–check or reduced pressure type).
   d) An optional water booster pump is available:
      * For installations where water pressure is at least 20 psig [1.4 kg/cm^2] dynamic but less than 40 psig [2.8 kg/cm^2].
      * To achieve satisfactory performance with dense loads where dynamic pressure is at or below 40 psig [2.8 kg/cm^2].
      * If required backflow preventer lowers the water pressure below the minimum specified.
      * The optional booster pump requires mechanical electrical and plumbing hook–up by customer. A separate electrical service to the water booster pump junction box is necessary. Contact your local Getinge USA representative for Utility Data
   e) For optional Water Saver see Getinge USA drawing HS3472.
2) Hot water to be supplied only when integral steam boiler is selected.
   a) Water quality information: For optimum results, the feed water supply should be tested prior to initial startup. If the mineral content exceeds the following recommended limits, various external treatment processes (water softener, RO, etc.) may be used to correct the problem. Routine manual blow–down or automatic blow–down option lowers concentrations of impurities and maintains the pH level above 7.0.
   b) Feedwater quality:

HARDNESS	0.5–5.0 GRAINS/GALLON [8–85 ppm]
RESISTIVITY	NOT TO EXCEED 50 kOHMS/cm
TEMPERATURE	100°F – 150°F [38°C – 65°C]
TOTAL DISSOLVED SOLIDS	150 PPM MAX.
pH	6.8–7.5

3) It shall be the customer's responsibility to provide a proper drainage system in accordance with applicable local codes. Temperature of drain water will not exceed 140°F [60°C] under normal operating conditions. If cold water supply is cut–off, temperature may exceed 200°F [93°C].
4) It shall be the customer's responsibility to provide condensate free steam between 97% and 100% saturated vapor.
5) Getinge USA recommends piping all vessel pressure relief valves to a vented manifold outside the equipment service area. Caution must be exercised not to reduce the discharge capacity of the relief valve. Recommended piping practices for relief valve piping can be found in ASME Boiler and Pressure Vessel Code Section VIII, Div. 1, UG–135. Check local codes for special requirements.
6) All customer connections to sterilizer must be labeled. For safety, all shutoff valves must be reachable when standing on the floor at the equipment (i.e. water, steam, compressed air).
7) Electrical Supply:
   a) It shall be the customer's responsibility to complete all electrical connections in accordance with the National Electrical Code and all applicable local codes.
   b) A dedicated, permanently connected electrical supply with conveniently accessible disconnect switch (supplied by customer) is required for each sterilizer service indicated in Table B. Where both single phase and 3 phase supply is required, two disconnect switches can be used, yet shall be properly labeled and located as close as possible to each other and the sterilizer. Refer to the Getinge USA Installation Manual for specific instructions.
   c) For standard 115VAC units, 115VAC supply is required at "E1". For units with the optional 230V to 115V step–down transformer (integral with sterilizer), 230VAC supply is required at "E2" (and no connection at "E1").
   d) For voltages other than 115V or 230V, a separate universal transformer is available to provide 115VAC to "E1" with input voltage configurable to 100, 200/208, 380/400/415, or 440/460/480. It shall be the customer's responsibility to install the universal transformer. Transformer box dimensions: 10" [254] L x 7 1/4" [184] W x 5 3/8" [137] D.
8) Double Door units, recessed into two walls, require partial dis–assembly of unit to allow installation into fixed walls.
9) Optional Wall Mounted Control Panel, see drawing no. HS04088. Cable length to sterilizer not to exceed 32 FT [9754].
10) For Seismic Force information and located weights see Getinge USA drawing P/N 700338 (500 unit). See sheet 3 of 5.

UNIT WEIGHTS AND CRATED MEASUREMENTS TABLE

[1] MAX. WEIGHT UNLOADED		CRATED MEASUREMENTS		
CRATED	UNCRATED	LENGTH	WIDTH	HEIGHT
1390 LBS [631 kg]	1280 LBS [581 kg]	5'–2 3/4" [1594]	3'–7 3/4" [1111]	6'–7" [2007]

[1] FOR INTEGRAL STEAM BOILER ADD 204 LBS [93 kg] TO MAX WEIGHT.

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PROJECTION	CLIENT	GETINGE	
REFERENCE DOCUMENTS	TITLE 544LS SERIES ARRANGEMENT DRAWING STEAM STERILIZER	GETINGE USA, Inc. 1777 East Henrietta Road Rochester, NY 14623–3133	ORIGINAL SIZE C
SYMBOL LIBRARY		DRAWING NUMBER HS4118	REV H PAGE 5 of 5

A SEE SHEET 1

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THE FILENAME IS: HS4118H1–5
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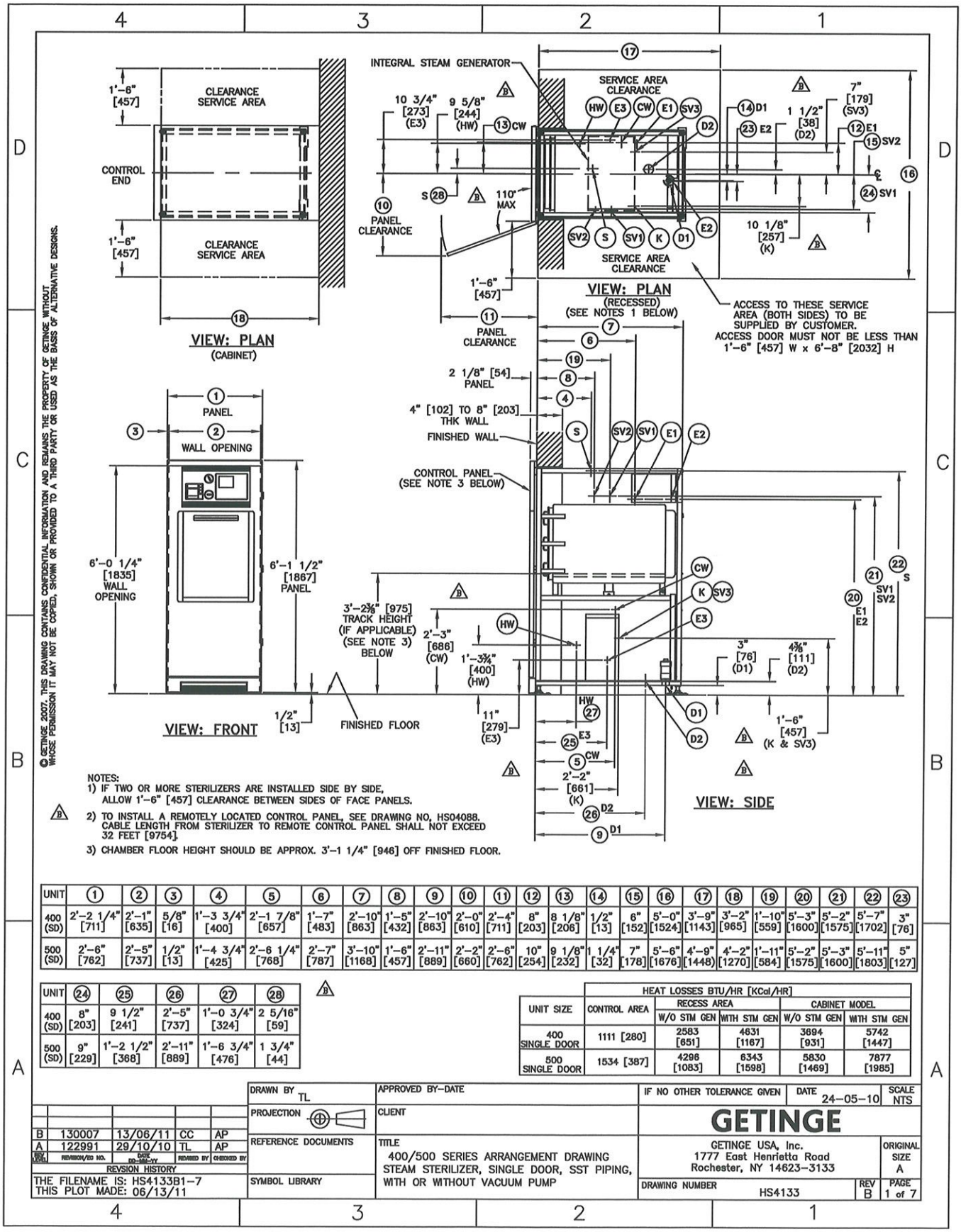
FIGURE 6–3, SHEET 1. 400/500 SERIES STEAM STERILIZER WITH SINGLE DOOR, STAINLESS STEEL PIPING



