STATCLAVE G4 Service Manual

1. UNIT OVERVIEW

Introduction

This service manual was created to act as reference for the service and repair of the STATCLAVE G4. If you have a question about the unit you are repairing, please do not hesitate to contact your local SciCan representative for information.

Principles of operation

The STATCLAVE G4 is a dynamic air removal (pre-vacuum) table-top steam sterilizer that uses steam to sterilize wrapped and unwrapped instrument loads typically used in dental and medical offices. It has six validated sterilization cycles with optimized drying for fast, effective instrument processing. An additional custom cycle can be configured using one of three temperature settings but this cycle must be validated by the user.

Steps in a typical cycle

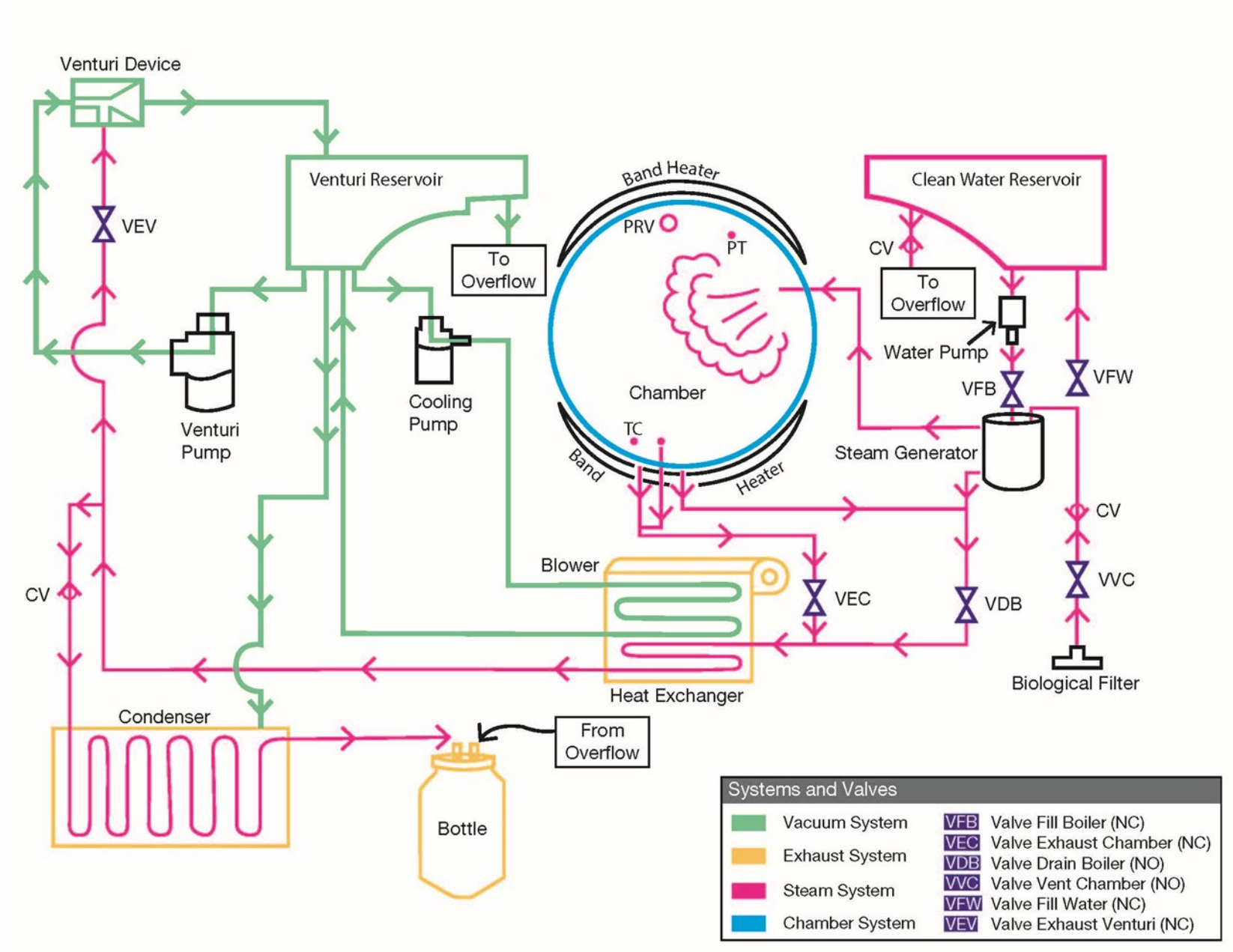
After pressing the START button to activate a cycle...

1. The band heaters turn on to warm the chamber to its operating temperature.
2. Water from the clean water reservoir is pumped to the boiler to create steam.
3. The vacuum system uses a Venturi device instead of a vacuum pump to remove air from the chamber as it fills with steam to ensure efficient air removal and steam penetration into the load.
4. Water from the clean water reservoir is pumped to the boiler to saturate the chamber with steam and bring the unit to sterilizing temperature.
5. Steam sterilization is achieved by exposing products to direct saturated steam contact at the required temperature and pressure for the specified time.
6. When it has completed the sterilization phase, the unit vents steam from the chamber to the condenser and into the exhaust bottle.
7. The Venturi-based vacuum system activates to pull any remaining steam and moist air from the chamber.
8. Filtered air is drawn into the chamber to dry the load and the band heaters are activated to speed drying.

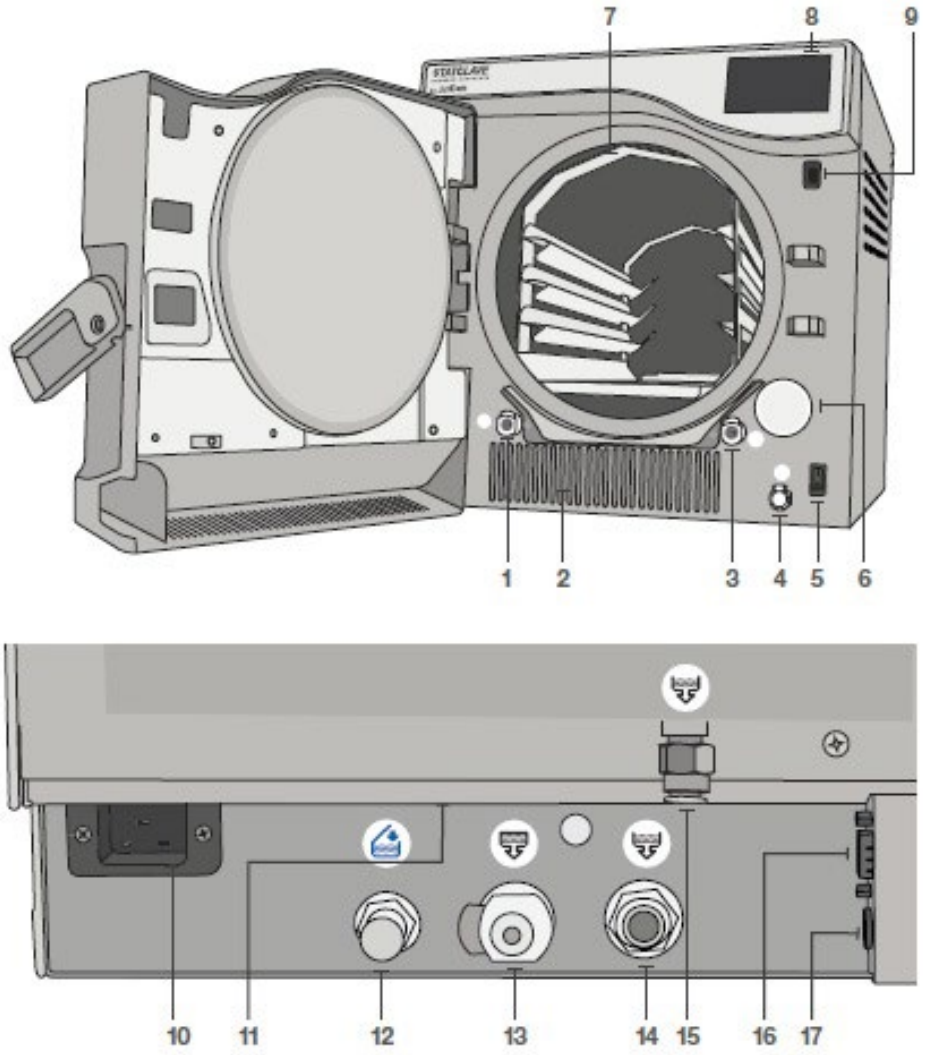
How does STATCLAVE G4 use a Venturi device to create a vacuum?

In the STATCLAVE G4, a water pump moves water through the constricted channel of a Venturi device. As the water goes through this constriction, from a large pipe to a small pipe, it creates an area of low pressure. A third tube connects to this constriction through which the low pressure draws a vacuum.

Diagram of key systems and components

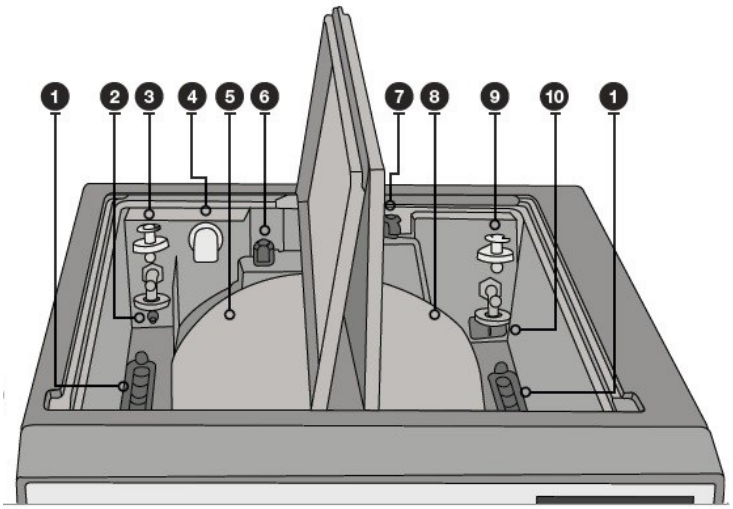

Venturi Device
VEV
Venturi Reservoir
To Overflow
Band Heater
PRV
PT
Chamber
TC
Band Heater
Clean Water Reservoir
CV
To Overflow
Water Pump
VFB
VFW
Steam Generator
CV
VVC
Biological Filter
Venturi Pump
Cooling Pump
CV
Blower
VEC
VDB
Heat Exchanger
Condenser
From Overflow
Bottle
Systems and Valves
Vacuum System
Exhaust System
Steam System
Chamber System
VFB Valve Fill Boiler (NC)
VEC Valve Exhaust Chamber (NC)
VDB Valve Drain Boiler (NO)
VVC Valve Vent Chamber (NO)
VFW Valve Fill Water (NC)
VEV Valve Exhaust Venturi (NC)

Front and back of the unit



1. Venturi reservoir drain quick-connect (OUT)
2. Warm air exhaust
3. Clean water reservoir drain quick-connect (OUT)
4. Clean water reservoir fill quick-connect (IN)
5. Power switch
6. Bacteriological filter (bacteria-retentive air filter)
7. Chamber rack
8. Touchscreen
9. USB port
10. Power cord input
11. Ethernet port (not visible)
12. Auto fill port for clean water reservoir
13. Condenser drain port (to drain for shipping)
14. Overflow drain port for reservoirs
15. Exhaust drain port
16. RS232 port
17. Power port for external fill pump (option)

Top of the unit – inside reservoirs



1. Reservoir filters
2. Venturi reservoir temperature sensor
3. Venturi reservoir level sensors (max. and min.)
4. Venturi recirculation tap
5. Venturi reservoir
6. Water cooling recirculation tap
7. Clean water fill tap
8. Clean water reservoir
9. Clean water reservoir level sensors (empty and full)
10. Clean water conductivity sensor

Specifications

Machine Dimensions:	Width: 17.75” / 450 mm Height: 19-19.5” / 483-495 mm Depth: 25” / 635mm
Chamber Dimensions:	Diameter: 11”/ 280 mm Depth: 15”/381 mm
Sterilization Chamber Volume:	6.9 US gal / 26 L
Distilled Water Reservoir Volume:	1 US gal / 4 L
Venturi Reservoir Volume (including condenser):	1.6 US gal /6 L
Weight (without water):	136 lbs/ 61.7kg
Weight (with full reservoirs and full load):	175 lbs/ 79.5kg
Clearance required:	Top: 7” /180 mm Right Side: 2” / 50 mm Left Side: 0”/ 0 cm Front with door open: 16”/ 41 cm
Water quality:	≤6.4ppm / 10 µS (conductivity at 20°C/68°F)
Minimum distilled water required for cycle:	0.26 US gal / 1 L
Minimum Venturi water required for cycle:	0.26 US gal / 1 L
PRV value (pressure relief valve):	Set at 40.6 PSI / 2.8 bar to release pressure in overpressure situations
Electrical Rating*:	120V, 60Hz, 12 A 208-240V, 60Hz, 12A *See serial number label for requirements specific to your unit.
Ethernet Port:	10/100 Base-T
USB Port:	USB 2.0
Current:	AC
Protection Class:	I
Protection:	covered
Ambient Operating Temperature:	41˚F - 104˚F / 5˚C - 40˚C
Sound levels:	≤ 60 dB
Humidity:	80% maximum
Max. Altitude:	6,562 ft / 2000 m

Safety devices

- Overheat thermostat: Steam generator overheat thermostat’s set point 310°C.
- Overheat thermostat: Band heater overheat thermostat set point 180°C.
- Pressure relief valve: The chamber pressure relief valve is set to 40.6 PSI/ 2.8 bar gauge to release pressure in an overpressure situation.
- Pressure or vacuum relief on power failure: The unit will automatically return the unit to atmospheric pressure when the power is interrupted.
- Electrical protection: two 15 Amp fuses (high current) and 2 Amp fuse (low current).

Water supply

High quality distilled water is recommended for use in the STATCLAVE G4. Deionized, demineralized or specially filtered water can also be used. Never use tap water. The STATCLAVE G4's water conductivity sensor automatically reads the water quality and will not allow the unit to run a cycle unless the water quality is ≤ 6.4ppm / 10 µS (conductivity at 20˚C/ 68˚F).

Safety information

THE FOLLOWING TERMS APPEAR IN THIS SERVICE MANUAL	
CAUTION!	A potential hazard to the operator or to patients.
IMPORTANT!	A situation that may affect the functioning of the unit or lead to a mechanical failure.
TIP	Additional information that may be helpful.

Pay close attention to the following symbols that appear on the unit:

Caution: A potential hazard to the operator

Caution: Hot surface

Caution: Danger of electric shock. Disconnect power supply when servicing unit.

Clean water fill

Venturi reservoir drain

Clean water drain

Condenser drain (only used for shipping and servicing)

Exhaust drain

Safe operation

The following apply to both operators and service technicians:

- Exercise caution and seek assistance when lifting or carrying the unit.
- Before performing routine maintenance or servicing the unit, turn the unit OFF and unplug the power cord from the power source.
- The operator should never remove the cover of the unit or insert objects through holes or openings in the cabinetry. Doing so may damage the unit and/or pose a hazard to the operator.
- If the unit is used in a manner other than that specified, the protection provided by the equipment may be impaired.

Safe servicing

- SciCan shall not be liable for incidental, special or consequential damages caused by any maintenance or services performed on the STATCLAVE G4 by a third party or for the use of equipment or parts manufactured by a third party, including lost profits, any commercial loss, economic loss, or loss arising from personal injury.

- All local, regional, state, and national regulations regarding the servicing of this class of device and safety requirements must be observed.

When the panels are removed

- Hazardous voltages are accessible. Disconnect the power cord before removing any panels.
- Sharp metal edges are exposed. Be careful and wear long sleeves and gloves.

Electrical

- If the panels are removed, a dielectric strength test (Hi-Pot) AND a protective bonding impedance test (ground continuity) must be performed on the STATCLAVE G4 when the work is completed and after the panel has been reinstalled.
- The STATCLAVE G4 contains electronic circuitry that is static sensitive. Always wear a static strap when working with or near printed wiring boards. In addition, use static footstraps, grounding mats and grounded work surfaces when servicing microprocessor devices. Transport boards and devices in static protected bags.

Lifting the unit

- The STATCLAVE G4 is heavy. Exercise caution and seek assistance when lifting or carrying the unit.

Water quality

- Use only steam-process distilled water in the STATCLAVE G4.
- Ensure that there is distilled water in the STATCLAVE G4 before activating the pump.

Reporting

- It is vital for SciCan to learn of any problem in the field. This information will help SciCan solve the problem quickly and improve product reliability in new units.

Biological waste

- Waste water in the unit may contain biological contaminants; use a mechanical means to siphon the contents. Wear disposable rubber gloves. Dispose of absorbent material according to biological waste disposal regulations.

Tools and hardware

Tools required for servicing include:

- Needle-nose pliers
- Wrench
- Nut driver
- Hose clamp pliers
- Screwdriver Philips
- Wire stripper
- Screwdriver slot
- Spring clamp pliers

Electrical Safety test equipment:

- Hi-Pot tester
- Ground continuity tester
- Static strap
- Static bags

The unit contains the following types of hardware:

- Phillips pan head self-tapping metal screws
- Phillips pan head stainless steel machine screws
- Hex screws
- Spring clamps
- Metal cable ties
- Plastic cable ties

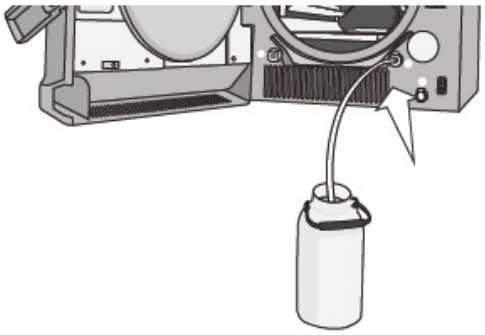
Shipping instructions

The unit should be serviced on site. If it is necessary to send the unit back to the dealer, follow these instructions:

1. Drain water from the unit. Follow these steps:

To drain CLEAN WATER reservoir:

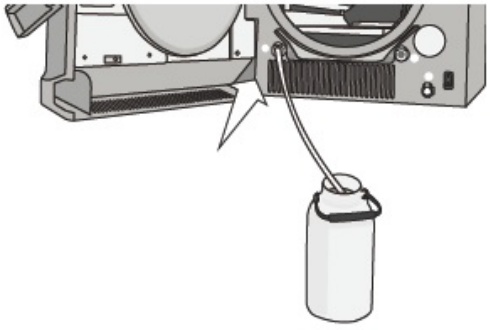
1. Open the unit door to connect the drain tube to the CLEAN WATER reservoir's front draining port. Drain the reservoir completely.



2. Empty the container.

To drain VENTURI reservoir:

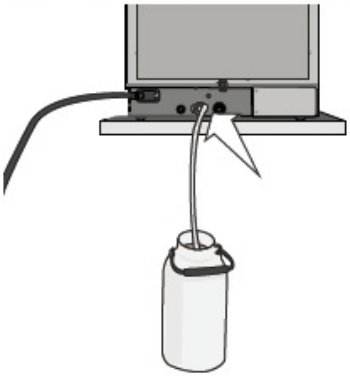
1. Repeat the procedure for the VENTURI reservoir.



2. Empty the container.

To drain CONDENSER:

1. Access the back of the unit to insert the quick-connect drain tube into the condenser draining port.



2. Empty the container.

2. Remove residual water from the water cooling system. Follow these steps:
    a) Remove the Venturi water reservoir filter.
    b) Insert siphoning tool into each drainage hole and pull residual water from the system.
3. Screw in the leveling legs.
4. Specify upright, heated, and insured shipping.
5. Ensure unit is returned on a pallet with at least two banding straps securing the box to the pallet. If original packaging is unavailable packaging can be ordered with part #01-115557S.
6. Shipping outside of these conditions can affect warranty.

2. LOCATION AND INSTALLATION

The STATCLAVE G4 will require a support surface that is strong enough to hold the weight of a fully loaded unit with full reservoirs (a total operating weight of 175 lbs / 79.5 kg). The space should also allow room for the door to open correctly, for the top reservoir lids to be opened for filling and for ventilation on the right side. Please review the installation details outlined in the section below prior to installation.

If the STATCLAVE G4 is installed in a sterilization center, the manufacturer of the sterilization center should allow enough space at the top, back and both sides of the unit to facilitate installation, leveling, and service access to the unit.

During installation, all consumables should have been added to the machine as appropriate. It is important to check that this has been undertaken before starting the machine.

Use the Installation Checklist for steps to ensure proper installation of unit.

Unboxing, connecting and lifting the unit into position

Remove the packaging's plastic handle insets.

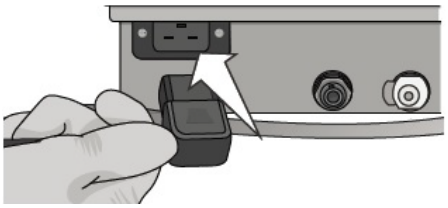
Slide the top cover up and off the unit.

Remove the accessories box and foam packaging.

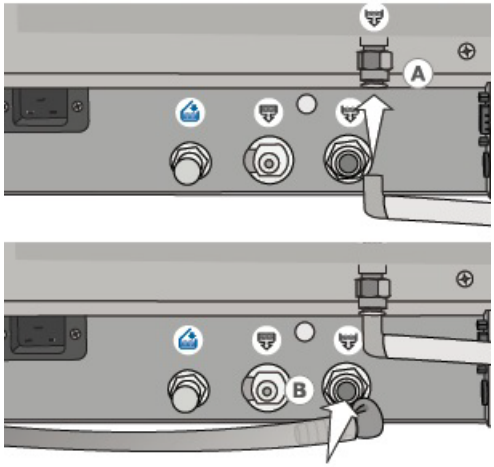
Open the bag and, with one person on either side, grip the strap handle and underside of the unit to lift and remove it from the base packaging.

Unlatch the unit door to open it and remove items stored in the chamber. Check the contents. (See Checking package contents, in this section.)

With the unit still on the floor, connect the power cord. (See Electrical connections and power, in this section.)



Connect the exhaust tubes. (See Connecting the exhaust tubes, in this section.)



Place the loose ends of the tubes and power cord over the top of the unit.

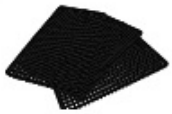
With one person on either side, grip the strap handle and underside of the unit to lift it into position.

Once in position, push the power cord and hoses through the cut-outs in the cabinetry to make the connections.

Checking package contents

When you receive your STATCLAVE, the items listed below will be included. If any of the items are missing, contact your dealer immediately.

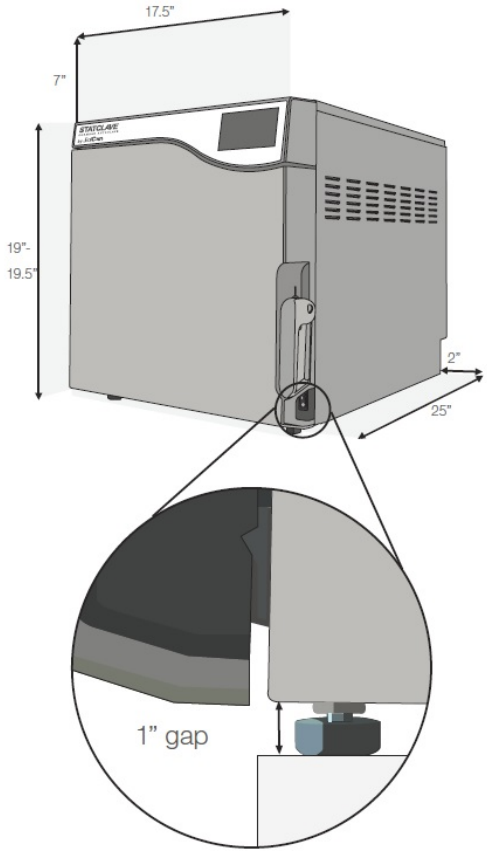
Included with Your STATCLAVE

	4 Stainless steel wire instrument trays		1 Wastewater bottle
	1 Chamber rack		1 Memory stick
	Operator's manual		Power cord
	1 Tray extractor with door unlocking pin		2 Pouched instrument racks
	2 Long silicone tubes with elbow connectors		1 Reservoir drain tube (for use when cleaning reservoirs)
	3 Drying plates		

Positioning a unit

- Place the STATCLAVE on a flat level surface strong enough to support a 175 lbs (79.5kg) load.
- Allow for at least 7" (180 mm) of space ABOVE the unit to enable access to the reservoirs. If there is less than 7" (180 mm) above the unit, use a screwdriver to remove the front hinge of the clean water reservoir so that it can slide in and out of position from the front of the unit.
- On the right side of the unit, allow for at least 2" (50 mm) of space for ventilation.
- The unit vents warm air from below the door. Ensure the door overhangs the level surface.

IMPORTANT! To improve drainage, ensure the unit is tiltled toward the back. Use the leveling feet to ensure the front of the unit is 1" (25 mm) from the level surface.



