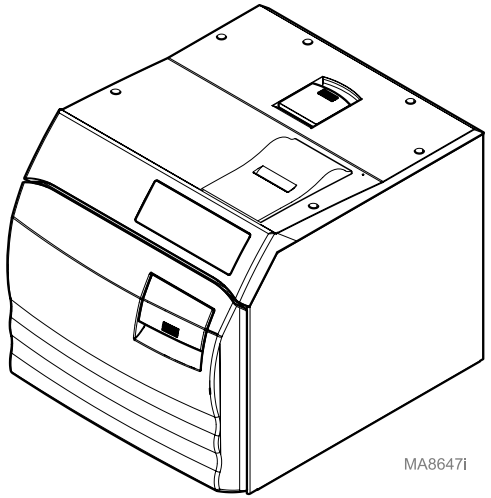
Troubleshooting / Testing / Repair Guide:
M9 / M11 (-020 thru -022) (-033 / -034)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WARNING
Some procedures require power to be connected with covers removed. Line voltage is present. Use extreme caution to prevent electric shock.

Equipment Alert
Always perform Service Diagnostics before replacing any major components.

TP210 Rev. A

004-1032-00 Rev. AA4 7/15/19)

Error Code Explanation

If an electronic malfunction is detected during a cycle, a numeric error code will appear on the display panel.
Each digit in the error code provides information about the problem that occurred.

Example:

First Digit = Where

The first digit indicates the component or system where the problem occurred.
*(example: **3** = Door Switch)*

Second Digit = What

The second digit indicates what problem or symptom was detected.
*(example: **8** = Open)*

Third Digit = When

The third digit indicates when the problem was detected.
*(example: **2** = Fill Mode)*

Trouble Shooting Chart

C010: (System Power Loss)
C060: (System Hardware)
C100 Series: (Stop Key)
C230 Series: (Water Low)
C320 Series: (Door Closed)
C380 Series: (Door Open)
C530 Series: (Steam Temp. Low)
C540 Series: (Steam Temp. High)
C560 Series: (Steam Temp. Hardware)
C570 Series: (Steam Temp. Over limit)
C630 Series: (Pressure Low)
C640 Series: (Pressure High)
C660 Series: (Pressure Hardware)
C670 Series: (Pressure Over limit)
C980 Series: (Hi-Limit Open)

The table below cross-references the numeric error code with the Component, Problem, and Mode.

First Digit *(Component)*	**Second Digit** *(Problem)*	**Third Digit** *(Mode)*
0 = General System	0 (not used)	0 = Power-Up Mode
1 = Stop Button	1 = Power Loss	1 = Select Cycle
2 = Water Level Sensor	2 = Closed	2 = Fill Mode
3 = Door Switch	3 = Low	3 = Heat-Up Mode
4 (not used)	4 = High	4 = Sterilizing Mode
5 = Temperature Sensor	5 (not used)	5 = Vent
6 = Pressure Sensor	6 = Hardware	6 = Door To Open
7 (not used)	7 = Over Limit	7 = Dry
8 (not used)	8 = Open	8 (not used)
9 = High Limit Thermostat	9 (not used)	9 (not used)

Troubleshooting Chart

Problem	Display / Symptom	Cause	Check	Action
Biological / Chemical indicator designates instruments not sterile	Positive biological / chemical indicator. No color change, or incomplete change has occurred on chemical indicator strip.	Error Message present during cycle.	Check if cycle was interrupted.	Ensure cycle was completed.
		Sterilizer overloaded.	Check the size of the load. (Refer to loading guidelines in the User Guide)	Reduce load size following proper loading guidelines.
		Not following instructions for use of the Biological Indicator.	Ready IFUS for the specific indicator.	Retest following the instructions of the Biological Indicator.
		Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		Biological / Chemical indicators not dry when removed from sterilizer.	Check with operator about how load is being processed.	Advise operator to allow adequate dry time.
		Biological Indicator isn't compatible w/cycle being tested.	Check Biological Indicator labeling or manufacturer's IFU to verify Biological Indicator is compatible w/ dynamic air removal sterilizers and the time & temp. are suitable for the cycle being tested.	Only use Biological Indicators labeled for use w/dynamic air removal sterilizers and the cycle parameters being tested.
		Biological Indicator being used is expired.	Check expiration date on Biological Indicator label or packaging.	Don't use Biological Indicators beyond their expiration date.
		Sterilization cycle was aborted prior to the start of the dry cycle.	Did sterilizer display "items not sterile".	Retest allowing the sterilizer to complete the cycle before removing the Biological Indicator from the chamber.
		Using trays not designed for M9/M11. (resulting in improper air flow)	Check trays being used.	Explain to user that only M9/M11 trays or approved cassette / cassette racks can be used.
		Indicators being stored in a damp and/or hot environment.	Check conditions of storage area.	Inform operator to follow manufacturer's instructions for storage before and after process.
		Indicators came into contact with water in the sterilizer.	Check with operator about how indicator is positioned.	Refer to: User Guide for proper operating procedures.
Display is working. Touch pad not working	When touch pad button(s) are pressed, the display does not respond correctly.	Moisture damage to touch pad.	Listen for audible beep from each key.	Replace touch pad.
		Touch pad harness disconnected / loose.	Check touchpad harness connection.	Clean touch pad harness connections.
				Secure touch pad harness connections.
		Touch pad malfunctioning.	Perform Key test in service diagnostic. Refer to: *Test Selection Screen*	Replace touch pad.
Display is blank. Touch pad not working Sterilizer has power	Touch pad / display panel not working.	Ribbon harness from Main PC board to display panel is disconnected.	Check ribbon harness connections.	Secure ribbon harness connections.
		Ribbon harness from Main PC board to display panel has open lead(s).	Check continuity of ribbon harness.	Replace ribbon harness.
		Display panel is malfunctioning.	Perform: *Display Panel Supply Voltage Test* (Check pins 1&2 on J13 for 4-6 VDC)	Replace Display PC board.

TP210 Rev. A

004-1032-00 [Revised: 8/15/17]

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Display shows all blocks	Display shows all blocks.	Contrast out of adjustment.	Check contrast adjustment.	Perform LCD Contrast adjustment.
		Ribbon harness from touch pad to display panel (J2) is disconnected or damaged.	Check ribbon harness connections.	Secure ribbon harness connections.
			Check continuity of ribbon harness.	Replace ribbon harness.
			Build up or corrosion on Display PC connection pins & harness.	Clean Display PC connection pins.
				Replace Display PC board.
Display malfunctioning Touch pad is working	Display panel shows undefined characters and emits intermittent beeps.	Contrast out of adjustment.	Check contrast adjustment.	Perform LCD Contrast adjustment.
		Ribbon harness from touch pad to display panel (J2) is disconnected or damaged.	Check ribbon harness connections.	Secure ribbon harness connections.
			Check continuity of ribbon harness.	Replace ribbon harness.
			Build up or corrosion on Display PC connection pins & harness.	Clean Display PC connection pins.
				Replace Display PC board.
Door not closing	Door not closing.	Door spring missing / damaged.	If the door motor releases the latch, but the door remains closed, Inspect door spring for damage.	Replace door springs.
			Verify if door is at the vented position. (Push in on door with out lifting handle)	
			Verify the QTY of door springs. (M11- QTY 2, M9-QTY 1)	
			Verify door springs are at a 45 degree angle.	Place door spring at a 45 degree angle.
		Door / Dam gasket(s).	Inspect door / dam gaskets for proper installation and any signs of sticking.	Install door / dam gaskets properly.
			If new gasket, check if wire ring in gasket is preventing gasket from fully being seated.	Temporarily remove wire ring. Re-install wire ring after gasket is fully seated.
		Trays not pushed in properly.	Be sure trays slide in properly.	Remove obstructions that prevent the trays from sliding in completely.
		Door pins / latch binding.	With door open, door handle should move Up / Down freely.	Clean door pins / latch mechanism. (Clean with Synthetic Dry Protectant - Aerosol / Spray on)
			Inspect latch mechanism for wear / damage.	Replace worn / damaged components.
		Door motor system / latch "hanging up".	Remove the door cover and RH side panel. With the door closed, run the 'Door Open Test'. Watch for any mechanical issues that may prevent the door from opening. Refer to: *Service Diagnostics (I/O Test)*	Replace worn / damaged components.
			Verify Door Motor is angled as close to PC board as possible.	Adjust door motor angle.
			Remove the door cover and RH side panel. With the door closed, run the 'Door Open Test'. Watch for any mechanical issues that may prevent the door from opening. Refer to: *Service Diagnostics (I/O Test)*	Replace door motor.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Door not closing - continued	Door not closing.	Door hinge binding.	Check for binding or build up of debris in the door hinges.	Clean debris from hinges.
		Residual pressure in chamber.	Check for chamber pressure when door motor is energized.	Clear any restriction that could prevent chamber pressure from reaching the pressure transducer on PC board.
			Check the load size. (Refer to User Guide) Verify that nothing is touching or crowding the temperature sensor.	Reduce load size.
			If pressure is above 0.72 psi (5 kPa), check for blockage in the pressure sensor tubing between the PC board and the chamber.	Clear blockage / replace pressure transducer tubing.
			Check if chamber filter is clogged.	Clean / Replace filter. (Clean with Speed-Clean and brush)
Door not open to full vent.	Door not open to full vent.	Door spring missing / damaged.	If the door motor releases the latch, but the door remains closed, Inspect door spring for damage.	Replace door springs
			Verify if door is at the vented position. (Push in on door with out lifting handle)	
			Verify the QTY of door springs. (M11- QTY 2, M9-QTY 1)	
			Verify door springs are at a 45 degree angle.	Place door spring at a 45 degree angle.
		Trays not pushed in properly	Be sure trays slide in properly	Remove obstructions that prevent the trays from sliding in completely
		Door pins / latch binding.	With door open, door handle should move Up / Down freely	Clean door pins / latch mechanism. (Clean with Synthetic Dry Protectant - Aerosol/ Spray on)
			Inspect latch mechanism for wear / damage	Replace worn / damaged components.
		Door motor system / latch "hanging up".	Remove the door cover and RH side panel. With the door closed, run the 'Door Open Test'. Watch for any mechanical issues that may prevent the door from opening. Refer to: Service Diagnostics (I/O Test	Replace worn / damaged components.
			Verify Door Motor is angled as close to PC board as possible.	Adjust door motor angle
		Door motor defective	Remove the door cover and RH side panel. With the door closed, run the 'Door Open Test'. Watch for any mechanical issues that may prevent the door from opening. Refer to: Service Diagnostics (I/O Test)	Replace door motor.
		Door hinge binding.	Check for binding or build up of debris in the door hinges.	Clean debris from hinges

TP210 Rev. A

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
GFI Tripping	GFI Tripping.	GFI is tripped.	Check if GFI is tripped.	Reset GFI.
		Weak / Faulty GFI outlet.	Check if sterilizer works on different GFI outlet.	Contact an electrician to replace GFI outlet.
		Voltage leak through sterilizer components.	In service diagnostic, check all electrical components and wire connections for deterioration.	Secure / Clean / Replace compromised component.
		Heating element gasket leaking	Check for corrosion from moisture leak at heating element terminals or thermostat connections	Replace heating element gaskets
				Replace damaged wire and or connection
		Heating element malfunctioning.	With both heater wires (J3 & J4)disconnected from the PC board, measure the resistance between the wire to chassis ground.	Replace heating element.
Heats Continually/Heating Element is glowing in select a cycle.	Heats Continually/Heating Element is glowing in select a cycle.	PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
		Loose / Damaged wire connections.	Check for crossed or shorted wire connections at overheat thermostats.	Replace wire harness.
High Pressure	High Pressure.	High Pressure during cycle.	Check where in cycle error occurred.	Explain Display message.
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temp Sensor Resistance Test. Allow sensor to cool to room temperature. *Temperature Sensor Resistance Test.*	Replace Temperature Senser.
		Door spring missing / damaged.	If the door motor releases the latch, but the door remains closed, Inspect door spring for damage.	Replace door springs.
			Verify if door is at the vented position. (Push in on door with out lifting handle)	
			Verify the QTY of door springs. (M11- QTY 2, M9-QTY 1)	
			Verify door springs are at a 45 degree angle.	Place door spring at a 45 degree angle.
		Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.

Troubleshooting Chart *- continued*

Problem	Display / Symptom	Cause	Check	Action
High Temperature	High Temperature.	Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		High Limit Thermostats open.	Verify if unit still overheated.	Unplug unit for 60 seconds, then plug unit into a dedicated, properly rated circuit. Allow unit to cool for 30 minutes.
		Office running back to back cycles.	Check if operator is running consecutive cycles without completing the DRY cycle.	Complete full cycle.
		If the unit skips the Fill mode...		
		Tray rack / tray plate not installed properly.	Inspect tray rack / tray plate for proper installation. (The 45 degree angled end of tray plate must be positioned upward and to the back of the chamber)	Install tray rack / tray plate properly.
		(M11) Mesh filter not in place.	Verify filter is in place.	Re-Install filter.
		Water Level sensor malfunctioning / dirty.	Inspect water level sensor. (Check for residual moisture)	Clean / Dry water level sensor. (Clean with Speed-Clean and scotch bright pad)
			Verify if filling or skipping fill. ("FILLING CHAMBER" will display on display for 30-60 seconds)	
			Perform: *Water Level Sensor Testing*	Replace water level sensor.
		If the unit completes the Fill mode…		
		Sterilizer is not level. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Instruments not drying properly	Instruments / packs / pouches are wet after Dry mode is complete.	NOTE: After sterilization is complete, all items must be handled in accordance with accepted and documented standards, such as the Centers for Disease Control and Prevention (CDC) documents, "Guidelines for Infection Control in Dental Healthcare Settings" Please refer to the CDC guidelines.		
		Sterilizer overloaded.	Check the size of the load. (Refer to User Guide)	Reduce load size.
		Door spring missing / damaged.	If the door motor releases the latch, but the door remains closed, Inspect door spring for damage.	Replace door springs.
			Verify if door is at the vented position. (Push in on door with out lifting handle)	
			Verify the QTY of door springs. (M11- QTY 2, M9-QTY 1)	
			Verify door springs are at a 45 degree angle.	Place door spring at a 45 degree angle.
		Door hinge binding.	Check for binding or build up of debris in the door hinges.	Clean debris from hinges.
		Sterilizer is not level. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Position / orientation of pouch.	Check with operator about how pouches are being loaded.	The preferred method is to position the pouches on edge using the pouch rack accessory. If this is not available, position the pouches with the paper side down.
		Customer decreased dry time.	Verify the dry time.	Adjust dry time. (factory preset is 30 minutes.)
		Chamber filter clogged.	Check if chamber filter is clogged.	Clean / Replace filter. (Clean with Speed-Clean and brush)
		Facility voltage too high / low.	Test facility supply voltage. Voltage must be... 115V models: 104 - 127 VAC 50/60 Hz 230V models: 207 - 253 VAC 50/60 Hz	Contact an electrician to modify voltage.
		Blockage or malfunction in VistaCool System if used.	Check for debris or blockage in the tubing / fittings to the VistaCool System.	Clean / Replace as required.
			Check operation of In-Iine Thermal Sensor.	Replace Thermal Regulator Wax Motor or Thermal Sensor.
		c1017 PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
		Door is opened past the vented position.	Check if door is being opened past the vented position.	Do not open door prior to end of dry cycle.
		Excessive wrapping of insturments.	Check if the insturments are wrapped in multiple layers or heavy cloth.	Refer to: Guidelines for loading in the User Guide.