UNIT	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑲	⑳	㉑	㉒	㉓
400 (SD)	2'–2 1/4" [711]	2'–1" [635]	5/8" [16]	1'–3 3/4" [400]	2'–1 7/8" [657]	1'–7" [483]	2'–10" [863]	1'–5" [432]	2'–10" [863]	2'–0" [610]	2'–4" [711]	8" [203]	8 1/8" [206]	1/2" [13]	6" [152]	5'–0" [1524]	3'–9" [1143]	3'–2" [965]	1'–10" [559]	5'–3" [1600]	5'–2" [1575]	5'–7" [1702]	3" [76]
500 (SD)	2'–6" [762]	2'–5" [737]	1/2" [13]	1'–4 3/4" [425]	2'–6 1/4" [768]	2'–7" [787]	3'–10" [1168]	1'–6" [457]	2'–11" [889]	2'–2" [660]	2'–6" [762]	10" [254]	9 1/8" [232]	1 1/4" [32]	7" [178]	5'–6" [1676]	4'–9" [1448]	4'–2" [1270]	1'–11" [584]	5'–2" [1575]	5'–3" [1600]	5'–11" [1803]	5" [127]

UNIT	㉔	㉕	㉖	㉗	㉘
400 (SD)	8" [203]	9 1/2" [241]	2'–5" [737]	1'–0 3/4" [324]	2 5/16" [59]
500 (SD)	9" [229]	1'–2 1/2" [368]	2'–11" [889]	1'–6 3/4" [476]	1 3/4" [44]

UNIT SIZE	HEAT LOSSES BTU/HR [KCal/HR]				
	CONTROL AREA	RECESS AREA		CABINET MODEL	
		W/O STM GEN	WITH STM GEN	W/O STM GEN	WITH STM GEN
400 SINGLE DOOR	1111 [280]	2583 [651]	4631 [1167]	3694 [931]	5742 [1447]
500 SINGLE DOOR	1534 [387]	4298 [1083]	6343 [1598]	5830 [1469]	7877 [1985]

REV LTR	REVISION/ECO NO.	DATE DD-MM-YY	REVISED BY	CHECKED BY
B	130007	13/06/11	CC	AP
A	122991	29/10/10	TL	AP

REVISION HISTORY

THE FILENAME IS: HS4133B1-7
THIS PLOT MADE: 06/13/11

DRAWN BY TL
PROJECTION
REFERENCE DOCUMENTS
SYMBOL LIBRARY
APPROVED BY–DATE
CLIENT
TITLE
400/500 SERIES ARRANGEMENT DRAWING STEAM STERILIZER, SINGLE DOOR, SST PIPING, WITH OR WITHOUT VACUUM PUMP
IF NO OTHER TOLERANCE GIVEN
DATE 24–05–10
SCALE NTS

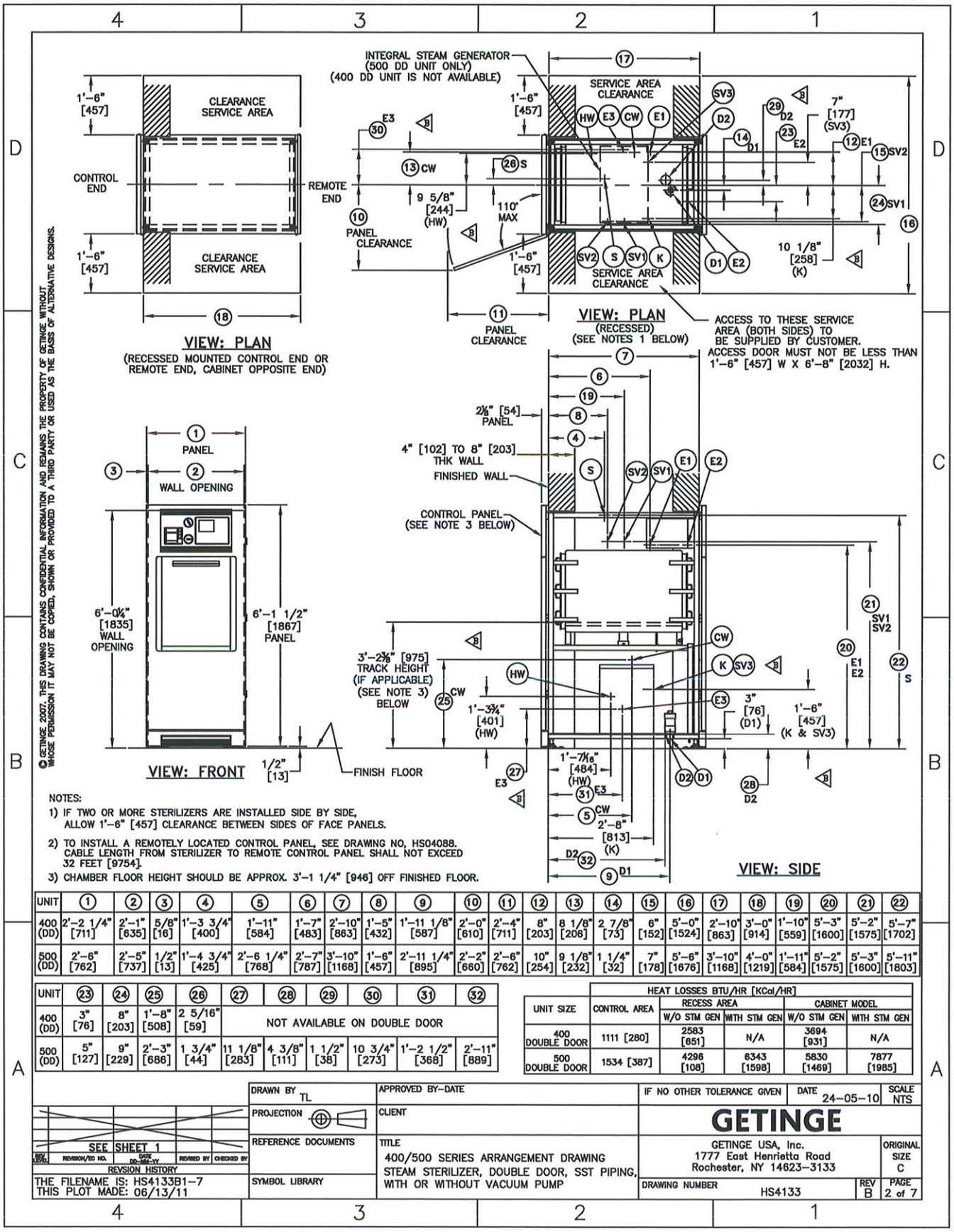
GETINGE

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

ORIGINAL SIZE A

DRAWING NUMBER HS4133
REV B
PAGE 1 of 7

FIGURE 6–3, SHEET 2. 400/500 SERIES STEAM STERILIZER WITH DOUBLE DOORS, STAINLESS STEEL PIPING



NOTES:

1) IF TWO OR MORE STERILIZERS ARE INSTALLED SIDE BY SIDE, ALLOW 1'–6" [457] CLEARANCE BETWEEN SIDES OF FACE PANELS.
2) TO INSTALL A REMOTELY LOCATED CONTROL PANEL, SEE DRAWING NO, HS04088. CABLE LENGTH FROM STERILIZER TO REMOTE CONTROL PANEL SHALL NOT EXCEED 32 FEET [9754].
3) CHAMBER FLOOR HEIGHT SHOULD BE APPROX. 3'–1 1/4" [946] OFF FINISHED FLOOR.

UNIT	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑲	⑳	㉑	㉒
400 (DD)	2'–2 1/4" [711]	2'–1" [635]	5/8" [16]	1'–3 3/4" [400]	1'–11" [584]	1'–7" [483]	2'–10" [863]	1'–5" [432]	1'–11 1/8" [587]	2'–0" [610]	2'–4" [711]	8" [203]	8 1/8" [206]	2 7/8" [73]	6" [152]	5'–0" [1524]	2'–10" [863]	3'–0" [914]	1'–10" [559]	5'–3" [1600]	5'–2" [1575]	5'–7" [1702]
500 (DD)	2'–6" [762]	2'–5" [737]	1/2" [13]	1'–4 3/4" [425]	2'–6 1/4" [768]	2'–7" [787]	3'–10" [1168]	1'–6" [457]	2'–11 1/4" [895]	2'–2" [660]	2'–6" [762]	10" [254]	9 1/8" [232]	1 1/4" [32]	7" [178]	5'–6" [1676]	3'–10" [1168]	4'–0" [1219]	1'–11" [584]	5'–2" [1575]	5'–3" [1600]	5'–11" [1803]

UNIT	㉓	㉔	㉕	㉖	㉗	㉘	㉙	㉚	㉛	㉜
400 (DD)	3" [76]	8" [203]	1'–8" [508]	2 5/16" [59]	NOT AVAILABLE ON DOUBLE DOOR					
500 (DD)	5" [127]	9" [229]	2'–3" [686]	1 3/4" [44]	11 1/8" [283]	4 3/8" [111]	1 1/2" [38]	10 3/4" [273]	1'–2 1/2" [368]	2'–11" [889]