Unit dimensions and operating environment

Height with front legs retracted	**19" / 483 mm**
Height with front legs fully extended	**19.5" / 495 mm**
Width	**17.75" / 450 mm**
Depth	**25" / 635 mm**
Weight (empty)	**136 lb/ 61.7kg**
Weight (with full reservoirs and full load)	**175 lb/ 79.5kg**

Temperature and Humidity

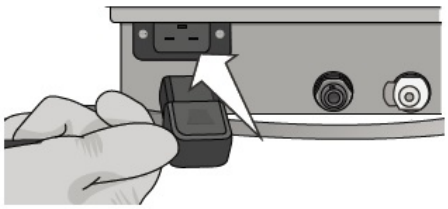
Avoid installing your STATCLAVE in direct sunlight or close to a heat source such as vents or radiators. The recommended operating temperatures are between 5°C-40°C / 41°F-104°F with humidity of maximum 80%.

Electromagnetic Environment

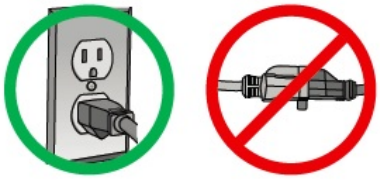
Your STATCLAVE has been tested and meets applicable standards for electromagnetic emissions. While your unit does not emit any radiation, it may itself be affected by other equipment that does. We recommend that your unit be kept away from potential sources of interference.

Electrical connections and power

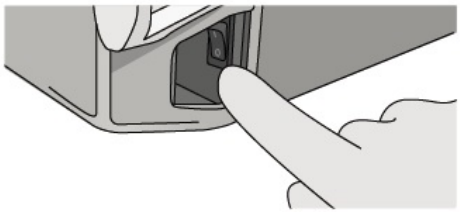
1. Ensure the power switch at the front right of the unit is in the OFF position and connect the power cord supplied to the power port at the back of the unit.



2. Connect directly to a power source. Don't use an extension cord.



3. Turn ON the power switch located at the front right of the unit.



Electrical Connections

To power your unit, use properly grounded and fused power sources with the same voltage rating as indicated on the serial number label at the back of your STATCLAVE G4.

- DO use an outlet that is protected by a suitable breaker.
- DO use a dedicated circuit, single phase 120 V~ 60Hz, 12A or 208-240 V~60Hz, 12A, depending on the voltage rating indicated on the serial number label at the back of the unit.

Unit Electrical Characteristics:

- Protection class 1 device.
- Maximum power consumption of the sterilizer is 1,440 Watts for 120V and 2,250-3,000 Watts for 208-240V.

Connecting the exhaust tubes

IMPORTANT: For the unit to function, BOTH reservoirs must be full and BOTH drain tubes must be connected.

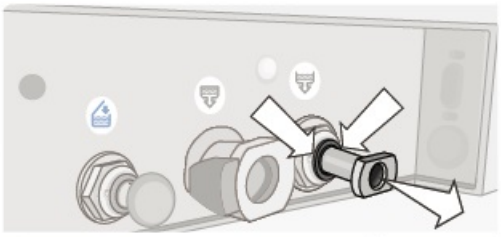
The STATCLAVE G4 uses water from the Venturi reservoir to generate vacuum draws at the beginning and end of each cycle. For the unit to operate, BOTH the clean water reservoir and the Venturi reservoir must contain the minimum required water levels.

When the chamber releases steam it travels through the condenser and drains from the condenser exhaust tube. Excess water in both the Venturi reservoir and the clean water reservoir drains from the reservoir overflow tube. BOTH elbow fittings at the back of the unit must be connected to a water draining system.

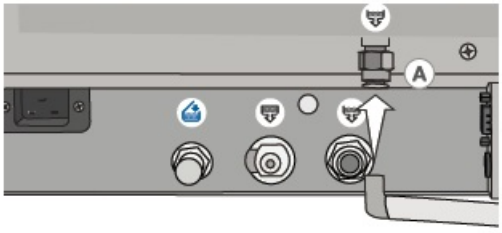
Direct to drain connection (recommended)

For direct-to-drain connections, you will need to use the **direct-to-drain hardware**.

1. The unit is shipped with plugs in its ports. To remove a plug, apply even pressure to the **Inner Ring** holding it down on either side of the plug and pull out the plug.

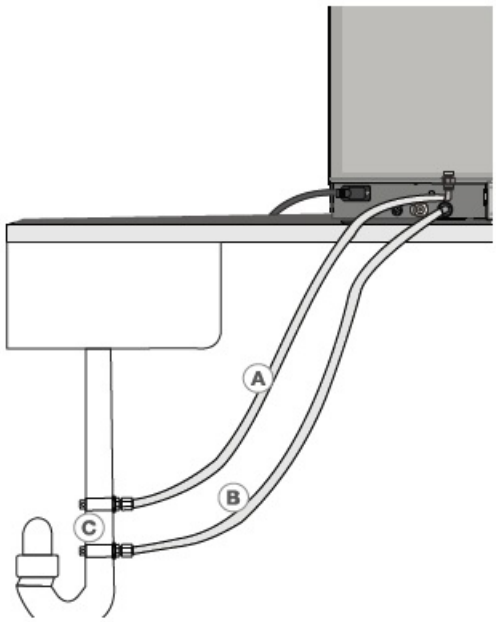


2. Insert one elbow connector with silicone tube to the metal exhaust port (A).



3. Insert the other elbow connector with silicone tube to the plastic reservoir overflow drain port (B).

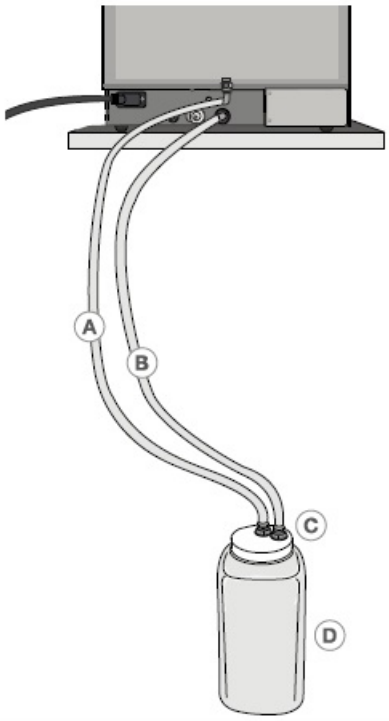
4. Connect the exhaust tube with elbow fittings (A) to the port installed on the drain pipe (C).
5. Connect the reservoir overflow tube (B) to the remaining port on the drain pipe (C).



Connecting to a waste bottle

The unit is shipped with a waste bottle in case a direct-to-drain installation is not possible. To use the waste bottle, follow these steps:

1. Set the waste bottle (D) on the ground or in the cabinetry below the unit.
2. Connect the exhaust tube (A) to a port on the waste bottle cap (C).
3. Connect the reservoir overflow tube (B) to a port on the waste bottle cap (C).



IMPORTANT! Avoid excess sagging in the lines; cut both tubes to measure.

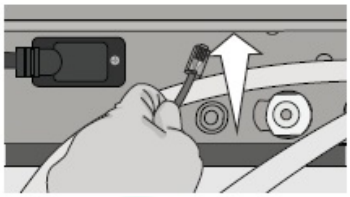
IMPORTANT! Tubes should not be kinked, bent or otherwise obstructed. The waste bottle must be lower than the autoclave's support surface otherwise the reservoirs may not drain correctly.

TIP **Do you want to drain the unit prior to shipping or cleaning?** For instructions on how to completely drain both reservoirs for shipping or cleaning, see Section 10.6 Draining the Reservoirs for Cleaning and Shipping.

Connecting to the Internet

Connecting to a wired network

1.



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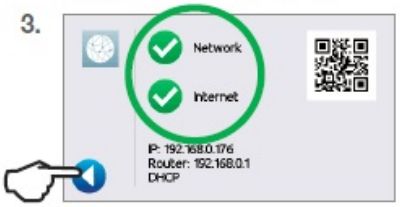

Connecting to a wireless network

From the unit's home screen, select SETTINGS, then follow these steps:

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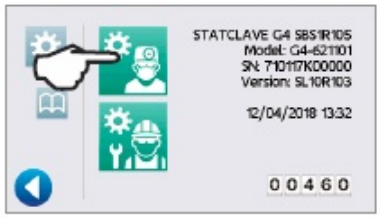

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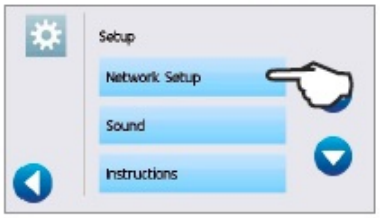

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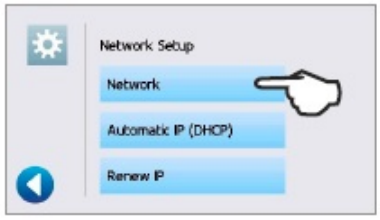

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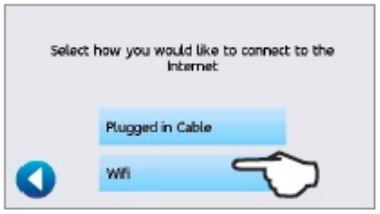

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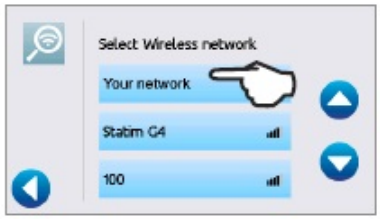

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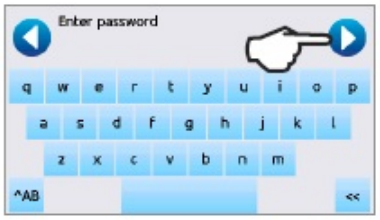


7.

8.

TIP

Data Security and WiFi

Ensuring your WiFi® connections are secure is an important element of safeguarding your organization's data. A WiFi network using WPA2™ provides both security (you can control who connects to it) and privacy (the transmissions cannot be read by others) for communications as they travel across your network. For maximum security, your network should include only devices with the latest in security technology – WiFi Protected Access® 2 (WPA2).

Tips for securing your network

Change the network name (SSID) from the default name.

Change the administrative credentials (username and password) that control the configuration settings of your Access Point/Router/Gateway.

Enable WPA2-Personal (aka WPA2-PSK) with AES encryption.

Wireless transmission considerations

To comply with Federal Communications Commission and Industry Canada Radiofrequency exposure compliance requirements, the antenna used for this transmitter has been installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. (The transmission antenna for the wireless card is located in the front fascia.)

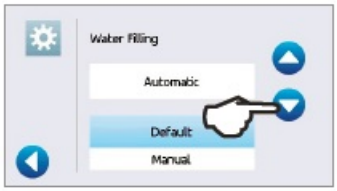
For the STATCLAVE Cybersecurity Statement, see Appendix C.

Connecting to an external water supply

If you are connecting your STATCLAVE G4 to an external filling device such as a Vista Pure specialized water filtration system or external water tank and auxiliary pump, make sure your unit is set to the AUTOMATIC filling mode. **To change this setting from the home screen, select SETTINGS then USER and then follow these steps:**

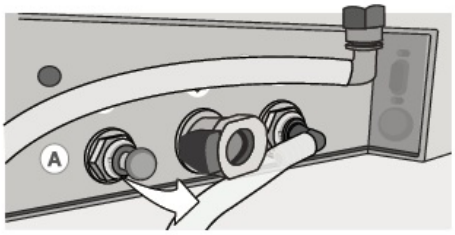
1.

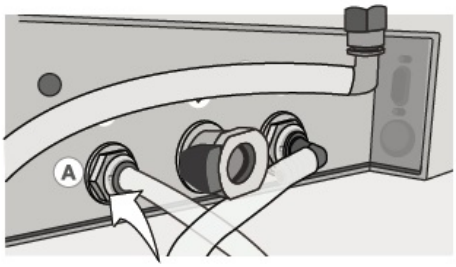
2.

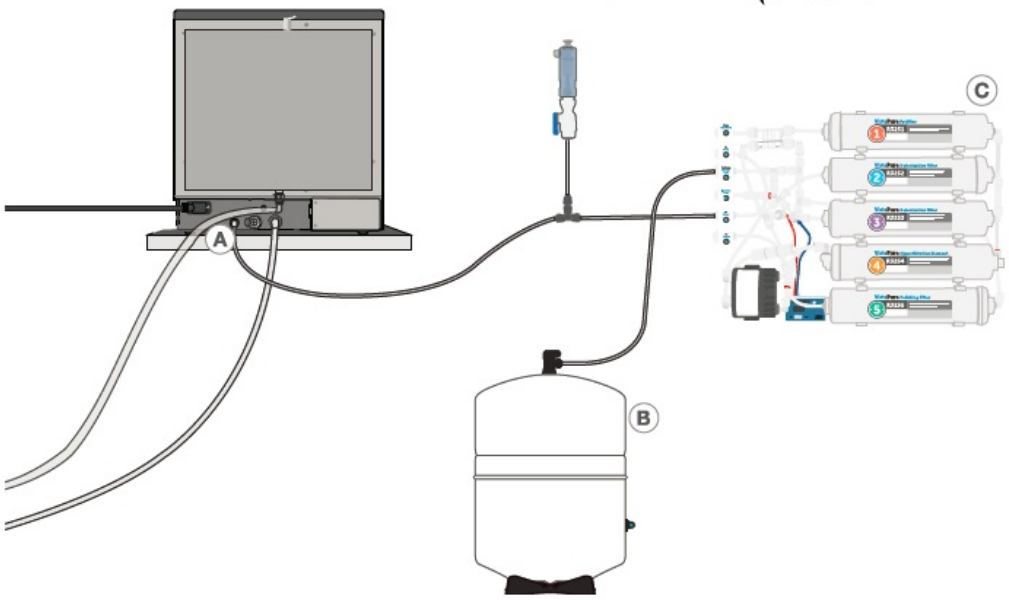


Connecting a Vista Pure Specialized Water Filtration System

1. Remove the plug from the automatic fill port (A) at the back of the unit.
2. Connect the water filtration system's Teflon tube (or other suitable tube) to the automatic fill port (A) at the back of the unit.
3. Ensure the tube runs freely from the water filtration system. It should not be sharply bent, crushed or obstructed in any way.
4. Open the valve on the water filtration system (C) to fill the accumulation tank.
5. Open the accumulation tank's (B) valve to facilitate the flow of water to the STATCLAVE.
6. Go to the home screen and select any cycle to activate the filling system.







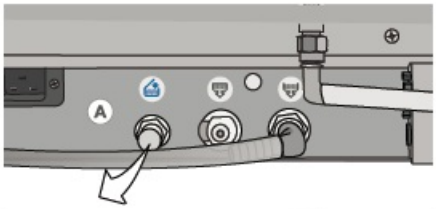
Connecting an auxiliary pump

An input hose can be connected to the STATCLAVE from an external tank that uses an automatic water pump to feed the internal tank automatically when it reaches the MIN level. Be sure to monitor the water level of your external tank. The STATCLAVE unit does not monitor the water level in the external tank and the auxiliary water pump should not run dry.

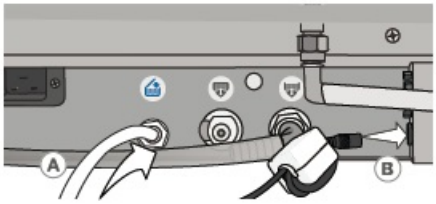
To use this method, you will need the STATCLAVE automatic fill pump (sold as an accessory) and an external tank with a minimum diameter opening of 2" (50mm) through which you can insert the pump.

To connect the automatic fill pump to the STATCLAVE, follow these steps:

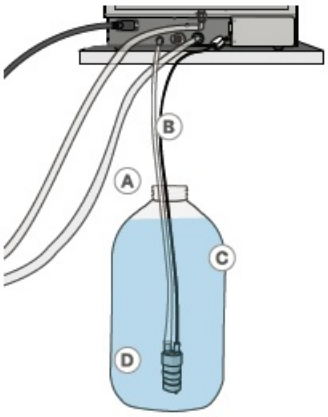
1. Remove the plug from the automatic fill port (A) at the back of the unit.



2. Connect the fitting at the end of the pump's tubing to the automatic fill port (A).
3. Connect the automatic fill pump's power source (B) to the power connection located at the back of the unit.



4. Fill the external tank (C) with distilled water.
5. Place the submersible automatic fill pump (D) in the external tank.
6. Go to the home screen and select any cycle to activate the filling system.

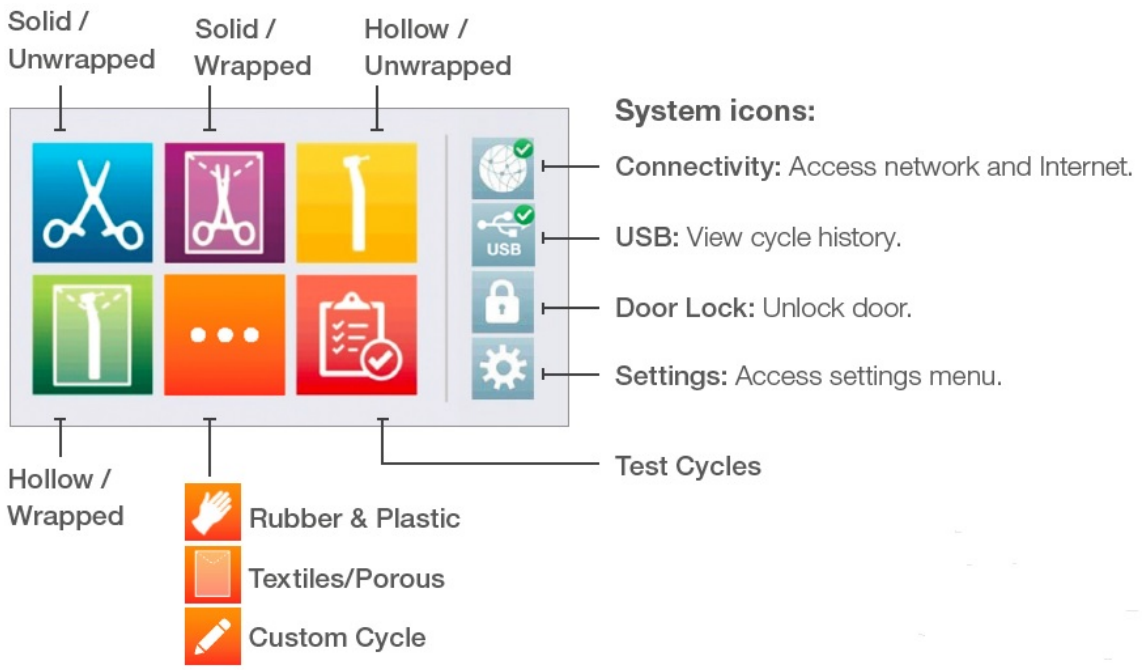


3. FUNCTIONS AND CYCLES

The STATCLAVE G4 is a dynamic air removal (pre-vacuum) table-top steam sterilizer that uses steam to sterilize wrapped and unwrapped instrument loads typically used in dental and medical offices. It has six validated sterilization cycles with optimized drying for fast, effective instrument processing. An additional custom cycle can be configured using one of three temperature settings but this cycle must be validated by the user.

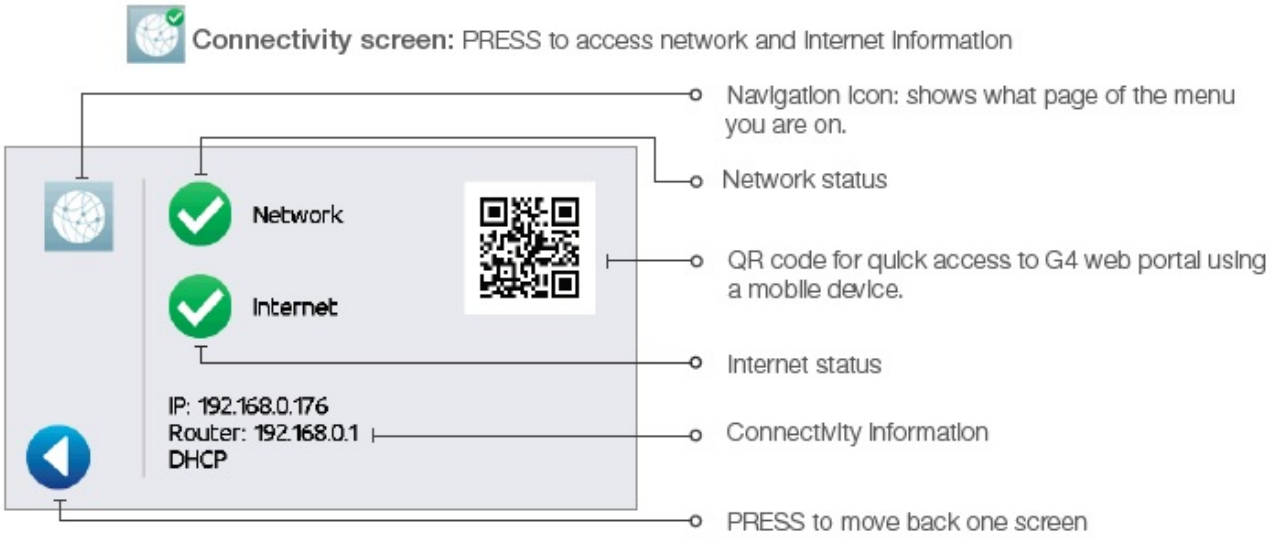
Touchscreen overview

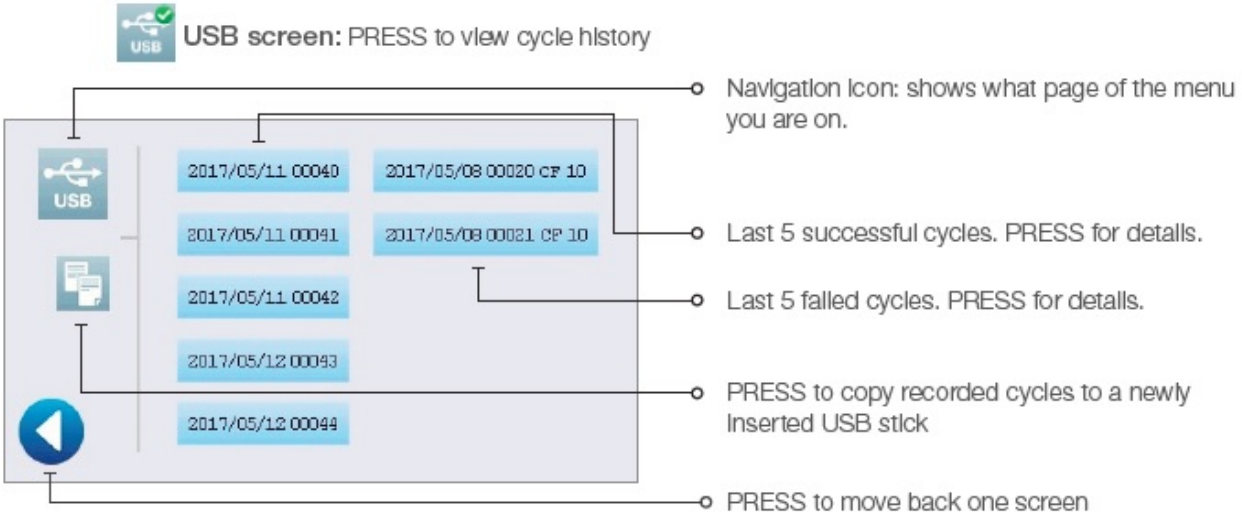
The home screen default setting shows icons for the four most common cycles: Solid Unwrapped, Solid Wrapped, Hollow Unwrapped and Hollow Wrapped. The "…" icon provides access to additional cycles. These include: Rubber & Plastic, Textiles/Porous and a Custom Cycle. The Test Cycles icon provides access to a Bowie Dick Test and a Vacuum Test.



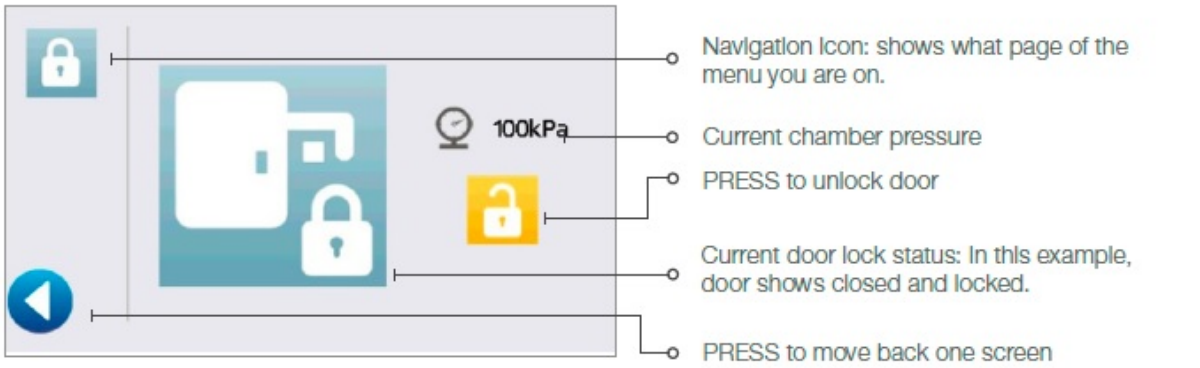
System icons and what they mean

The home screen contains four system icons. Press these icons to access additional functions and information.