004-1032-00 [Revised: 8/15/17]

Interactive Mode	SW1 Switch Settings.	SW1 switch #6 is in the "on" position.	Check position of switch #6. Refer to: *SW1 Switch Settings*	Turn off SW1 switch #6.
		Message will not reset.	Move switch #6 on/off. Unplug unit for 60 seconds, then plug unit into a dedicated, properly rated circuit.	Replace Main PC board.
Low Pressure	Low Pressure.	Low Pressure during cycle.	Check where in cycle error occurred.	Explain Display message.
		Door / Dam gasket(s).	Inspect door / dam gaskets for proper installation and any signs of sticking.	Install door / dam gaskets properly.
			If new gasket, check if wire ring in gasket is preventing gasket from fully being seated.	Temporarily remove wire ring. Re-install wire ring after gasket is fully seated.
		Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
Low Temperature	Low Temperature.	Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.

Troubleshooting Chart - *continued*

Problem	Display / Symptom	Cause	Check	Action
Low Water	WATER LOW	Reservoir water level is low.	Check water level in reservoir.	Add distilled water to the reservoir until water reaches appropriate level. Press STOP button, then initiate a new cycle.
		Chamber filter clogged.	Check if chamber filter is clogged.	Clean / Replace filter. (Clean with Speed-Clean and brush)
		Water Level sensor malfunctioning / dirty.	Inspect water level sensor.	Clean / Dry water level sensor. (Clean with Speed-Clean and scotch bright pad)
			Loose / damaged wire connections. (Check wire connections and all grounded locations)	Secure / Repair loose or damaged connections.
			Perform: *Water Level Sensor Test*	Replace water level sensor.
		Air valve malfunctioning / dirty.	With door open and door switch engaged, initiate fill cycle to verify if filling. If yes- air valve malfunctioning / dirty. Perform: *Air Valve Test* If no- Refer to: Fill Valve malfunctioning / dirty.	Clean / Replace air valve.
		Fill valve malfunctioning / dirty.	Inspect fill valve / related tubing for restrictions.	Clean / Replace fill valve.
			Inspect two wires connecting the fill valve and PC board (W3 / W4 on PC board) for damage and/or loose connections.	Secure / Repair loose or damaged connections.
			With the sterilizer in the Fill Mode & door switch engaged… Perform: *Fill Valve Continuity Test*	Clean / Replace fill valve.
		PC Board malfunctioning.	Verify voltage to Fill Valve. Perform: *Fill Valve Supply Voltage Test*	Replace Main PC board.
		Chamber is dirty or corroded.	Inspect the bottom of the chamber.	Clean bottom of the chamber with Speed-Clean and distilled water or water that meets the referenced water purity specifications in User Guide.
		Blockage or malfunction in VistaCool System if used.	Check for debris or blockage in the tubing / fittings to the VistaCool System.	Clean / Replace as required.
			Check operation of In-Iine Thermal Sensor.	Replace Thermal Regulator Wax Motor or Thermal Sensor.
Maintenance message is displayed - Monthly	PERFORM MONTHLY MAINTENANCE	Sterilizer software detects it has been 28 days since initial start up, or last monthly maintenance.	Refer to User Guide for monthly maintenance procedures.	Perform monthly maintenance procedures. (Note: Initiating a new cycle will clear the maintenance message)
Maintenance message is displayed - Weekly	PERFORM WEEKLY MAINTENANCE	Sterilizer software detects it has been 7, 14, or 21 days since initial start up, or last monthly maintenance.	Refer to User Guide for weekly maintenance procedures.	Perform weekly maintenance procedures. (Note: Initiating a new cycle will clear the maintenance message)
No Audible Tones Sterlizer functions	No Audible Tones. Sterlizer functions.	PC board not seeing one of the ribbon cables.	Check connection of ribbon cables at all points.	Disconnect and reconnect ribbon cables in each location several times.
		PC Board Malfunctioning.	Check if tones do not return.	Replace Main PC board.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
No power	Touch pad / display panel not working.	No power to sterilizer.	Check power cord connection.	Secure power cord connections. (At wall outlet & sterilizer receptacle)
		GFI is tripped.	Check if GFI is tripped.	Reset GFI.
		No voltage from outlet.	Verify voltage from outlet.	Contact an electrician to modify voltage.
		Fuse blown.	Faulty fuses (F1 / F2) on main PC board.	Replace fuses.
		Fuse holder compromised.	Verify fuse holder is not compromised.	Replace Main PC board.
		Faulty PC board.	PC Board Test	Replace PC board.
		Power cord/receptacle damaged.	Inspect condition of power cord/ receptacle.	Replace power cord/ receptacle.
		Loose/damaged wire connections.	Check condition or wires.	Secure/replace wires.
Noise / unusual sound	Noise / unusual sound.	Door / Dam gasket(s).	Press on door to see if noise / sound goes away.	Clean / Replace gaskets.
		Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		Vent valve.	Inspect vent valve. (Clean valve, stretch spring)	Clean / Replace vent valve.
		Air valve	Check for sticking or debris in air valve.	Clean/replace air valve.
		Fan malfunctioning.	Check fan operation.	Replace fan.
		Side panel touching PC board transformer.	Check clearance between side panel and PC board.	Adjust side panel/PC board bracket.
		Ribbon cable loose or damaged.	If unit is beeping/clicking with no display. (or display cuts out)	Secure/replace ribbon harness.
Offensive Odor	Offensive Odor.	Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		End user using rust inhibitor. (surgical milk)	Check if draining reservoir daily.	Drain reservoir daily.
Plastic ring fell in reservoir	Plastic ring fell in reservoir.	End user filling reservoir with distilled water.	None.	Have service technician remove from reservoir next office visit.

Troubleshooting Chart - *continued*

Problem	Display / Symptom	Cause	Check	Action
Pouches / Packs Hot	Pouches / packs appear discolored after cycle is complete.	Excessive dry time.	Check the dry time for the cycle parameter.	Adjust dry time. (factory preset is 30 minutes.)
		Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		Sterilizer overloaded.	Check the size of the load. (Refer to User Guide)	Reduce load size.
		Sterilizer is not level. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Door hinge binding.	Check for binding or build up of debris in the door hinges.	Clean debris from hinges.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	

TP210 Rev. A

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Pouches / Packs Hot - continued	Pouches / packs appear discolored after cycle is complete.	Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Replacement fill / vent valve solenoid requires rectifier harness for DC coil.	Install rectifier harness.
			Check for voltage flow through rectifier harness. Refer to: *Fill / Vent Valve Supply Voltage Test*	Replace rectifier harness.
			Leaking or defective vent valve. (Check for water leaking from condensing coil spout) Perform: *Vent Valve Test*	Clean / Replace vent valve.
			Leaking or defective fill valve. Check for water leaking back into reservoir thru the fill line. (Look for bubbles coming from bottom of reservoir) Perform: *Fill Valve Test*	Clean / Replace fill valve.
			Leaking or defective air valve. Check for excessive steam coming thru condensing coil spout. NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.	Clean / Replace air valve.
			Leaking or defective pressure relief valve. Check for water / steam leakage from beneath the rear of the sterilizer. Perform: *Pressure Relief Valve Test*	Replace pressure relief valve.
			Pressure transducer tubing leaking. Check for steam leakage at pressure transducer tubing connections.	Secure pressure transducer tubing connections with high temperature cable ties.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.
		Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating Element should be free of any flaking / pitting. Perform: *Heating Element Resistance Test* (should read 9-11 Ω)	Replace heating element.
		Facility voltage too high / low.	Test facility supply voltage. Voltage must be... 115V models: 104 - 127 VAC 50/60 Hz 230V models: 207 - 253 VAC 50/60 Hz	Contact an electrician to modify voltage.
		Door spring missing / damaged.	If the door motor releases the latch, but the door remains closed, Inspect door spring for damage.	Replace door springs.
			Verify if door is at the vented position. (Push in on door with out lifting handle)	
			Verify the QTY of door springs. (M11- QTY 2, M9-QTY 1)	
			Verify door springs are at a 45 degree angle.	Place door spring at a 45 degree angle.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Printer malfunctioning	Printer does not generate data.	Printer is out of paper.	Lift printer cover and check paper roll.	Refer to: User Guide for proper operating procedures.
		Cartridge ribbon is dry.	Check cartridge ribbon.	Install new ribbon cartridge.
		Printer needs to be reset.	Perform: *Software Reset Procedure*	Reset Printer software.
		Loose / Damaged wire connections.	Check wire connections at J14 on the Main PC board and terminal pins on printer.	Secure / Repair loose or damaged connections.
			Check continuity of wire harness.	Replace printer harness if necessary.
		Printer malfunctioning.	Paper roll spindle out of postion or broken	Reposition/replace spindle.
			Perform: *Printer Supply Voltage Test*	Replace printer.
		PC Board malfunctioning.	Perform: *Printer Supply Voltage Test*	Replace Main PC board.
	Print is very small.	Paper roll too large.	Check size of paper roll. Inform operator that paper roll cannot be larger than 2" in diameter.	Use Midmark paper roll.
		Paper roll rubbing on ribbon harness.	Check position of ribbon harness and paper roll.	Secure ribbon harness away from paper roll.
		Incorrect paper type being used.	Check if thermal paper is being used.	Use Midmark paper roll.
Signs of Rust.	Sterilizer Shows signs of Rust.	Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. (Refer to User Guide)	Perform monthly maintenance.
		Incorrect Water Purity.	Refer to the water purity specification in the User Guide.	Follow water purity specifications.
		Instruments are wet prior to sterilization.	Check if insturments are throughly dried prior to sterilization.	Dry instruments throughly.
		Towels or packaging contain chlorine bleach residue.	Check how towels and packaging are laundered.	Do not use chlorine products to launder towels / packaging.
		Excessive wrapping of insturments.	Check if the insturments are wrapped in multiple layers or heavey cloth.	Refer to Guidelines for loading in the User Guide.
		Instruments are rusting.	Check quality of instrument with magnet.Rust can be transferred from instruments to the sterilizer. (corrioson sensitive material such as carbon steal, iron, etc)	Replace rusting instruments.
Temp Hardware	Temp Hardware.	Unit was brought in from cold environment.	Allow unit to warm to room temperature.	Unplug unit for 60 seconds, then plug unit into a dedicated, properly rated circuit. Allow unit to reach room temperature.
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.

Troubleshooting Chart - *continued*

Problem	Display / Symptom	Cause	Check	Action
Unit not building Temperature or Pressure.	Unit not building Temperature or Pressure.	Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating Element should be free of any flaking / pitting. Perform: Heating Element Resistance Test (should read 9-11 Ω)	Replace Heating Element
			Inspect heating element wires for corrosion or if disconnected.	Reconnect / replace heating element wires.
		Loose / damaged wire connection.	Check wire connections at high-limit thermostat and at J5 on Main PC Board.	Secure / repair loose or damaged wire connections.
		PC Board malfunctioning.	Perform: Heating Element Supply Voltage Test (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: Main PC Board Relay Test (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: Main PC Board Pressure Transducer Voltage Test (Acceptable range: 4.0 to 6.0 VDC)	
Unplug / Replug	Unplug / Replug		Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		High Limit Thermostats open.	Verify if unit still overheated.	Unplug unit for 60 seconds, then plug unit into a dedicated, properly rated circuit. Allow unit to cool for 30 minutes.
		Office running back to back cycles.	Check if operator is running consecutive cycles without completing the DRY cycle.	Complete full cycle.
		If the unit skips the Fill mode...		
		Tray rack / tray plate not installed properly.	Inspect tray rack / tray plate for proper installation. (The 45 degree angled end of tray plate must be positioned upward and to the back of the chamber)	Install tray rack / tray plate properly.
		(M11) Mesh filter not in place.	Verify filter is in place.	Re-Install filter.
		Water Level sensor malfunctioning / dirty.	Inspect water level sensor. (Check for residual moisture)	Clean / Dry water level sensor. (Clean with Speed-Clean and scotch bright pad)
			Verify if filling or skipping fill. ("filling chamber" will display on display for 30-60 seconds)	
			Perform: *Water Level Sensor Testing*	Replace water level sensor.
		If the unit completes the Fill mode…		
		Sterilizer is not level. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.

TP210 Rev. A

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Water Leaking Under Unit.	Water Puddling under door.	Sterilizer is not level. (remove tray / trays)	*Verify support surface is level.*	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	Place sterilizer on a level support surface.
		Gap between gasket housing and dam gasket.	Check if there is a gap in between the gasket housing and dam gasket.	Replace dam gasket.
		Weak or worn gasket kit.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
		Gasket housing defective.	Check distence between gasket housing pins.	Replace gasket housing.
		Heating element gasket leaking.	Check for corrosion from moisture leaking at heating element terminals or thermostat terminals.	Replace heating element gaskets.
		Loose/missing reservoir clamp.	Check if hose clamp at the reservoir is connection to the drain tube is loose, disconnected or damaged.	Tighten/replace clamp.
		Reservoir /tubing leaking.	Check reservoir and tubing from the reservoir to the manifold assembly for leaks.	Repair/replace reservoir or tubing.
		Manifold block leaking.	Check manifold block assembly for leaks	Replace Fill/Vent Manifold assembly

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C010***	C010: POWER MODE SYSTEM PWR LOSS ITEMS NOT STERILE PUSH STOP TO RESTART	Power interruption. (Unit lost power for a few seconds during Fill, Heat-Up, or Sterilization Mode.)	Check power cord connections. (Power interruption could be due to an electrical storm, brown out, etc.)	Secure power cord connections. (At wall outlet & at sterilizer receptacle)
				Unplug unit for 60 seconds, then plug unit into a dedicated, properly rated circuit.
		Loose / Damaged wire connections.	Check AC terminals and connections at J5 on main PC board	Secure / Repair loose or damaged connections.
		Power cord/receptacle damaged.	Inspect condition of power cord/ receptacle.	Replace power cord/ receptacle.
		Ribbon cable loose or damaged.	If unit is beeping/clicking with no display. (or display cuts out)	Secure/replace ribbon harness.
		Diplay PC compromised.	Check for damaged pins/connection to ribbon cable.	Replace diplay PC board.
		Error Code will not reset.	Unit must be unplugged for 60 seconds.	Replace Main PC board.
Error Code: ***C060***	C060: POWER MODE SYSTEM HARDWARE ITEMS NOT STERILE UNPLUG/RE-PLUG UNIT	Power interruption. (Unit lost power for a few seconds during Fill, Heat-Up, or Sterilization Mode.)	Check power cord connections. (Power interruption could be due to an electrical storm, brown out, etc.)	Unplug unit for 60 seconds, then plug unit into a dedicated, properly rated circuit.
			Check supply voltage.	Contact an electrician to modify voltage.
		Loose / Damaged wire connection.	Check AC terminals and connections at J5 on main PC board.	Secure / Repair loose or damaged connections.
		Power cord/receptacle damaged.	Inspect condition of power cord/ receptacle.	Replace power cord/ receptacle.
		Ribbon cable loose or damaged.	If unit is beeping/clicking with no display. (or display cuts out)	Secure/replace ribbon harness.
		Diplay PC compromised.	Check for damaged pins/connection to ribbon cable.	Replace diplay PC board.
		Error Code will not reset.	Unit must be unplugged for exactly 60 seconds.	Replace Main PC board.
Error Code: ***C099***	C099: MISC MODE ??? ??? PUSH STOP TO RESTART	Code was generated during factory testing	No check necessary.	Press STOP button and initiate a new cycle
Error Code: ***C102***	C102: FILL MODE STOP PRESSED	STOP button was pressed.	No Check Necessary.	Press STOP button and initiate a new cycle.
		Touch pad malfunctioning.	Perform Key test in service diagnostic. Refer to: *Test Selection Screen*	Replace touch pad.
Error Code: ***C103***	C103: HEATUP MODE STOP PRESSED	STOP button was pressed.	Check if chamber pressure and temperature has dissipated, if not it may be necessary to allow chamber to cool.	Press STOP button and initiate a new cycle.
		Touch pad malfunctioning.	Perform Key test in service diagnostic. Refer to: *Test Selection Screen*	Replace touch pad.
Error Code: ***C104***	C104: STERILIZE MODE STOP PRESSED	STOP button was pressed.	Check if chamber pressure and temperature has dissipated, if not it may be necessary to allow chamber to cool.	Press STOP button and initiate a new cycle.
		Touch pad malfunctioning.	Perform Key test in service diagnostic. Refer to: *Test Selection Screen*	Replace touch pad.
Error Code: ***C105***	C105: VENT MODE STOP PRESSED	STOP button was pressed.	Check if chamber pressure and temperature has dissipated, if not it may be necessary to allow chamber to cool.	Press STOP button and initiate a new cycle.
		Touch pad malfunctioning.	Perform Key test in service diagnostic. Refer to: *Test Selection Screen*	Replace touch pad.