UNIT SIZE	HEAT LOSSES BTU/HR [KCal/HR]				
	CONTROL AREA	RECESS AREA		CABINET MODEL	
		W/O STM GEN	WITH STM GEN	W/O STM GEN	WITH STM GEN
400 DOUBLE DOOR	1111 [280]	2583 [651]	N/A	3694 [931]	N/A
500 DOUBLE DOOR	1534 [387]	4296 [108]	6343 [1598]	5830 [1469]	7877 [1985]

DRAWN BY TL	APPROVED BY–DATE	IF NO OTHER TOLERANCE GIVEN	DATE 24–05–10	SCALE NTS
PROJECTION	CLIENT	GETINGE		
REFERENCE DOCUMENTS	TITLE 400/500 SERIES ARRANGEMENT DRAWING STEAM STERILIZER, DOUBLE DOOR, SST PIPING, WITH OR WITHOUT VACUUM PUMP	GETINGE USA, Inc. 1777 East Henrietta Road Rochester, NY 14623–3133		ORIGINAL SIZE C
SEE SHEET 1		DRAWING NUMBER HS4133	REV B	PAGE 2 of 7
REV LTR / REVISION/ECO NO. / DATE DD–MM–YY / REVISED BY / CHECKED BY	SYMBOL LIBRARY			
REVISION HISTORY				
THE FILENAME IS: HS4133B1–7 THIS PLOT MADE: 06/13/11				

FIGURE 6–3, SHEET 3. 400/500 SERIES STEAM STERILIZER WITH STAINLESS STEEL PIPING, PLUMBING AND ELECTRICAL CONNECTIONS

NOTICE: Work by others

Safe and efficient operation of this product is dependent upon the owner/user providing the services specified herein as well as any other normally accepted electrical, mechanical or plumbing interface between user's supply and this product. Getinge USA will not assume responsibility for problems that result from non–compliance with the above conditions. The following conditions and services are required by Getinge USA equipment and are to be provided by others.

TABLE A: PLUMBING CONNECTIONS & UTILITIES

(Refer to notes 1–6 on sheet 4)

required for	ON UNIT CONNECTION	PIPE SIZE TO UNIT	PRESSURE RANGE DYNAMIC AT UNIT	FLOW RATE MAX
all units	CW= Cold water 3/4" NPT female	3/4" NPT See note 1c	(Standard Piping–Ejector) 40–70 psig [2.8–4.9 kg/cm²]	(Standard Piping–Ejector) 5 gpm [1.2 m³/Hr]
			(Vac Pmp Piping–w/o Ejector) 10–70 psig [0.7–4.9 kg/cm²]	(Vac Pmp Piping–w/o Ejector) 6 gpm [1.4 m³/Hr]
all units	D1 = Standard Drain 1 1/2" [38] ODT	See note 3	Not applicable	See note 3
only units with vacuum pump	D2 = Drain Vac Pump 1 1/2" [38] NPT Male			
all units	SV1 (Chamber) SV2 (Jacket) = Sterilizer vessel pressure relief valve vent – 3/4" NPT female	See note 5	Not applicable	See note 5
Units installed in a facility that has a steam source	S= Steam (House Supply) 3/4" NPT female See note 4 & 11	3/4" NPT	40–50 psig [2.8–3.5 kg/cm₂]	(Standard Piping–Ejector) 170 lbs/Hr [77 kg/Hr]
				(Vac Pmp Piping–w/o Ejector) 120 lbs/Hr [54 kg/Hr]
Units sold with an optional factory installed steam boiler	HW= Hot water 3/8" NPT female See note 2	1/2" NPT	20–50 psig (min.) [1.4–3.5 kg/cm²]	0.4 gpm [.09 m³/Hr]
Units sold with an optional factory installed steam boiler	SV3=Steam Boiler pressure relief valve vent 1" NPT female	See note 5	Not applicable	See note 5
Units sold with an optional factory installed Biological Sealing Flange or Cross–Contamination Barrier	AS= Compressed Air dry , filtered, oil–less (BSF/CCB only) See sheets 5 & 6	1/4" NPT	70–100 psig dynamic [4.9–7.0 kg/cm²]	1 SCFM [1.7 cu. m/Hr]

TABLE B: ELECTRICAL CONNECTIONS & UTILITIES

(Refer to note 7 on sheet 4)

required for	SERVICE	CONDUIT SIZE	UTILITY NOMINAL VOLTAGE	UTILITY VOLTAGE RANGE	MAX. CURRENT NOMINAL VOLTAGE	Breaker/Fusing Recommended	Consumption
all units (Domestic–US)	E1= Power Box	1/2" [13]	115V, 50/60 Hz, 1~	104 – 126V	12 A	15 A	250 W/Hr
OPTIONAL – connections required for optional equipment listed below							
all units (International)	E2= Integral Transformer Box	1/2" [13]	230V, 50/60Hz, 1~	207 – 253V	5 A	15 A	N/A
Units sold with optional factory installed SST steam boiler	K= Electric 4 WIRE WITH GROUND (for units with optional factory installed stainless steel steam boiler) (Not available on 400 DD) (Not available with vacuum pump)	1 1/4" [32]	208V, 50/60Hz, 3~	188 – 216V	84 A	100 A	N/A
		1" [25]	230V, 50/60Hz, 3~	217 – 250V	73 A	100 A	
		1" [25]	380V, 50Hz, 3~	374 – 432V	46 A	60 A	
		1" [25]	415V, 50Hz, 3~	374 – 432V	42 A	60 A	
		3/4" [19]	460V, 60Hz, 3~	432 – 500V	36 A	50 A	
		3/4" [19]	600V, 60Hz, 3~	540 – 625V	29 A	40 A	
Units sold with optional factory installed vacuum pump.	E3= Vacuum Pump Motor 2HP–(50Hz)/3HP–(60Hz) Junction Box – 4 wire with ground (Without steam boiler) (Not available on 400 DD) (Not available on BSF/CCB)	1/2" [13]	208V, 60Hz, 3~	188 – 216V	8.8 A	15 A	N/A
			230V, 60Hz, 3~	217 – 250V			
			380V, 50Hz, 3~	346 – 420V	4.1 A		
			460V, 60Hz, 3~	414 – 506V	4.4 A		

OPERATING ENVIRONMENTAL CONDITIONS

TEMPERATURE: 50°F [10°C] TO 104°F [40°C]
RELATIVE HUMIDITY: 10% – 90% NON–CONDENSING
ATMOSPHERIC PRESSURE: 0–6500 FEET [0–2000 METERS] ELEVATION, (SPECIAL SOFTWARE NEEDED FOR HIGHER ELEVATIONS)
POLLUTION DEGREE: 2

SEE SHEET 1

REVISION HISTORY

THE FILENAME IS: HS4133B1–7
THIS PLOT MADE: 06/13/11

DRAWN BY TL | APPROVED BY–DATE | IF NO OTHER TOLERANCE GIVEN | DATE 24–05–10 | SCALE NTS
PROJECTION | CLIENT | GETINGE
REFERENCE DOCUMENTS | TITLE: 400/500 SERIES ARRANGEMENT DRAWING STEAM STERILIZER SST PIPING
SYMBOL LIBRARY

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

ORIGINAL SIZE A
DRAWING NUMBER HS4133 | REV B | PAGE 3 of 7

FIGURE 6–3, SHEET 4. 400/500 SERIES STEAM STERILIZER WITH STAINLESS STEEL PIPING, NOTES TO ARCHITECTS AND CONTRACTORS

NOTES TO ARCHITECTS & CONTRACTORS

1) Cold water:
   a) Cold water quality: Use potable water with a hardness of 0.5–10 grains/gal [8–170 ppm].
   b) Maximum temperature requirement is 80°F [27°C]. Optimal vacuum efficiency is at or below 70°F [21°C].
   c) Back–syphonage protection is required by others. Check local plumbing code and install backflow preventer. (Examples: Vacuum breaker, dual–check or reduced pressure type).
   d) An optional water booster pump is available to achieve satisfactory performance where:
      * For installations where water pressure is at least 20 psig [1.4 kg/cm^2] dynamic but less than specified 40 psig [2.8 kg/cm^2].
      * Required backflow preventer lowers the water pressure below the minimum specified.
      * The optional booster pump requires mechanical electrical and plumbing hook–up by customer.
        A separate electrical service to the water booster pump junction box is necessary. Water line size will increase. Contact your local Getinge USA representative for site specific Utility Data.
   e) For optional Water Saver see Getinge USA drawing HS03472 (standard ejector piping ONLY).
2) Hot water to be supplied only when integral steam boiler is selected.
   a) Water quality information: For optimum results, the feed water supply should be tested prior to initial startup. If the mineral content exceeds the following recommended limits, various external treatment processes (water softener, RO, etc.) may be used to correct the problem. Routine manual blow–down or automatic blow–down option lowers concentrations of impurities and maintains the pH level above 7.0.
   b) Feedwater quality (SST Boiler use deionized or RO water):

RESISTIVITY	1–1.2 MΩ–cm
TEMPERATURE	100°F – 150°F [38°C – 65°C]
TOTAL DISSOLVED SOLIDS	.5 PPM MAX.