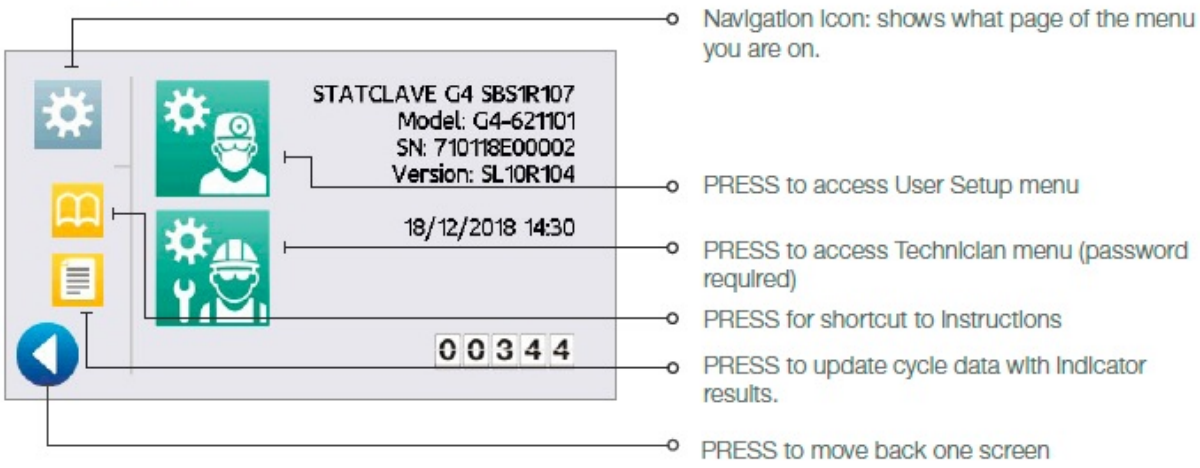
Door lock screen: PRESS to view door and lock status.



Door lock breakdown:

Door CLOSED, handle UP	Door OPEN
Door CLOSED and LOCKED	Chamber pressure is out of range. Door cannot be unlocked at this time.
Door CLOSED and UNLOCKED	PRESS icon to unlock door.

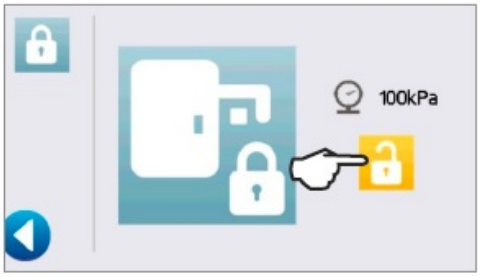
Settings screen: PRESS to access settings



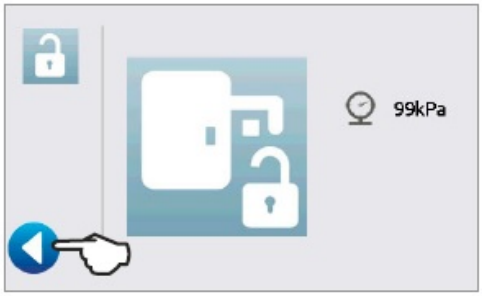
Unlocking the door – power on

The STATCLAVE G4 will lock the chamber door when you select a cycle. To unlock the door, go to the home screen and follow these steps.

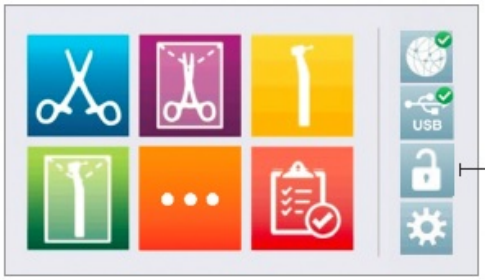
1. PRESS lock icon.



2. PRESS unlock.

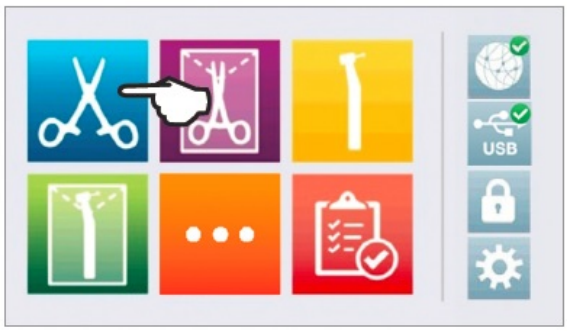


3. PRESS back.

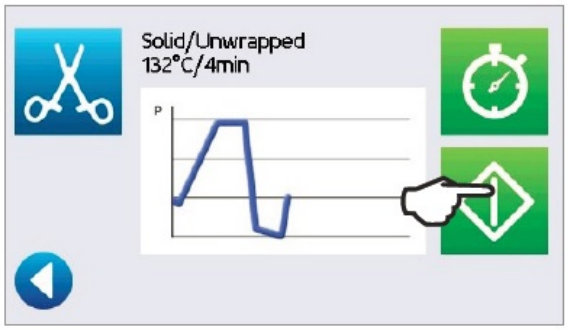


4. Lock icon is now changed to unlocked.

Starting and stopping a cycle



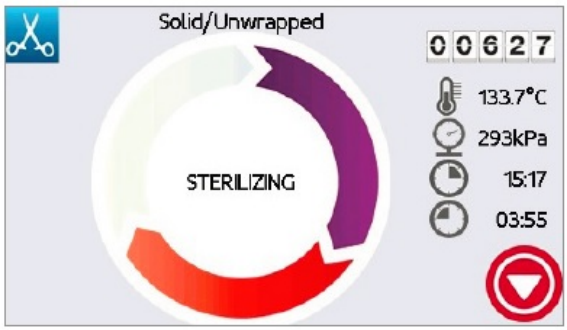
1. **Select a cycle.**



2. **Press START.**

Delayed start

Start



3. **Cycle in progress.**

Current chamber temperature

Current chamber pressure

Total time elapsed in the cycle - seen on cycle screen for entire cycle

Appears during STERILIZATION and DRYING to show time remaining

Stop

Cycle chart and descriptions

When selecting a sterilization cycle, users are instructed to choose according to the recommendations of leading infection control authorities and local regulatory guidelines.

STERILIZATION CYCLE INFORMATION

Cycle	Load Type and Weight	Sterilization Temperature and Time	Minimum Drying Time**
Solid / Unwrapped 	**IUSS CYCLE*** for unwrapped solid instruments (mirrors, explorers), hinged instruments (hemostats) on trays. Maximum Load: 6 Kg /13.2 lbs	132°C /270°F for 4 minutes	0-60 min. (Default 10 min)
Solid / Wrapped 	Single wrapped IMS cassettes with solid instruments, rigid sterilization containers with solid instruments or single-pouched solid instruments on a pouch rack. Maximum Load: 6 Kg /13.2 lbs	132°C /270°F for 4 minutes	25 min.**
Hollow / Unwrapped* 	**IUSS CYCLE*** for unwrapped dental handpieces on trays. Maximum Load: 6 Kg /13.2 lbs	132°C /270°F for 4 minutes	0-60 min. (Default 10 min)
Hollow / Wrapped 	Single-pouched dental handpieces on a pouch rack. Maximum Load: 6 Kg /13.2 lbs	132°C /270°F for 4 minutes	25 min.**
Textiles /Porous 	Textiles Maximum Load: 2 Kg /4.4 lbs	132°C /270°F for 4 minutes	20 min.**
Rubber & Plastic 	**IUSS CYCLE*** for unwrapped solid or hollow instruments constructed of metal, rubber and plastic. Maximum Load: 2 Kg /4.4 lbs	121 °C /250°F for 20 minutes	0-60 min. (Default 10 min)
Custom † 	Maximum Load: 2 Kg/ 4.4 lbs	121 °C /250°F from 20-30 minutes	0-60 min. (Default 10 min)
	Maximum Load: 6 Kg/ 13.2 lbs	132 °C /270°F from 4-18 minutes	0-60 min. (Default 25 min)
	Maximum Load: 6 Kg/ 13.2 lbs	134 °C /273°F from 4-18 minutes	0-60 min. (Default 25 min)

*Immediate Use Steam Sterilization cycle.
**For a maximum load. If you adjust a cycle's drying time to less than the default time, you must check that the load is dry.

† Custom cycles have NOT been validated and have NOT been cleared by the FDA in the U.S. or any other regulatory authority. The user is responsible for validating the sterilization efficacy of a custom cycle.

Test cycles

Running a vacuum test

The vacuum test checks the sterilizer's plumbing system for leaks. Run this test with the rack and empty trays in the chamber.

IMPORTANT: Vacuum tests must be conducted when the unit is cool. Running a vacuum test on a hot chamber may cause the test to fail.

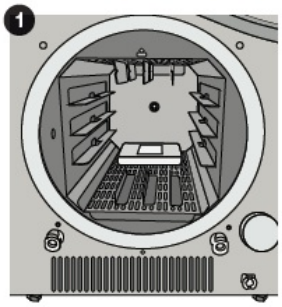
Running a vacuum test can take a minimum of 45 minutes. When the test is complete, the screen will display a CYCLE COMPLETE message. If the test has failed, see Troubleshooting.

Running a Bowie-Dick test

The BOWIE-DICK test is used to ensure proper air removal is occurring in a pre-vacuum autoclave. Complete air removal is important because pockets of cool air remaining in the chamber can compromise sterilization. Using an FDA-approved Bowie-Dick test pack, the Bowie-Dick test runs a cycle at 134°C for 3.5 minutes to evaluate the correct air removal.

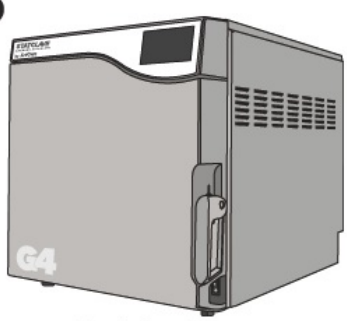
To perform a Bowie-Dick test, you will need a Bowie-Dick device or test pack. While you should always refer to the instructions provided by the test manufacturer, generally, the process is as follows:

1



Open the unit's chamber door to insert a Bowie Dick test pack. (Position centre back.)

2

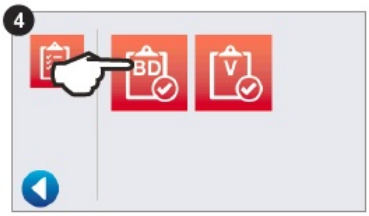


Close and lock the door.

3

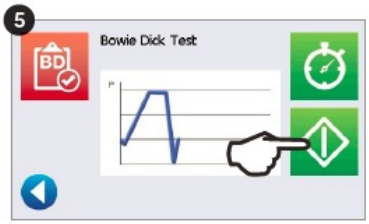
From the home screen, select the **TESTS icon**.

4

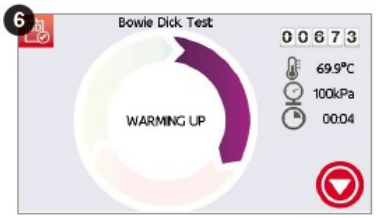


To run a Bowie Dick Test, press the **BD icon**.

5

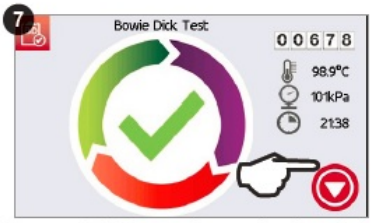


6



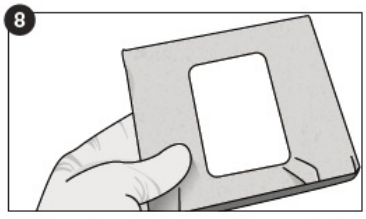
Allow the test to run to completion.

7



Press STOP to release the load.

8



Follow the test manufacturer's instructions to interpret test results. If unit passes the test, unit is ready for use. If unit fails, check manufacturer's instructions and repeat test.

What happens during a cycle

The STATCLAVE G4, like all autoclaves, uses various combinations of time, temperature, and pressure to make up different cycles that are designed to sterilize specific load types. Each cycle is divided into various phases. Some cycles may have more or less phases depending on the needs of the load type. For example, a cycle for hollow instruments will have an additional vacuum draw phase before sterilization to ensure steam penetrates every hollow of every instrument in the load. In another example, a solid unwrapped cycle uses only one vacuum draw at the start because it does not have instruments with hollow areas that require more steam penetration.

The following is a description of what devices are ON/OFF and OPEN/CLOSED at each stage of a Hollow Wrapped cycle, which is a cycle that includes the greatest number of phases.

1. **WARMING UP CHAMBER**

Band Heaters:	ON (target is 120°C but it can overshoot by 150C)
Water Pump and VFB:	OFF
Steam Generator:	ON
VDB:	OPEN
VEC:	OPEN
Venturi Pump and VEV:	OFF
Blower for Heat Exchanger:	OFF
Cooling Pump:	OFF
VVC:	OPEN
VFW:	OPEN for auto fill between cycles only.

2. **WARMING UP**

Band Heaters:	ON (120°C)
Water Pump and VFB:	ON as required
Steam Generator:	ON
VDB:	CLOSED
VEC:	OPEN
Venturi Pump and VEV:	OFF
Blower for Heat Exchanger:	OFF
Cooling Pump:	OFF
VVC:	CLOSED

3. **VACUUM PULSE**

Band Heaters:	OFF
Water Pump and VFB:	ON as required
Steam Generator:	ON
VDB:	CLOSED
VEC:	OPEN
Venturi Pump and VEV:	ON

Blower for Heat Exchanger:	ON
Cooling Pump:	ON
VVC:	CLOSED

4. PRESSURE PULSE (phase included only on some cycles)

Band Heaters:	OFF (ON as required)
Water Pump and VFB:	ON as required
Steam Generator:	ON
VDB:	CLOSED
VEC:	OPEN
Venturi Pump and VEV:	ON
Blower for Heat Exchanger:	ON
Cooling Pump:	ON
VVC:	CLOSED

5. VACUUM DRAW/ PULSE (phase included only on some cycles)

Band Heaters:	OFF
Water Pump and VFB:	OFF
Steam Generator:	OFF
VDB:	CLOSED
VEC:	OPEN
Venturi Pump and VEV:	ON
Blower for Heat Exchanger:	ON
Cooling Pump:	ON
VVC:	CLOSED

6. PRESSURIZING

Band Heaters:	OFF (ON as required)
Water Pump and VFB:	ON as required
Steam Generator:	ON
VDB:	CLOSED
VEC:	CLOSED
Venturi Pump and VEV:	OFF
Blower for Heat Exchanger:	ON
Cooling Pump:	ON
VVC:	CLOSED

7. STERILIZING

Band Heaters:	OFF
Water Pump and VFB:	OFF

Steam Generator:	ON-OFF as required
VDB:	CLOSED
VEC:	CLOSED
Venturi Pump and VEV:	OFF
Blower for Heat Exchanger:	ON
Cooling Pump:	ON
VVC:	CLOSED

8. VENTING

Band Heaters:	ON
Water Pump and VFB:	OFF
Steam Generator:	OFF
VDB:	OPEN
VEC:	CLOSED
Venturi Pump and VEV:	OFF
Blower for Heat Exchanger:	ON
Cooling Pump:	ON
VVC:	CLOSED

9. VACUUM DRAW

Band Heaters:	ON
Water Pump and VFB:	OFF
Steam Generator:	ON
VDB:	OPEN
VEC:	OPEN
Venturi Pump and VEV:	ON
Blower for Heat Exchanger:	ON
Cooling Pump:	ON
VVC:	CLOSED

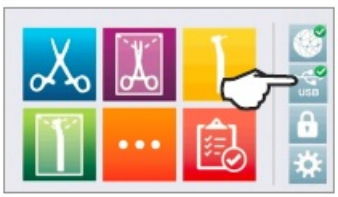
10. AIR DRYING

Band Heaters:	ON (targets 170°C @132°C cycles and 150°C @ 121°C cycles)
Water Pump and VFB:	OFF
Steam Generator:	ON
VDB:	OPEN
VEC:	OPEN
Venturi Pump and VEV:	ON
Blower for Heat Exchanger:	ON
Cooling Pump:	ON
VVC:	CLOSED (OPEN for vacuum pulses and vacuum relief)

Accessing and reading cycle information

Retrieving Cycle Information Using the Touchscreen

You can always see the last five successful cycles and the last five incomplete cycles, whether you have a USB storage device attached to the unit or not.

1.  Press the USB icon.

2.  Press on a cycle information button to see its details.

TIP **The unit will record the last five successful cycles and the last five incomplete cycles (incomplete cycles will be identified with a CF number).** If you select a cycle from the list, it will display cycle information in a format similar to how it would be printed.

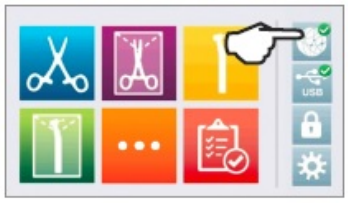
Retrieving Cycle Information Using the Web Portal

Use the STATCLAVE G4 Web Portal to access all the cycle information stored on the STATCLAVE G4 from your computer. If the STATCLAVE G4 was not connected to a network during the initial installation, follow the instructions in the Location and Installation section *Connecting your STATCLAVE G4 to a network*.

The STATCLAVE G4 web portal is a direct connection to the STATCLAVE G4 on a user's local area network. It is protected by the firewall and not accessible to outside users (unless they have a Remote Access Code. For more information, see *Section below: Allowing a technician to access the STATCLAVE G4 from a remote location)*.

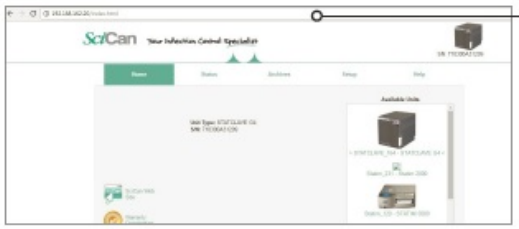
The web portal provides real-time cycle information and archived sterilization records unique to this unit. From the web portal, you can print reports, set up email notification and search cycle history.

To access your web portal, follow these steps:

1.  Press the connectivity icon.

2. 

The connectivity screen displays information about your STATCLAVE's internet connection, including its IP address.

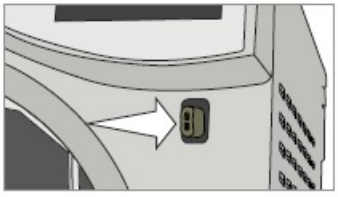
3. 

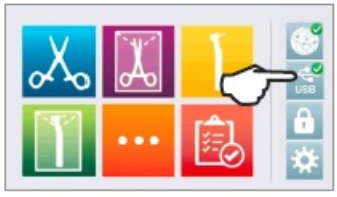
Type the IP address displayed on the touchscreen into the browser of any web enabled device to access your unit's web portal.
To set up your web portal, follow the instructions available on the portal's **HELP** tab.

TIP **Using a portable device?** Scan QR Code to easily access your unit's web portal.

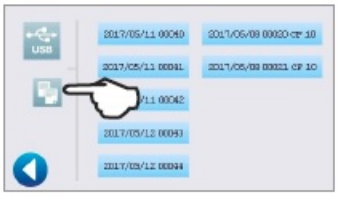
Retrieving Cycle Information Using the USB Data Back Up

The USB storage device can be used to transfer cycle information stored in the unit to a computer. Best practice suggests this should be done once a week. To transfer data using the USB port, follow these steps:

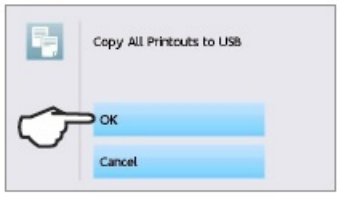
1. 
Insert the USB storage device into the USB port.

2. 

Press the USB icon.

3. 

Press the Copy icon.

4. 

Press OK to copy cycle data to the USB device inserted.

IMPORTANT! Data stored in the internal memory of the STATCLAVE can only be copied once. Data that has been previously transferred will not be resaved onto a new USB storage device. You can access previously transferred information from your STATCLAVE G4's Web Portal.

When the activity light on the USB storage device stops blinking or the USB icon on the LCD turns from a flashing green to a solid grey, remove the USB storage device and transfer the information to your computer.

IMPORTANT! If you select the USB storage device icon from the main menu, you will only be able to view the last five complete cycles and the last five incomplete cycles. To view all the cycles stored on the USB storage device, you must connect the device to your computer.

Adjusting unit settings

Using the user menu

To access the user menu, select the SETTINGS icon from the home screen and then press on the image of the dentist.

Menu item	Submenu item	What to do with it
GENERAL		
	Time	Enter values
	Date	Enter values
	Set Time Zone	Select zone
	Time Update	Select automatic or manual
	Time 12/24	Select 12-hour or 24-hour format
	Date Format	Select how date is displayed
	Country	Type name to select country
	Units	Select metric or imperial
LANGUAGE		
		Select from language list
UNIT NO.		
		For users with multiple units
PRINTER		
	Printer Type	Select serial or no printer
	Baud rate	For printer adjustments
	End of Line CR/LF	For printer adjustments
	Printer user ° char	For printer adjustments
PROCESS		

	Enforced	Select ON, OFF or DOCUMENTATION
	User	Create User ID and PIN for up to 20 users
SCREEN		
	Screensaver	Adjust the time delay for the screensaver
	LCD Contrast	Adjust LCD readability
	Cycle Run	Select circle or chart graphic to display during a cycle
NETWORK SETUP		
	Network	Select WiFi or wired connection
	Automatic IP (DHCP)	Network connection
	Renew IP	Network connection
SOUND		
	Button Beep	Turn the beep On/Off
	Beep Volume	Adjust sound
INSTRUCTIONS		
	Water Reservoir Filters	Slide show on how to clean filter
DRYING		
	Solid/Unwrapped 132°C/4 min	Adjust drying time
	Solid/Wrapped 132°C/4 min	Adjust drying time
	Hollow/Unwrapped 132°C/4 min	Adjust drying time
	Hollow/Wrapped 132°C/4 min	Adjust drying time
	Textiles/Porous 132°C/4 min	Adjust drying time
	Rubber & Plastic 121°C/20 min	Adjust drying time

ONLINE		
	Online Access	Enter an email address to receive notifications
	Privacy	Agree: Your unit will send cycle data and unit errors to SciCan. It will also receive automatic software updates to the user interface.
		Disagree: Your unit will NOT send any cycle information, but it will receive automatic software updates to the user interface.
	Intro	Select ON then use the power switch to turn the unit OFF. The start-up screen and connection wizard will begin when the unit is next powered ON.
	Remote Access	Use to generate a token that can be sent to a technician who can access your unit remotely.
	Notifications	Enter email addresses (max. 4) to which unit can send notifications.
WATER FILLING		
	Auto / Manual	Select auto when using an external auto fill system. Default is manual.
STAND BY		
	Stand by On/Off	Select high, low or off
	Stand by Start	Enter time value. Default is 07:00
	Stand by End	Enter time value. Default is 20:00
CUSTOM CYCLE		
	Cycle temperature	Select from 3 temperature options.

	Sterilization time	Adjust the custom cycle's sterilization hold time.
	Drying time	Adjust the custom cycle's drying time.

Using the service menu

To access the service menu, select the SETTINGS icon from the home screen, press on the image of the technician and enter the service code 7919 on the keypad.