[Revised: 8/15/17
004-1032-00]

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C106**	C106: DOOR OPEN MODE STOP PRESSED	STOP button was pressed.	No Check Necessary.	Press STOP button and initiate a new cycle.
		Touch pad malfunctioning.	Perform Key test in service diagnostic. Refer to: *Test Selection Screen*	Replace touch pad.
Error Code: **C107**	C107: DRY MODE STOP PRESSED	STOP button was pressed.	No Check Necessary.	Press STOP button and initiate a new cycle.
		Touch pad malfunctioning.	Perform Key test in service diagnostic. Refer to: *Test Selection Screen*	Replace touch pad.
Error Code: **C232**	C232: FILL MODE WATER LOW ITEMS NOT STERILE PUSH STOP TO RESTART Water level sensor did not detect water within the 5 minute time limit.	Reservoir water level is low.	Check water level in reservoir.	Add water to the reservoir until water reaches appropriate level. Press STOP button, then initiate a new cycle.
		Chamber filter clogged.	Check if chamber filter is clogged.	Clean / Replace filter. (Clean with Speed-Clean and brush)
		Water Level sensor malfunctioning / dirty.	Inspect water level sensor.	Clean / Dry water level sensor. (Clean with Speed-Clean and scotch bright pad)
			Loose / damaged wire connections. (Check wire connections and all grounded locations)	Secure / Repair loose or damaged connections.
			Perform: *Water Level Sensor Test*	Replace water level sensor.
		Air valve malfunctioning / dirty.	With door open and door switch engaged, initiate fill cycle to verify if filling. If yes- Air valve malfunctioning / dirty. Perform: *Air Valve Test* If no- Refer to: Fill Valve malfunctioning / dirty.	Clean / Replace air valve.
		Fill valve malfunctioning / dirty.	Inspect fill valve / related tubing for restrictions.	Clean / Replace fill valve.
			Inspect two wires connecting the fill valve and PC board (W3 / W4 on PC board) for damage and/or loose connections.	Secure / Repair loose or damaged connections.
			With the sterilizer in the Fill Mode & door switch engaged… Perform: *Fill Valve Continuity Test*	Clean / Replace fill valve.
		PC Board malfunctioning.	Verify voltage to Fill Valve. Perform: *Fill Valve Supply Voltage Test*	Replace Main PC board.
		Chamber is dirty or corroded.	Inspect the bottom of the chamber.	Clean bottom of the chamber with Speed-Clean and distilled water or water that meets the referenced water purity specifications in User Guide.
		Restricted Condensing Coil.	Check for blockage in coil and assure weep hole is present and not obstructed.	Clear blockage / replace condensing coil.
		Blockage or malfunction in VistaCool System if used.	Check for debris or blockage in the tubing / fittings to the VistaCool System.	Clean / Replace as required.
			Check operation of In-line Thermal Sensor.	Replace Thermal Regulator Wax Motor or Thermal Sensor.
			Check for weep hole in the manifold lid and threaded area on the tank of the VistaCool System.	*Drill hole in VistaCool manifold and threaded area on the tank.*
			Check position of tank for proper installation.	Install VistaCool as recommened. VistaCool Installation Guide and Owners manual.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C326***	C326: DOOR MODE DOOR CLOSED OPEN DOOR Door switch indicates that the door remains closed one second after door motor has attempted to open door.	Door spring missing / damaged.	If the door motor releases the latch, but the door remains closed. Inspect door spring for damage.	Replace door springs.
			Verify if door is at the vented position. (Push in on door with out lifting handle)	
			Verify the QTY of door springs. (M11- QTY 2, M9-QTY 1)	
			Verify door springs are at a 45 degree angle.	Place door spring at a 45 degree angle.
		Door / Dam gasket(s).	Inspect door / dam gaskets for proper installation and any signs of sticking.	Install door / dam gaskets properly.
			If new gasket, check if wire ring in gasket is preventing gasket from fully being seated.	Temporarily remove wire ring. Re-install wire ring after gasket is fully seated.
		Trays not pushed in properly.	Be sure trays slide in properly.	Remove obstructions that prevent the trays from sliding in completely.
		Door pins / latch binding.	With door open, door handle should move Up / Down freely.	Clean door pins / latch mechanism. (Clean with Synthetic Dry Protectant - Aerosol / Spray on)
				Tightened door pins/latch mechanism.
			Inspect latch mechanism for wear / damage.	Replace worn / damaged components.
		Door motor system / latch "hanging up".	Remove the door cover and RH side panel. With the door closed, run the 'Door Open Test'. Watch for any mechanical issues that may prevent the door from opening. Refer to: *Service Diagnostics (I/O Test)*	Replace worn / damaged components.
			Verify door motor is angled as close to PC board as possible.	Adjust door motor angle.
			Check if the connecting rod is installed in the proper location on the door motor cam. (9 for M9, 11 for M11)	Install connecting rod in the proper 9 or 11 location on the door motor cam.
		Door motor defective.	Remove the door cover and RH side panel. With the door closed, run the 'Door Open Test'. Watch for any mechanical issues that may prevent the door from opening. Refer to: *Service Diagnostics (I/O Test)*	Replace door motor.
		Door hinge binding.	Check for binding or build up of debris in the door hinges.	Clean debris from hinges.
			If debris cannot be cleaned from hinges to remove binding	Send unit to Midmark for factory Repair and Return.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C326*** *- continued*	C326: DOOR MODE DOOR CLOSED OPEN DOOR Door switch indicates that the door remains closed one second after door motor has attempted to open door.	Door switch / PC board malfunctioning.	Note: Test switch with the door OPEN and CLOSED.	Replace door switch.
			Perform: Door Switch Continuity Test. With door closed, disconnect door switch wires from J1 & J2 of Main PC board. Place meter probes on door switch wires. If Continuity is not present replace door switch. Refer to: *Door Switch Continuity Test*	
			Check supply voltage from PC board. (Line voltage 120 or 230 VAC) Refer to: *Door Switch Supply Voltage Test*	Replace Main PC board.
		Door switch activation tab obstructed.	Check for full movement of activation tab.	Remove any obstruction.
		Residual pressure in chamber.	Check for chamber pressure when door motor is energized.	Clear any restriction that could prevent chamber pressure from reaching the pressure transducer on PC board.
			Check the load size. (Refer to User Guide) Verify that nothing is touching or crowding the temperature sensor.	Reduce load size.
			If pressure is above 0.72 psi (5 kPa), check for blockage in the pressure sensor tubing between the PC board and the chamber.	Clear blockage / replace pressure transducer tubing.
			Check if chamber filter is clogged.	Clean / Replace filter. (Clean with Speed-Clean and brush)
Error Code: ***C382***	C382: FILL MODE DOOR OPEN ITEMS NOT STERILE CLOSE DOOR	Door switch contacts opened during Fill Mode.	Check with operator to determine if door was opened during fill mode.	Close door. Cycle will continue where it left off.
		Door / Dam gasket(s).	Inspect door / dam gaskets for proper installation and any signs of sticking.	Install door / dam gaskets properly.
			If new gasket, check if wire ring in gasket is preventing gasket from fully being seated.	Temporarily remove wire ring. Re-install wire ring after gasket is fully seated.
		Door switch activation tab obstructed.	Check for full movement of activation tab.	Remove any obstruction.
		Tray rack / tray plate not installed properly.	Inspect tray rack / tray plate for proper installation. (The 45 degree angled end of tray plate must be positioned upward and to the back of the chamber)	Install tray rack / tray plate properly.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C382 - continued***	C382: FILL MODE DOOR OPEN ITEMS NOT STERILE CLOSE DOOR	Door switch / PC board malfunctioning.	Note: Test switch with the door OPEN and CLOSED.	Replace door switch.
			Perform: Door Switch Continuity Test. With door closed, disconnect door switch wires from J1 & J2 of Main PC board. Place meter probes on door switch wires. If Continuity is not present replace door switch. Refer to: *Door Switch Continuity Test*	
			Check supply voltage from PC board. (Line voltage 120 or 230 VAC) Refer to: *Door Switch Supply Voltage Test*	Replace Main PC board.
		Door motor system / latch "hanging up"	Place in Service Diagnostics Mode. With the door closed, run the Door Open Test. Watch for any mechanical issues that may prevent full rotation of door motor cam. Refer to: *Service Diagnostics (I/O Test)*	Replace door motor
Error Code: ***C383***	C383: HEATUP MODE DOOR OPEN ITEMS NOT STERILE CLOSE DOOR	Door switch contacts opened during Heat Up mode.	Check with operator to determine if door was opened during Heat Up mode.	Close door. Cycle will continue where it left off.
		Door / Dam gasket(s).	Inspect door / dam gaskets for proper installation and any signs of sticking.	Install door / dam gaskets properly.
			If new gasket, check if wire ring in gasket is preventing gasket from fully being seated.	Temporarily remove wire ring. Re-install wire ring after gasket is fully seated.
		Door switch activation tab obstructed.	Check for full movement of activation tab.	Remove any obstruction.
		Tray rack / tray plate not installed properly.	Inspect tray rack / tray plate for proper installation. (The 45 degree angled end of tray plate must be positioned upward and to the back of the chamber)	Install tray rack / tray plate properly.
		Door pins / latch binding.	With door open, door handle should move Up / Down freely.	Clean door pins / latch mechanism. (Clean with Synthetic Dry Protectant - Aerosol / Spray on)
			Inspect latch mechanism for wear / damage.	Replace worn / damaged components.
		Door motor system / latch "hanging up".	Remove the door cover and RH side panel. With the door closed, run the 'Door Open Test'. Watch for any mechanical issues that may prevent the door from opening. Refer to: *Service Diagnostics (I/O Test)*	Replace worn / damaged components.
			Verify Door Motor is angled as close to PC board as possible.	Adjust door motor angle.
			Remove the door cover and RH side panel. With the door closed, run the 'Door Open Test'. Watch for any mechanical issues that may prevent the door from opening. Refer to: *Service Diagnostics (I/O Test)*	Replace door motor.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C383** - continued	C383: HEATUP MODE DOOR OPEN ITEMS NOT STERILE CLOSE DOOR	Door hinge binding.	Check for binding or build up of debris in the door hinges.	Clean debris from hinges.
		Door switch / PC board malfunctioning.	Note: Test switch with the door OPEN and CLOSED.	Replace door switch.
			Perform: Door Switch Continuity Test. With door closed, disconnect door switch wires from J1 & J2 of Main PC board. Place meter probes on door switch wires. If Continuity is not present replace door switch. Refer to: *Door Switch Continuity Test*	
			Check supply voltage from PC board. (Line voltage 120 or 230 VAC) Refer to: *Door Switch Supply Voltage Test*	Replace Main PC board.
Error Code: **C384**	C384: STERILIZE MODE DOOR OPEN ITEMS NOT STERILE UNPLUG REPLUG UNIT	Door switch / PC board malfunctioning.	Note: Test switch with the door OPEN and CLOSED.	Replace door switch.
			Perform: Door Switch Continuity Test. With door closed, disconnect door switch wires from J1 & J2 of Main PC board. Place meter probes on door switch wires. If Continuity is not present replace door switch. Refer to: *Door Switch Continuity Test*	
			Check supply voltage from PC board. (Line voltage 120 or 230 VAC) Refer to: *Door Switch Supply Voltage Test*	Replace Main PC board.
Error Code: **C385**	C385: VENT MODE DOOR OPEN ITEMS NOT STERILE UNPLUG REPLUG UNIT	Door switch / PC board malfunctioning.	Note: Test switch with the door OPEN and CLOSED.	Replace door switch.
			Perform: Door Switch Continuity Test. With door closed, disconnect door switch wires from J1 & J2 of Main PC board. Place meter probes on door switch wires. If Continuity is not present replace door switch. Refer to: *Door Switch Continuity Test*	
			Check supply voltage from PC board. (Line voltage 120 or 230 VAC) Refer to: *Door Switch Supply Voltage Test*	Replace Main PC board.
Error Code: **C533**	C533: HEATUP MODE STEAM TEMP LOW ITEMS NOT STERILE UNPLUG / REPLUG UNIT Sterilization Mode not reached after 25 minutes.	Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		Sterilizer is not level. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating Element should be free of any flaking / pitting. Perform: *Heating Element Resistance Test* (should read 9-11 Ω)	Replace heating element.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C533** - continued	C533: HEATUP MODE STEAM TEMP LOW ITEMS NOT STERILE UNPLUG / REPLUG UNIT Sterilization Mode not reached after 25 minutes.	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Replacement fill / vent valve solenoid requires rectifier harness for DC coil.	Install rectifier harness.
			Check for voltage flow through rectifier harness. Refer to: *Fill / Vent Valve Supply Voltage Test*	Replace rectifier harness.
			Leaking or defective vent valve. (Check for water leaking from condensing coil spout) Perform: *Vent Valve Test*	Clean / Replace vent valve.
			Leaking or defective fill valve. Check for water leaking back into reservoir thru the fill line. (Look for bubbles coming from bottom of reservoir) Perform: *Fill Valve Test*	Clean / Replace fill valve.
			Leaking or defective air valve. Check for excessive steam coming thru condensing coil spout. NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.	Clean / Replace air valve.
			Leaking or defective Pressure Relief Valve. Check for water / steam leakage from beneath the rear of the sterilizer. Perform: *Pressure Relief Valve Test*	Replace pressure relief valve.
			Pressure transducer tubing leaking. Check for steam leakage at pressure transducer tubing connections.	Secure pressure transducer tubing connections with high temperature cable ties.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C534***	C534: STERILIZE MODE STEAM TEMP LOW ITEMS NOT STERILE UNPLUG / REPLUG UNIT During Sterilization Mode, chamber temperature dropped below the cycle's designated sterilization temperature.	Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		Sterilizer is not level. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Replacement fill / vent valve solenoid requires rectifier harness for DC coil.	Install rectifier harness.
			Check for voltage flow through rectifier harness. Refer to: *Fill / Vent Valve Supply Voltage Test*	Replace rectifier harness.
			Leaking or defective vent valve. (Check for water leaking from condensing coil spout) Perform: *Vent Valve Test.*	Clean / Replace vent valve.
			Leaking or defective fill valve. Check for water leaking back into reservoir thru the fill line. (Look for bubbles coming from bottom of reservoir) Perform: *Fill Valve Test*	Clean / Replace fill valve.
			Leaking or defective air valve. Check for excessive steam coming thru condensing coil spout. NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.	Clean / Replace air valve.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C534** - continued	C534: STERILIZE MODE STEAM TEMP LOW ITEMS NOT STERILE UNPLUG / REPLUG UNIT During Sterilization Mode, chamber temperature dropped below the cycle's designated sterilization temperature.	Pressure Leaks. - continued	Leaking or defective Pressure Relief Valve. Check for water / steam leakage from beneath the rear of the sterilizer. Perform: Pressure Relief Valve Test	Replace pressure relief valve.
			Pressure transducer tubing leaking. Check for steam leakage at pressure transducer tubing connections.	Secure pressure transducer tubing connections with high temperature cable ties.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.
		Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating element should be free of any flaking / pitting. Perform: Heating Element Resistance Test (should read 9-11 Ω)	Replace heating element.
		PC Board malfunctioning.	Perform: Heating Element Supply Voltage Test (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: Main PC Board Relay Test (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: Main PC Board Pressure Transducer Voltage Test (Acceptable range: 4.0 to 6.0 VDC)	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C544***	C544: STERILIZE MODE STEAM TEMP HIGH ITEMS NOT STERILE UNPLUG / REPLUG UNIT During Sterilization Mode, chamber temperature reached 6°F above the designated sterilization temperature.	Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Replacement fill / vent valve solenoid requires rectifier harness for DC coil.	Install rectifier harness.
			Check for voltage flow through rectifier harness. Refer to: *Fill / Vent Valve Supply Voltage Test*	Replace rectifier harness.
			Leaking or defective vent valve. (Check for water leaking from condensing coil spout) Perform: *Vent Valve Test*	Clean / Replace vent valve.
			Leaking or defective fill valve. Check for water leaking back into reservoir thru the fill line. (Look for bubbles coming from bottom of reservoir) Perform: *Fill Valve Test*	Clean / Replace fill valve.
			Leaking or defective air valve. Check for excessive steam coming thru condensing coil spout. NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.	Clean / Replace air valve.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C544*** *- continued*	C544: STERILIZE MODE STEAM TEMP HIGH ITEMS NOT STERILE UNPLUG / REPLUG UNIT During Sterilization Mode, chamber temperature reached 6°F above the designated sterilization temperature.	Pressure Leaks. *- continued*	Leaking or defective Pressure Relief Valve. Check for water / steam leakage from beneath the rear of the sterilizer. Perform: *Pressure Relief Valve Test*	Replace pressure relief valve.
			Pressure transducer tubing leaking. Check for steam leakage at pressure transducer tubing connections.	Secure pressure transducer tubing connections with high temperature cable ties.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.
		Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating element should be free of any flaking / pitting. Perform: *Heating Element Resistance Test* (should read 9-11 Ω)	Replace heating element.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
			Verify unit is operating within designated program parameters. Refer to: *Using a Pressure gauge*	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C560*** Note: When a code ends in "0", it means the unit had a power interruption during operating conditions. The operator may have unplugged the unit when a previous error code was displayed.	C560: POWERUP MODE STEAM TEMP HARDWARE UNPLUG / REPLUG UNIT Steam A/D converter reports an average value outside the limits for normal operation during POWER UP mode.	Unit was brought in from cold environment.	Allow unit to warm to room temperature.	Unplug unit for 60 seconds, then plug unit into a dedicated, properly rated circuit. Allow unit to reach room temperature.
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Check temperature sensor harness connection at J12 on PC board.	Secure / Repair loose or damaged connections.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
Error Code: ***C561***	C561: SELECT MODE STEAM TEMP HARDWARE UNPLUG / REPLUG UNIT Steam A/D converter reports an average value outside the limits for normal operation during SELECT mode	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Check temperature sensor harness connection at J12 on PC board.	Secure / Repair loose or damaged connections.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C562**	C562: FILL MODE STEAM TEMP HARDWARE UNPLUG / REPLUG UNIT Steam A/D converter reports an average value outside the limits for normal operation during FILL mode.	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Check temperature sensor harness connection at J12 on PC board.	Secure / Repair loose or damaged connections.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
Error Code: **C563**	C563: HEATUP MODE STEAM TEMP HARDWARE UNPLUG / REPLUG UNIT Steam A/D converter reports an average value outside the limits for normal operation during HEAT UP mode.	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Check temperature sensor harness connection at J12 on PC board.	Secure / Repair loose or damaged connections.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C564**	C564: STERILIZE MODE STEAM TEMP HARDWARE UNPLUG / REPLUG UNIT Steam A/D converter reports an average value outside the limits for normal operation during STERILIZE mode.	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Check temperature sensor harness connection at J12 on PC board.	Secure / Repair loose or damaged connections.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
Error Code: **C565**	C565: VENT MODE STEAM TEMP HARDWARE UNPLUG / REPLUG UNIT Steam A/D converter reports an average value outside the limits for normal operation during VENT mode.	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Check temperature sensor harness connection at J12 on PC board.	Secure / Repair loose or damaged connections.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C566***	566: DOOR OPEN MODE STEAM TEMP HARDWARE UNPLUG / REPLUG UNIT Steam A/D converter reports an average value outside the limits for normal operation during DOOR OPEN mode.	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Check temperature sensor harness connection at J12 on PC board.	Secure / Repair loose or damaged connections.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
Error Code: ***C567***	567: DRY MODE STEAM TEMP HARDWARE UNPLUG / REPLUG UNIT Steam A/D converter reports an average value outside the limits for normal operation during DRY mode.	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Check temperature sensor harness connection at J12 on PC board.	Secure / Repair loose or damaged connections.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C570*** Note: When a code ends in "0", it means the unit had a power interruption during operating conditions. The operator may have unplugged the unit when a previous error code was displayed.	C570: POWER UP MODE STEAM TEMP OVERLIM UNPLUG / REPLUG UNIT Steam temperature exceeds 284°F (140°C) during POWER UP mode.	Power interruption. (Unit lost power for a few seconds during Fill, Heat-Up, or Sterilization Mode.)	Check power cord connections. (Power interruption could be due to an electrical storm, brown out, etc.)	Secure power cord connections. (At wall outlet & sterilizer receptacle)
		The operator may have unplugged the unit when a previous error code was displayed.	Check previous error codes. Refer to: *Service Diagnostics (Recall Errors)*	Refer to the error code(s) in this troubleshooting chart.
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	