3) It shall be the customer's responsibility to provide a proper drainage system in accordance with applicable local codes. Temperature of drain water will not exceed 140°F [60°C] under normal operating conditions. If cold water supply is cut–off, temperature may exceed 200°F [93°C].
4) It shall be the customer's responsibility to provide condensate free steam between 97% and 100% saturated vapor.
5) Getinge USA recommends piping all vessel pressure relief valves to a vented manifold outside the equipment service area. Caution must be exercised not to reduce the discharge capacity of the relief valve. Recommended piping practices for relief valve piping can be found in ASME Boiler and Pressure Vessel Code Section VIII, Div. I, UG–135. Check local codes for special requirements.
6) All customer connections to sterilizer must be labeled. For safety, all shutoff valves must be reachable when standing on the floor at the equipment (i.e. water, steam, compressed air).
7) Electrical Supply:
   a) It shall be the customer's responsibility to complete all electrical connections in accordance with the National Electrical Code and all applicable local codes.
   b) A dedicated, permanently connected electrical supply with conveniently accessible disconnect switch (supplied by customer) is required for each sterilizer service indicated in Table B. Where both single phase and 3 phase supply is required, two disconnect switches can be used, yet shall be properly labeled and located as close as possible to each other and the sterilizer. Refer to the Getinge USA installation Manual for specific instructions.
   c) For standard 115VAC units, 115VAC supply is required at "E1". For units with the optional 230V to 115V step–down transformer (integral with sterilizer), 230VAC supply is required at "E2" (and no connection at "E1").
8) For 500LS units equipped with biological sealing flange or cross contamination barrier (optional), see this drawing sheet 5 & 6. Vacuum pump is not available on biological sealing flange or cross contamination barrier.
9) Double Door units, recessed into two walls, require partial dis–assembly of unit to allow installation into fixed walls.
10) Optional Wall Mounted Control Panel, see drawing no. HS04088. Cable length to sterilizer not to exceed 32 ft [9754].
11) For Seismic Force information and loaded weights see sheet 7 of 7.

UNIT WEIGHTS AND CRATED MEASUREMENTS TABLE

UNIT SIZE	MAX. WEIGHT UNLOADED CRATED	MAX. WEIGHT UNLOADED UNCRATED	CRATED MEASUREMENTS LENGTH	WIDTH	HEIGHT
400 SINGLE DOOR	965 LBS [438 Kg]	855 LBS [387 Kg]	4'–5 1/2" [1359]	3'–4 3/4" [1035]	6'–7" [2007]
400 DOUBLE DOOR	1020 LBS [462 Kg]	910 LBS [412 Kg]			
500 SINGLE DOOR	1223 LBS [554 Kg]	1103 LBS [500 Kg]	5'–2 3/4" [1594]	3'–7 3/4" [1111]	6'–7" [2007]
500 DOUBLE DOOR	1298 LBS [588 Kg]	1178 LBS [(534 Kg]			

FOR INTEGRAL STEAM BOILER ADD 204LBS [93Kg] TO MAX WEIGHT.

DRAWN BY TL	APPROVED BY–DATE	IF NO OTHER TOLERANCE GIVEN	DATE 24–05–10	SCALE NTS
PROJECTION	CLIENT	GETINGE		
REFERENCE DOCUMENTS	TITLE 400/500 SERIES ARRAGEMENT DRAWING STEAM STERILIZER SST PIPING	GETINGE USA, Inc. 1777 East Henrietta Road Rochester, NY 14623–3133		ORIGINAL SIZE A
SYMBOL LIBRARY		DRAWING NUMBER HS4133	REV B	PAGE 4 of 7

SEE SHEET 1

REVSION HISTORY

REV. LTR	REVISION/ECO NO.	DATE DD-MMM-YY	REVISED BY	CHECKED BY

THE FILENAME IS: HS4133B1–7
THIS PLOT MADE: 06/13/11

FIGURE 6–3, SHEET 5. 522/533 SERIES STEAM STERILIZER WITH DOUBLE DOORS, BIOLOGICAL SEALING FLANGE (BSF), STAINLESS STEEL PIPING

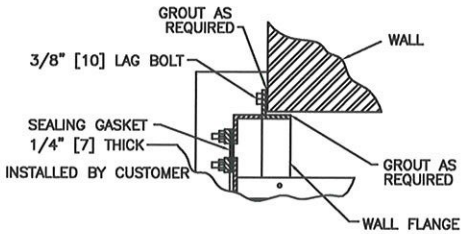
INFORMATION ON THIS PAGE IS FOR MODEL 522/533 STEAM STERILIZER WITH BIOLOGICAL FLANGE (BSF) ONLY

NOTES:

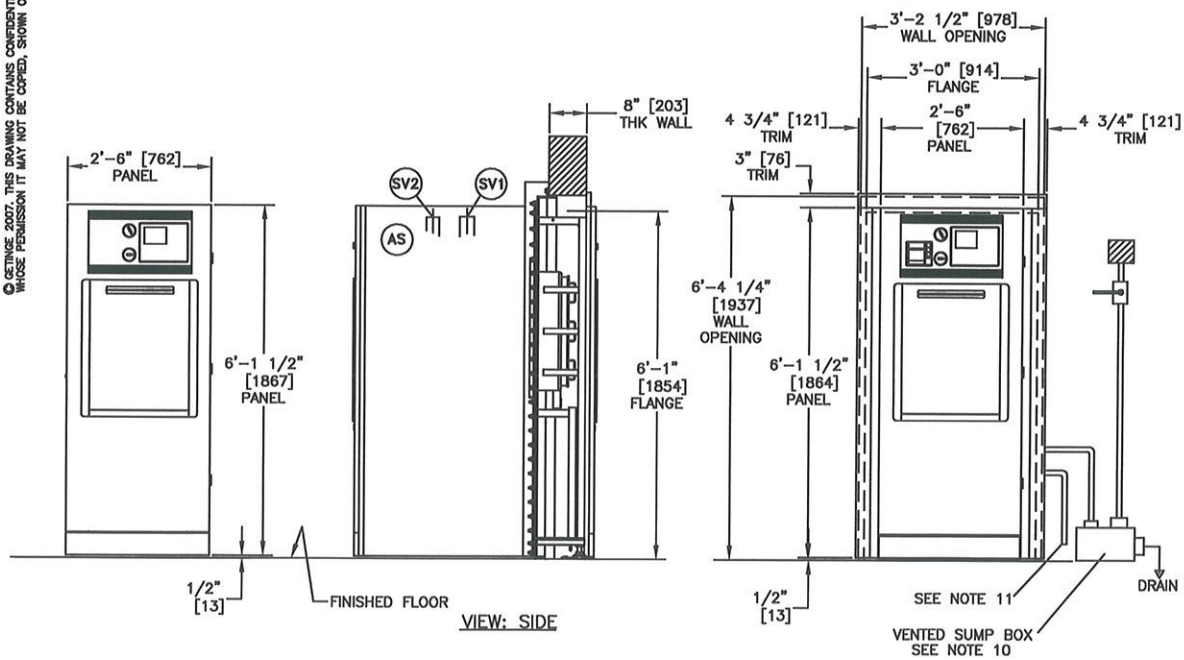
1) FOR SERVICE LOCATIONS, SPECIFICATIONS, AND ARCHITECT NOTES SEE SHEET 3 & 4. BIOLOGICAL FLANGE IS 500 SERIES ONLY.
2) FOR BIOLOGICAL FLANGE UNITS, CONTROLS ARE SWITCHED DEPENDING ON REQUESTED END FOR BIOLOGICAL FLANGE. IF (BFCE) IS REQUESTED, CONTROLS W/PRINTER ARE ON B/F END. IF (BFRE) IS REQUESTED, CONTROLS W/PRINTER ARE ON THE END OPPOSITE OF THE B/F. SERVICE LOCATIONS REMAIN THE SAME, AS INDICATED ON SHEET 2.
3) WALL FLANGE (SUPPLIED BY GETINGE) CAN BE SHIPPED AHEAD OF STERLIZER. WALL SHOULD BE BUILT BY CUSTOMER TO DIMENSIONS SPECIFIED FOR TIGHT FIT. SEE TYPICAL INSTALLATION.
4) SEE INSTALLATION INSTRUCTIONS P/N 61301608205 FOR MORE DETAIL.
5) DIMENSIONS ARE FEET–INCHES [MILLIMETERS].
6) FOR MOUNTING OF CABINET AND TRIM PACKAGE SEE GETINGE USA DRAWING P/N 61301608483 & 61301608562.
7) BIOLOGICAL FLANGE UNITS INCLUDE A UNIDIRECTIONAL DOOR SEAL AIR RETENTION TANK AS SHOWN.. SERVICE REQUIREMENTS FOR THE DOOR SEAL RETENTION SYSTEM ARE AS FOLLOWS::

   (AS) — A DRY, FILTERED, OIL–LESS COMPRESSED AIR SUPPLY (70–100 PSIG DYNAMIC, USAGE <1SCFM) IS REQUIRED FOR THIS SYSTEM. CONNECTION IS 1/4" NPT AT LOCATION INDICATED. A COMPRESSOR FOR THIS PURPOSE IS AVAILABLE FROM GETINGE USA (P/N 61301601462) AT EXTRA COST. AIR QUALITY WILL BE CLEAN, DRY INSTRUMENT QUALITY.