Menu item	Submenu item	What to do with it
PRODUCTION TOOLS		
	Calibration	To calibrate the unit using a probe, set calibration to ON so that you can run a cycle and adjust the temperature offset.
	Burn-in mode	
	Conductivity Setup	
DIAGNOSTIC TOOLS This menu contains a number of tools technicians can use to more accurately diagnose problems.		
	Device Status/Test	
	Repeater Mode	Use to run a series of cycles in succession. Can be set to repeat 1 to 5 cycles in a row or set it to ON to run the same cycle over again until you stop it.
	Repeater count	
	Debug Mode	To display the debug screen while running a cycle, set Debug Screen to ON.
	Clear CF Printouts	
	Calibration Offsets	To calibrate the unit using a probe, set calibration to ON so that you can run a cycle and adjust the temperature offset.
FACTORY DEFAULT		
	Cycle Number	

	Factory Default	Reset all values to factory settings. DO NOT USE unless instructed by SciCan.
	NVRAM Tools	
NETWORK SETUP If your unit has access to the network but no internet, the connectivity icon on the home screen will be yellow. You may need to manually enter a DNS value, for example: 008.008.008.008. A static IP address may be required for some network configurations. Consult the local network's administrator.		
	Network	Select Plugged in cable or WiFi
	Automatic IP (DHCP)	To enable the use of a static IP address for your unit, select OFF.
	Renew IP	Use to renew the unit's IP address in case of a network error. Additionally, you can scan the QR code on this screen with a handheld device to create an instant Remote Access. (Device must be on same network as unit.)
	Static IP	Enter the static IP address.
	Subnet Mask	A network administrator tool. Use if you have selected a static IP address for the unit.
	Router	A network administrator tool. Use if you have selected a static IP address for the unit.
	DNS	A network administrator tool. Use if you have selected a static IP address for the unit.
PRINTER TYPE		
		Select serial or no printer
LOCAL CONTROL QUALITY		

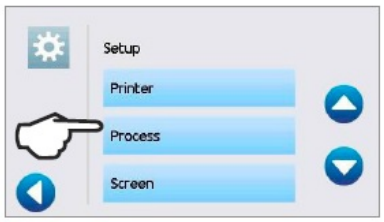
Viewing the STATCLAVE G4 from another networked device may be done at high or low resolutions. NOTE: Select LOW if you want the screens to load faster. Default is HIGH.		
		Select high or low quality
TECHNICIAN TOOLS		
	Dealer ID	Enter the number assigned to the dealer by SciCan
	Change Password	Set a new password to limit access to the service menu
	Maintenance	Notification On/Off: Turn the maintenance message on/off.
		Schedule: Select maintenance intervals by months or cycles.
		Reset: Reset the maintenance counter after performing the service.
CYCLE SELECTION Some users prefer their units to display only the most common cycles used. Press on a cycle icon to remove it from the home screen menu. Press on the icon to reinstate it.		
		Select the cycle icons you wish to display on the home screen

Setting up load traceability with USER ID, PIN, and Process Enforced Usage

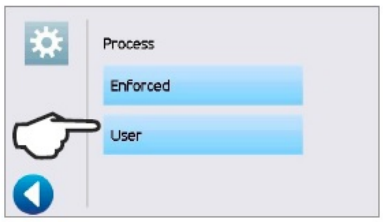
The Process Enforced function keeps track of who has started and who has removed a load from your STATCLAVE G4. It does this by prompting users to enter a PIN at the start of a cycle, when they STOP or CANCEL a cycle, and when they REMOVE a load. Using Process Enforced does not restrict any functions, it is simply a means of tracking whether a registered user or unregistered user was operating the unit. To use the Process Enforced feature, you must first assign User IDs and PINs.

To set up a User ID and PIN, select SETTINGS then USER and follow these steps:

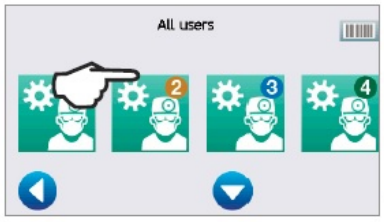
1.



2.



3.

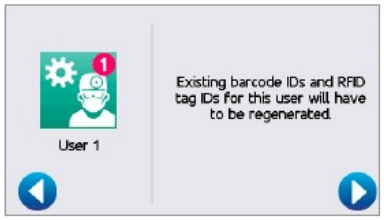


From the SETUP PIN screen, you can assign up to 20 PINs. Select one of the User icons to assign a PIN.

4.

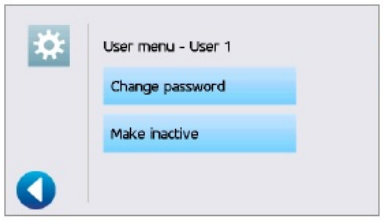
Using the keypad, assign a PIN of up to four digits. Press **EN** to save.

5.



Press **FORWARD** to accept the new PIN.

6.



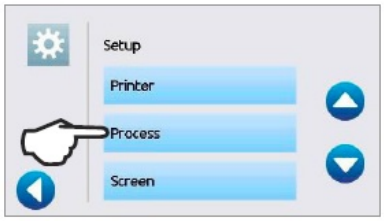
Press **BACK** to return to the User icons.

TIP To make a correction, select the PIN User you want to change. On the next screen select **Change password**.

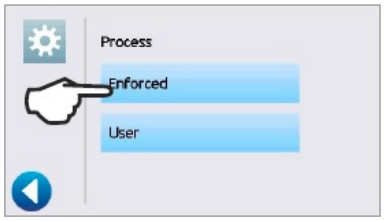
To turn Process Enforced Usage ON, OFF or to activate DOCUMENTATION mode, select SETTINGS then USER and follow these steps:

To turn Process Enforced Usage ON, OFF or to activate DOCUMENTATION mode, select SETTINGS then USER and follow these steps:

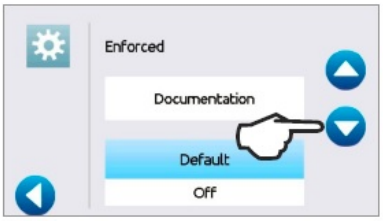
1.



2.

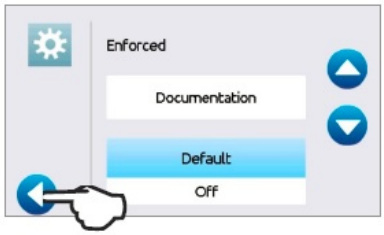


3.



Use the arrows to select **ON**, **OFF** or **DOCUMENTATION**.

4.



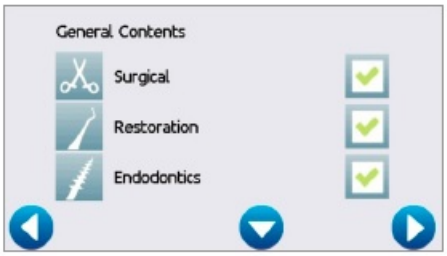
Press **BACK** to save your change and return to the main menu.

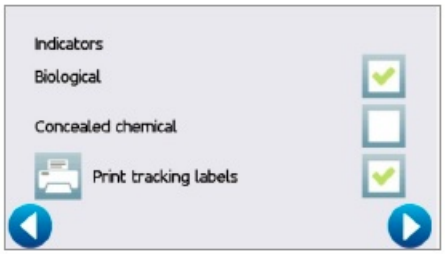
TIP Any user can stop a cycle and remove the load even with the Process Enforced feature ON. However, the cycle data will record that an unregistered user has stopped the cycle and/or opened the door.

Using Process Enforced Documentation mode:

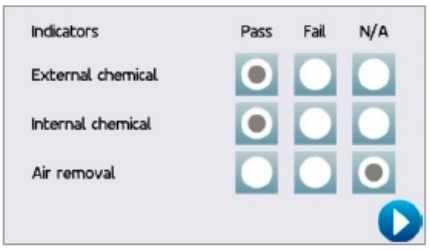
This mode activates the process enforced usage function along with the additional documentation function that generates a report with information about the cycle and the load type.

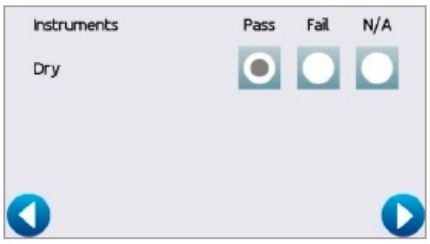
When starting a cycle with Process Enforced Documentation mode turned ON, you will be prompted to identify the general contents of the load to be processed by selecting from a list as well as whether a biological indicator and chemical indicator are included.





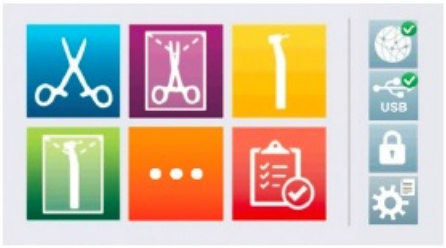
At the end of the cycle, you will be prompted to report whether the indicators have passed and whether the load is dry (as applicable).





Biological Indicator/Spore test results are available at a different time than chemical indicators but you still have the option to add the BI/Spore test results to the documentation report when these results are available.

On the home screen, the STATCLAVE G4 will indicate a result is pending by showing this icon: 



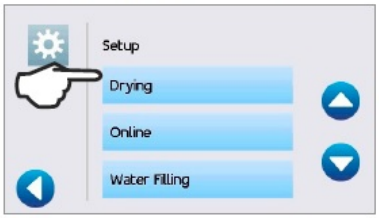
Pressing this button will lead you to a screen that allows you to input the Biological Indicator results.

Setting drying time

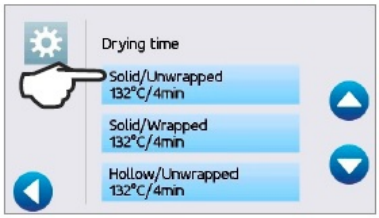
Use this setting to lengthen or shorten drying times on selected cycles. The default drying times for each cycle are preset to provide optimal drying of a maximum load. Smaller loads may require shorter drying times. If you have shortened the drying time of a cycle to less than the default setting, you must check the load for dryness.

CAUTION! Instruments in pouches or wraps that are not completely dry must be used immediately or reprocessed.

To change drying times, select SETTINGS then USER and follow these steps:

1. 

Go to DRYING.

2. 

Select the program whose drying time you would like to change.

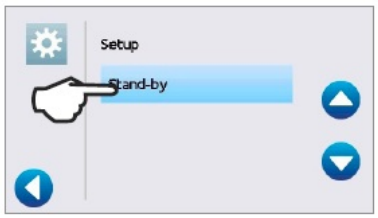
Setting the stand-by mode

Using this setting will reduce the warm-up time between cycles by keeping the autoclave's chamber at a temperature that is optimal for your office's level of use.

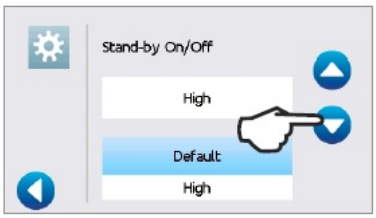
- STAND-BY LOW: For low to average use. Provides a balance between keeping the chamber at 70°C and using a minimum of electricity.
- STAND-BY HIGH: For high use. Optimizes the STATCLAVE G4 for speed by keeping the chamber at 120°C. This is the unit's default setting.
- OFF: For infrequent use. In this setting, the warm up time will be longer (up to 12 minutes from a cold start).

To change this setting and to modify the amount of time the unit is in Stand-by, select SETTINGS then USER and follow these steps:

1.

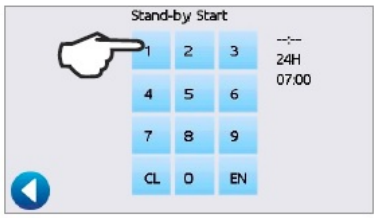


2.



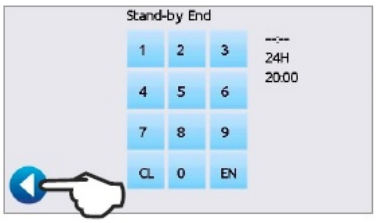
Use the arrows to select stand-by HIGH, LOW or OFF.

3.



If HIGH or LOW is selected, you will be prompted to enter a START and END time for the Stand-by mode.

4.



Once you have entered the END time, press **EN** to save and press **BACK** to return to the previous menu.

TIP To improve drying performance and shorten cycle times, ensure the unit is set to Stand-by HIGH.

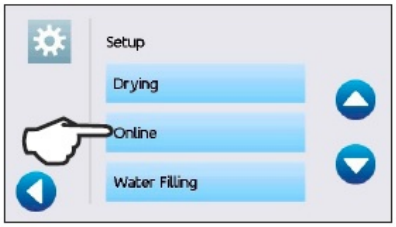
TIP The STATCLAVE G4's default setting is to maintain the unit at Stand-by HIGH from 7:00 a.m. to 8:00 p.m. For this feature to function correctly, your unit must be set to the correct time, date and country.

1. Press **SETTINGS** to verify that your unit is set to your local time and date.
2. To update this imformation, from the **SETTINGS** screen, select **USER** and **GENERAL**.
3. Select the item (**TIME**, **DATE**, **COUNTRY**) you would like to update and enter the correct values.

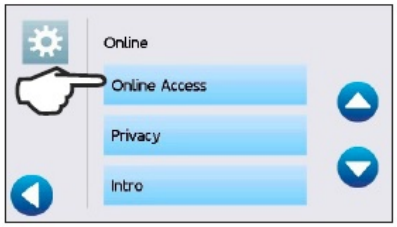
Registering for online access

From the home screen, select SETTINGS then USER and follow these steps:

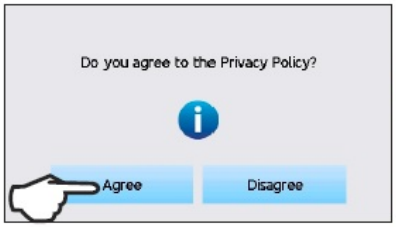
1.



2.

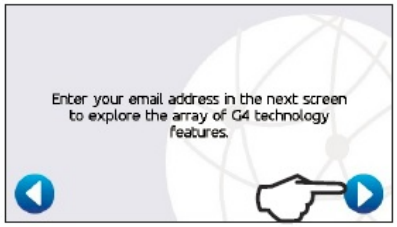


3.



To use ONLINE ACCESS, you must agree to the Privacy Policy. Then press **FORWARD**.

4.



5.

Enter your email.

A confirmation email will be sent to your inbox.

TIP If you did not recieve a comfirmation email, check your spam folder.

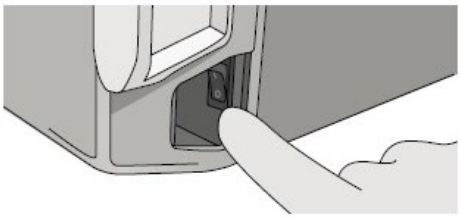
TIP To cancel, scroll to privacy in the STATCLAVE's User menu and disagree.

First start up

Once the STATCLAVE has been correctly installed, and before using it for the first time, make sure BOTH the clean water and Venturi reservoirs contain distilled water. The STATCLAVE uses water from the Venturi reservoir to generate vacuum draws at the beginning and end of each cycle. Both reservoirs must contain the minimum required water levels for the unit to function.

IMPORTANT! DON'T run the STATCLAVE without the chamber rack in place.

1. Power on the unit.



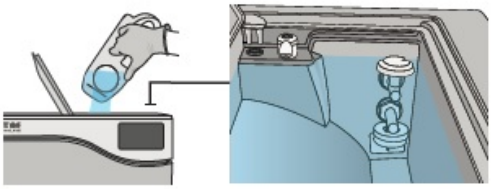
2. Follow the screen prompts to connect your STATCLAVE using either WiFi or an Ethernet cable connection. This will automatically set the time and date for your unit.

TIP If you do not wish to connect your STATCLAVE at this time, Press **FORWARD** and select a language. Then press **FORWARD** and **SKIP** to scroll to the end of the introduction. You must Agree or Disagree with the Privacy Policy to get to the home screen. (For more information on the Privacy Policy screen see Section 8. Using and Changing Settings.)

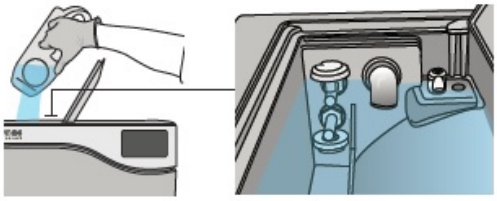
From the home screen, select **SETTINGS** then **USER** and then the **GENERAL** button to access the menu for time, date, country, and time zone. (See Section 8 Using and Changing Settings)

(SciCan recommends connecting and registering your STATCLAVE. To do this at a later time, See Section 8.5 Registering for STATCLAVE Online Access.)

3. Open the clean water reservoir located on the top right of the unit. Using a large container, fill with distilled water to the maximum fill level line or until you hear 3 BEEPs. (For more fill options see Section 4. Filling the Water Reservoirs.)

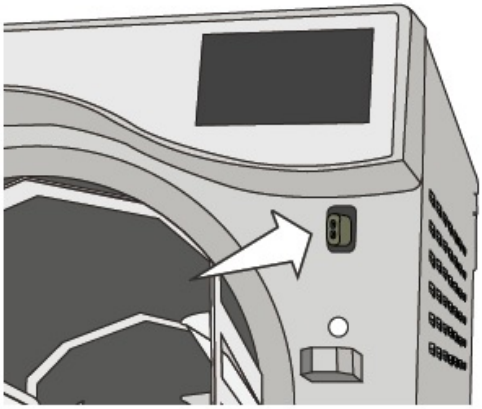


4. Open and fill the Venturi reservoir to the maximum fill level.

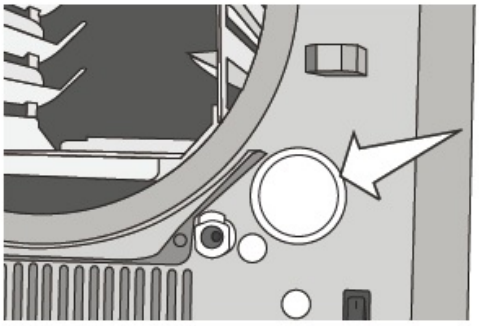


5. Open the door, plug the USB storage device into the USB port.

CAUTION! Hot Chamber.
The unit's stand-by mode is preset to maintain a hot chamber.



6. Make sure the bacteriological filter is securely in place.



7. Check your national and local guidelines for any additional protocols and tests required before using your unit.

4. MAINTENANCE

General information

Regular maintenance will ensure the safe and efficient operation of your STATCLAVE G4. Before conducting any of the cleaning and maintenance procedures described in this chapter, power OFF the unit and disconnect it from its power source.

WARNING: HOT SURFACES. The STATCLAVE G4 chamber's stand-by mode maintains an optimal operating temperature during working hours. Unless this feature is disabled, the chamber will remain hot between cycles throughout the work day. Take care to ensure the STATCLAVE G4 is properly cooled before accessing the chamber to perform any maintenance.

DO always use SciCan replacement parts.

DON'T use abrasive cloths, metal brushes or metal-cleaning products, whether solids or liquids, to clean the device or sterilization chamber.

Maintenance message

WHEN A MAINTENANCE MESSAGE APPEARS, the user has 2 options:

1. Pressing OK to acknowledge the message. The user can then continue to use the STATCLAVE G4 or perform the required maintenance. When the user presses OK, the maintenance notification counter will restart the counter, regardless of whether or not the user has performed the maintenance.
2. Pressing REMIND LATER will prompt the STATCLAVE G4 to repeat the message 24 hours later.

Preventative scheduled maintenance

OPERATOR	
DAILY	Wipe the door gasket clean with a damp, lint-free cloth.
	Clean external surfaces with a damp, lint-free cloth.
WEEKLY	Clean the chamber and, if applicable, the waste water bottle.
	Disinfect external surfaces.

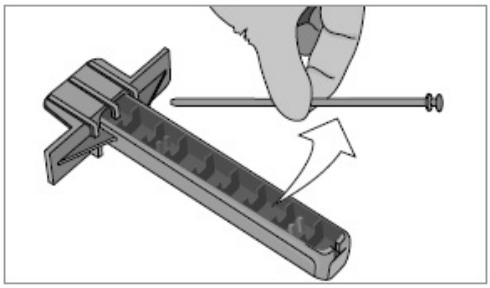
MONTHLY or every 100 cycles	Drain and clean both water reservoirs. Remove and clean both reservoir filters.
	Inspect and clean the 3 chamber filters
	Clean the external distilled water tank - if installed
	Clean the chamber rack and trays
EVERY 6 MONTHS or 500 cycles (Message appears at intervals)	Perform all the cleaning tasks listed in the monthly schedule above.
	Replace the bacteriological filter
	Replace the door seal
TECHNICIAN	
EVERY YEAR or 1,000 CYCLES	A complete maintenance of the autoclave including testing of the pressure relief valve and the power failure pressure/vacuum relief valve (by a SciCan-approved technician) is recommended.

Unlocking the door – no power

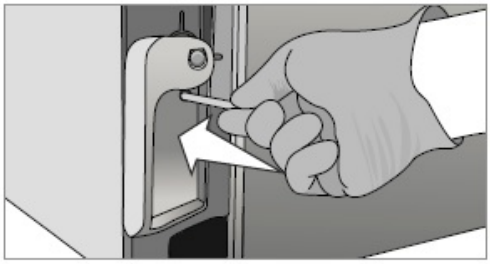
The STATCLAVE G4 is equipped with a safety mechanism that automatically regulates the chamber pressure when the unit loses power. (The unit will take approximately 2 minutes to depressurize. Without power, the door lock will remain engaged.)

To unlock the door without power, follow these steps.

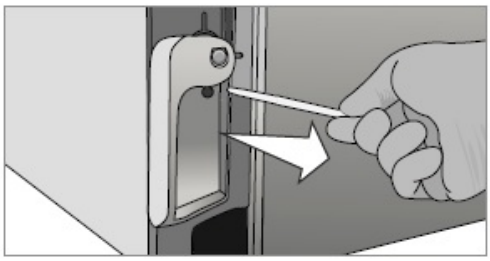
1. Remove the emergency door unlocking pin located in the handle of the tray extractor supplied with your STATCLAVE



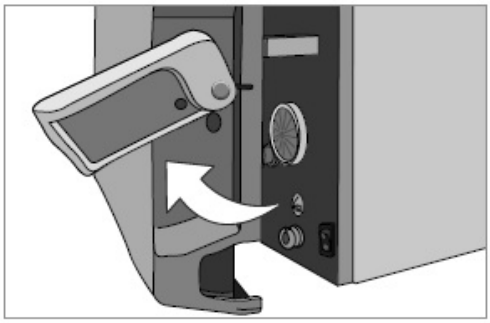
2. Insert the emergency door unlocking pin into the small hole on the side of the unit's handle. Push the pin into the hole as far as it goes to trigger the door release.



3. Remove the emergency door unlocking pin from the hole in the door handle.



4. Pull up on the handle to open.



CAUTION! Risk of Injury.

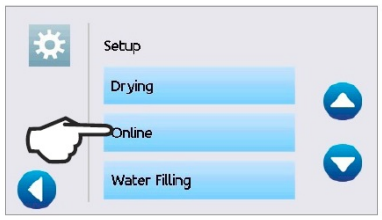
Do not force the door handle. If the unit is locked due to a cycle fault, do not force the door handle. Power OFF the unit and allow it to cool for 10 minutes before attempting again.

Instructing a user to provide remote access to a unit

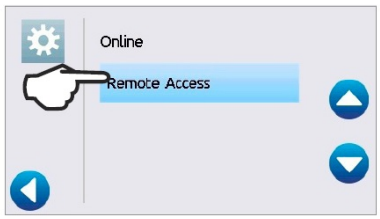
Technicians and other authorized personnel may want to connect to your STATCLAVE G4 from a remote location to review its functioning or access stored information. To allow an external user to remotely access your STATCLAVE G4, you will need to provide a security token to the person requesting access.

To obtain this code, from the home screen, select SETTINGS then USER and follow these steps:

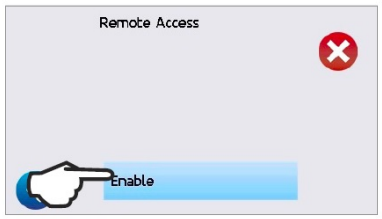
1.



2.



3.



Press **ENABLE** and wait a few seconds for a security token to be provided.

4.

Provide the token number to the technician requiring Remote Access.

DON'T press DISABLE until the session is complete or until otherwise instructed.

The token is valid for 2 hours after which the remote session automatically disconnects. To end the session earlier, select DISABLE from the Remote Access screen to disable the token.

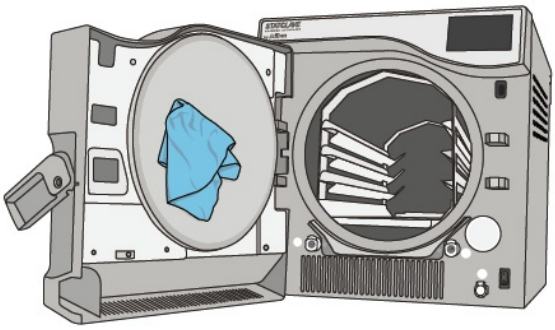
Routine maintenance procedures

Cleaning the door seal and door plate

Frequency: Daily

CAUTION! Hot Chamber.
The unit's stand-by mode is preset to maintain a hot chamber. Turn the unit off and allow adequate time for it to cool before performing maintenance.

1. Using a clean, lint-free cloth dampened with water, wipe the door seal and door plate.

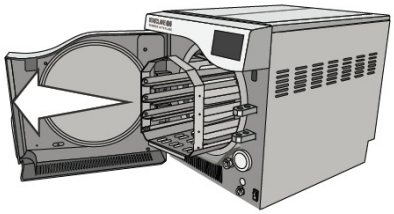


Cleaning the chamber, rack and trays

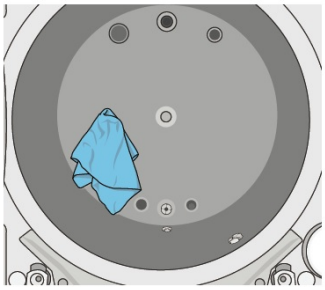
Frequency: Monthly or every 100 cycles

CAUTION! Hot Chamber.

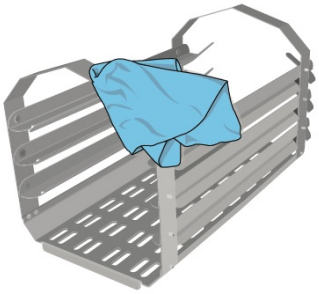
The unit's stand-by mode is preset to maintain a hot chamber. Turn the unit off and allow adequate time for it to cool before performing maintenance.