TP210 Rev. A

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C571***	C571: SELECT MODE STEAM TEMP OVERLIM UNPLUG / REPLUG UNIT Steam temperature exceeds 284°F (140°C) during SELECT mode.	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
Error Code: ***C572***	C572: FILL MODE STEAM TEMP OVERLIM UNPLUG / REPLUG UNIT Steam temperature exceeds 284°F (140°C) during FILL mode.	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C573***	C573: HEATUP MODE STEAM TEMP OVERLIM UNPLUG / REPLUG UNIT Steam temperature exceeds 284°F (140°C) during HEAT UP mode.	Office running back to back cycles.	Check if operator is running consecutive cycles without completing the DRY cycle.	Complete full cycle.
		If the unit skips the Fill mode...		
		Tray rack / tray plate not installed properly.	Inspect tray rack / tray plate for proper installation. (The 45 degree angled end of tray plate must be positioned upward and to the back of the chamber)	Install tray rack / tray plate properly.
		(M11) Mesh filter not in place.	Verify filter is in place.	Re-Install filter.
		Water Level sensor malfunctioning / dirty.	Inspect water level sensor. (Check for residual moisture)	Clean / Dry water level sensor. (Clean with Speed-Clean and scotch bright pad)
			Verify if filling or skipping fill. ("filling chamber" will display on display for 30-60 seconds)	
			Perform: *Water Level Sensor Testing*	Replace water level sensor.
		If the unit completes the Fill mode…		
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Replacement fill / vent valve solenoid requires rectifier harness for DC coil.	Install rectifier harness.
			Check for voltage flow through rectifier harness. Refer to: *Fill / Vent Valve Supply Voltage Test*	Replace rectifier harness.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C573** - continued	C573: HEATUP MODE STEAM TEMP OVERLIM UNPLUG / REPLUG UNIT Steam temperature exceeds 284°F (140°C) during HEAT UP mode.	Pressure Leaks. - continued	Leaking or defective vent valve. (Check for water leaking from condensing coil spout) Perform: Vent Valve Test	Clean / Replace vent valve.
			Leaking or defective fill valve. Check for water leaking back into reservoir thru the fill line. (Look for bubbles coming from bottom of reservoir) Perform: Fill Valve Test	Clean / Replace fill valve.
			Leaking or defective air valve. Check for excessive steam coming thru condensing coil spout. NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.	Clean / Replace air valve.
			Leaking or defective Pressure Relief Valve. Check for water / steam leakage from beneath the rear of the sterilizer. Perform: Pressure Relief Valve Test	Replace pressure relief valve.
			Pressure transducer tubing leaking. Check for steam leakage at pressure transducer tubing connections.	Secure pressure transducer tubing connections with high temperature cable ties.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.
		Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating element should be free of any flaking / pitting. Perform: Heating Element Resistance Test (should read 9-11 Ω)	Replace heating element.
		PC Board malfunctioning.	Perform: Heating Element Supply Voltage Test (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: Main PC Board Relay Test (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: Main PC Board Pressure Transducer Voltage Test (Acceptable range: 4.0 to 6.0 VDC)	
Error Code: **C574**	C574: STERILIZE MODE STEAM TEMP OVERLIM ITEMS NOT STERILE UNPLUG / REPLUG UNIT Steam temperature exceeds 284°F (140°C) during STERILIZE mode.	Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C574** - continued	C574: STERILIZE MODE STEAM TEMP OVERLIM ITEMS NOT STERILE UNPLUG / REPLUG UNIT Steam temperature exceeds 284°F (140°C) during STERILIZE mode.	Temperature sensor malfunctioning. - continued	Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Replacement fill / vent valve solenoid requires rectifier harness for DC coil.	Install rectifier harness.
			Check for voltage flow through rectifier harness. Refer to: *Fill / Vent Valve Supply Voltage Test*	Replace rectifier harness.
			Leaking or defective vent valve. (Check for water leaking from condensing coil spout) Perform: *Vent Valve Test*	Clean / Replace vent valve.
			Leaking or defective fill valve. Check for water leaking back into reservoir thru the fill line. (Look for bubbles coming from bottom of reservoir) Perform: *Fill Valve Test*	Clean / Replace fill valve.
			Leaking or defective air valve. Check for excessive steam coming thru condensing coil spout. NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.	Clean / Replace air valve.
			Leaking or defective Pressure Relief Valve. Check for water / steam leakage from beneath the rear of the sterilizer. Perform: *Pressure Relief Valve Test*	Replace pressure relief valve.
			Pressure transducer tubing leaking. Check for steam leakage at pressure transducer tubing connections.	Secure pressure transducer tubing connections with high temperature cable ties.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C574*** *- continued*	C574: STERILIZE MODE STEAM TEMP OVERLIM ITEMS NOT STERILE UNPLUG / REPLUG UNIT Steam temperature exceeds 284°F (140°C) during STERILIZE mode.	Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating element should be free of any flaking / pitting. Perform: *Heating Element Resistance Test* (should read 9-11 Ω)	Replace heating element.
		Chamber filter clogged.	Check if chamber filter is clogged.	Clean / Replace filter. (Clean with Speed-Clean and brush)
		Pressure tubing at incorrect angle.	Check tubing for restrictions and ensure tubing is angled down and away from the PC Board.	Adjust pressure tubing to correct angle.
Error Code: ***C575***	C575: VENT MODE STEAM TEMP OVERLIM ITEMS NOT STERILE UNPLUG / REPLUG UNIT Steam temperature exceeds 284°F (140°C) during VENT mode.	Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Replacement fill / vent valve solenoid requires rectifier harness for DC coil.	Install rectifier harness.
			Check for voltage flow through rectifier harness. Refer to: *Fill / Vent Valve Supply Voltage Test*	Replace rectifier harness.
			Leaking or defective vent valve. (Check for water leaking from condensing coil spout) Perform: *Vent Valve Test*	Clean / Replace vent valve.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C575** - continued	C575: VENT MODE STEAM TEMP OVERLIM ITEMS NOT STERILE UNPLUG / REPLUG UNIT Steam temperature exceeds 284°F (140°C) during VENT mode.	Pressure Leaks. - continued	Leaking or defective fill valve. Check for water leaking back into reservoir thru the fill line. (Look for bubbles coming from bottom of reservoir) Perform: Fill Valve Test	Clean / Replace fill valve.
			Leaking or defective air valve. Check for excessive steam coming thru condensing coil spout. NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.	Clean / Replace air valve.
			Leaking or defective Pressure Relief Valve. Check for water / steam leakage from beneath the rear of the sterilizer. Perform: Pressure Relief Valve Test	Replace pressure relief valve.
			Pressure transducer tubing leaking. Check for steam leakage at pressure transducer tubing connections.	Secure pressure transducer tubing connections with high temperature cable ties.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.
Error Code: **C576**	C576: DOOR OPEN MODE STEAM TEMP OVERLIM ITEMS NOT STERILE UNPLUG / REPLUG UNIT Steam temperature exceeds 284°F (140°C) during DOOR OPEN mode.	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: Temperature Sensor Resistance Test	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: Temperature Sensor Supply Voltage Test	Replace Main PC board.
Error Code: **C577**	C577: DRY MODE STEAM TEMP OVERLIM ITEMS NOT STERILE UNPLUG / REPLUG UNIT Steam temperature exceeds 284°F (140°C) during DRY mode.	Door spring missing / damaged.	If the door motor releases the latch, but the door remains closed, Inspect door spring for damage.	Replace door springs.
			Verify if door is at the vented position. (Push in on door with out lifting handle)	
			Verify the QTY of door springs. (M11- QTY 2, M9-QTY 1)	
			Verify door springs are at a 45 degree angle.	Place door spring at a 45 degree angle.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C577 - continued***	C577: DRY MODE STEAM TEMP OVERLIM ITEMS NOT STERILE UNPLUG / REPLUG UNIT Steam temperature exceeds 284°F (140°C) during DRY mode.	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating element should be free of any flaking / pitting. Perform: *Heating Element Resistance Test* (should read 9-11 Ω)	Replace heating element.
		Facility voltage too high / low.	Test facility supply voltage. Voltage must be... 115V models: 104 - 127 VAC 50/60 Hz 230V models: 207 - 253 VAC 50/60 Hz	Contact an electrician to modify voltage.
		Door motor system / latch "hanging up".	Check if the connecting rod is installed in the proper location on the door motor cam. (9 for M9, 11 for M11)	Install connecting rod in the proper 9 or 11 location on the door motor cam.
Error Code: ***C633***	C633: HEATUP MODE PRESSURE LOW ITEMS NOT STERILE UNPLUG / REPLUG UNIT This will occur if chamber pressure does not reach 1 psi within one minute after air valve closes; or if chamber pressure does not reach 4.93 psi within 25 minutes after starting the HEAT UP mode.	Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C633** - continued	C633: HEATUP MODE PRESSURE LOW ITEMS NOT STERILE UNPLUG / REPLUG UNIT This will occur if chamber pressure does not reach 1 psi within one minute after air valve closes; or if chamber pressure does not reach 4.93 psi within 25 minutes after starting the HEAT UP mode.	*If the unit is building temperature....*		
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Replacement fill / vent valve solenoid requires rectifier harness for DC coil.	Install rectifier harness.
			Check for voltage flow through rectifier harness. Refer to: *Fill / Vent Valve Supply Voltage Test*	Replace rectifier harness.
			Leaking or defective vent valve. (Check for water leaking from condensing coil spout) Perform: *Vent Valve Test*	Clean / Replace vent valve.
			Leaking or defective fill valve. Check for water leaking back into reservoir thru the fill line. (Look for bubbles coming from bottom of reservoir) Perform: *Fill Valve Test*	Clean / Replace fill valve.
			Leaking or defective air valve. Check for excessive steam coming thru condensing coil spout. NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.	Clean / Replace air valve.
			Leaking or defective Pressure Relief Valve. Check for water / steam leakage from beneath the rear of the sterilizer. Perform: Pressure Relief Valve Test	Replace pressure relief valve.
			Pressure transducer tubing leaking. Check for steam leakage at pressure transducer tubing connections.	Secure pressure transducer tubing connections with high temperature cable ties.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C633*** *- continued*	C633: HEATUP MODE PRESSURE LOW ITEMS NOT STERILE UNPLUG / REPLUG UNIT This will occur if chamber pressure does not reach 1 psi within one minute after air valve closes; or if chamber pressure does not reach 4.93 psi within 25 minutes after starting the HEAT UP mode.	*If the unit is not building temperature....*		
		Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating element should be free of any flaking / pitting. Perform: *Heating Element Resistance Test* (should read 9-11 Ω)	Replace heating element.
			Inspect heating element wires for corrosion or if disconnected.	Reconnect / Replace heating element wires.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
Error Code: ***C634***	C634: STERILIZE MODE PRESSURE LOW ITEMS NOT STERILE UNPLUG / REPLUG UNIT	Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Leaking or defective air valve. Check for excessive steam coming thru condensing coil spout. NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.	Clean / Replace air valve.
			Leaking or defective Pressure Relief Valve. Check for water / steam leakage from beneath the rear of the sterilizer. Perform: *Pressure Relief Valve Test*	Replace pressure relief valve.
			Pressure transducer tubing leaking. Check for steam leakage at pressure transducer tubing connections.	Secure pressure transducer tubing connections with high temperature cable ties.
			Replacement fill / vent valve solenoid requires rectifier harness for DC coil.	Install rectifier harness.
			Check for voltage flow through rectifier harness. Refer to: *Fill / Vent Valve Supply Voltage Test*	Replace rectifier harness.
			Leaking or defective vent valve. (Check for water leaking from condensing coil spout) Perform: *Vent Valve Test*	Clean / Replace vent valve.
			Leaking or defective fill valve. Check for water leaking back into reservoir thru the fill line. (Look for bubbles coming from bottom of reservoir) Perform: *Fill Valve Test*	Clean / Replace fill valve.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C634** - continued*	C634: STERILIZE MODE PRESSURE LOW ITEMS NOT STERILE UNPLUG / REPLUG UNIT	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Facility voltage too high / low.	Test facility supply voltage. Voltage must be... 115V models: 104 - 127 VAC 50/60 Hz 230V models: 207 - 253 VAC 50/60 Hz	Contact an electrician to modify voltage.
Error Code: ***C642***	C642: FILL MODE PRESSURE HIGH ITEMS NOT STERILE PUSH STOP TO RESTART	Defective Air valve.	Leaking or defective air valve. Perform: *Air Valve Test* Check for excessive steam coming thru condensing coil spout.	Clean / Replace air valve.
		Restricted Condensing Coil.	Check for blockage in coil and assure weep hole is present and not obstructed.	Clear blockage / replace condensing coil.
		Pressure tubing at incorrect angle.	Check tubing for restrictions and ensure tubing is angled down and away from the PC Board.	Adjust pressure tubing to correct angle.
		Blockage or malfunction in VistaCool System if used.	Check for debris or blockage in the tubing / fittings to the VistaCool System.	Clean / Replace as required.
			Check operation of In-Iine Thermal Sensor.	Replace Thermal Regulator Wax Motor or Thermal Sensor.
			Check for weep hole in the manifold lid and threaded area on the tank of the VistaCool System.	*Drill hole in VistaCool manifold and threaded area on the tank.*
		The 90 degree elbow fitting(s) are not installed.	Check if the 90 degree elbow fitting(s) are installed on the tank.	Install the 90 degree elbow fitting(s).
		Tank is lower than the facility drain.	Check if tank is higher than the facility drain.	Install the tank higher than the facility drain.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C642*** *- continued*	C642: FILL MODE PRESSURE HIGH ITEMS NOT STERILE PUSH STOP TO RESTART	PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
Error Code: ***C644***	C644: STERILIZE MODE PRESSURE HIGH ITEMS NOT STERILE PUSH STOP TO RESTART	Sterilizer Overloaded.	Check the load size. (Refer to User Guide)	Reduce load size.