8) IF THE UNITS RECESSED AT THE END OPPOSITE THE BIOLOGICAL FLANGE, REFER TO SHEET 2 FOR DIMENSIONAL INFORMATION.
9) NOT USED
10) CHAMBER DRAIN PIPING WILL BE CONSIDERED TO BE CONTAMINATED AND A METHOD AND MEANS OF DECONTAMINATION FOR THIS PIPING HAS NOT BEEN PROVIDED FOR DISASSEMBLY/SERVICING.
11) 1/2" [13] OD TUBING (JACKET) CAN BE PIPING TO SANITARY SEWER.



TYPICAL INSTALLATION



DRAWN BY TDL	APPROVED BY–DATE	IF NO OTHER TOLERANCE GIVEN	DATE 24–05–10	SCALE NTS
PROJECTION	CLIENT	GETINGE		
REFERENCE DOCUMENTS	TITLE: 500 SERIES ARRANAGEMENT DRAWING, STEAM STERILIZER, BIOLOGICAL FLANGE, SST PIPING	GETINGE USA, Inc. 1777 East Henrietta Road Rochester, NY 14623–3133		ORIGINAL SIZE A
SYMBOL LIBRARY		DRAWING NUMBER HS4133	REV B	PAGE 5 of 7

REVISION HISTORY: SEE SHEET 1 (REV LTR | REVISION/ECO NO. | DATE BY–MO–DY | REVISED BY | CHECKED BY)

THE FILENAME IS: HS4133B1–7
THIS PLOT MADE: 06/13/11

FIGURE 6–3, SHEET 6. 522/533 STEAM STERILIZER WITH DOUBLE DOORS, CROSS CONTAMINATION BARRIER (CCB), STAINLESS STEEL PIPING