1. 

Remove the sterilization trays and the rack from the chamber. (Pull the rack out to disengage it)

2. 

Use a clean, lint-free cloth dampened with water to clean the chamber and the chamber flange. Wipe dry.

3. 

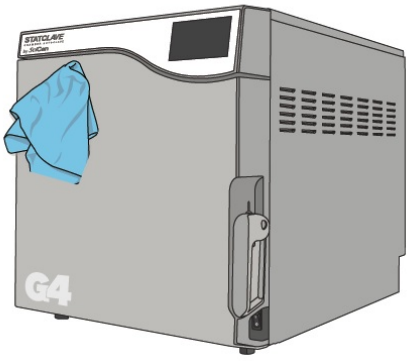
Use a clean, lint-free cloth dampened with water to clean the STATCLAVE rack and trays.

IMPORTANT! When cleaning the chamber, be careful not to damage the temperature probe on the inside back wall of the chamber.

Cleaning and disinfecting the external surfaces

Frequency: Clean daily. Disinfect weekly.

1. Clean all of the STATCLAVE's external parts using OPTIM wipes or a clean, lint-free cloth dampened with water and, if needed, a mild detergent.
2. Dry the surfaces and remove any residue before powering ON the unit.

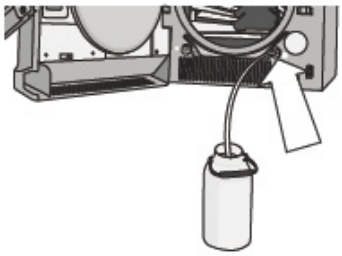


Draining the unit for cleaning and shipping

IMPORTANT! Before shipping or servicing the unit, drain all water from the unit using these 3 ports.

Use the wastewater bottle or arrange an empty 4-litre (1 gallon) container on the floor near the sterilizer and insert the free end of the silicone drain tube (supplied with your STATCLAVE).

To drain CLEAN WATER reservoir:

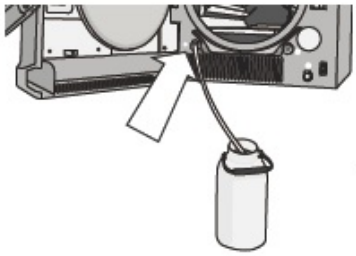
1. 

Open the unit door to connect the drain tube to the CLEAN WATER reservoir's front draining port. Drain the reservoir completely.

2. 

Empty the container.

To drain WASTEWATER reservoir:

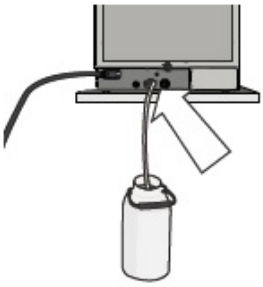
1. 

Repeat the procedure for the WASTEWATER reservoir.

2. 

Empty the container.

To drain CONDENSER:

1. 

Access the back of the unit to insert the quick-connect drain tube into the condenser draining port.

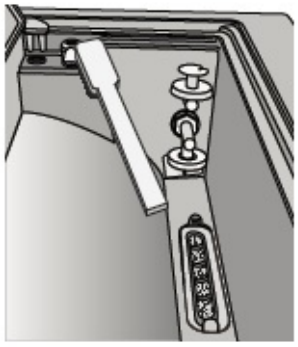
2. 

Empty the container.

Cleaning the water reservoirs and reservoir filters

To avoid accidental cross-contamination, always start with the clean water reservoir and complete steps 1-6 BEFORE cleaning the Venturi reservoir.

Follow the draining instructions in Section 10.6 to drain the reservoir completely.

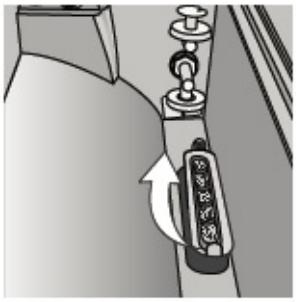
1. 

Using a soft bristle brush, scrub the corners and loosen any deposits.

2. 

Wipe the reservoir's surfaces using OPTIM wipes or a clean, lint-free cloth dampened with water.

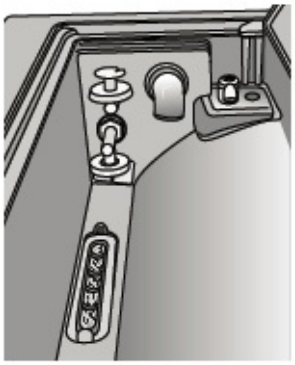
Rinse the reservoir's surfaces with distilled water and drain it using the front drain tube (See section 10.6 Draining the reservoirs for cleaning and shipping).

3. 

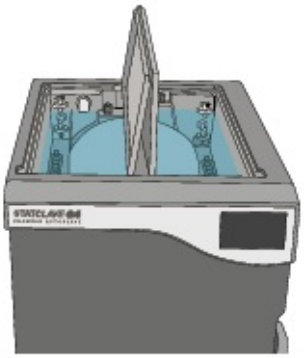
Remove the reservoir filter by pulling up on the filter's tab.

4. 

Rinse the filter under running water and dry it before re-installing.

5. 

Repeat these steps to clean the Venturi reservoir.

6. 

Once you have cleaned both reservoirs, fill them with distilled water and run one empty cycle.

CAUTION!

To avoid cross contamination, be sure to use a different cloth and container with solution to wipe the internal surfaces of each reservoir.

Cleaning the external water reservoir tank

1. Disconnect the external tank from the sterilizer and close the tank valve.
2. Fill the tank with a solution of distilled water and alcohol (10%), such as isopropyl.
3. Allow the solution to sit for 30 minutes.

4. Drain the tank and discard the solution.
5. Fill the tank with water and drain it, to remove any residual alcohol solution.
6. Reconnect the tank to the sterilizer and refill with distill water.

Cleaning the chamber filters

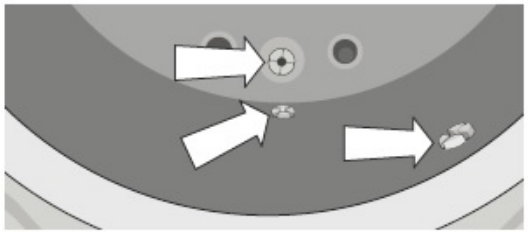
Over time the chamber's three filters will collect enough debris to slow chamber draining and effect performance. To clean or replace the filters follow these steps:

CAUTION! Hot Chamber.
The unit's stand-by mode is preset to maintain a hot chamber. Turn the unit off and allow adequate time for it to cool before performing maintenance.

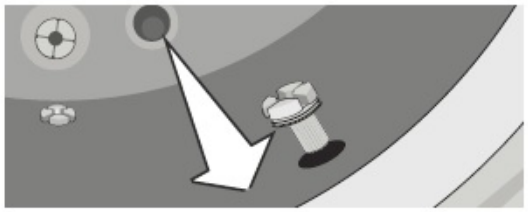
Frequency: Monthly or every 100 cycles.

Over time, the chamber's three filters will collect enough debris to slow chamber draining and effect performance. To clean or replace the filters follow these steps:

1. Remove the 3 chamber filters by unscrewing them from the chamber. Clean it under running water. Clear the mesh of debris. (If the filter cannot be reused, replace it).



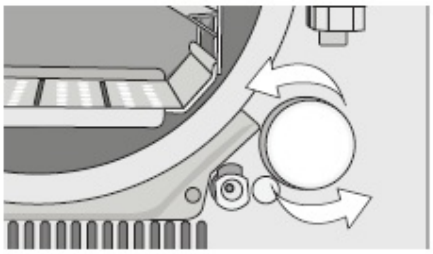
2. To reinstall a filter, screw the filter back into position. The grooves on the filter head should be flush with the chamber surface to enable proper drainage. Tighten by hand.



Replacing the bacteriological filter

Frequency: Every 6 months or 500 cycles.

1. Open the unit door.
2. Unscrew the bacteriological filter.
3. Replace it with a new filter. Tighten by hand only.



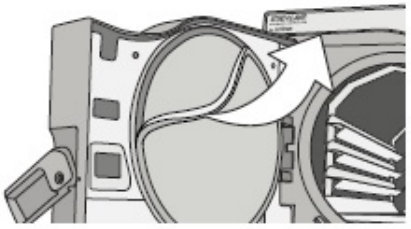
CAUTION! A biological filter must always be in place during a cycle. Running a cycle without a biological filter in place will compromise the sterility of the load.

Replacing the door seal

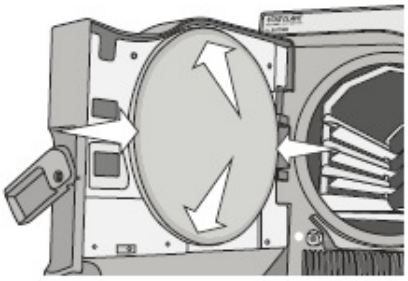
CAUTION! Hot Chamber.
The unit's stand-by mode is preset to maintain a hot chamber. Turn the unit off and allow adequate time for it to cool before performing maintenance.

Frequency: Every 6 months or 500 cycles.

1. Remove the old gasket by pulling it out of position. Clean the door gasket seat of any debris.



2. Put the new door gasket in place, and press the gasket into its seat. Start at the top, then sides, then bottom. With four sides seated, push the remaining gasket completely into its seat.



Annual service recommendations

What to check
Clean reservoirs and reservoir filters
Check integrity of incoming and outgoing services (power, water supply, drain)
Check general condition of machine
Check bacteriological filter (replace if required)
Inspect and clean right cover air filter
Check door seal (replace if required)
Inspect chamber filters (replace if required)
Review error history
Software upgrade (if required)
Check the pressure relief valve and power failure pressure/vacuum relief
Calibrate the unit if necessary (See Calibration section for details on when calibration is needed) or in accordance to local guidelines

WARNINGS AND PRECAUTIONS

If you have questions about the unit you are repairing, please do not hesitate to contact your local SciCan representative for information. Also, the unit is heavy. Exercise caution and seek assistance when lifting or carrying it.

EXERCISE CAUTION

- Hazardous voltages are accessible when the covers and panels are removed.
- Disconnect the power cord before servicing the power mains portion of the controller board and associated devices.
- Removing the covers and panels may expose some sharp metal edges. Be careful and wear long sleeves and gloves.

PERFORM TESTS

- If you service or replace parts associated with the power main, perform a dielectric strength test (Hi-Pot) on the unit. Perform a second Hi-Pot test once the cover has been returned to the unit.
- If components of the protective earthing system are changed or if connections are broken and remade, perform a protective bonding impedance test (ground continuity). Perform both a second Hi-Pot test and a second ground continuity test once the cover or panel has been returned to the unit.
- If any panel is removed, perform a dielectric strength test (Hi-Pot) AND a protective bonding impedance test (ground continuity) on the unit when the work is completed and after the panel has been returned to the unit.

PROTECT THE UNIT

- The unit contains electronic circuitry that is static sensitive. Always wear a static strap when working with or near printed wiring boards. In addition, use static footstraps, grounding mats and grounded work surfaces when servicing microprocessor devices. Transport boards and devices in static protected bags.
- In order to ensure adherence to the applicable safety agency approvals, state, provincial, regional and national laws, replace components with SciCan approved parts only.

Calibration procedure

When to calibrate the unit

If you replace a component that affects the system monitoring sterilization conditions, you will have to check and possibly adjust the calibration of the unit. These components include: the pressure sensor, thermocouple and controller board.

NOTE: To ensure a successful calibration process, run a vacuum test prior to calibration to check the unit for leaks.

Regional regulatory guidelines may also require that an autoclave be calibrated at regular intervals.

Equipment and tools required

1. Pressure and temperature meter
2. Temperature probe
3. Allen key (6mm)
4. Teflon tape
5. Adjustable wrench
6. Calibration fitting (01-115514S)

Calibration equipment specifications:

- Calibration reference meters (temperature and pressure) are important for accurately setting the STATCLAVE G4 unit so that the correct sterilization conditions (temperature and pressure) occur in accordance with the original specifications of the unit and national/international standards.
- Any digital thermometer and temperature probe (thermocouple) used during calibration should have the highest accuracy around 130°C and 140°C.
- Temperature meters and probes should always be calibrated as a matched pair.
- Test equipment must be calibrated within the manufacturer's recommended calibration interval.
- Calibration of reference equipment used with autoclaves should ALWAYS be completed to national or international standards and by a certified calibration laboratory.

Meters recommended by SciCan:

For measuring temperature:

- Fluke 51 Series II Digital Thermometer

- Fluke 80PK-26 SureGrip Tapered Temperature Probe

For measuring pressure:

- Druck DPI 705R Absolute Pressure Meter with external 0 - 7 bar absolute pressure transducer with ¼” NPT female thread

For measuring Temperature and Pressure combined

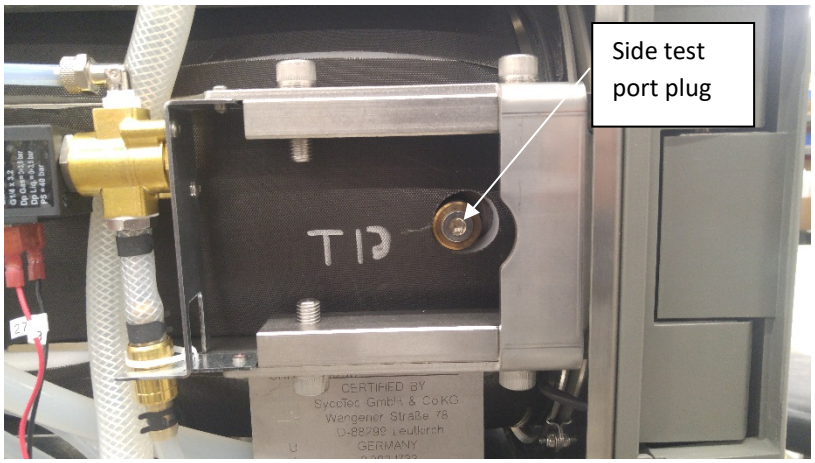
Heise PTE-1 Handheld LCD digital calibrator complete with temperature and pressure modules, and PT100 probe as follows:

- Meter (without data logging capabilities) — PTEC = X X 4 4A
- Pressure Module — HQS2 B A A 400 kPa A
- Temperature Module — HQS RT1 PT-100
- RTD Probe Pt-100 — PT5

How to calibrate the unit

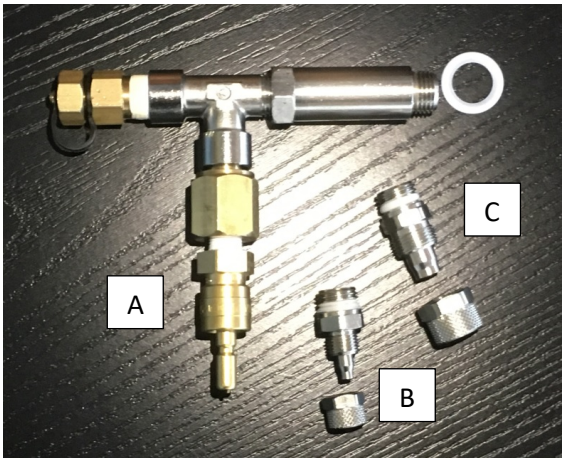
STAGE 1. Setting up calibration

1. Remove the 2 screws at the back of the left panel and slide the panel to the rear to disengage the tabs at the top and bottom of the panel.
2. Using a 6 mm Allen key, remove the side test port (marked as TP) plug from the chamber’s side port.



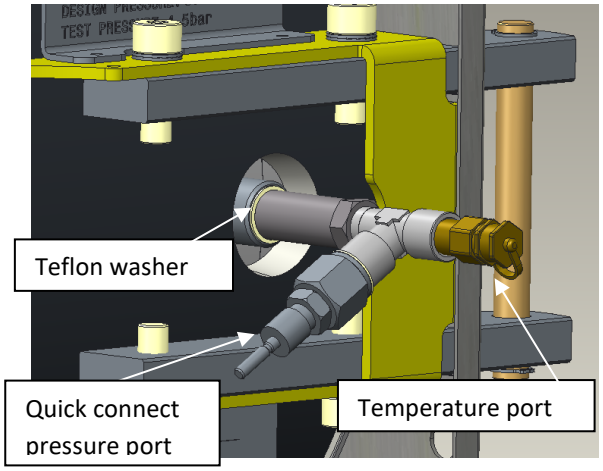
3. Check that the calibration fitting (01-115514S) is equipped with the correct pressure port for your reference meter.

The calibration fitting comes with a quick connect pressure port (A) but you can remove this and replace it with either the 1/4-inch knurled nut pressure port (B) for 1/4-inch Teflon tubing or the 3/8-inch knurled nut pressure port (C) for 3/8-inch Teflon tubing.

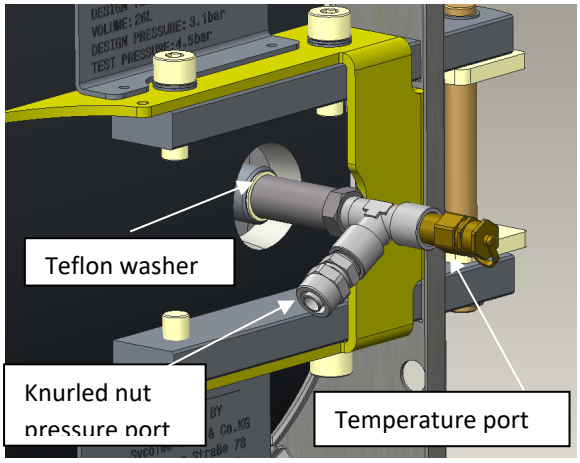


4. Connect the assembled calibration fitting to the side test port, configured either in option 1 or option 2. Use a Teflon washer (61-114611) to seal the connection between the calibration fitting and the side test port. Finger tighten and ¼ turn.

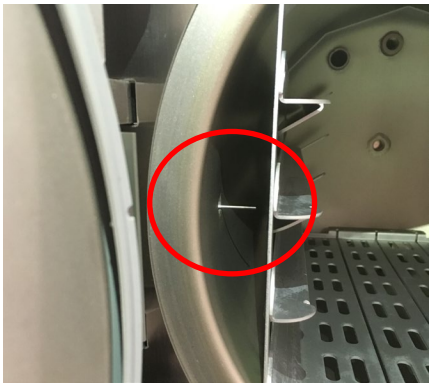
5. Open the door. ***CAUTION! The rack and chamber may be hot if the unit is in standby mode.***
6. Insert the temperature probe through the temperature port (TWINLOK001) on the calibration fitting making sure the tip of the probe is well inside the chamber and not touching the rack.



Option 1 (as provided)



Option 2 (assembly required)

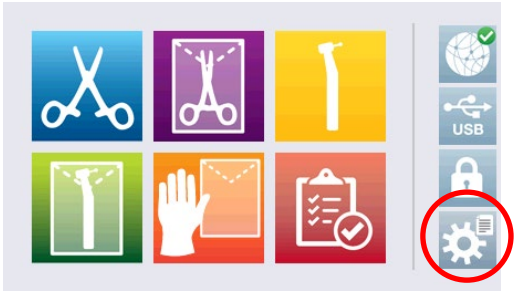


7. Switch on both the temperature and pressure reference meters. Ensure the pressure meter is set to **kPa** and the temperature meter is in **C°**.
8. Close the chamber door.
9. Connect one end of the pressure meter tube to your reference meter.
10. Connect the other end of the pressure meter tube to the pressure port on the calibration fitting.

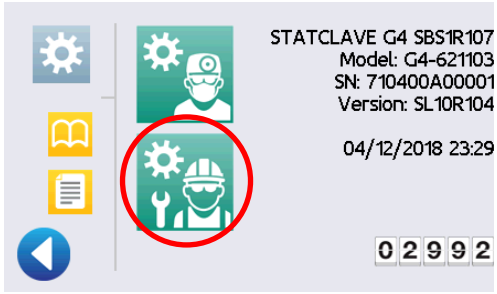
STAGE 2. Starting calibration

11. From the STATCLAVE G4 home screen, access the calibration function by following these steps:

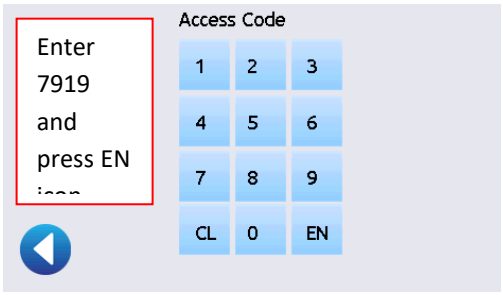
1.



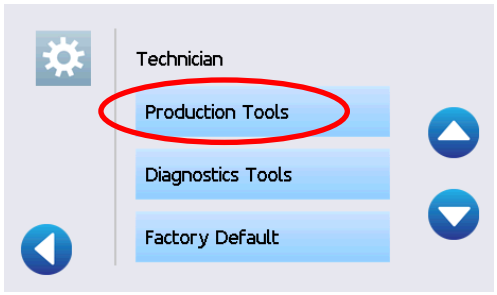
2.



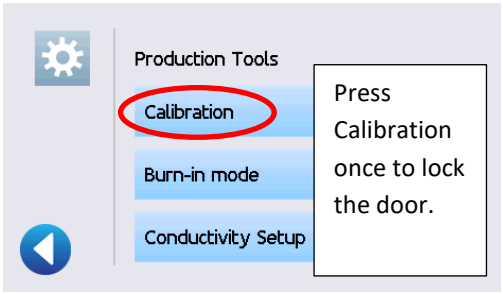
3.



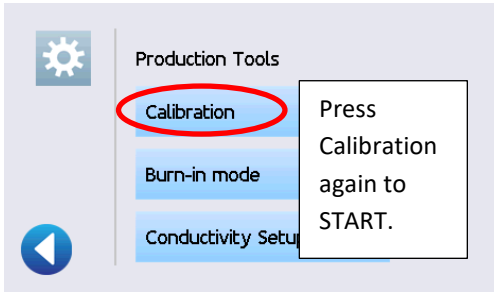
4.



5.

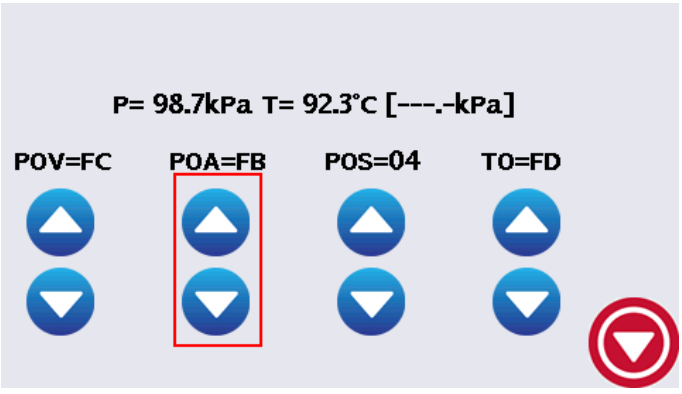


6.



STAGE 3. Adjusting the atmospheric pressure

12. When you press the Calibration button to start the calibration cycle, the following screen will appear.

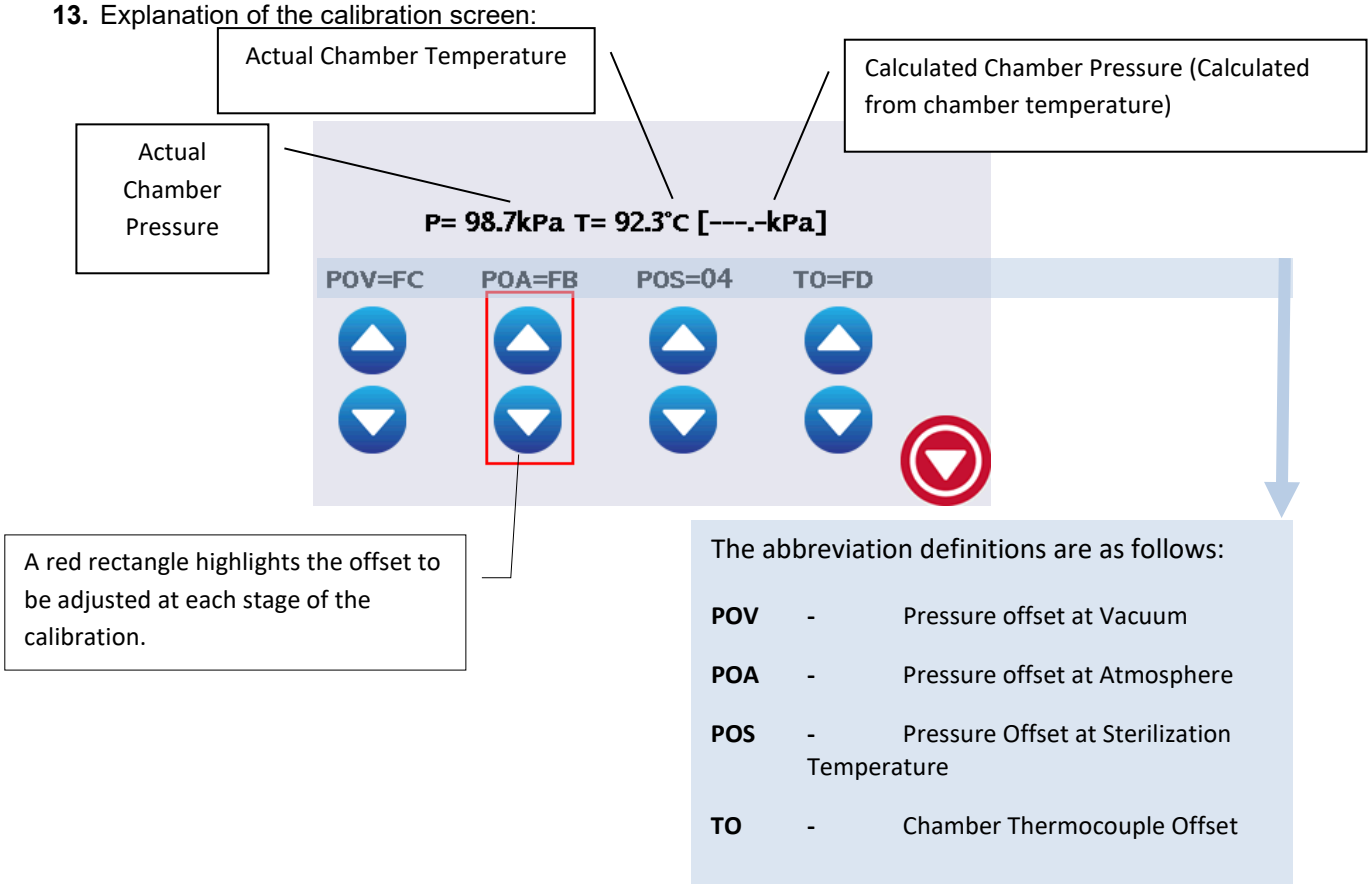


IMPORTANT! When this screen appears, the **POA** field will be highlighted and you will have 30 seconds to complete the **POA** calibration before the cycle continues to the vacuum phase.