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Pressure tubing at incorrect angle.	Check tubing for restrictions and ensure tubing is angled down and away from the PC Board.	Adjust pressure tubing to correct angle.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C645***	C645: VENT MODE PRESSURE HIGH ITEMS NOT STERILE PUSH STOP TO RESTART Absolute pressure inside chamber is greater than 0.7 psig (5 kPag) for longer than 10 minutes. (i.e. Vent mode is not complete)	Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		Chamber filter clogged.	Check if chamber filter is clogged.	Clean / Replace filter. (Clean with Speed-Clean and brush)
		Vent valve.	Inspect vent valve. (Clean valve, stretch spring)	Clean / Replace vent valve.
			With the sterilizer in the Vent Mode... Perform: *Vent Valve Testing* (The valve is normally open, and should not be energized during the Vent mode).	
		Pressure tubing at incorrect angle.	Check tubing for restrictions. Ensure tubing is angled down and away from the PC Board.	Adjust pressure tubing to correct angle.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
		Blockage or malfunction in VistaCool System if used.	Check for debris or blockage in the tubing / fittings to the VistaCool System.	Clean / Replace as required.
			Check operation of In-Iine Thermal Sensor.	Replace Thermal Regulator Wax Motor or Thermal Sensor.
			Check for weep hole in the manifold lid and threaded area on the tank of the VistaCool System.	*Drill hole in VistaCool manifold and threaded area on the tank.*
		The 90 degree elbow fitting(s) are not installed.	Check if the 90 degree elbow fitting(s) are installed on the tank.	Install the 90 degree elbow fitting(s).
		Tank is lower than the facility drain.	Check if tank is higher than the facility drain.	Install the tank higher than the facility drain.
Error Code: ***C646***	C646: DOOR TO OPEN PRESSURE HIGH PUSH STOP TO RESTART Gauge pressure inside chamber is equal to or greater than 0.7 psi (5 kPa) during DOOR OPEN mode.	Chamber filter clogged.	Check if chamber filter is clogged.	Clean / Replace filter. (Clean with Speed-Clean and brush)
		Air valve.	Leaking or defective air valve. Perform: Air Valve Test Check for excessive steam coming thru condensing coil spout.	Clean / Replace air valve.
		Vent valve.	Inspect vent valve.	Clean / Replace vent valve.
			With the sterilizer in the Vent Mode... Perform: *Vent Valve Testing* (The valve is normally open, and should not be energized during the Vent mode)	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C647***	C647: DRY MODE PRESSURE HIGH PUSH STOP TO RESTART Gauge pressure inside chamber is equal to or greater than 2.18 psi (15 kPa) during DRY mode, or 0.7 psi (5 kPa) during DOOR mode.	*If Door did not open before DRY mode....*		
		Door spring missing / damaged.	If the door motor releases the latch, but the door remains closed, Inspect door spring for damage.	Replace door springs.
			Verify if door is at the vented position. (Push in on door with out lifting handle)	
			Verify the QTY of door springs. (M11- QTY 2, M9-QTY 1)	
			Verify door springs are at a 45 degree angle.	Place door spring at a 45 degree angle.
		Chamber filter clogged.	Check if chamber filter is clogged.	Clean / Replace filter. (Clean with Speed-Clean and brush)
		Door / Dam gasket(s).	Inspect door / dam gaskets for proper installation and any signs of sticking.	Install door / dam gaskets properly.
			If new gasket, check if wire ring in gasket is preventing gasket from fully being seated.	Temporarily remove wire ring. Re-install wire ring after gasket is fully seated.
		Trays not pushed in properly.	Be sure trays slide in properly.	Remove obstructions that prevent the trays from sliding in completely.
		Door pins / latch binding.	With door open, door handle should move Up / Down freely.	Clean door pins / latch mechanism. (Clean with Synthetic Dry Protectant - Aerosol / Spray on)
			Inspect latch mechanism for wear / damage.	Replace worn / damaged components.
		Door motor system / latch "hanging up".	Remove the door cover, and RH side panel. With the door closed, run the 'Door Open Test'. Watch for any mechanical issues that may prevent the door from opening. Refer to: *Service Diagnostics (I/O Test)*	Replace worn / damaged components.
			Verify Door Motor is angled as close to PC board as possible.	Adjust door motor angle.
			Place in Service Diagnostics Mode. With the door closed, run the Door Open Test. Watch for any mechanical issues that may prevent full rotation of door motor cam. Refer to: *Service Diagnostics*	Replace door motor.
			Check if the connecting rod is installed in the proper location on the door motor cam. (9 for M9, 11 for M11)	Install connecting rod in the proper 9 or 11 location on the door motor cam.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C647 - continued***	C647: DRY MODE PRESSURE HIGH PUSH STOP TO RESTART Gauge pressure inside chamber is equal to or greater than 2.18 psi (15 kPa) during DRY mode, or 0.7 psi (5 kPa) during DOOR mode.	*If Door did open before DRY mode....*		
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads, should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
Error Code: ***C660*** Note: When a code ends in "0", it means the unit had a power interruption during operating conditions. The operator may have unplugged the unit when a previous error code was displayed.	C660: POWER UP MODE PRESSURE HARDWARE UNPLUG / REPLUG UNIT Pressure A/D converter reports an average value outside the limits for normal operation during POWER UP mode.	Power interruption. (Unit lost power for a few seconds during Fill, Heat-Up, or Sterilization Mode.)	Check power cord connections. (Power interruption could be due to an electrical storm, brown out, etc.)	Unplug unit for 60 seconds, then plug unit into a dedicated, properly rated circuit.
			Check supply voltage.	Contact an electrician to modify voltage.
		The operator may have unplugged the unit when a previous error code was displayed.	Check previous error codes. Refer to: *Service Diagnostics (Recall Errors)*	Refer to the error code(s) in this troubleshooting chart.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C661**	C661: SELECT MODE PRESSURE HARDWARE UNPLUG / REPLUG UNIT Pressure A/D converter reports an average value outside the limits for normal operation during SELECT mode.	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform: Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform: Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
Error Code: **C662**	C662: FILL MODE PRESSURE HARDWARE UNPLUG / REPLUG UNIT Pressure A/D converter reports an average value outside the limits for normal operation during FILL mode	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform: Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform: Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C662*** *- continued*	C662: FILL MODE PRESSURE HARDWARE UNPLUG / REPLUG UNIT Pressure A/D converter reports an average value outside the limits for normal operation during FILL mode.	PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
Error Code: ***C663***	C663: HEATUP MODE PRESSURE HARDWARE UNPLUG / REPLUG UNIT Pressure A/D converter reports an average value outside the limits for normal operation during HEAT UP mode.	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform: Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform: Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C664**	C664: STERILIZE MODE PRESSURE HARDWARE UNPLUG / REPLUG UNIT Pressure A/D converter reports an average value outside the limits for normal operation during STERILIZE mode.	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform: Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform: Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C665***	C665: VENT MODE PRESSURE HARDWARE UNPLUG / REPLUG UNIT Pressure A/D converter reports an average value outside the limits for normal operation during VENT mode.	Chamber filter clogged.	Check if chamber filter is clogged.	Clean / Replace filter. (Clean with Speed-Clean and brush)
		Vent valve.	Inspect vent valve.	Clean / Replace vent valve.
			With the sterilizer in the Vent Mode... Perform: *Vent Valve Testing* (The valve is normally open, and should not be energized during the Vent mode)	
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform: Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform: Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Pressure tubing at incorrect angle.	Check tubing for restrictions and ensure tubing is angled down and away from the PC Board.	Adjust pressure tubing to correct angle.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C667***	C667: DRY MODE PRESSURE HARDWARE UNPLUG / REPLUG UNIT Pressure A/D converter reports an average value outside the limits for normal operation during DRY mode.	Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform: Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform: Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Pressure tubing at incorrect angle.	Check tubing for restrictions and ensure tubing is angled down and away from the PC Board.	Adjust pressure tubing to correct angle.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
		Facility voltage too high / low.	Test facility supply voltage. Voltage must be... 115V models: 104 - 127 VAC 50/60 Hz 230V models: 207 - 253 VAC 50/60 Hz	Contact an electrician to modify voltage.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C670*** Note: When a code ends in "0", it means the unit had a power interruption during operating conditions. The operator may have unplugged the unit when a previous error code was displayed.	C670: POWER UP MODE PRESSURE OVERLIM UNPLUG / REPLUG UNIT Gauge pressure inside chamber is greater than 34.8 psig (240 kPa) during POWER UP mode.	Power interruption (Unit lost power for a few seconds during Fill, Heat-Up, or Sterilization Mode.)	Check power cord connections. (Power interruption could be due to an electrical storm, brown out, etc.)	Unplug unit for 60 seconds, then plug unit into a dedicated, properly rated circuit.
			Check supply voltage.	Contact an electrician to modify voltage.
		The operator may have unplugged the unit when a previous error code was displayed.	Check previous error codes. Refer to: *Service Diagnostics (Recall Errors)*	Refer to the error code(s) in this troubleshooting chart.
		Vent valve.	Inspect vent valve. (Clean valve, stretch spring)	Clean / Replace vent valve.
			With the sterilizer in the Vent Mode... Perform: *Vent Valve Testing* (The valve is normally open, and should not be energized during the Vent mode).	
		Pressure tubing at incorrect angle.	Check tubing for restrictions and ensure tubing is angled down and away from the PC Board.	Adjust pressure tubing to correct angle.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
Error Code: ***C671*** t.	C671: SELECT MODE PRESSURE OVERLIM UNPLUG / REPLUG UNIT Gauge pressure inside chamber is greater than 34.8 psig (240 kPa) during SELECT mode.	PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C672***	C672: FILL MODE PRESSURE OVERLIM UNPLUG / REPLUG UNIT Gauge pressure inside chamber is greater than 34.8 psig (240 kPa) during FILL mode.	Defective Air valve.	Leaking or defective air valve. Perform: Air Valve Test Check for excessive steam coming thru condensing coil spout.	Clean / Replace air valve.
		Pressure tubing at incorrect angle.	Check tubing for restrictions and ensure tubing is angled down and away from the PC Board.	Adjust pressure tubing to correct angle.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
Error Code: ***C673***	C673: HEATUP MODE PRESSURE OVERLIM ITEMS NOT STERILE UNPLUG / REPLUG UNIT Gauge pressure inside chamber is greater than 40 psig (276 kPa) during HEAT UP mode.	Sterilizer overloaded.	Check the size of the load. (Refer to User Guide)	Reduce load size.
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Defective Air valve.	Leaking or defective air valve. Perform: *Air Valve Test* Check for excessive steam coming thru condensing coil spout.	Clean / Replace air valve.
		Pressure tubing at incorrect angle.	Check tubing for restrictions and ensure tubing is angled down and away from the PC Board.	Adjust pressure tubing to correct angle.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C673** - continued	C673: HEATUP MODE PRESSURE OVERLIM ITEMS NOT STERILE UNPLUG / REPLUG UNIT Gauge pressure inside chamber is greater than 40 psig (276 kPa) during HEAT UP mode.	PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
		Blockage or malfunction in VistaCool System if used.	Check for debris or blockage in the tubing / fittings to the VistaCool System.	Clean / Replace as required.
			Check operation of In-Iine Thermal Sensor.	Replace Thermal Regulator Wax Motor or Thermal Sensor.
			Check for weep hole in the manifold lid and threaded area on the tank of the VistaCool System.	*Drill hole in VistaCool manifold and threaded area on the tank.*
Error Code: **C674**	C674: STERILIZE MODE PRESSURE OVERLIM ITEMS NOT STERILE UNPLUG / REPLUG UNIT Gauge pressure inside chamber is greater than 40 psig (276 kPa) during STERILIZE mode.	Sterilizer overloaded.	Check the size of the load. (Refer to User Guide)	Reduce load size.
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Pressure tubing at incorrect angle.	Check tubing for restrictions and ensure tubing is angled down and away from the PC Board.	Adjust pressure tubing to correct angle.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C674** - continued	C674: STERILIZE MODE PRESSURE OVERLIM ITEMS NOT STERILE UNPLUG / REPLUG UNIT Gauge pressure inside chamber is greater than 34.8 psig (240 kPa) during STERILIZE mode.	PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
		Blockage or malfunction in VistaCool System if used.	Check for debris or blockage in the tubing / fittings to the VistaCool System.	Clean / Replace as required.
			Check operation of In-Iine Thermal Sensor.	Replace Thermal Regulator Wax Motor or Thermal Sensor.
			Check for weep hole in the manifold lid and threaded area on the tank of the VistaCool System.	*Drill hole in VistaCool manifold and threaded area on the tank.*
Error Code: **C675**	C675: VENT MODE PRESSURE OVERLIM ITEMS NOT STERILE UNPLUG / REPLUG UNIT Gauge pressure inside chamber is greater than 34.8 psig (240 kPa) during VENT mode.	Chamber filter clogged.	Check if chamber filter is clogged.	Clean / Replace filter. (Clean with Speed-Clean and brush)
		Vent valve.	Inspect vent valve. (Clean valve, stretch spring)	Clean / Replace vent valve.
			With the sterilizer in the Vent Mode... Perform: *Vent Valve Testing* (The valve is normally open, and should not be energized during the Vent mode).	
		Pressure tubing at incorrect angle.	Check tubing for restrictions and ensure tubing is angled down and away from the PC Board.	Adjust pressure tubing to correct angle.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
		Blockage or malfunction in VistaCool System if used.	Check for debris or blockage in the tubing / fittings to the VistaCool System.	Clean / Replace as required.
			Check operation of In-Iine Thermal Sensor.	Replace Thermal Regulator Wax Motor or Thermal Sensor.
			Check for weep hole in the manifold lid and threaded area on the tank of the VistaCool System.	*Drill hole in VistaCool manifold and threaded area on the tank.*