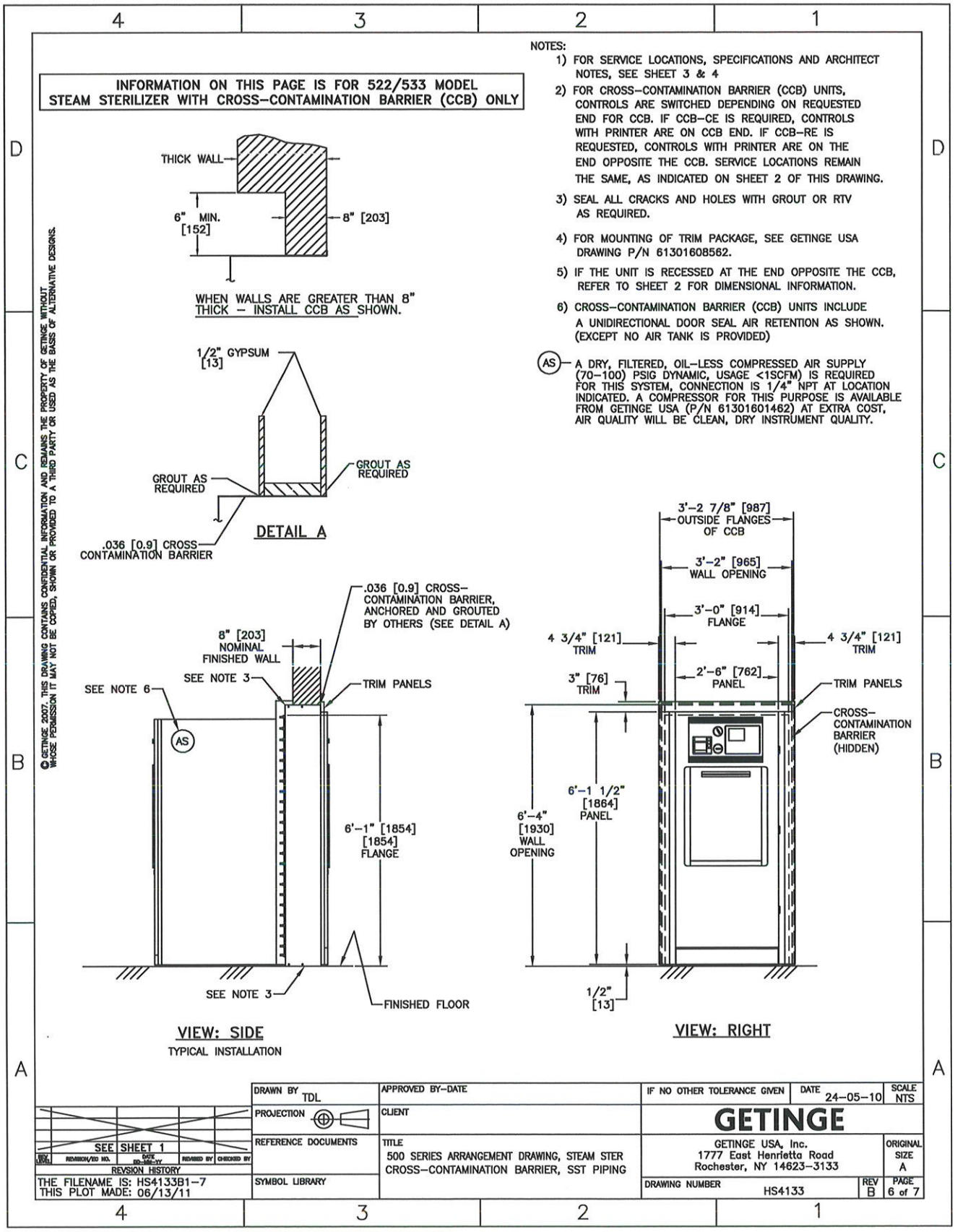


FIGURE 6–3, SHEET 7. 400/500 SERIES STEAM STERILIZER, SEISMIC ANCHOR INFORMATION

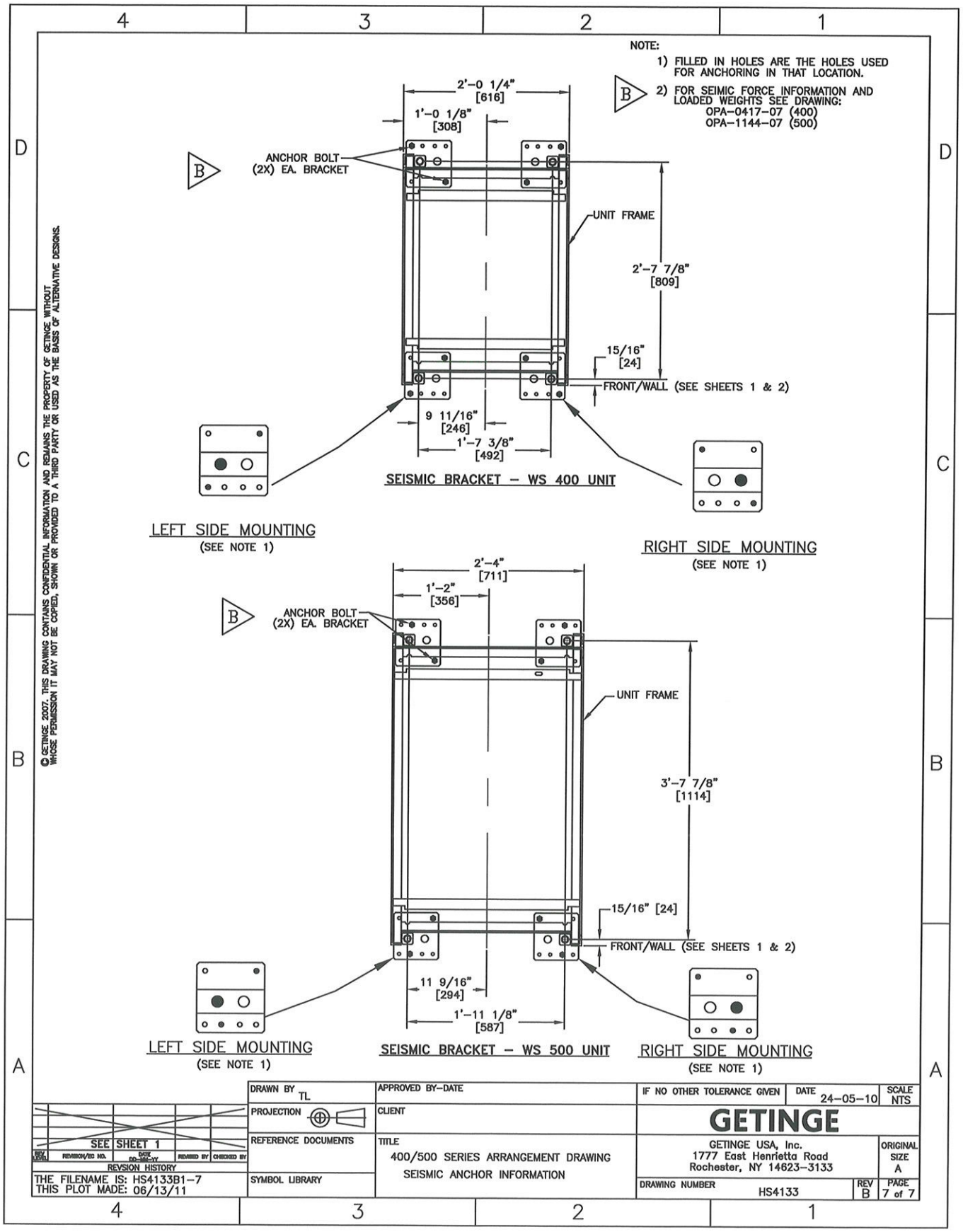


FIGURE 6–4, SHEET 1. 400/500/700/800 SERIES WALL MOUNT DISPLAY

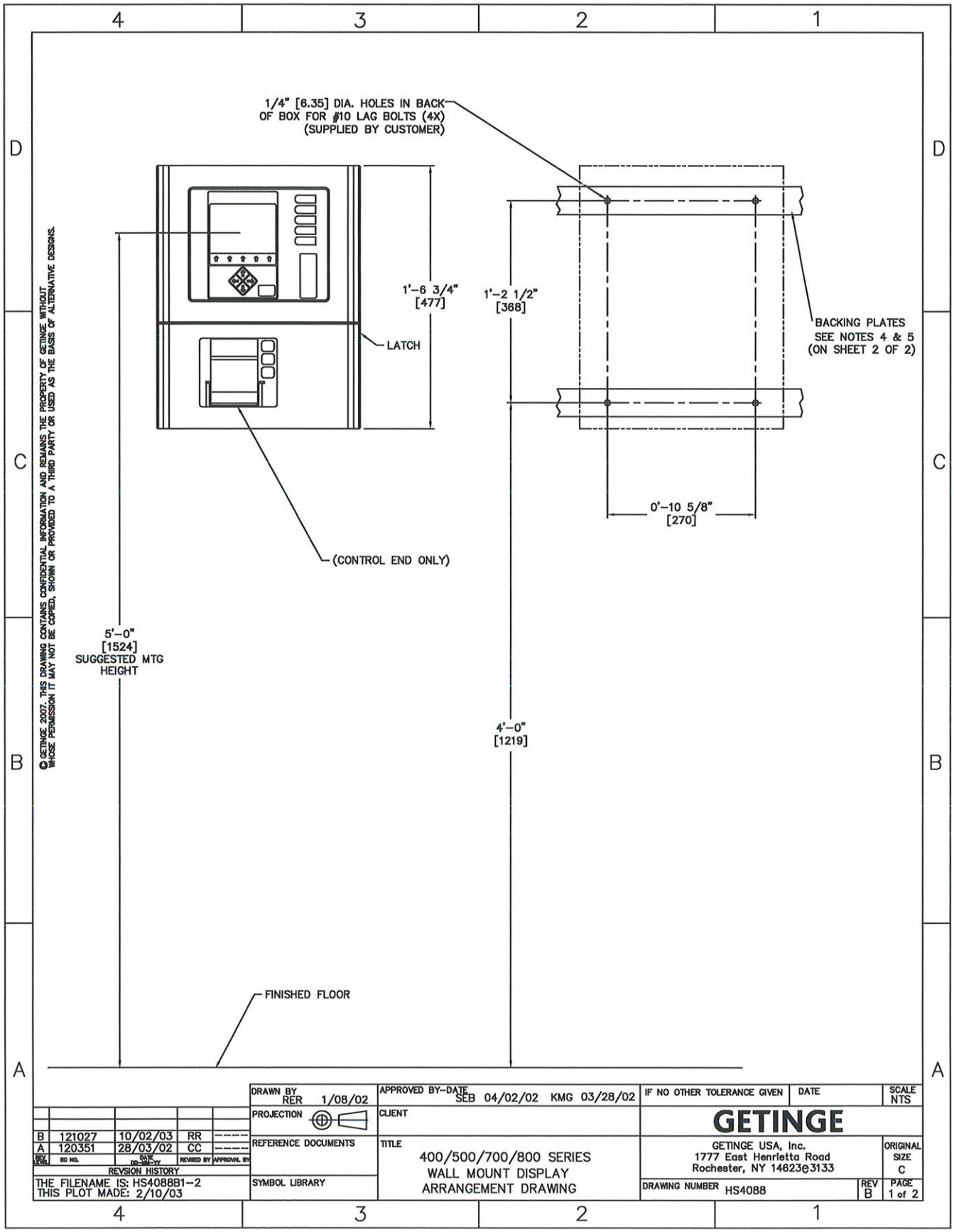


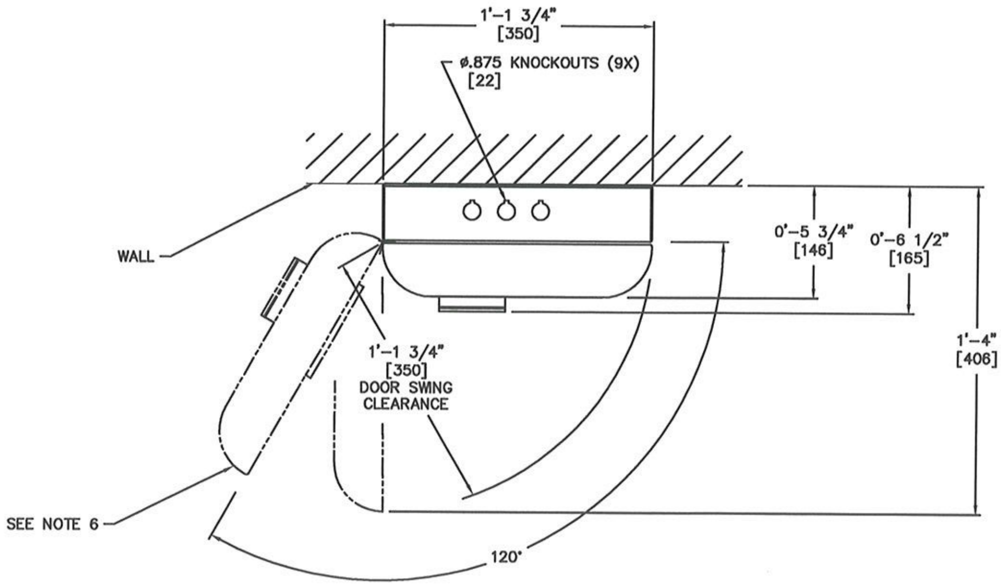
FIGURE 6–4, SHEET 2. 400/500/700/800 SERIES WALL MOUNT DISPLAY, NOTES

NOTES:

1. WEIGHT OF WALL MOUNT CONTROL PANEL APPROX. 21 LBS (9.5 KG).
2. CUSTOMER MUST ROUTE SHIELDED CABLES (SUPPLIED BY GETINGE/CASTLE) BETWEEN THE STERILIZER AND CONTROL PANEL. SEE CHART BELOW FOR NUMBER OF CABLES REQUIRED. CABLES CAN ENTER CONTROL PANEL AT TOP, BOTTOM, OR BACK OF BOX. MAXIMUM LINEAR CABLE LENGTH IS 32' (9754).

CABLE(S) REQUIRED	
CONTROL END	(2) FOR PRINTER (1) FOR OP30 (1) FOR GROUND
REMOTE END (DOUBLE DOOR UNITS ONLY)	(1) FOR OP30 (1) FOR GROUND

3. CABLE DOES NOT REQUIRE CONDUIT UNLESS REQUIRED BY LOCAL ELECTRICAL CODES. (MAXIMUM OF 24VAC/2.5A IS SUPPLIED TO THE WALL MOUNT CONTROL PANEL)
4. FOR SEISMIC ANCHOR REQUIREMENTS AND WORST CASE C. G. WEIGHT REFER TO GETINGE USA DRAWING 700426.
5. FOR INSTALLATION NOT REQUIRING SEISMIC ANCHORING INTO WALL, CONSTRUCTION NEEDS TO BE ABLE TO WITHSTAND 80 LBS (356 N) DOWNWARD FORCE. BACKING PLATES MAY NEED TO BE INSTALLED (BY CUSTOMER) TO ANCHOR INTO.
6. THE LEFT HAND DOOR IS SHOWN. FOR RIGHT HAND DOOR, REMOVE THE HINGE AND LATCH AND ASSEMBLE ON THE OPPOSITE SIDE.
7. BOX MUST BE PROPERLY GROUNDED WITH WIRE PROVIDED.
8. TIE THE GROUND WIRE TO OTHER CORDS AT INTERVALS.
9. REFER TO GETINGE USA INSTALLATION MANUAL FOR SPECIFIC INSTRUCTIONS.
10. DIMENSIONS ARE FEET/INCHES [MM]