To complete the **POA** calibration, compare the pressure reading on the display (**P**) with the pressure reading on the pressure reference meter. (See the following Step for a full explanation of the calibration screen.) Adjust the pressure reading using the up or down arrows on the **POA** offset field.

NOTE: The difference in two readings should be within 0.5Kpa. If the two readings cannot be matched precisely, set pressure reading on unit to one count below the reading on the pressure reference meter.

13. Explanation of the calibration screen:



14. After completing the POA calibration, use the arrows below the **POS** and **TO** values to set them to **00**, if the displayed values are not already 00.

NOTE: Offset adjustment arrows DON'T have to be highlighted to change values.

STAGE 4. Adjusting the pressure at vacuum

15. The cycle then continues to the vacuum phase. The **POV** field on the display will be highlighted.

16. Wait for the vacuum to reach **60 Kpa or less**. Once the vacuum is in this range, compare the reading on unit's display (**P**) with the reading on pressure reference meter. The pressure reading can now be adjusted by using the up or down arrows on the **POV** field**.**

*NOTE: The **POV** offset will be adjusted again at Step 26 of the calibration process when the unit reaches a pressure (vacuum) value in the region of **20kPa (30kPa or less)**.*

17. On completion of the vacuum phase, the unit will go back to atmospheric pressure. Check the readings between the unit's pressure display (**P**) and the pressure reference meter. The two readings should still be within **0.5Kpa**.

STAGE 5. Checking your reference meter values using the steam saturation table

18. The unit will now start to heat up to 120°C for the first time. This is the first pressure pulse. It will be followed by a vacuum pulse and then the pressure and temperature will begin to increase again. ***CAUTION! The Teflon tubing connecting the test port to the pressure reference meter will become hot.***

19. When the reference meter reaches 125°C, you can verify that the steam saturation level is correct by checking the temperature and pressure values on your reference meters against the table below. Check again at 130°C.
To check the values, read the temperature on your reference meter and make sure that the pressure reference meter is reading a value that is within 3 kPa from the corresponding pressure value in the table. For example, at 125°C your corresponding pressure value should be no lower than 229.24 and no higher than 235.24.

Check reference meter values here

Temperature (°C)	Pressure (kPa)
120	198.67
121	205.05
122	211.59
123	218.3
124	225.18
125	232.24
126	239.47
127	246.89
128	254.5
129	262.29
130	270.28
131	278.46
132	286.85
133	295.43
134	304.23
135	313.23
136	322.45
137	331.88
138	341.54
139	351.43
140	361.54

20. If your reference meters DO show that your temperature and pressure values match with the steam saturation table, continue to the next step.

If your values DO NOT match the values, stop the procedure, tighten all the calibration fittings and start a new calibration.

STAGE 6. Adjusting the unit pressure and temperature

21. Wait until the cycle reaches the sterilization phase (temperature above 132°C).

22. First, compare the temperature readings between temperature reference meter and the STATCLAVE G4's temperature display (**T**). Adjust the temperature reading using up or down arrows on the **TO** field to match the two temperatures within 0.1°C.

23. Next compare the pressure readings between the pressure reference meter and the pressure reading (**P**) on the unit's display. Adjust the pressure reading using up or down arrows on the **POS** field. The difference in the two readings should be within **0.5Kpa**. If the two readings cannot be matched precisely, set the pressure reading on the unit to one count below the reading on pressure reference meter.

24. The measured pressure indicated on the display (**P**) should match the calculated pressure on the display (shown as **[XXX.X Kpa]**) within **3Kpa**. If not, verify the temperature and pressure readings once again against the reference meter readings and make the necessary adjustments. The pressure reading on the display (**P**) should be within **1KPa** of the pressure reference meter reading.

STAGE 7. Checking the unit readings with the steam saturation table

25. Once you have set the unit values, verify that the steam saturation level is correct by checking the temperature and pressure values on the unit against the steam saturation table from Step 19.

If the unit values **DO** show that your temperature and pressure values match with the steam saturation table, continue to the next step.

If the unit values **DO NOT** match the table values, stop the procedure, tighten all the calibration fittings and start a new calibration.

STAGE 8. Adjusting the pressure at vacuum again

26. On completion of the sterilization phase, the cycle will go back to the vacuum phase. Wait for the vacuum to reach **20Kpa or less**. At this stage, verify the pressure reading (**P**) on display with the pressure reference meter display. The two readings should be within **0.5Kpa**. Adjust the **POV** offset, if required.

NOTE: The difference in two readings should be within 0.5Kpa. If the two readings cannot be matched precisely, set pressure reading on unit to one count below the reading on the pressure reference meter.

STAGE 9. Finishing calibration

27. The calibration procedure is now complete. You can press STOP to abort the cycle.

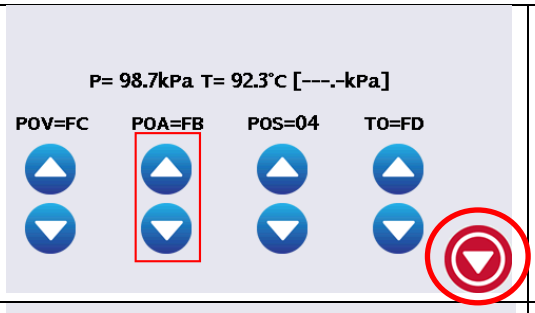
28. The offset values will be automatically saved, but you will still need to back up these values using the Backup NVRAM function. See the following section: How to back up your calibration data.

29. Wait for the unit to equalize its pressure to atmosphere before disconnecting any calibration equipment and fittings.
CAUTION! Do not attempt to remove the equipment if the unit is under pressure or vacuum.

30. After removing the calibration fitting, install a new test plug to close the test port. Open the door and switch off the unit. **Calibration is now complete.**

How to back up the calibration data

To back-up the calibration data (which is saved automatically) for future references using the Backup NVRAM feature, follow these steps:

<table>
<tr>
<td>1.
 
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 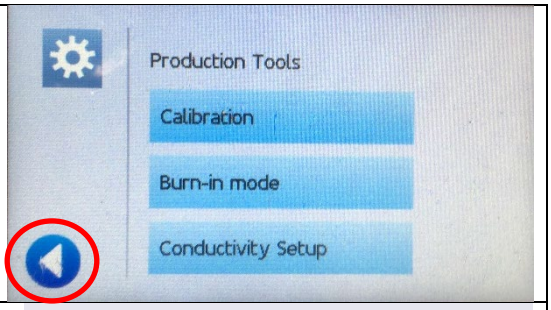
</td>
</tr>
<tr>
<td>3.
 
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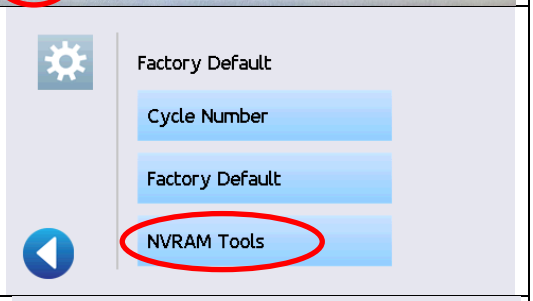
<td>4.
 
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 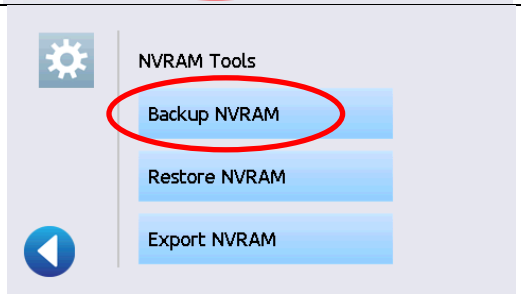
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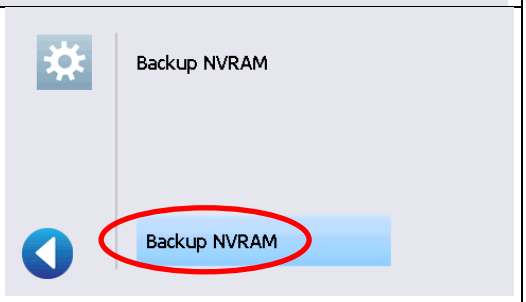
 
</td>
</tr>
<tr>
<td>7. Press  until you return to the main menu.</td>
<td>8. Power the unit OFF.</td>
</tr>
</table>

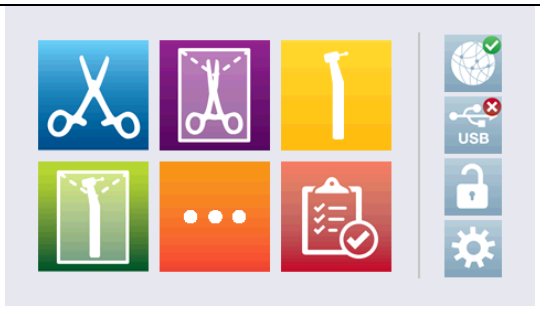
5. DIAGNOSTICS AND TROUBLESHOOTING

Using the device screen

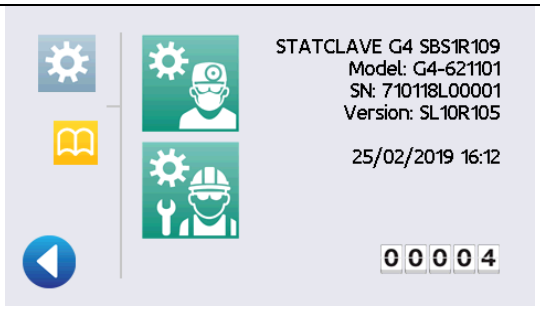
The STATCLAVE G4 has a number of sensors and systems that are constantly reading and generating values. These sensors and systems can be seen on the device screen, a diagnostic tool found in the service menu. The display section of this screen shows you what the current values are for these sensors. The button on the interactive sections provide you with the ability to test components individually or in combination so that you can simulate an operating condition.

To access the device screen, follow these steps:

1.

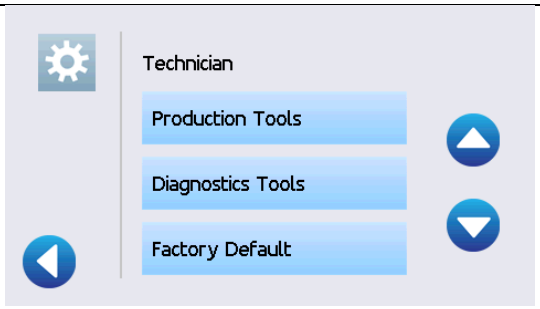


2.



3.

4.



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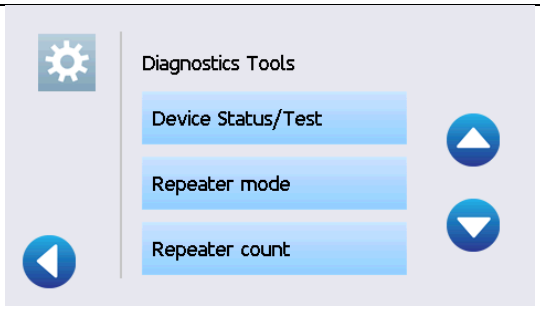

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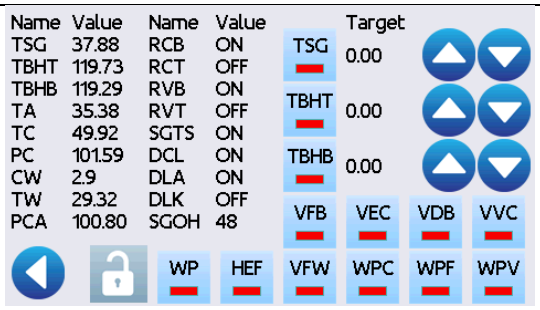


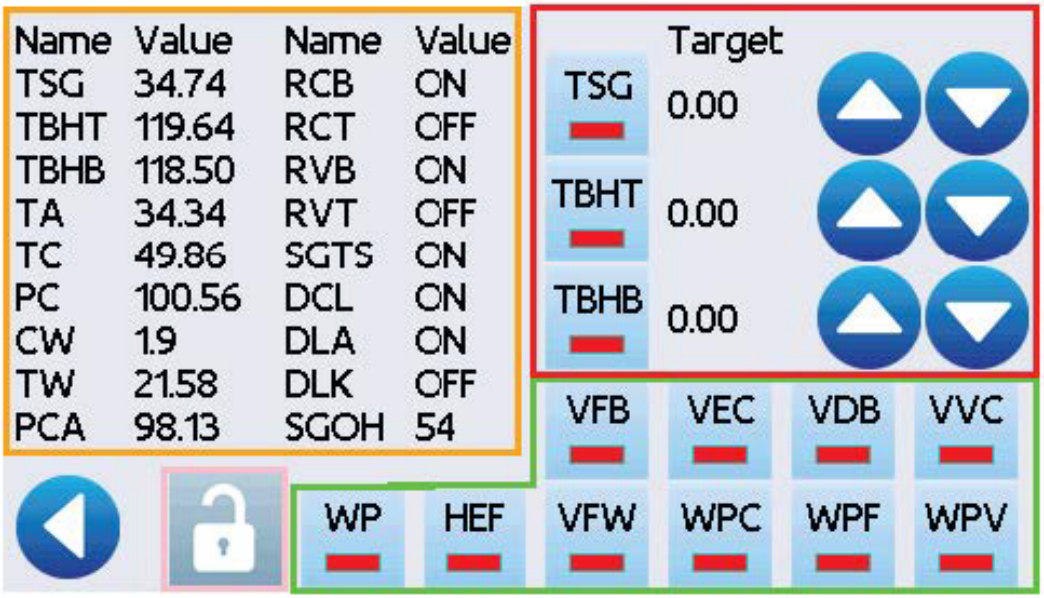
The device screen is divided into four groups (see image below).

Section A is for monitoring all systems. The values displayed here are generated in real time.

Section B is for checking the heating systems. To verify the functioning of either the steam generator (TSG) or the top and bottom band heaters (TBHT and TBHB), you can use the arrows to the right to increase the temperature in that component to a specific target temperature and then watch the corresponding reading in Section A to see if the component successfully reaches the target temperature.

Section C is for checking the individual functioning of valves, pumps and the heat exchanger fan. Press on a button to activate that individual component or press the buttons in a specific sequence to simulate an operating condition.

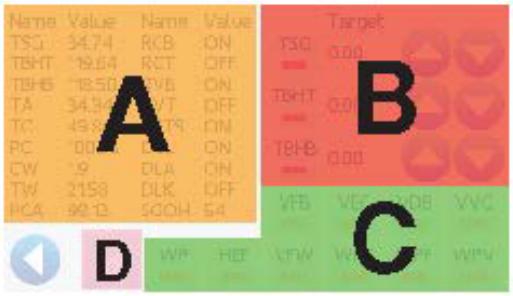
Section D locks and unlocks the door. There are 3 microswitches that control the door functioning. Door closed (DCL), door latched (DLA) and door locked (DLK) are listed in Section A along with their ON/OFF values to show that the microswitches are functioning correctly.



A

Sensor Name		Value
TSG	Temperature Steam Generator	°C
TBHT	Temperature Band Heater Top	°C
TBHB	Temperature Band Heater Bottom	°C
TA	Temperature Ambient (PCB)	°C
TC	Temperature Chamber	°C
PC	Pressure Chamber	kPa abs
CW	Conductivity of Water	µS
TW	Temperature of Water Venturi Reservoir	°C
PCA	Pressure Chamber Atmospheric	kPa

Sensor Name		Value
RCB	Reservoir Clean Bottom	ON - OFF
RCT	Reservoir Clean Top	ON - OFF
RVB	Reservoir Venturi Bottom	ON - OFF
RVT	Reservoir Venturi Top	ON - OFF
SGTS	Steam Generator Thermostat	ON - OFF
DCL	Door Closed (ON=Closed; OFF=Open)	ON - OFF
DLA	Door Latched (ON=Latched; OFF=Unlatched)	ON - OFF
DCL	Door Locked (ON=Locked; OFF=Unlocked)	ON - OFF
SGOH	Steam Generator Overheat counter	Total Times

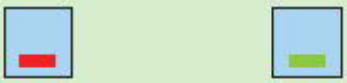


B

Sensor Name		Value
TSG	Temperature Steam Generator^	0 to 150°C
TBHT	Temperature Band Heater Top^	0 to 100°C
TBHB	Temperature Band Heater Bottom^	0 to 100°C

^adjusts in 25°C increments

C



Sensor Name		Sensor Name	
WP	Water Pump	VFB	Valve Fill Boiler
HEF	Heat Exchanger Fan	VEC	Valve Exhaust Chamber
WPC	Water Pump Cooling	VDB	Valve Drain Boiler
WPF	Water Pump Fill	VVC	Valve Vent Chamber
WPV	Water Pump Venturi	VFW	Valve Fill Water

D

WARNINGS AND PRECAUTIONS

If you have questions about the unit you are repairing, please do not hesitate to contact your local SciCan representative for information. Also, the unit is heavy. Exercise caution and seek assistance when lifting or carrying it.

EXERCISE CAUTION

- Hazardous voltages are accessible when the covers and panels are removed.
- Disconnect the power cord before servicing the power mains portion of the controller board and associated devices.
- Removing the covers and panels may expose some sharp metal edges. Be careful and wear long sleeves and gloves.

PERFORM TESTS

- If you service or replace parts associated with the power main, perform a dielectric strength test (Hi-Pot) on the unit. Perform a second Hi-Pot test once the cover has been returned to the unit.
- If components of the protective earthing system are changed or if connections are broken and remade, perform a protective bonding impedance test (ground continuity). Perform both a second Hi-Pot test and a second ground continuity test once the cover or panel has been returned to the unit.
- If any panel is removed, perform a dielectric strength test (Hi-Pot) AND a protective bonding impedance test (ground continuity) on the unit when the work is completed and after the panel has been returned to the unit.

PROTECT THE UNIT

- The unit contains electronic circuitry that is static sensitive. Always wear a static strap when working with or near printed wiring boards. In addition, use static footstraps, grounding mats and grounded work surfaces when servicing microprocessor devices. Transport boards and devices in static protected bags.
- In order to ensure adherence to the applicable safety agency approvals, state, provincial, regional and national laws, replace components with SciCan approved parts only.

Investigating a leak: how to perform a positive pressure test

There are 3 methods to pressurize the system with air to search for leaks in the plumbing system. Method 1 uses the air intake tube, method 2 uses the test port and method 3 uses a solenoid valve.

Method 1: Using the air intake tube

1. Remove the left and right panels. Remove the top screws on the rear panel/condenser and leave it in the open position.
2. On the LCD screen, go to the technician menu. Go to Diagnostic Tools →Device Status/Tests menu. On the device screen, press the VDB valve button to close this valve.
3. Close and latch the door then use the lock icon on the device screen to lock the door.
4. On the right side of the unit, disconnect the silicone tubing from the biological air filter inlet port.
5. Insert the nozzle of a compressed air gun into the silicone tubing and add air to increase the pressure in the chamber.
6. On the device screen you will see sensor readings on left side of the display. The 'Pressure Chamber' (PC) value is the current pressure in the chamber.
7. Raise the Pressure Chamber (PC) value to 270 kPa. IMPORTANT! Do not exceed 380 kPa because this will trigger the pressure relief valve.
8. Turn off the compressed air and disconnect it from the silicone tubing. It may take up to 5 minutes for the air pressure reading to stabilize. If you notice a rapid drop in air pressure then you have a leak, but fluctuations in air pressure are common until it can stabilize.
9. Using a soap and water mixture in a spray bottle, spray the tube and valve connections to look for bubbles.

On the right side, check:

- Solenoid valve VDB
- Solenoid valve VFC
- NOTE: Solenoid valve VFW does not need to be checked because it is part of the filling system.

On the left side, check:

- Solenoid valve VVC
- Venturi check valve
- Vacuum check valve

On the rear, check:

- Solenoid valve VFB
- Pressure relief valve
- Pressure sensor
- Thermocouple fittings
- Steam generator fittings (3)

10. When the leak test is complete, press the VDB button on the device screen to release the air from the chamber.
11. Reconnect the silicone tubing to the biological air filter.
12. Unlock the door using the lock icon on the device screen.

Method 2: Using the test port

For this test, you will need a test port fitting with Teflon tubing to connect your compressed air regulator to the test port.

1. Remove all the panels.
2. Close and latch the door.
3. Remove the test port plug from the side port of the unit and connect the adapter fitting with push-in fitting to that port. Tighten the test port adapter fitting using a ¾" open wrench.
4. From the home screen, go to the technician menu and select the device screen. Select the lock icon to lock the door.
5. From the device screen, select "VDB" to close this normally open valve.
6. Connect your compressed air tubing to the push in fitting on the test port and pressurize the chamber to 270 kPa. You can find the chamber pressure reading on the device screen next to "PC".
7. Apply snoop to all the fittings on the chamber and on the valves to find the leak.
8. When you have found the leak, you may simply need to tighten a connection. If you need to remove a valve or component, you will need to depressurize the chamber. From the device screen, select "VDB" to exhaust the air from the chamber.
9. Once the leak is fixed, repeat the procedure described above to pressurize the system and apply snoop to the repair to check for leaks.
10. When the leak is fixed, from the device screen, select "VDB" to exhaust the air from the chamber.
11. Plug the test port, using a new Teflon washer on the test port plug.
12. Run a vacuum leak test.

Method 3: Using a solenoid valve

For this test, you will need a compressed air regulator with a bleed valve and pressure gauge and a short length of braided hose. You can perform this test from a point on the unit's right side or left side. To work from the left side, detach the braided hose from the T-connection below the VEV valve. To work from the right side, detach the braided hose from the VDB valve. The following instructions are for working from the right side:

1. Remove all the panels.
2. Close and latch the door.
3. From the right side, remove the braided hose from the VDB valve.
4. Attach your short length of braided hose to the VDB valve and use a spring clamp to fasten it.

5. Insert your regulator and pressurize the chamber to 25 psig (270 kPa gauge). NOTE: the door will automatically lock when the unit senses the chamber pressure rising.
6. When the pressure in the chamber has reached its target, close the regulator valve and turn the unit OFF.
7. Apply snoop to all the fittings on the chamber and on the valves to find the leak.
8. When you have found the leak, you may simply need to tighten a connection. If you need to remove a valve or component, you will need to depressurize the chamber. Use the bleed valve on the regulator to depressurize the chamber.
9. Once the leak is fixed, repeat the procedure described above to pressurize the system and apply snoop to the repair to check for leaks.
10. When the leak is fixed, use the bleed valve on the regulator to depressurize the chamber.
11. Remove the regulator and braided hose from the VDB valve and re-connect the unit's braided hose to the VDB valve.
12. Run a vacuum leak test.