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C677***	C677: DRY MODE PRESSURE OVERLIM ITEMS NOT STERILE UNPLUG / REPLUG UNIT Gauge pressure inside chamber is greater than 34.8 psig (240 kPa) during DRY mode.	Chamber filter clogged.	Check if chamber filter is clogged.	Clean / Replace filter. (Clean with Speed-Clean and brush)
		Door spring missing / damaged.	If the door motor releases the latch, but the door remains closed, Inspect door spring for damage.	Replace door springs.
			Verify if door is at the vented position. (Push in on door with out lifting handle)	
			Verify the QTY of door springs. (M11- QTY 2, M9-QTY 1)	
			Verify door springs are at a 45 degree angle.	Place door spring at a 45 degree angle.
		Door motor system / latch "hanging up".	Check if the connecting rod is installed in the proper location on the door motor cam. (9 for M9, 11 for M11)	Install connecting rod in the proper 9 or 11 location on the door motor cam.
		Pressure tubing at incorrect angle.	Check tubing for restrictions and ensure tubing is angled down and away from the PC Board.	Adjust pressure tubing to correct angle.
		Vent valve.	Inspect vent valve. (Clean valve, stretch spring)	Clean / Replace vent valve.
			With the sterilizer in the Vent Mode... Perform: *Vent Valve Testing* (The valve is normally open, and should not be energized during the Vent mode).	
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C980*** Note: An error code beginning with "C98" means the high-limit thermostat is tripped open. This is normally due to lack of water in the chamber.	C980: POWER UP MODE HI-LIMIT OPEN UNPLUG / REPLUG UNIT High-limit thermostat opened for at least 0.25 seconds during POWER UP mode.	Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		Sterilizer was unplugged, then plugged back in while thermostat was still tripped.	Verify if error was preceded with other error codes. (i.e. C983, C573)	Unplug unit for 60 seconds, then plug unit into a dedicated, properly rated circuit. Allow unit to cool for 30 minutes.
		Hi Limit thermostat malfunctioning.	If error code does not reset… Perform: *Thermostat Continuity Test* Meter Reading - Anything but OL	Replace thermostats.
		Loose / Damaged wire connection.	Check wire connections at high-limit thermostat and at J5 on Main PC Board.	Secure / Repair loose or damaged wire connections.
		If the unit skips the Fill mode…		
		Tray rack / tray plate not installed properly.	Inspect tray rack / tray plate for proper installation. (The 45 degree angled end of tray plate must be positioned upward and to the back of the chamber)	Install tray rack / tray plate properly.
		(M11) Mesh filter not in place.	Verify filter is in place.	Re-Install filter.
		Office running back to back cycles.	Check if operator is running consecutive cycles without completing the DRY cycle.	Complete full cycle.
		Water level sensor malfunctioning. Dirty/foreign object touching sensor.	Check sensor. Inspect water level sensor for foreign objects. (burs, instruments, etc.)	Clean/Dry water level sensor. (Clean with Speed-Clean and scotch bright pad) Remove foreign objects.
			Perform: *Water Level Sensor Test*	Replace water level sensor.
		If the unit completes the Fill mode…		
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Replacement fill / vent valve solenoid requires rectifier harness for DC coil.	Install rectifier harness.
			Check for voltage flow through rectifier harness. Refer to: *Fill / Vent Valve Supply Voltage Test*	Replace rectifier harness.
			Leaking or defective vent valve. (Check for water leaking from condensing coil spout) Perform: *Vent Valve Test*	Clean / Replace vent valve.
			Leaking or defective fill valve. Check for water leaking back into reservoir thru the fill line. (Look for bubbles coming from bottom of reservoir) Perform: *Fill Valve Test*	Clean / Replace fill valve.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C980*** *- continued* Note: An error code beginning with "C98" means the high-limit thermostat is tripped open. This is normally due to lack of water in the chamber.	C980: POWER UP MODE HI-LIMIT OPEN UNPLUG / REPLUG UNIT High-limit thermostat opened for at least 0.25 seconds during POWER UP mode.	*If the unit completes the Fill mode… - continued*		
		Pressure Leaks. *- continued*	Leaking or defective air valve. Check for excessive steam coming thru condensing coil spout. NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.	Clean / Replace air valve.
			Leaking or defective Pressure Relief Valve. Check for water / steam leakage from beneath the rear of the sterilizer. Perform: *Pressure Relief Valve Test*	Replace pressure relief valve.
			Pressure transducer tubing leaking. Check for steam leakage at pressure transducer tubing connections.	Secure pressure transducer tubing connections with high temperature cable ties.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.
		Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating element should be free of any flaking / pitting. Perform: *Heating Element Resistance Test* (should read 9-11 Ω)	Replace heating element.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
		Sterilizer overloaded.	Check the size of the load. (Refer to User Guide)	Reduce load size.

TP210 Rev. A

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C981*** Note: An error code beginning with "C98" means the high-limit thermostat is tripped open. This is normally due to lack of water in the chamber.	C981: SELECT MODE HI-LIMIT OPEN UNPLUG / REPLUG UNIT High-limit thermostat opened for at least 0.25 seconds during SELECT mode.	Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		Sterilizer was unplugged, then plugged back in while thermostat was still tripped.	Verify if error was preceded by other error codes. (i.e. C983, C573)	Unplug unit for 60 seconds, then plug unit into a dedicated, properly rated circuit. Allow unit to cool for 30 minutes.
		Hi Limit thermostat malfunctioning.	If error code does not reset… Perform: *Thermostat Continuity Test* Meter Reading - Anything but OL	Replace thermostats
		Loose / Damaged wire connection.	Check wire connections at high-limit thermostat and at J5 on Main PC Board.	Secure / Repair loose or damaged wire connections.
		If the unit skips the Fill mode…		
		Tray rack / tray plate not installed properly.	Inspect tray rack / tray plate for proper installation. (The 45 degree angled end of tray plate must be positioned upward and to the back of the chamber)	Install tray rack / tray plate properly.
		(M11) Mesh filter not in place.	Verify filter is in place.	Re-Install filter.
		Office running back to back cycles.	Check if operator is running consecutive cycles without completing the DRY cycle.	Complete full cycle.
		Water level sensor malfunctioning. Dirty/foreign object touching sensor.	Check sensor. Inspect water level sensor for foreign objects. (burs, instruments, etc.)	Clean/Dry water level sensor. (Clean with Speed-Clean and scotch bright pad) Remove foreign objects.
			Perform: *Water Level Sensor Test*	Replace water level sensor.
		If the unit completes the Fill mode…		
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Replacement fill / vent valve solenoid requires rectifier harness for DC coil.	Install rectifier harness.
			Check for voltage flow through rectifier harness. Refer to: *Fill / Vent Valve Supply Voltage Test*	Replace rectifier harness.
			Leaking or defective vent valve. (Check for water leaking from condensing coil spout) Perform: *Vent Valve Test*	Clean / Replace vent valve.
			Leaking or defective fill valve. Check for water leaking back into reservoir thru the fill line. (Look for bubbles coming from bottom of reservoir) Perform: *Fill Valve Test*	Clean / Replace fill valve.

TP210 Rev. A

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C981*** *- continued* Note: An error code beginning with "C98" means the high-limit thermostat is tripped open. This is normally due to lack of water in the chamber.	C981: SELECT MODE HI-LIMIT OPEN UNPLUG / REPLUG UNIT High-limit thermostat opened for at least 0.25 seconds during SELECT mode.	Pressure Leaks. *- continued*	Leaking or defective air valve. Check for excessive steam coming thru condensing coil spout. NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.	Clean / Replace air valve.
			Leaking or defective Pressure Relief Valve. Check for water / steam leakage from beneath the rear of the sterilizer. Perform: *Pressure Relief Valve Test*	Replace pressure relief valve.
			Pressure transducer tubing leaking. Check for steam leakage at pressure transducer tubing connections.	Secure pressure transducer tubing connections with high temperature cable ties.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.
		Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating element should be free of any flaking / pitting. Perform: *Heating Element Resistance Test* (should read 9-11 Ω)	Replace heating element.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
		Sterilizer overloaded.	Check the size of the load. (Refer to User Guide)	Reduce load size.

TP210 Rev. A

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C982** Note: An error code beginning with "C98" means the high-limit thermostat is tripped open. This is normally due to lack of water in the chamber.	C982: FILL MODE HI-LIMIT OPEN UNPLUG / REPLUG UNIT High-limit thermostat opened for at least 0.25 seconds during FILL mode.	Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		Sterilizer was unplugged, then plugged back in while thermostat was still tripped.	Verify if error was preceded with other error codes. (i.e. C983, C573)	Unplug unit for 60 seconds, then plug unit into a dedicated, properly rated circuit. Allow unit to cool for 30 minutes.
		Hi Limit thermostat malfunctioning.	If error code does not reset… Perform: *Thermostat Continuity Test* Meter Reading - Anything but OL	Replace thermostats.
		Loose / Damaged wire connection.	Check wire connections at high-limit thermostat and at J5 on Main PC Board.	Secure / Repair loose or damaged wire connections.
		If the unit skips the Fill mode…		
		Tray rack / tray plate not installed properly.	Inspect tray rack / tray plate for proper installation. (The 45 degree angled end of tray plate must be positioned upward and to the back of the chamber)	Install tray rack / tray plate properly.
		(M11) Mesh filter not in place.	Verify filter is in place.	Re-Install filter.
		Office running back to back cycles.	Check if operator is running consecutive cycles without completing the DRY cycle.	Complete full cycle.
		Water level sensor malfunctioning. Dirty/foreign object touching sensor.	Check sensor. Inspect water level sensor for foreign objects. (burs, instruments, etc.)	Clean/Dry water level sensor. (Clean with Speed-Clean and scotch bright pad) Remove foreign objects.
			Perform: *Water Level Sensor Test*	Replace water level sensor.
		If the unit completes the Fill mode…		
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Replacement fill / vent valve solenoid requires rectifier harness for DC coil.	Install rectifier harness.
			Check for voltage flow through rectifier harness. Refer to: *Fill / Vent Valve Supply Voltage Test*	Replace rectifier harness.
			Leaking or defective vent valve. (Check for water leaking from condensing coil spout) Perform: *Vent Valve Test*	Clean / Replace vent valve.
			Leaking or defective fill valve. Check for water leaking back into reservoir thru the fill line. (Look for bubbles coming from bottom of reservoir) Perform: *Fill Valve Test*	Clean / Replace fill valve.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C982** - continued* Note: An error code beginning with "C98" means the high-limit thermostat is tripped open. This is normally due to lack of water in the chamber.	C982: FILL MODE HI-LIMIT OPEN UNPLUG / REPLUG UNIT High-limit thermostat opened for at least 0.25 seconds during FILL mode.	*If the unit completes the Fill mode… - continued*		
		Pressure Leaks. *- continued*	Leaking or defective air valve. Check for excessive steam coming thru condensing coil spout. NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.	Clean / Replace air valve.
			Leaking or defective Pressure Relief Valve. Check for water / steam leakage from beneath the rear of the sterilizer. Perform: *Pressure Relief Valve Test*	Replace pressure relief valve.
			Pressure transducer tubing leaking. Check for steam leakage at pressure transducer tubing connections.	Secure pressure transducer tubing connections with high temperature cable ties.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.
		Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating element should be free of any flaking / pitting. Perform: *Heating Element Resistance Test* (should read 9-11 Ω)	Replace heating element.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
		Sterilizer overloaded.	Check the size of the load. (Refer to User Guide)	Reduce load size.