D				
C				
B				
A	SEE SHEET 1			
REV.	EO NO.	DATE DD-MM-YY	REVISED BY	APPROVAL BY

REVISION HISTORY

THE FILENAME IS: HS4088B1–2
THIS PLOT MADE: 10/02/03

DRAWN BY: RER
APPROVED BY–DATE: SEB 22/04/02 KMG 28/03/03
IF NO OTHER TOLERANCE GIVEN
DATE: 08/01/02
SCALE: NTS
PROJECTION
CLIENT
GETINGE
REFERENCE DOCUMENTS
TITLE: 400/500/700/800 SERIES WALL MOUNT DISPLAY ARRANGEMENT DRAWING
GETINGE USA, Inc.
1777 East Henrietta Road
Rochester, NY 14623–3133
ORIGINAL SIZE: C
SYMBOL LIBRARY
DRAWING NUMBER: HS4088
REV: B
PAGE: 2 of 2

FIGURE 6–5. AIR COMPRESSOR

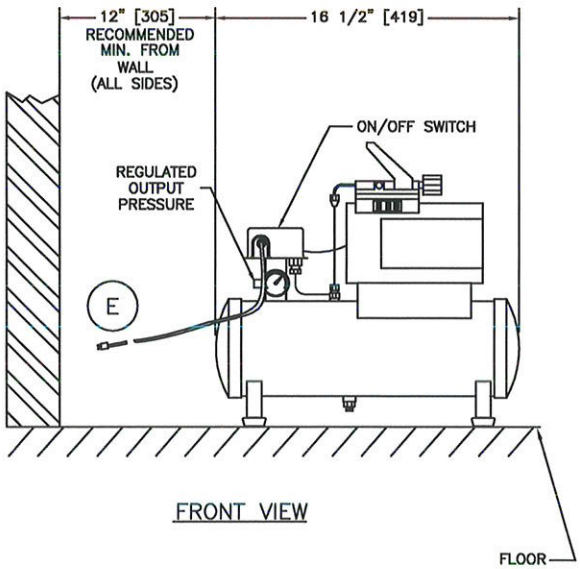
NOTES

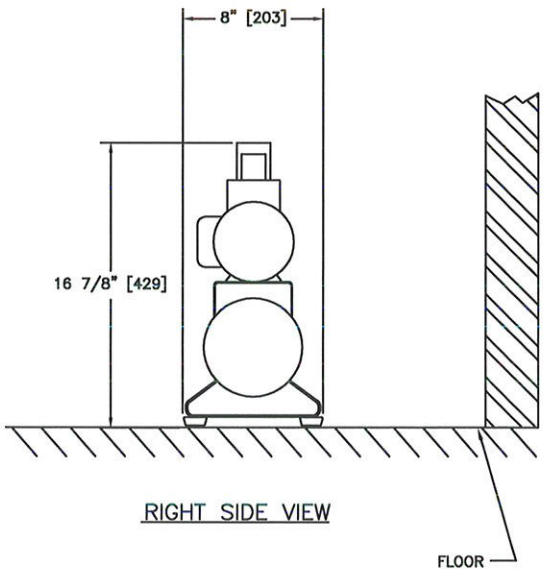
ARCHITECTS AND CONTRACTORS

1. LOCATE COMPRESSOR IN A DRY, CLEAN AND WELL VENTILATED AREA.
2. 115V, 60HZ, 1 PHASE, 4.2A
3. 1/2 HP, OIL–LESS.
4. .90 CFM AT 100 PSI
5. INCLUDES REGULATOR, TANK, AND OUTLET PRESSURE GAUGE.
6. CONTROLS ON AT 100 PSI, OFF AT 125 PSI.

SERVICE	UTILITY	RATING
(E) 6' LINE CORD PROVIDED	120V 60 HZ,1PH	15 AMP

WEIGHT= 29 LBS





REV LTR	ECO NO.	DATE DD-MM-YY	REVISED BY	APPROVAL BY
D				
C	UPDATE CO. NAME	05/05/05	RER	---
B	119403	11/05/99	PJD	---
A	118224	24/07/97	JS	---

REVISION HISTORY

THE FILENAME IS: HS4064C1
THIS PLOT MADE: 05/05/05

DRAWN BY SD	APPROVED BY–DATE RLC 12/08/97 PJD 06/08/97	IF NO OTHER TOLERANCE GIVEN	DATE 11/07/97 / SCALE NTS
PROJECTION	CLIENT	GETINGE	
REFERENCE DOCUMENTS	TITLE: AIR COMPRESSOR PACKAGE (GETINGE PRODUCT 61301601462) ARRANGEMENT DRAWING	GETINGE USA, Inc. 1777 East Henrietta Road Rochester, NY 14623–3133	ORIGINAL SIZE C
SYMBOL LIBRARY		DRAWING NUMBER HS4064	REV C / PAGE 1 of 1

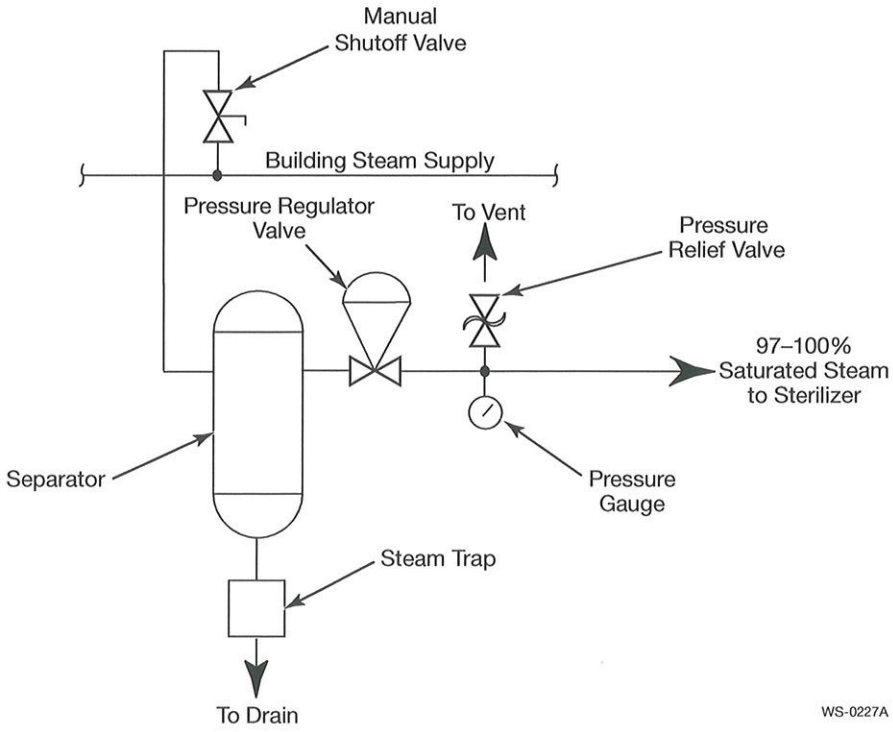
SECTION 7 TECHNICAL DATA

The following topics are covered in this section:

STEAM SUPPLY QUALITY

It is the customer's responsibility to provide condensate-free steam between 97% and 100% saturated vapor. Failure to comply with this requirement may result in decreased sterilizer function, performance, and reliability.