Step-by-step troubleshooting by symptom

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
No power	Power cord or main power issue	Check that the unit is plugged into a properly grounded outlet and that the power cord is firmly seated at the rear of the machine. Try another outlet. Power unit OFF for 10 seconds and then power ON again. Check the condition of the line circuit breaker or fuse.
There is water under the machine.	Spill over from refilling External water tank feed issue	Check that water was not spilled when refilling the reservoir. Check that the tube coming from the external tank (if fitted) is completely pushed onto the connector. Run a Vacuum Test. If water drips from the underside of the unit during the test, call your SciCan dealer.
Cycle interrupted — NOT STERILE, Cycle aborted — NOT STERILE and CYCLE FAULT messages.	The STOP button was pressed while the unit was in operation. A power outrage or power fluctuation occurred while the unit was in operation.	Wait a few minutes and attempt another cycle before proceeding to the next solution. NOTE: STATCLAVE G4 units connected to the Internet and registered with SciCan will automatically send Cycle Fault messages to SciCan's international service center.
Excessive steam issuing from the front of the machine.	Door seal issue	Open and close the door then attempt another cycle. Check the door seal for misalignment or damage. Replace the door seal if required. If the leak persists, turn the unit **OFF**, remove the load and contact your SciCan dealer.

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
The printer does not work.	Connection or power connection failure.	Make sure that the printer cable is connected securely with the connector on the back of the STATCLAVE G4. Make sure that the printer is powered ON. Power OFF the STATCLAVE G4 for 10 seconds and then power it ON again.
Time and date are incorrect.	Unit was shipped to a new time zone	The time and date are set on the date of manufacture but have not been adjusted for a new time zone. See Section X. Setting up your STATCLAVE G4, for time and date instructions.
Touchscreen is blank/white	Power interruption	Power was interrupted during a firmware upgrade. Power off the unit and power it on again. It can take up to 6 minutes before the main menu screen appears.
Touchscreen is blank/ dark	Power connection failure	Check power source.
USB storage device does not contain the last print out	USB device failure	Re-insert the USB storage device and wait for the data to copy over again. If problem persists, back up all the information you have on the USB device and reformat it. NOTE: You can always access all of your unit's cycle information through the unit's web portal.

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Touchscreen shows: [Internet X]	Unit is not connected to Internet.	An X over the connectivity icon means the unit is not connected to a network. If it is supposed to be connected to a network and the X is visible, it is because the unit is unable to acquire an IP address. To resolve the issue, try some of the following: • Check that the router is functioning properly • Check the LAN cable (try a new cable if possible) • Make sure your router assigns IP addresses automatically. • Renew the IP address by following these steps: 1. Scroll through the setup menu to NETWORK SETUP and select. 2. Select RENEW IP
Unit is not sending emails	Internet connection failure	Check email settings by using the TEST button on the unit's web portal. From the SETUP web page, select the TOOLS tab. Click on TEST to check your router, unit, and Internet connections. If all settings appear to be OK. Go to the unit's touchscreen and renew the IP address by following these steps: 1. Scroll through the setup menu to NETWORK SETUP and select. 2. Select RENEW IP

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Not receiving emails from the unit	Privacy settings on unit have not been accepted. Spam filter is blocking emails	Check your spam filter. Be certain the unit has been identified as an accepted email source. Ensure that you have accepted the SciCan Privacy policy by putting a check mark in the box on the CONTACTS page of your web portal.
Door will not open – no power	Power failure	Press [LOCK ICON] to go to the door lock status screen and press [UNLOCK ICON]. This screen will show if the chamber is under pressure or vacuum and whether it can be opened.
Door will not open - power	Lock status still engaged	Press [LOCK ICON] to go to the door lock status screen and press [UNLOCK ICON]. This screen will show if the chamber is under pressure or vacuum and whether it can be opened.
Water remains in the chamber at the end of a cycle	Chamber filters are obstructed.	Inspect the four chamber filters and clean or replace them as needed. See Section 9.10 Cleaning the Chamber Filter.
	Obstruction in the drain circuit or drain tube.	Check that the drain tubes (and the connectors they are pushed onto) are not obstructed and run freely from the device to the tank.

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
	The air intake on the frame and/or the cover is obstructed, or the heat exchanger is not sufficiently ventilated.	Remove all possible obstructions from the air intake and heat exchanger. Check that the device is not in direct contact with walls or surfaces (see Section 2 Location and Installation).
Vacuum test has failed	The unit chamber was hot when the test was initiated.	Ensure stand-by chamber warming system is turned OFF. (See Section 7.4 Setting the Stand-by Mode). Attempt a second Vacuum Test making sure the chamber is cooled to room temperature.
Water is pooling under the unit	There is a leak in the system.	Contact your SciCan dealer.
Bowie-Dick test has failed		Attempt a second Bowie-Dick test. If it fails, contact your SciCan dealer.
No cycles are stored in the unit's memory	Logic board configuration issue	Check unit serial number to see if it was accurately updated after a logic board service. If number consists of zeros, call SciCan.

Troubleshooting loading errors and operator complaints

COMPLAINT	POSSIBLE CAUSE	POSSIBLE SOLUTION
Machine will not start, and touchscreen shows: [H2OX]	Clean water reservoir issue either water level is too low or water used is of inadequate quality.	Press on the icon to confirm whether it is a water level problem or a water quality problem.
		If water level is too low: Refill the reservoir. Refer to the steps described in section 3.4 Filling the Reservoir.
		If the water quality is inadequate: You have likely used water that is not steam-process distilled or is improperly distilled. Empty the reservoir and refill with steam-process water containing less than 5 ppm total dissolved solids (having conductivity of less than 10 µS / cm). If you have a water conductivity meter, check the quality of the water before refilling the reservoir. To empty the reservoir, see section XX Shipping the unit.

COMPLAINT	POSSIBLE CAUSE	POSSIBLE SOLUTION
Instruments do not dry.	Improper loading Wrong cycle selection for this particular load Chamber draining issues	NOTE: For optimal drying, allow the cycle to continue to completion. Make sure the instruments are loaded correctly in the chamber. Refer to section XX Preparing Instruments. Chamber filters are blocked. See 9.10 Cleaning the Chamber Filters.
Unit's total cycle time is too long	Unit is starting with a cold chamber	From a cold start, the unit's total cycle time can take as much as 10 additional minutes. Reduce the warm-up time between cycles or set the unit to warm-up at a specific time in the morning. See sections 3.13 Setting Preheating and 3.14 Setting Stand-by Time.
Instruments are blackening or there is damage to materials.	Sterilization temperature is too high for the materials	The sterilization program selected is not appropriate for the materials/instruments being sterilized. Check materials/instruments manufacturer's recommendations. Also see Section 6. Sterilization Programs.
Instruments show traces of oxidation or spotting	Low quality instruments	Instruments made of inferior materials can be prone to discoloration. Check the quality of the instruments that are spotting. Verify that they can tolerate steam sterilization.

COMPLAINT	POSSIBLE CAUSE	POSSIBLE SOLUTION
	Inadequate water quality.	Drain the clean water reservoir and refill it with high-quality distilled water.
	Organic or inorganic residues on the instruments.	Instruments must be free of debris prior to sterilization. Clean and rinse all instruments before loading them into the sterilizer. Disinfectant residues and solid debris may inhibit sterilization and damage the instruments and the STATCLAVE G4. Lubricated instruments must be wiped thoroughly, and any excess lubricant should be removed before loading.
	Contact between instruments made of different metals.	Separate instruments made of different metals. See Section 4.3 Unwrapped Instruments for instructions on arranging instruments made of different materials.
	Lime residue on the wall of the sterilization chamber and/or accessories.	Clean the device and its parts, as required. (See Appendix C “Maintenance”).
Water in the chamber	Cycle interrupted during warm-up phase.	Remove load. Remove rack. Use clean cloth or paper towel to mop up excess water. Insert rack and load and start a new cycle.
Unit is using too much water	Unit is overloaded	See Section 4. Loading Instruments for details on capacity.

COMPLAINT	POSSIBLE CAUSE	POSSIBLE SOLUTION
Door will not close	Item obstruction	Check for instrument or a cassette that is keeping the door from closing correctly. Check the door seal to make sure it is properly seated. To re-seat the door seal, see Section 9.13 Replacing the Door Seal.
Door will not close - No obstructions	Chamber pressure balance issue.	Leave the door open for 1 minute and try again.
Handle in closed position but door not showing 'locked'	The door will lock once a cycle is selected.	Press a cycle button to initiate the door lock microswitch.
Touchscreen remains on WARMING UP CHAMBER screen	Band heaters were not on. From a cold start, the unit can take approximately 15 minutes to warm up. The chamber needs to be above 50°C and the band heaters need to be at 120°C or more.	Go to SETTINGS and select STANDBY. Change unit Stand-by setting to HIGH.

Cycle Fault List

CF #	Description	Possible causes	Phase of the cycle
CF 4	Chamber failed to achieve sterilization conditions	Chamber door seal leak Boiler heater element Water Pump Valve Exhaust Chamber Valve Vent Chamber	VACUUM PULSE
			PRESSURE PULSE (132/134°C cycle)
			PRESSURE PULSE (121°C cycle)
			PRESSURIZING
CF 10	Chamber temperature failed to drop in the allotted time	Water Pump Venturi Valve Exhaust Chamber Check for kinked hoses Check for clogged chamber filters	PRESSURE PURGE VACUUM
		Check for kinked hoses Valve Exhaust Chamber Valve Drain Boiler Water Pump Venturi	VENTING
CF 12	Faulty Chamber Thermocouple	Check Chamber Thermocouple	
CF 13	Faulty Boiler Thermocouple	Check Boiler Thermocouple	
CF 15	Chamber temperature is too high for this phase	Blocked exhaust / valve Miscalibration	
CF 16	Boiler is too hot	Boiler heater element stuck ON Controller board failure Water pump	
CF17	Pressure failed to rise 5kPa during the initial phase of the vacuum draw with steam	Possible leaks due to tubing connections, stuck valves and/or door seal Boiler heater element Bad/Disconnected Bad pressure sensor	VACUUM PULSE
CF 23	Top band heater failed to heat up	Bad/disconnected top band heater IO board failure	WARMUP
CF 24	Bottom band heater failed to heat up	Bad/disconnected bottom band heater IO board failure	WARMUP
CF 25	Steam generator failed to heat up	Boiler heater element Bad/Disconnected Controller board failure	WARMUP

CF #	Description	Possible causes	Phase of the cycle
CF 28	Chamber pressure went above threshold	Pressure measurement failure. Check pressure transducer Miscalibration. Blocked exhaust / valve	
CF 30	Actual chamber temperature and calculated chamber temperature do not match	Air leak Blocked exhaust / valve Miscalibration Valve Exhaust Chamber	PRESSURIZING
CF 42	Manual clean water filling failure	Water filling Valve bad/disconnected Blocked tubing Clean Water Level switch stuck OFF	
CF 43	Automatic clean water filling failure	Water filling Valve bad/disconnected Blocked tubing External Water filling pump bad/disconnected IO board failure 24V power supply failure Clean Water Level switch stuck OFF	
CF 44	Venturi water reservoir overflow	Water reservoir exhaust blocked Overflow switch malfunction (stuck ON)	
CF 50	Chamber temperature LESS than 121°C (for 121°C cycles)	Pressure and/or temperature sensor miscalibration. Poor air removal during conditioning (exhaust blockage). Not able to generate steam or a leak in the system.	STERILIZATION
CF 51	Chamber temperature MORE than 124°C (for 121°C cycles)	Pressure and/or temperature sensor miscalibration. Unable to depressurize cassette (blocked exhaust, failed solenoid valve).	STERILIZATION
CF 52	Measured pressure LESS than calculated pressure 208 kPa (for 121°C cycle)	Pressure and/or temperature sensor miscalibration	STERILIZATION
CF 53	Measured pressure MORE than calculated pressure 222 kPa (for 121°C cycle)	Pressure and/or temperature sensor miscalibration. Unable to depressurize cassette (blocked exhaust, failed valve). Poor air removal (partial exhaust blockage).	STERILIZATION

CF #	Description	Possible causes	Phase of the cycle
CF 54	Measured pressure LESS than calculated pressure at 205 kPa (for 121°C cycle)	Pressure and/or temperature sensor miscalibration. Unable to generate steam, or there is a leak in the system.	STERILIZATION
CF 55	Measured pressure MORE than calculated pressure at 225 kPa (for 121°C cycle)	Pressure sensor miscalibration. Unable to depressurize cassette (blocked exhaust, failed valve).	STERILIZATION
CF 60	Chamber temperature LESS than 132°C (for 132°C cycles) 134°C (for 134°C cycles)	Pressure and/or temperature sensor miscalibration. Poor air removal during conditioning (exhaust blockage). Not able to generate steam or a leak in the system.	STERILIZATION
CF 61	Chamber temperature MORE than 135°C (for 132°C cycles) 137°C (for 134°C cycles)	Pressure and/or temperature sensor miscalibration. Unable to depressurize cassette (blocked exhaust, failed solenoid valve).	STERILIZATION
CF 62	Measured pressure LESS than calculated pressure 291 kPa (for 132°C cycle) 309 kPa (for 134°C cycle)	Pressure and/or temperature sensor miscalibration	STERILIZATION
CF 63	Measured pressure MORE than calculated pressure 309 kPa (for 132°C cycle) 327 kPa (for 134°C cycle)	Pressure and/or temperature sensor miscalibration.Unable to depressurize cassette (blocked exhaust, failed valve).Poor air removal (partial exhaust blockage).	STERILIZATION
CF 64	Measured pressure LESS than calculated pressure at 287 kPa (for 132°C cycle) 304 kPa (for 134°C cycle)	Pressure and/or temperature sensor miscalibration. Unable to generate steam, or there is a leak in the system.	STERILIZATION
CF 65	Measured pressure MORE than calculated pressure at 313 kPa (for 132°C cycle) 332 kPa (for 134°C cycle)	Pressure sensor miscalibration. Unable to depressurize cassette (blocked exhaust, failed valve).	STERILIZATION
CF 70	Timer error The time maintained by the internal timer of the processor didn't match the time maintained by the external real-time clock	Damaged controller board Steam leak	STERILIZATION

CF #	Description	Possible causes	Phase of the cycle
CF 73	Vacuum draw timeout Unit failed to reach vacuum target	Possible air leaks due to tubing and/or stuck valves Valve Exhaust Chamber Valve Drain Boiler Water Pump Venturi	VACUUM DRAW before STERI
			VACUUM DRAW before STERI (R&P cycle)
			VACUUM DRAW before STERI
			VACUUM DRAW after STERI
			VACUUM DRAW (Vacuum test cycle)
CF 74	Vacuum hold Unit failed to maintain vacuum and pressure increases above 85kPa	Possible air leaks due to tubing and/or stuck valves Valve Exhaust Chamber Water Pump Venturi	VACUUM HOLD after STERI
CF 75	Vacuum relief phase I Unit fails to relief the vacuum and reach atmospheric pressure less 5kPa	Exhaust blockage Valve Vent Chamber Valve Exhaust Chamber Valve Drain Boiler Water Pump Venturi	VACUUM RELIEF
CF 76	Vacuum relief phase II Unit fails to relief the vacuum and reach atmospheric pressure less 5kPa	Exhaust blockage Valve Vent Chamber Valve Exhaust Chamber Valve Drain Boiler Water Pump Venturi	VACUUM RELIEF
CF 77	Vacuum draw steam timeout Unit fails to reach vacuum target	Possible air leaks due to tubing and/or stuck valves Valve Exhaust Chamber Water Pump Venturi Water Pump Cooling	VACUUM PULSE
CF 79	Venturi reservoir water temperature too high	Heat Exchanger Fan Water Pump Cooling Valve Exhaust Venturi stuck ON	Cycle run
CF 80	Top band heater is too hot	Top band heater element stuck ON Controller board failure	
CF 81	Bottom band heater is too hot	Bottom band heater element stuck ON Controller board failure	
CF 82	Top band heater temperature sensor failure	Top band heater temperature sensor failure Controller board failure	

CF #	Description	Possible causes	Phase of the cycle
CF 83	Bottom band heater temperature sensor failure	Bottom band heater temperature sensor failure Controller board failure	
CF 84	Venturi water reservoir temperature sensor failure	Venturi water reservoir temperature sensor failure Controller board failure	
CF 90	Corrupted/not initialized chamber thermocouple calibration	Corrupted/not initialized chamber thermocouple calibration	
CF 91	Corrupted/not initialized pressure calibration	Corrupted/not initialized pressure calibration	
CF 92	Controller board temperature high	Air filter clogged, poor air ventilation	
CF 95	Communication Lost	Harness cable between the User interface board and controller board damaged or disconnected	
CF 98	Communication with the ADC failed	Controller board damaged	

6. REMOVING AND REPLACING PANELS

WARNINGS AND PRECAUTIONS

If you have questions about the unit you are repairing, please do not hesitate to contact your local SciCan representative for information. Also, the unit is heavy. Exercise caution and seek assistance when lifting or carrying it.

EXERCISE CAUTION

- Hazardous voltages are accessible when the covers and panels are removed.
- Disconnect the power cord before servicing the power mains portion of the controller board and associated devices.
- Removing the covers and panels may expose some sharp metal edges. Be careful and wear long sleeves and gloves.

PERFORM TESTS

- If you service or replace parts associated with the power main, perform a dielectric strength test (Hi-Pot) on the unit. Perform a second Hi-Pot test once the cover has been returned to the unit.
- If components of the protective earthing system are changed or if connections are broken and remade, perform a protective bonding impedance test (ground continuity). Perform both a second Hi-Pot test and a second ground continuity test once the cover or panel has been returned to the unit.
- If any panel is removed, perform a dielectric strength test (Hi-Pot) AND a protective bonding impedance test (ground continuity) on the unit when the work is completed and after the panel has been returned to the unit.

PROTECT THE UNIT

- The unit contains electronic circuitry that is static sensitive. Always wear a static strap when working with or near printed wiring boards. In addition, use static footstraps, grounding mats and grounded work surfaces when servicing microprocessor devices. Transport boards and devices in static protected bags.
- In order to ensure adherence to the applicable safety agency approvals, state, provincial, regional and national laws, replace components with SciCan approved parts only.

6.1 Removing and reinstalling the left panel

1. Remove the 2 screws.
2. Slide the panel to the rear to disengage the tabs at the top and bottom of the panel.

Figure 6.1-1

6.2 Removing and reinstalling the right panel

1. Remove the 2 screws.
2. Slide the panel to the rear to disengage the tabs at the top and bottom of the panel.

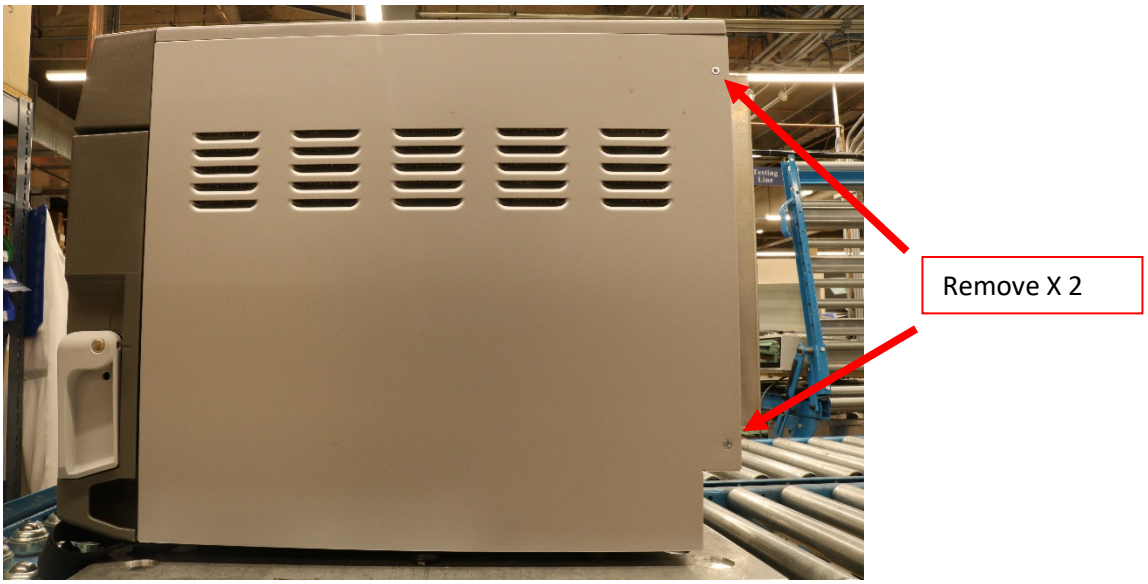


Figure 6.2-1

6.3 Removing and reinstalling the back panel

1. Use the condenser service port to completely drain the condenser.
2. Loosen the 2 screws in keyhole slots.
3. Remove the 4 other screws.
4. Lift the panel and use the steel cable to hang it in the service position.
5. Disconnect the three tubes.

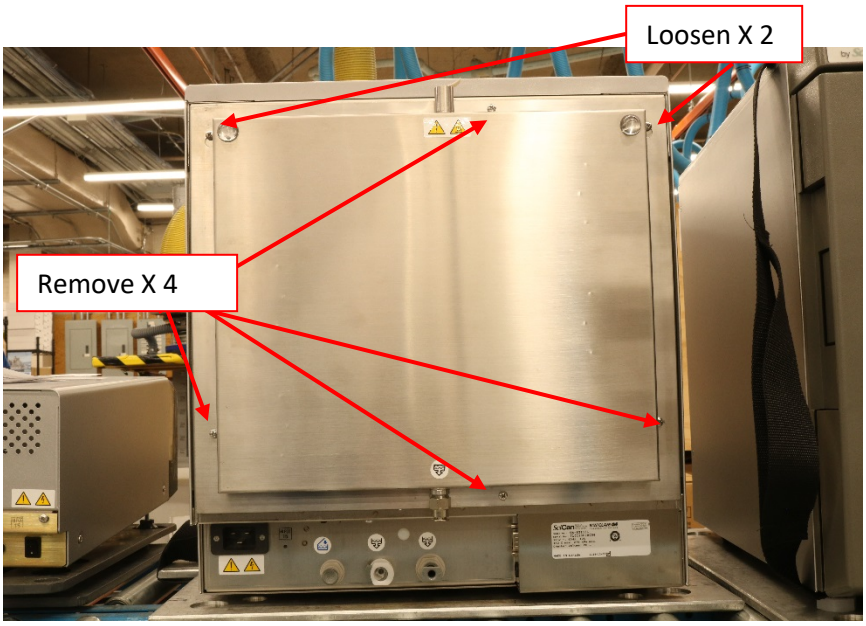


Figure 6.3-1

7. FRONT AND DOOR COMPONENTS

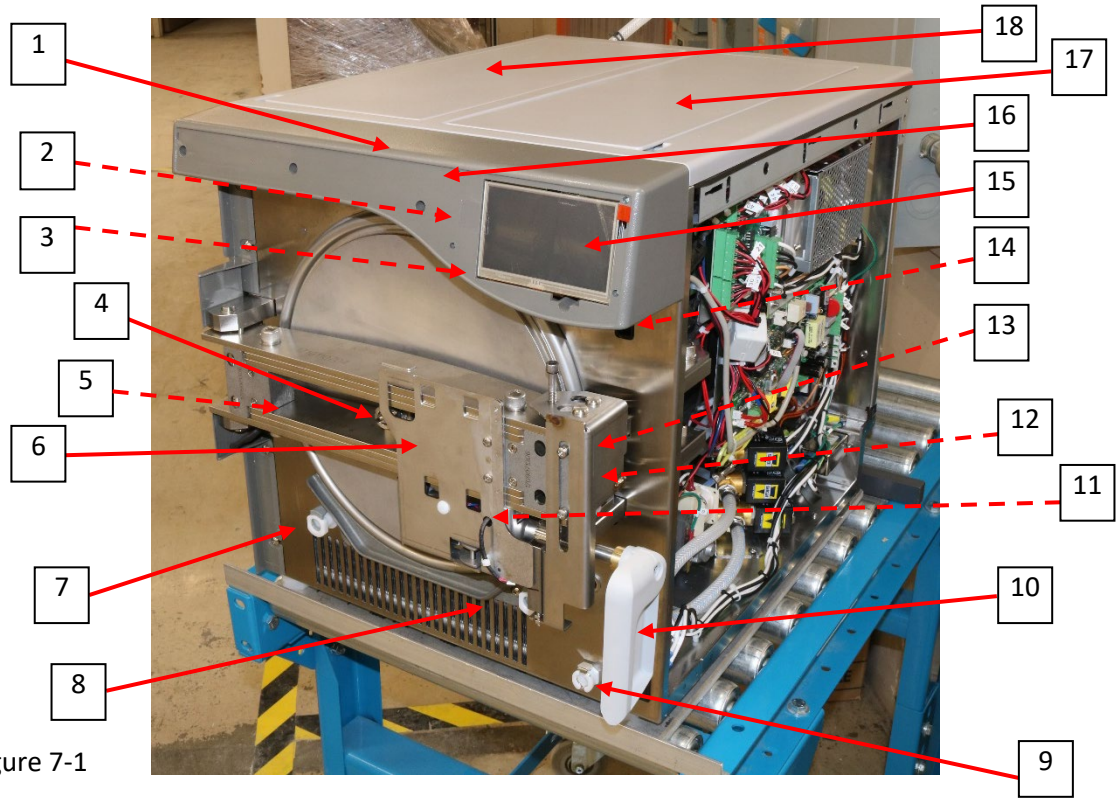


Figure 7-1

ITEM	PART #	PART NAME	INVENTORY DESCRIPTION
1	01-115437S	LCD Fascia	Fascia-Decal Kit
2	01-114711S	WiFi antenna (not visible)	WIFI Adaptor Kit
3	01-113682S	Speaker (not visible)	Speaker Assembly
4	N/A	Chamber door adjustment screw (factory set)	N/A
5	N/A	Chamber door adjustment locking screw	N/A
6	01-115452S	Door lock mechanism assembly	Door Locking Mechanism
7	01-115431S	Venturi water front drain outlet	Coupling Barb 3/8 Valved
8	01-115431S	Clean water front drain outlet	Coupling Barb 3/8 Valved
9	01-115432S	Clean water front fill inlet	Coupling Barb 1/4 Valved