TP210 Rev. A

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C983*** Note: An error code beginning with "C98" means the high-limit thermostat is tripped open. This is normally due to lack of water in the chamber.	C983: HEATUP MODE HI-LIMIT OPEN UNPLUG / REPLUG UNIT High-limit thermostat opened for at least 0.25 seconds during HEAT UP mode.	Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		High Limit Thermostats open.	If error code does not reset… Perform: *Thermostat Continuity Test* Meter Reading - Anything but OL	Replace thermostats.
		If the unit skips the Fill mode…		
		Tray rack / tray plate not installed properly.	Inspect tray rack / tray plate for proper installation. (The 45 degree angled end of tray plate must be positioned upward and to the back of the chamber)	Install tray rack / tray plate properly.
		(M11) Mesh filter not in place.	Verify filter is in place.	Re-Install filter.
		Office running back to back cycles.	Check if operator is running consecutive cycles without completing the DRY cycle.	Complete full cycle.
		Water level sensor malfunctioning. Dirty/foreign object touching sensor.	Check sensor. Inspect water level sensor for foreign objects. (burs, instruments, etc.).	Clean/Dry water level sensor. (Clean with Speed-Clean and scotch bright pad) Remove foreign objects.
			Perform: *Water Level Sensor Test*	Replace water level sensor.
		If the unit completes the Fill mode…		
		Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Replacement fill / vent valve solenoid requires rectifier harness for DC coil.	Install rectifier harness.
			Check for voltage flow through rectifier harness. Refer to: *Fill / Vent Valve Supply Voltage Test*	Replace rectifier harness.
			Leaking or defective vent valve. (Check for water leaking from condensing coil spout) Perform: *Vent Valve Test*	Clean / Replace vent valve.
			Leaking or defective fill valve. Check for water leaking back into reservoir thru the fill line. (Look for bubbles coming from bottom of reservoir) Perform: *Fill Valve Test*	Clean / Replace fill valve.
			Leaking or defective air valve. Check for excessive steam coming thru condensing coil spout. NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.	Clean / Replace air valve.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C983*** *- continued* Note: An error code beginning with "C98" means the high-limit thermostat is tripped open. This is normally due to lack of water in the chamber.	C983: HEATUP MODE HI-LIMIT OPEN UNPLUG / REPLUG UNIT High-limit thermostat opened for at least 0.25 seconds during HEAT UP mode.	*If the unit completes the Fill mode… - continued*		
		Pressure Leaks. - *continued*	Leaking or defective Pressure Relief Valve. Check for water / steam leakage from beneath the rear of the sterilizer. Perform: *Pressure Relief Valve Test*	Replace pressure relief valve.
			Pressure transducer tubing leaking. Check for steam leakage at pressure transducer tubing connections.	Secure pressure transducer tubing connections with high temperature cable ties.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.
		Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating element should be free of any flaking / pitting. Perform: *Heating Element Resistance Test* (should read 9-11 Ω)	Replace heating element.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
		Sterilizer overloaded.	Check the size of the load. (Refer to User Guide)	Reduce load size.

TP210 Rev. A

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C984*** Note: An error code beginning with "C98" means the high-limit thermostat is tripped open. This is normally due to lack of water in the chamber.	C984: STERILIZE MODE HI-LIMIT OPEN UNPLUG / REPLUG UNIT High-limit thermostat opened for at least 0.25 seconds during STERILIZE mode.	Maintenance not performed.	Verify weekly & monthly maintenance has been performed by customer. Refer to User Guide.	Perform monthly maintenance.
		High Limit Thermostats open.	Verify if unit still overheated.	Unplug unit for 60 seconds, then plug unit into a dedicated, properly rated circuit. Allow unit to cool for 30 minutes.
		Hi Limit thermostat malfunctioning.	If error code does not reset… Perform: *Thermostat Continuity Test* Meter Reading - Anything but OL	Replace thermostats.
		Loose / Damaged wire connection.	Check wire connections at high-limit thermostat and at J5 on Main PC Board.	Secure / Repair loose or damaged wire connections.
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Replacement fill / vent valve solenoid requires rectifier harness for DC coil.	Install rectifier harness.
			Check for voltage flow through rectifier harness. Refer to: *Fill / Vent Valve Supply Voltage Test*	Replace rectifier harness.
			Leaking or defective vent valve. (Check for water leaking from condensing coil spout) Perform: *Vent Valve Test*	Clean / Replace vent valve.
			Leaking or defective fill valve. Check for water leaking back into reservoir thru the fill line. (Look for bubbles coming from bottom of reservoir) Perform: *Fill Valve Test*	Clean / Replace fill valve.
			Leaking or defective air valve. Check for excessive steam coming thru condensing coil spout. NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.	Clean / Replace air valve.
			Leaking or defective Pressure Relief Valve. Check for water / steam leakage from beneath the rear of the sterilizer. Perform: *Pressure Relief Valve Test*	Replace pressure relief valve.
			Pressure transducer tubing leaking. Check for steam leakage at pressure transducer tubing connections.	Secure pressure transducer tubing connections with high temperature cable ties.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.
		Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating element should be free of any flaking / pitting. Perform: *Heating Element Resistance Test* (should read 9-11 Ω)	Replace heating element.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C984*** *- continued* Note: An error code beginning with "C98" means the high-limit thermostat is tripped open. This is normally due to lack of water in the chamber.	C984: STERILIZE MODE HI-LIMIT OPEN UNPLUG / REPLUG UNIT High-limit thermostat opened for at least 0.25 seconds during STERILIZE mode.	Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
		Sterilizer overloaded.	Check the size of the load. (Refer to User Guide)	Reduce load size.

TP210 Rev. A

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: **C985** Note: An error code beginning with "C98" means the high-limit thermostat is tripped open. This is normally due to lack of water in the chamber.	C985: VENT MODE HI-LIMIT OPEN UNPLUG / REPLUG UNIT High-limit thermostat opened for at least 0.25 seconds during VENT mode.	Hi Limit thermostat malfunctioning.	If error code does not reset… Perform: *Thermostat Continuity Test* Meter Reading - Anything but OL	Replace thermostats.
		Loose / Damaged wire connection.	Check wire connections at high-limit thermostat and at J5 on Main PC Board.	Secure / Repair loose or damaged wire connections.
		Pressure Leaks.	Check for loose / worn door and dam gaskets or water leaking around door. Verify door and dam gaskets are installed properly. (Replace gasket kit 1x year)	Clean / Replace gaskets.
			Replacement fill / vent valve solenoid requires rectifier harness for DC coil.	Install rectifier harness.
			Check for voltage flow through rectifier harness. Refer to: *Fill / Vent Valve Supply Voltage Test*	Replace rectifier harness.
			Leaking or defective vent valve. (Check for water leaking from condensing coil spout) Perform: *Vent Valve Test*	Clean / Replace vent valve.
			Leaking or defective fill valve. Check for water leaking back into reservoir thru the fill line. (Look for bubbles coming from bottom of reservoir) Perform: *Fill Valve Test*	Clean / Replace fill valve.
			Leaking or defective air valve. Check for excessive steam coming thru condensing coil spout. NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.	Clean / Replace air valve.
			Leaking or defective Pressure Relief Valve. Check for water / steam leakage from beneath the rear of the sterilizer. Perform: *Pressure Relief Valve Test*	Replace pressure relief valve.
			Pressure transducer tubing leaking. Check for steam leakage at pressure transducer tubing connections.	Secure pressure transducer tubing connections with high temperature cable ties.
			Check all plumbing fitting connections for leakage.	Tighten or replace fittings.
		Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating element should be free of any flaking / pitting. Perform: *Heating Element Resistance Test* (should read 9-11 Ω)	Replace heating element.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C985*** *- continued* Note: An error code beginning with "C98" means the high-limit thermostat is tripped open. This is normally due to lack of water in the chamber.	C985: VENT MODE HI-LIMIT OPEN UNPLUG / REPLUG UNIT High-limit thermostat opened for at least 0.25 seconds during VENT mode.	Sterilizer is unlevel. (remove tray / trays)	Verify support surface is level.	Place sterilizer on a level support surface.
			Verify water on all sides of chamber are equal.	
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
		Sterilizer overloaded.	Check the size of the load. (Refer to User Guide)	Reduce load size.

TP210 Rev. A

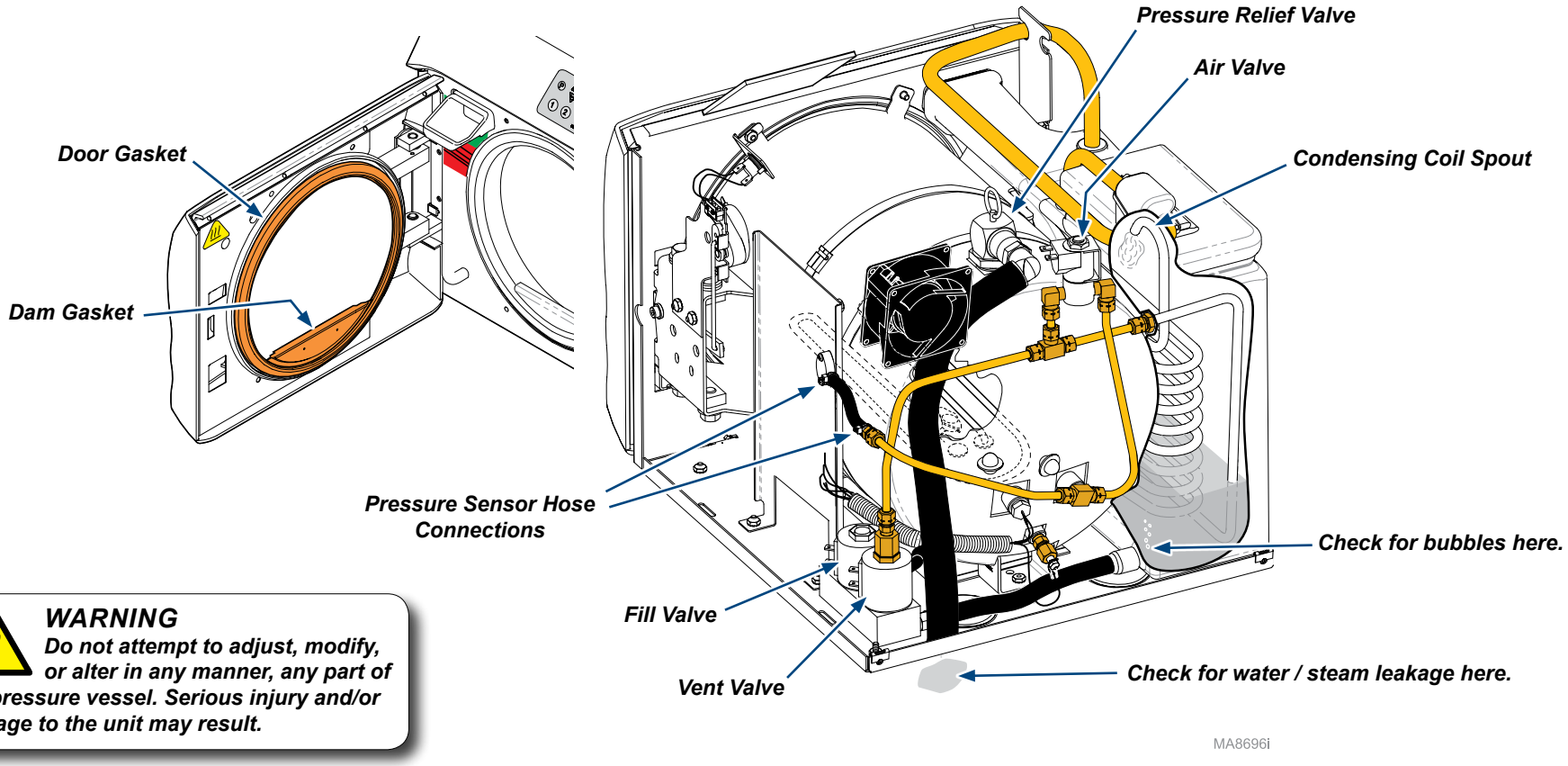
Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C987***	C987: DRY MODE HI-LIMIT OPEN UNPLUG / REPLUG UNIT High-limit thermostat opened for at least 0.25 seconds during DRY mode.	High Limit Thermostats open.	Verify if unit still overheated.	Unplug unit for 60 seconds, then plug unit into a dedicated, properly rated circuit. Allow unit to cool for 30 minutes.
		Temperature sensor malfunctioning.	Check for residue build up on temperature sensor probe.	Clean sensor probe with Speed-Clean, distilled water, and abrasive pad.
			Check that nothing is touching or crowding the temperature sensor. (Example: trays, pouches, cassettes, etc.)	Reposition items so nothing touches or crowds the temperature sensor.
			Perform Temperature Sensor Resistance Test. Allow sensor to cool to room temperature before testing. Acceptable range 1.07-1.1K Ω. Refer to: *Temperature Sensor Resistance Test*	Replace temperature sensor.
			Perform Temperature Sensor Supply Voltage Test. Disconnect sensor harness from J12 on PC board. On pins 1 & 2 acceptable range is 4.0 - 6.0 VDC. Refer to: *Temperature Sensor Supply Voltage Test*	Replace Main PC board.
		Hi Limit thermostat malfunctioning.	If error code does not reset… Perform: *Thermostat Continuity Test* Meter Reading - Anything but OL	Replace thermostats.
		Loose / Damaged wire connection.	Check wire connections at high-limit thermostat and at J5 on Main PC board.	Secure / Repair loose or damaged wire connections.
		Door spring missing / damaged.	If the door motor releases the latch, but the door remains closed, Inspect door spring for damage.	Replace door springs.
			Verify if door is at the vented position. (Push in on door with out lifting handle)	
			Verify the QTY of door springs. (M11- QTY 2, M9-QTY 1)	
			Verify door springs are at a 45 degree angle.	Place door spring at a 45 degree angle.
		Door hinge binding.	Check for binding or build up of debris in the door hinges.	Clean debris from hinges.
		Facility voltage too high / low.	Test facility supply voltage. Voltage must be... 115V models: 104 - 127 VAC 50/60 Hz 230V models: 207 - 253 VAC 50/60 Hz	Contact an electrician to modify voltage.

Troubleshooting Chart - continued

Problem	Display / Symptom	Cause	Check	Action
Error Code: ***C987*** *- continued*	C987: DRY MODE HI-LIMIT OPEN UNPLUG / REPLUG UNIT High-limit thermostat opened for at least 0.25 seconds during DRY mode.	Heating element malfunctioning.	Inspect heating element. Heating element should lay flat in the bottom of the chamber. Heating element should be free of any flaking / pitting. Perform: *Heating Element Resistance Test* (should read 9-11 Ω)	Replace heating element.
		PC Board malfunctioning.	Perform: *Heating Element Supply Voltage Test* (With harness attached to leads should have line voltage in test mode)	Replace Main PC board.
			Perform: *Main PC Board Relay Test* (Check TP1 & TP2 for an acceptable range: 10 to 14 VDC)	
			Perform: *Main PC Board Pressure Transducer Voltage Test* (Acceptable range: 4.0 to 6.0 VDC)	
		Sterilizer overloaded.	Check the size of the load. (Refer to User Guide)	Reduce load size.
		Sterilizer was unplugged, then plugged back in while thermostat was still tripped.	Verify if error was preceded with other error codes. (i.e. C983, C573)	Unplug unit for 60 seconds, then plug unit into a dedicated, properly rated circuit. Allow unit to cool for 30 minutes.

Checking for Pressure Leaks



WARNING
Do not attempt to adjust, modify, or alter in any manner, any part of the pressure vessel. Serious injury and/or damage to the unit may result.