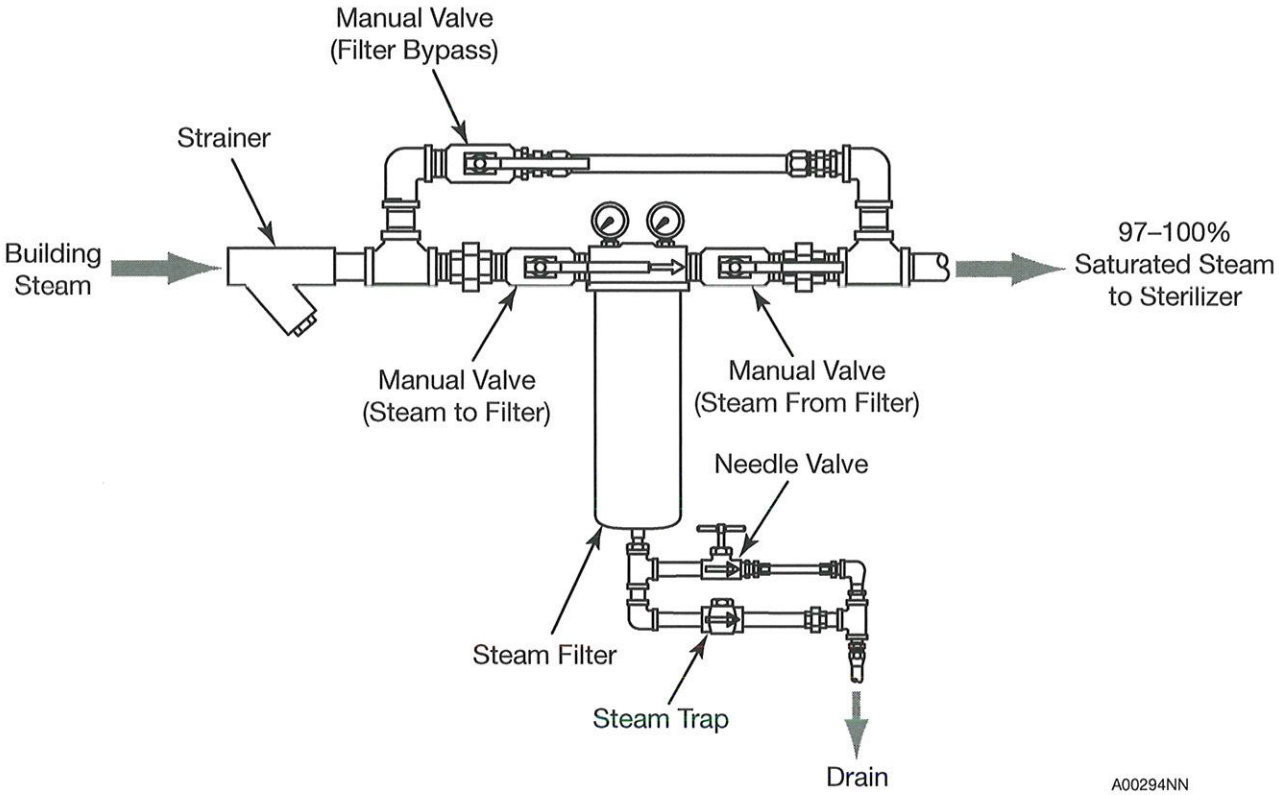
FIGURE 7–1. PREFERRED STEAM SUPPLY PIPING



Three methods that may assist in meeting this requirement are:

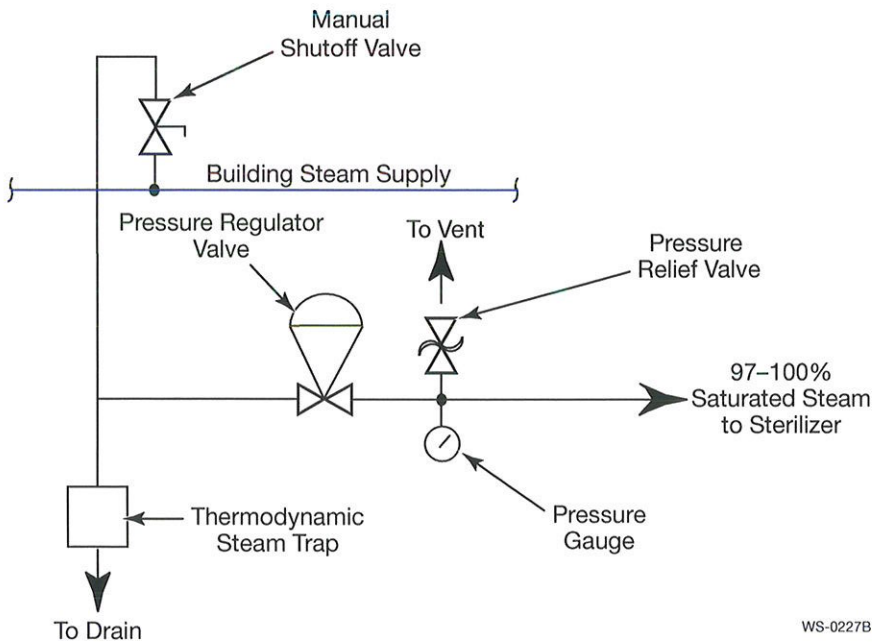
- adding a steam separator kit; see Figure 7–1

FIGURE 7–2. MP-106 STEAM CONDITIONING PACKAGE



- installing MP-106 Steam Conditioning Package, which may be purchased from Getinge; see Figure 7–2

FIGURE 7–3. THERMODYNAMIC STEAM TRAP AND PIPING



- installing a thermodynamic steam trap and associated piping (MP-107 Steam Trap Piping Assembly, which may be purchased from Getinge); see Figure 7–3

STEAM BOILER FEEDWATER QUALITY

For optimum results, the feedwater supply should be tested prior to initial startup. If the mineral content exceeds the following recommended limits, various external treatment processes such as a water softener or reverse osmosis (RO) may be used to correct the problem. Routine manual blow-down or the automatic blow-down option lowers concentrations of impurities and maintains the pH level above 7.0.

Feedwater quality for a steam boiler connected with brass piping:

- hardness: 0.5–5.0 grains/gallon (8–85 ppm)
- resistivity: not to exceed 50,000 ohm-cm
- temperature: 38°C–65°C (100°F–150°F)
- pH: 6.8–7.5

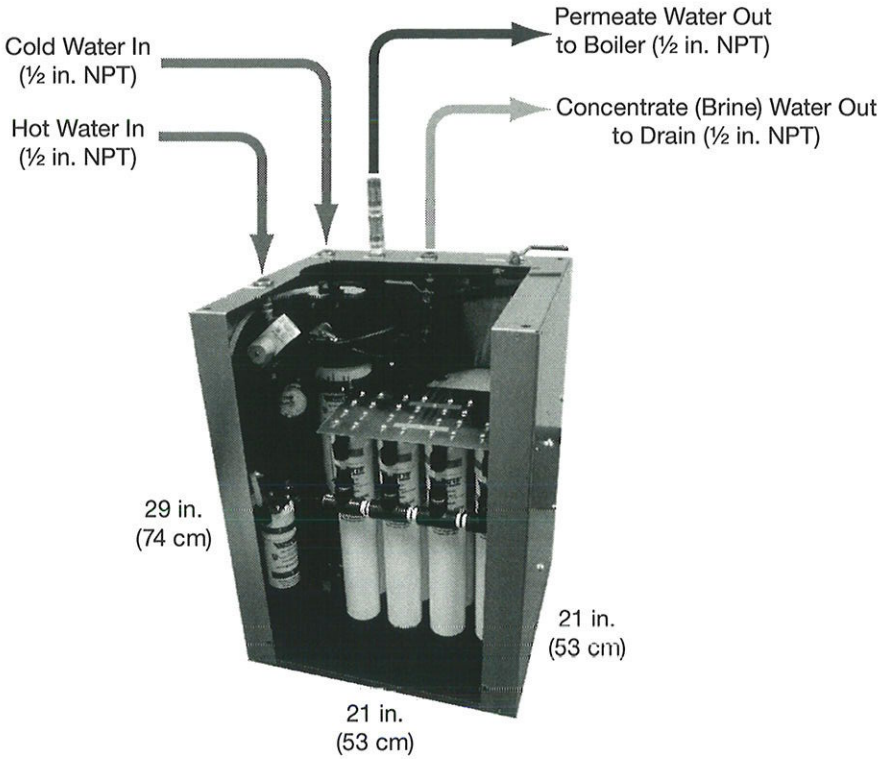
Feedwater quality for a stainless steel steam boiler:

- water: deionized or reverse osmosis (RO)
- resistivity: 1–1.2 megohm-cm
- temperature: 38°C–65°C (100°F–150°F)
- total dissolved solids: 0.5 parts per million, maximum

An analysis of the on-site boiler feedwater should be made by a recognized and reliable water treatment company to ascertain the existing condition and treatment required.

Reverse osmosis (RO) water treatment systems of various capacities may be purchased from Getinge. The Model HS-300 Water Treatment System shown in Figure 7–4 meets the requirements of one 400/500 Series Steam Sterilizer. For installations where one water treatment system supplies multiple sterilizers, consult your Getinge representative.

FIGURE 7–4. HS-300 WATER TREATMENT SYSTEM



SECTION 8 FUNCTIONAL CHECK

INSTALLATION CHECK

INSPECTION BY INSTALLERS

Upon completion of the installation:

1. Inspect and remove any debris.
2. Tighten any loose hardware.
3. Check that utilities are connected properly and piping and wiring comply with all applicable codes.

CAUTION

POSSIBILITY OF DAMAGE TO EQUIPMENT: Check that all wires, cables, and tubing are routed and secured away from steam lines.

4. Check that the sterilizer is anchored to the floor and seismic anchoring (if required) complies with all applicable codes.
5. Check that the face panels are installed and secure.
6. Check that the cabinet panels (optional) are installed and secure.

FINAL INSPECTION BY GETINGE

The sterilizer is not to be operated until the Installation Checklist is completed by a Getinge representative or its agent. Getinge will inspect and evaluate the equipment by running a number of qualifying tests. Once the equipment is operating to specification, Getinge will schedule an in-service review with the customer's Getinge sales representative. Following the in-service review, the equipment will be released to the customer to use.

NOTE

Operating instructions for the sterilizer are beyond the scope of this manual. Before operating the sterilizer, read User Manual for the 400/500HC Steam Sterilizer or User Manual for the 400/500LS Steam Sterilizer.

INDEX

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