ITEM	PART #	PART NAME	INVENTORY DESCRIPTION
10	01-115425S	Door handle	Door Handle
11	01-115453S	Door locking solenoid (not visible)	Solenoid Latching
12	01-115546S	Door locked microswitch (not visible)	Door Latching Microswitch
13	01-115545S	Door closed microswitch (not visible)	Microswitch W/Roller
14	01-115408S	USB port (not visible)	Cable, Extension USB
15	01-115438S	LCD touchscreen	Fascia LCD Kit
16	01-115436S	STATCLAVE fascia decal (not shown)	Decal
17	01-115444S	Clean water reservoir lid	Lid Kit, Reservoir
18	01-115444S	Venturi water reservoir lid	Lid Kit, Reservoir

8.RIGHT SIDE COMPONENTS

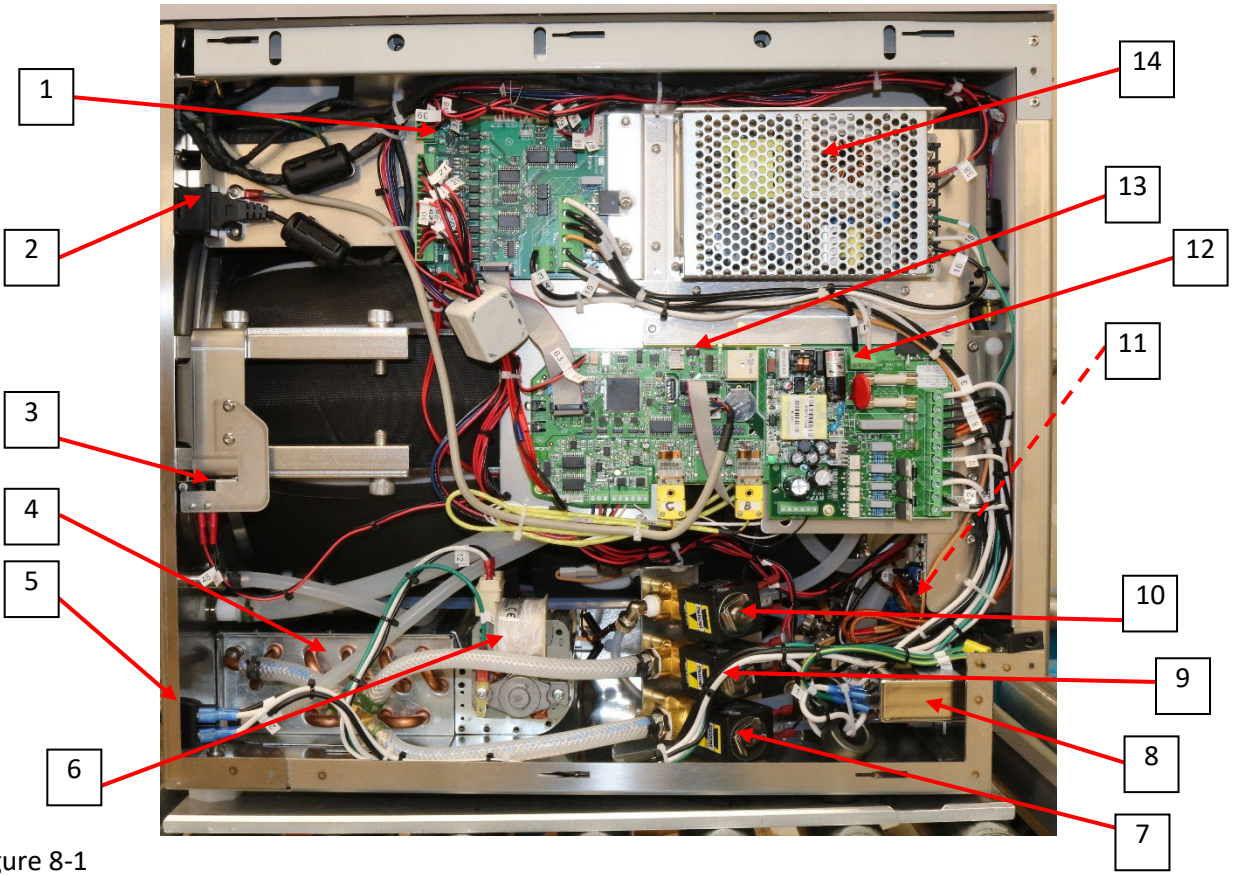


Figure 8-1

ITEM	PART #	PART NAME	INVENTORY DESCRIPTION
1	01-115413S	I/O board	IO PCB, STATCLAVE
2	01-115408S	USB port	Cable, Extension USB, STATCLAVE
3	01-115546S	Door latch microswitch	Door Latching Microswitch
4	01-115403S	Heat exchanger	Heat Exchanger
5	01-112024S	Power switch	Rocker Switch Spare Kit

ITEM	PART #	PART NAME	INVENTORY DESCRIPTION
6	01-115404S	Blower	Air Blower 120V
6	01-115405S	Blower	Air Blower 230V
7	01-115468S	Solenoid valve VDB – drain steam generator	Valve Drain Boiler Kit, STATCLAVE
8	01-110505S	EMI filter	EMI Filter 20A/250V
9	01-115467S	Solenoid valve VEC – exhaust chamber	Valve Exhaust Chamber Kit
10	01-115470S	Solenoid valve VFW – clean water fill	Valve Fill Water Kit
11	01-115417S	Band heater relay switch (not visible)	Relay Kit 120V
11	01-115418S	Band heater relay switch (not visible)	Relay Kit 230V, STATCLAVE
12	01-103472S	Fuse 15A 250V (Pkg of 2)	Fuses 15 A (2 Pcs)
13	01-115414S	Controller board	Control PCB 120V, STATCLAVE
13	01-115415S	Controller board	Control PCB 230V, STATCLAVE
14	01-113266S	Power supply	Power Supply 24V

9. LEFT SIDE COMPONENTS

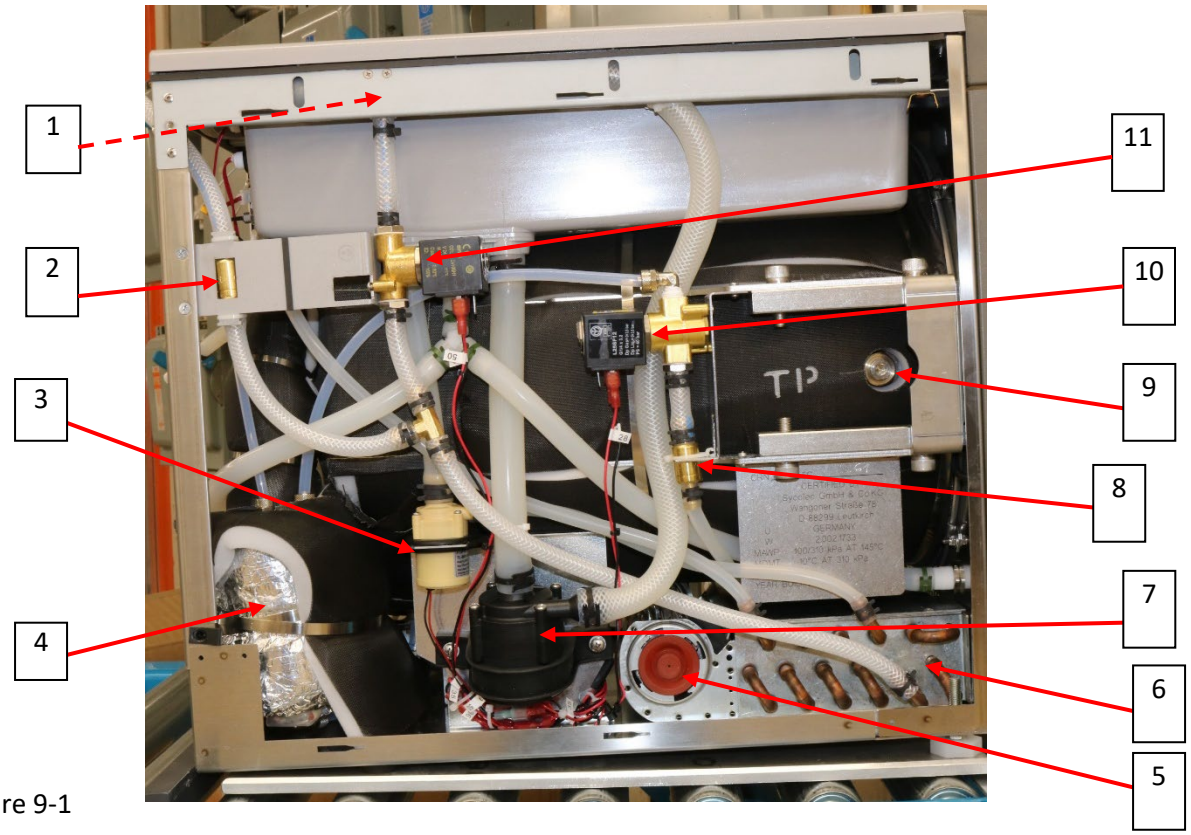
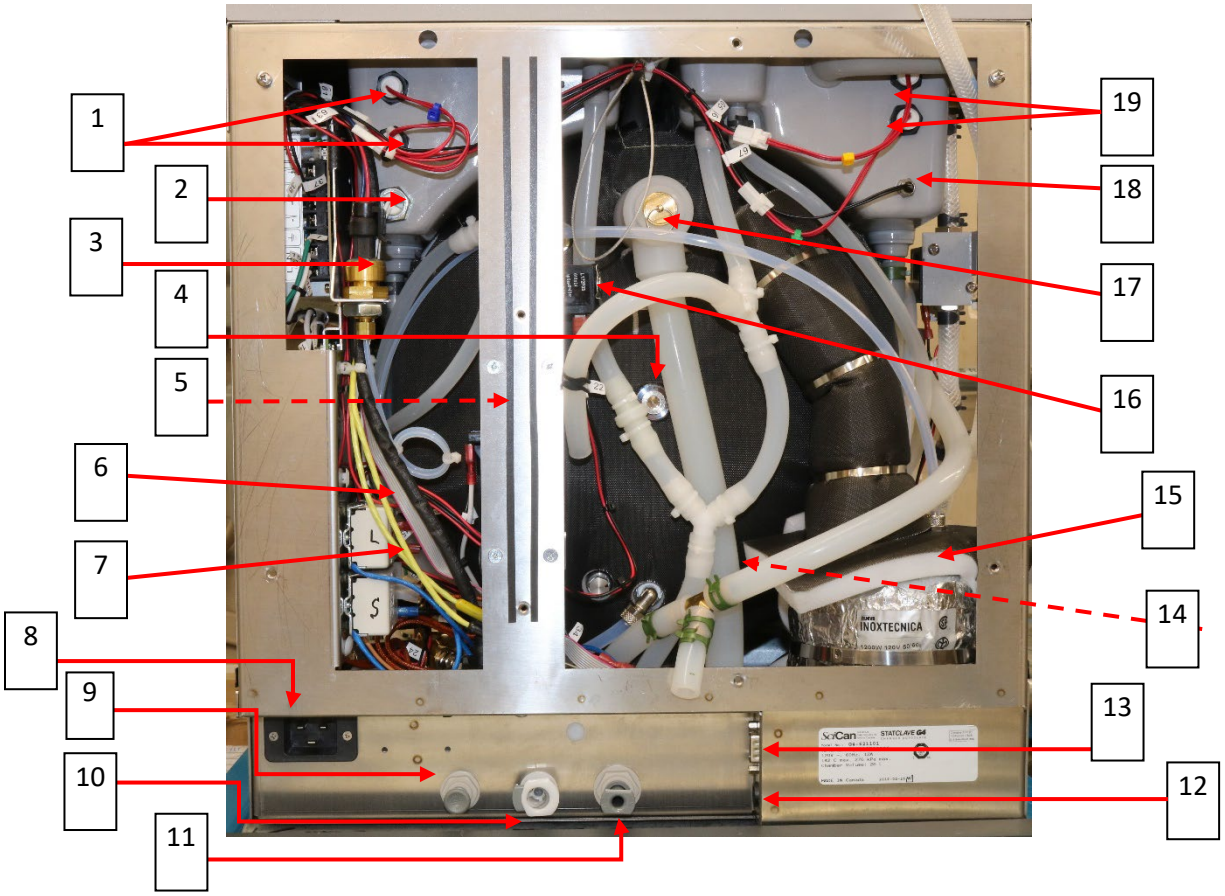


Figure 9-1

ITEM	PART #	PART NAME	INVENTORY DESCRIPTION
1	01-115399S	Venturi device (not visible)	Venturi Water Jet Kit, STATCLAVE
2	01-115392S	Condenser check valve	Check Valve, Barb, AF, No Spg
3	01-115401S	Water cooling pump	Water Cooling Pump Comp, STATCLAVE
4	01-115393S	Steam generator	Steam Generator, 120V, STATCLAVE
4	01-115394S	Steam generator	Steam Generator, 230V, STATCLAVE
5	01-115404S	Blower	Air Blower 120V
5	01-115405S	Blower	Air Blower 230V
6	01-115403S	Heat exchanger	Heat Exchanger

ITEM	PART #	PART NAME	INVENTORY DESCRIPTION
7	01-115400S	Venturi pump	Venturi Water Pump Comp, STATCLAVE
8	01-115392S	Vacuum check valve	Check Valve, Barb, Af, No Spg
9	01-115385S	Test port	Fitting, Sprint Plug Flush, G1/4
10	01-115469S	Solenoid valve VVC – vacuum relief	Valve Vent Chamber Kit, STATCLAVE
11	01-115471S	Solenoid valve VEV – Venturi	Valve Exhaust Venturi Kit. STATCLAVE

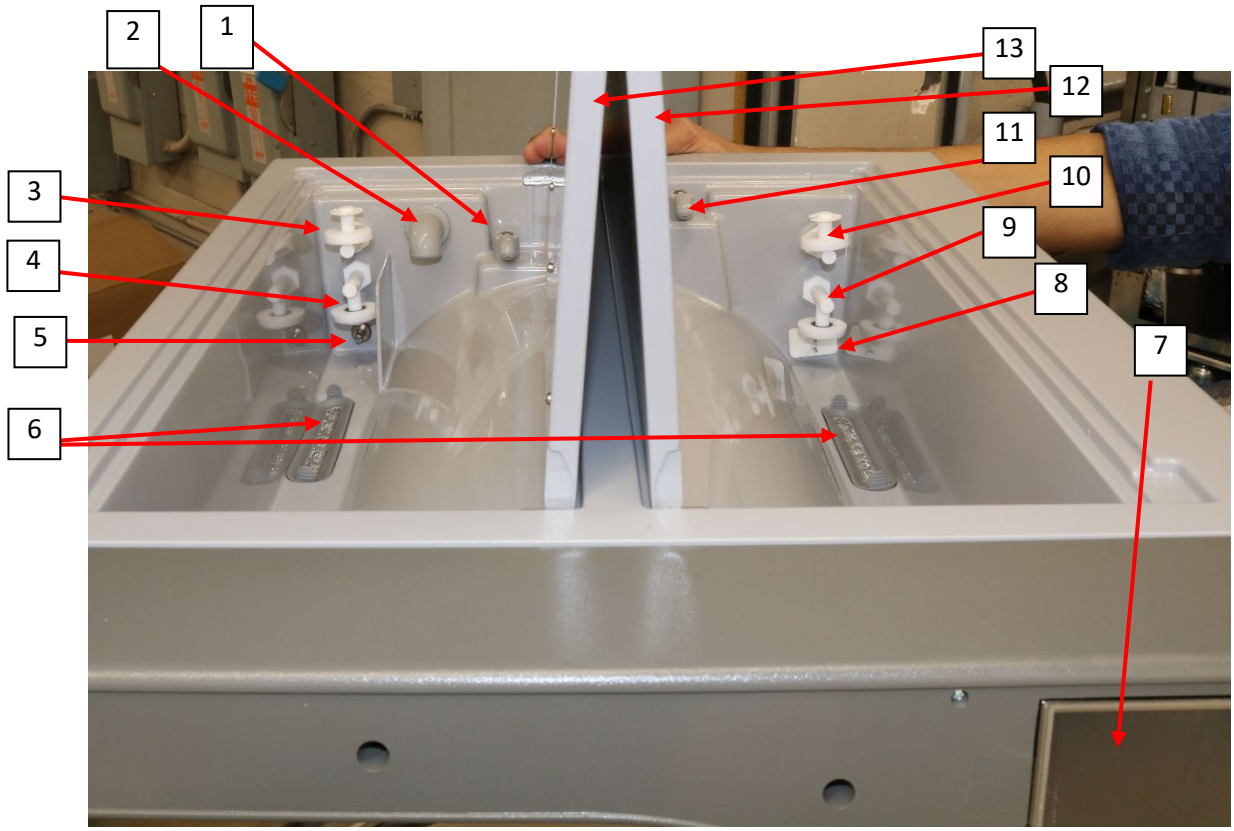
10. REAR COMPONENTS



ITEM	PART #	PART NAME	INVENTORY DESCRIPTION
1	01-115448S	Clean water reservoir float switches (full and empty)	Float Sensor, Reservoir, STATCLAVE
2	01-115449S	Clean water reservoir conductivity sensor	Sensor Conductivity, STATCLAVE
3	01-108567S	Pressure transducer	Pressure Transducer 68 PSI
4	01-115385S	Test port	Fitting, Sprint Plug Flush, G1/4
5	01-115397S	Steam generator water pump (not visible)	Ulka Pump, 120V, STATCLAVE
5	01-115398S	Steam generator water pump (not visible)	Ulka Pump, 220V, STATCLAVE
6	N/A	Steam generator switch – level (part of SG kit)	Steam Generator Switch – Safety (Part of SG Kit)

ITEM	PART #	PART NAME	INVENTORY DESCRIPTION
7	N/A	Steam generator switch – safety (part of SG kit)	Steam Generator Switch – Level (Part of SG Kit)
8	01-110505S	EMI filter	EMI FILTER 20A/250V
9	01-115434S	External fill port	Bulkhead Connector, 1/4", STATCLAVE
10	01-115431S	Condenser water compartment drain	Coupling barb, 3/8” Valved
11	01-115433S	Clean water overflow drain outlet	Bulkhead Connector, 3/8", STATCLAVE
12	01-115409S	24V DC power (for auxiliary fill pump)	Cable, DC Power Jack, STATCLAVE
13	01-115411S	RS232 port (for external printer)	Cable, RS232 Kit, STATCLAVE
14	01-115455S	Chamber thermocouple	Thermocouple Chamber, STATCLAVE
15	See Left side	Steam generator	Steam Generator
16	01-115466S	Solenoid valve VFB – fill (Boiler) steam generator	Valve Fill Boiler Kit, STATCLAVE
17	01-115454S	Pressure relief valve	Pressure Relief Valve, STATCLAVE
18	01-115451S	Venturi water reservoir thermistor	Water Temperature Sensor, STATCLAVE
19	01-115448S	Venturi water reservoir float switches (high and low)	Float Sensor, Reservoir, STATCLAVE
Not shown	01-115464S	Condenser and back panel	Condenser
Not shown	01-115391S	Exhaust drain for condenser	Fitting, Thread 1/4, Tube 3/8"

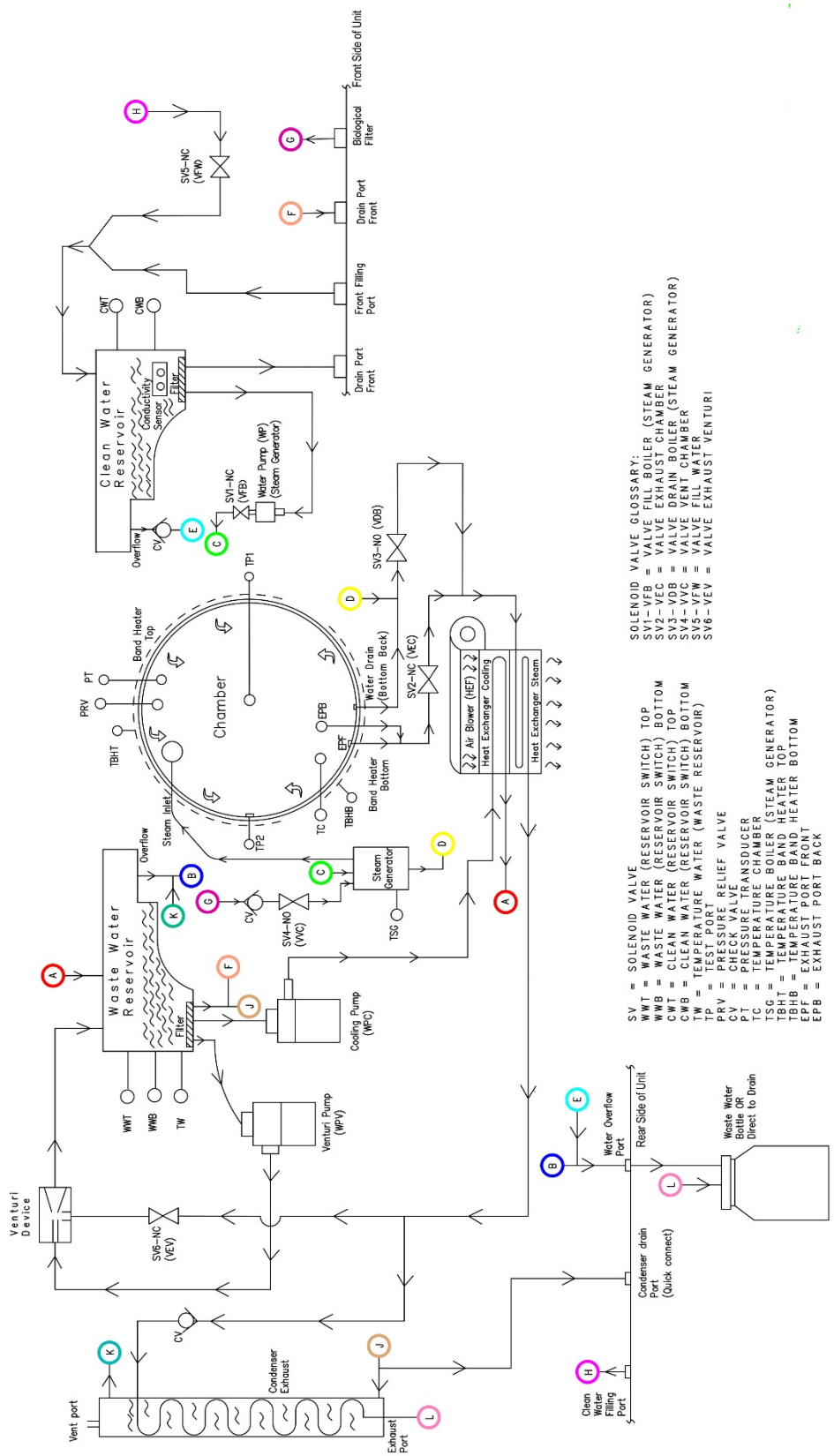
11. TOP COMPONENTS



ITEM	PART #	PART NAME	INVENTORY DESCRIPTION
1	01-115447S	Reservoir cooling spout	Rubber Spout Kit, STATCLAVE
2	01-115446S	Venturi recirculation spout	Venturi Silicone Tube, STATCLAVE
3	01-115448S	Venturi water reservoir float switch, high	Float Sensor, Reservoir, STATCLAVE
4	01-115448S	Venturi water reservoir float switch, low	Float Sensor, Reservoir, STATCLAVE
5	01-115451S	Venturi water reservoir thermistor	Water Temperature Sensor, STATCLAVE

ITEM	PART #	PART NAME	INVENTORY DESCRIPTION
6	01-115480S	Reservoir filters	Reservoir Filter (1 Pcs), STATCLAVE
7	01-115438S	LCD fascia assembly	Fascia LCD Kit, STATCLAVE
8	01-115449S	Clean water reservoir conductivity sensor	Sensor Conductivity, STATCLAVE
9	01-115448S	Clean water reservoir float switch, empty	Float Sensor, Reservoir, STATCLAVE
10	01-115448S	Clean water reservoir float switch, full	Float Sensor, Reservoir, STATCLAVE
11	01-115447S	Clean water fill spout	Rubber Spout Kit, STATCLAVE
12	01-115444S	Clean water reservoir lid	Lid Kit, Reservoir, STATCLAVE
13	01-115444S	Venturi water reservoir lid	Lid Kit, Reservoir, STATCLAVE

APPENDIX A: STATCLAVE G4 plumbing diagram



APPENDIX B: STATCLAVE G4 electrical schematic