Component	Check	Correction
Door / Dam Gaskets	*Check for water leaking around door.*	*Inspect / clean gaskets.* *Replace gasket(s) if necessary.*
Vent Valve	*Check for water leaking from condensing coil spout.*	*Clean / replace vent valve.*
Fill Valve	*Check for water leaking back into reservoir thru the fill line.* *Look for bubbles coming from bottom of reservoir.*	*Clean / replace fill valve.*
Air Valve	*Check for excessive steam coming thru condensing coil spout.* *NOTE: During the HEAT & VENT modes, it is normal for steam to be exhausted thru the spout.*	*Clean / replace air valve.*
Pressure Relief Valve	*Check for water / steam leakage from beneath the rear of the sterilizer.*	*Refer to: Pressure Relief Valve Test.* *Replace valve if necessary.*
Pressure Sensor Hose	*Check for steam leakage at pressure sensor hose connections.*	*Secure pressure sensor hose connection with high temperature cable ties.*

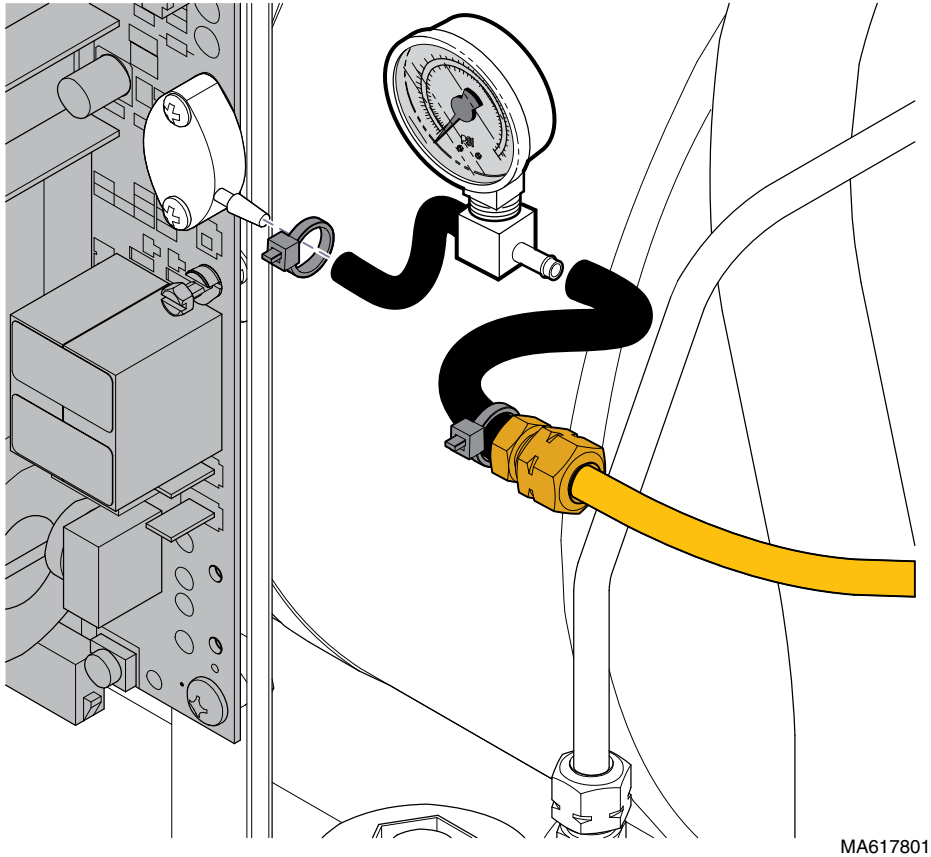
Using a Pressure Gauge

Note
To test chamber pressure, a Pressure Gauge Harness is available (002-0372-00).

Step 1: Connect the pressure gauge.
A) Cut cable tie, then disconnect tubing from PC board.
B) Connect pressure gauge harness as shown.

Step 2: Verify correct pressure display.
A) Run a sterilization cycle.
B) The pressure shown on the gauge should match the pressure on the display panel.

Step 3: Remove gauge / Connect tubing.
A) Disconnect pressure gauge harness.
B) Connect tubing to PC board.
C) Secure tubing with high-temp cable tie.



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Service Diagnostics

The Service Diagnostics feature allows you to view recent error codes and test the sterilizer's major components without running a complete cycle. The Service Diagnostics tests should always be done before replacing any major component.

Activating Service Diagnostics

> **Caution**
> *This operation requires power to be connected to the unit with panels removed. Use caution when performing this procedure.*

To activate Service Diagnostics...

A) Disconnect sterilizer power cord.
B) Remove RH side panel.
C) Move switch #1 on SW1 block to ON.
D) Reconnect power cord.
E) Press **Start** button.

Note: Go to "Test Selection Screen" page for next step.

To return to normal operating mode...

A) Disconnect power cord.
B) Move switch #1 (SW1 block) to OFF.
C) Reconnect power cord.

TP210 Rev. A

Test Selection Screen

Press the **Start** button to initiate the I/O Test.
This test allows you to energize the air valve, vent valve, fill valve, door motor, and heating element independently without running a cycle.

This test also displays the temperature / pressure inside the chamber, and the status of the high-limit thermostats, door switch, and the water level sensor.

Press the **Stop** button to show the last five error codes displayed on the unit.

Press the **Handpieces** button to initiate the Keytest.
This test allows you to check the functionality of the buttons on the touch pad.

I/O Test

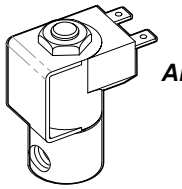
Air Valve Test

Press the Start button.

This energizes the Air Valve, causing it to open.
*Press the **Start** button again to close the valve.*

[You should hear a "click" when the valve opens / closes.
This indicates the PC board and valve are functioning properly.]

Press the Stop button for the next test.



Air Valve

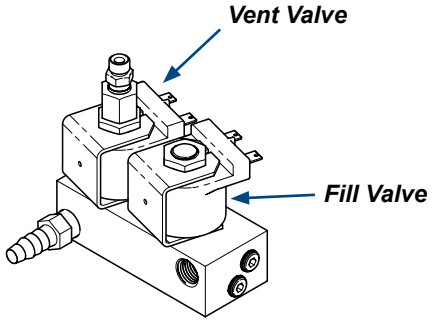
Vent Valve Test

Press the Start button.

This energizes the Vent Valve, causing it to close.
*Press the **Start** button again to open the valve.*

[You should hear a "click" when the valve opens / closes.
This indicates the PC board and valve are functioning properly.]

Press the Stop button for the next test.



Vent Valve

Fill Valve

Fill Valve Test

Equipment Alert

The door switch must be tripped when testing the Fill Valve. Close the door or manually trip the switch. The water level sensor does not function during this test. The chamber will overflow if the valve is left open too long.

Press the Start button.

This energizes the Fill Valve, causing it to open.
*Press the **Start** button again to closes the valve.*

[Water will flow into the chamber when the valve opens.
This indicates the PC board and valve are functioning properly.]

Press the Stop button for the next test.

I/O Test - continued

Door Open Test

Note: This test should be done with the door closed.

Press the Start button.

This energizes the Door Motor System.

[The door should open after approx. 15 seconds.
This indicates the PC board and door motor are functioning properly.]

Press the Stop button for the next test.

Door Motor System

Steam Heater Test

Equipment Alert

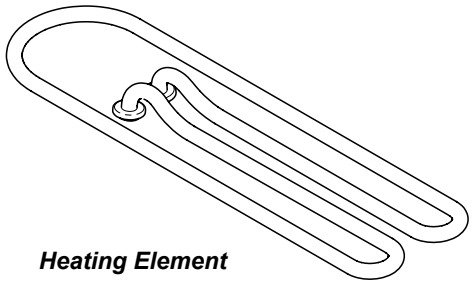
Do not run this test more than twice without allowing unit to cool.
Doing so may cause the sterilizer to overheat.

Press the Start button.

This energizes the Heating Element.

[The heating element should heat up for approx. 15 seconds, then shut off.
This indicates the PC board and heating element are functioning properly.]

Press the Stop button for the next test.



Heating Element

I/O Test - continued

High-Limit Thermostats
Status should always be *CLOSED*.
OPEN, indicates malfunctioning thermostat(s), or that the unit has overheated

Door Switch
Status should correctly reflect the position of the door.

Water Level Sensor
Status should reflect the water level in the chamber. If water is contacting the sensor, status should be *FULL*. If not, EMPTY.

Sensor Status
The display shows the status of the High-Limit Thermostats, the Door Switch, and the Water Level Sensor.

[If the display reading indicates a malfunction, test the corresponding component]

Press the Stop button for the next test.

Chamber Temperature / Pressure
The display shows the temperature / pressure inside the chamber.

Press the Stop button to return to the Test Selection Screen.

Chamber Temperature
[Verify w/ thermometer]

Chamber Pressure
With the door open, display should show: 0.0 PSI (0.0 kPa)

Service Diagnostics *- continued*

Recall Errors

Recall Errors
The display shows the last five error codes displayed on the unit.

NOTE: "1" is the most recent error code; "5" is the oldest.

Recall Errors
To erase all five error codes from memory...
*Press the **Start** button.*

To retain error codes...
*Press the **Stop** button.*

TP210 Rev. A

Service Diagnostics *- continued*

Keytest

Keytest
Press the Start button.

[When the designated button is pressed, you will hear a single "beep", then the test will advance to the next button. This indicates the button is functioning properly].

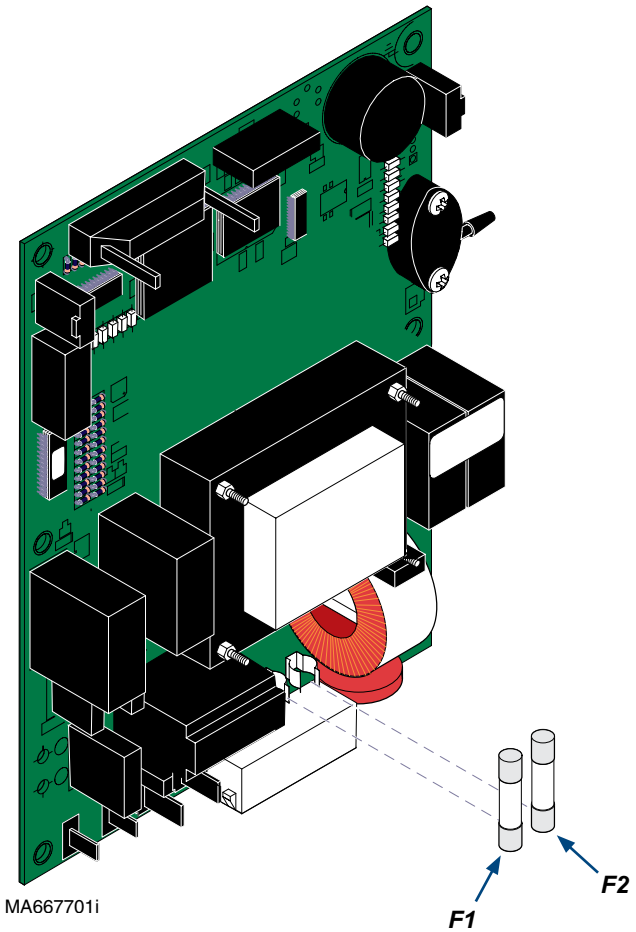
Keytest
Press the Stop button.

Keytest
Press the Handpieces button.

[Continue for all remaining buttons].

TP210 Rev. A

Fuses



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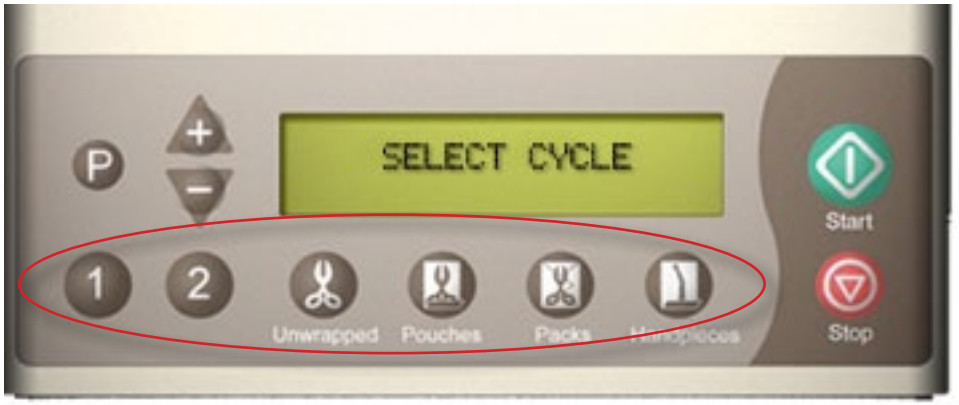
Fuse Ratings:	
115V models	*F1: 0.250 amp, 250V, Slo-Blo, 1/4" x 1-1/4"* *F2: 15 amp, 250V, Fast-Acting, 1/4" x 1-1/4"*
230V models	*F1: 0.125 amp, 250V, Slo-Blo, 5 mm x 20 mm* *F2: 8 amp, 250V, Fast-Acting, 5 mm x 20 mm*

Adjusting the Dry Time

To adjust the dry time...

A) Press desired cycle button (Unwrapped, Pouches, etc.).
*B) Press the < **P** > button.*
*C) Press the < **+** > or < **-** > button to adjust dry time.*
*D) Press the < **P** > button.*

Note: The adjusted dry time is stored in memory for the selected cycle. Repeat these steps for other cycles as required.



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TP210 Rev. A

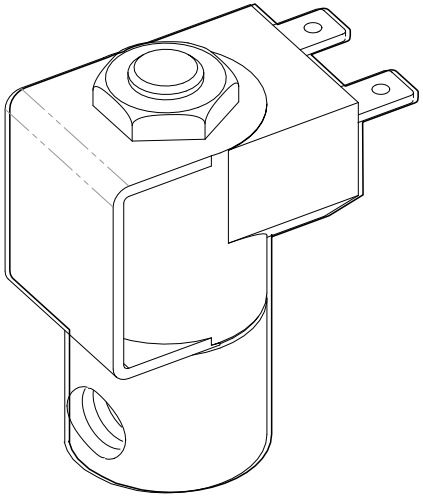
Air Valve

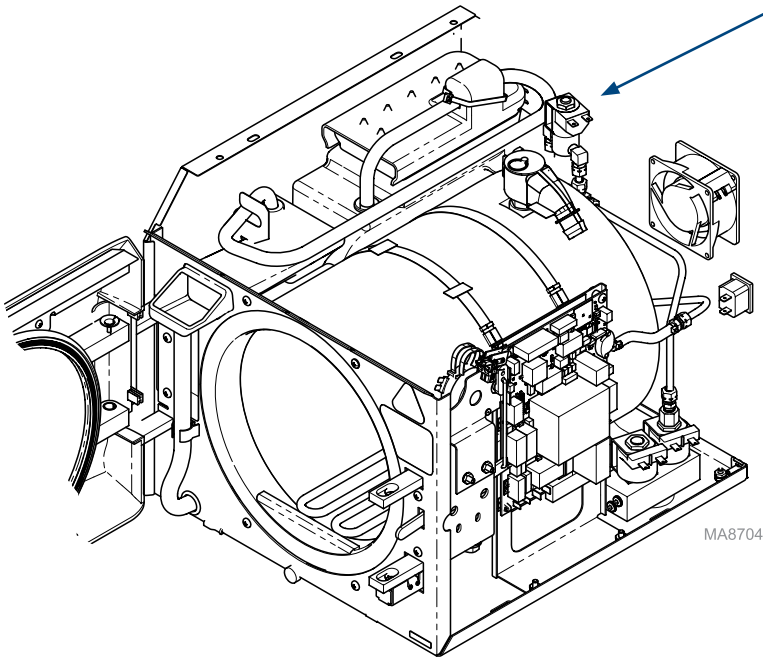
Location / Function

During the Fill Mode...
Line voltage is supplied to the air valve. This causes the valve to open so that water can flow into the chamber.

During the Heat-Up Mode...
When the Heat-Up Mode begins, the PC board stops the current flow to the air valve. This allows the valve to close. The PC board opens the air valve three times during the Heat-Up Mode to release air from the chamber (this prevents vacuum-effect).

During the Sterilization / Vent / Dry Modes...
There is no current flow to the air valve. The valve is closed.





Air Valve - continued

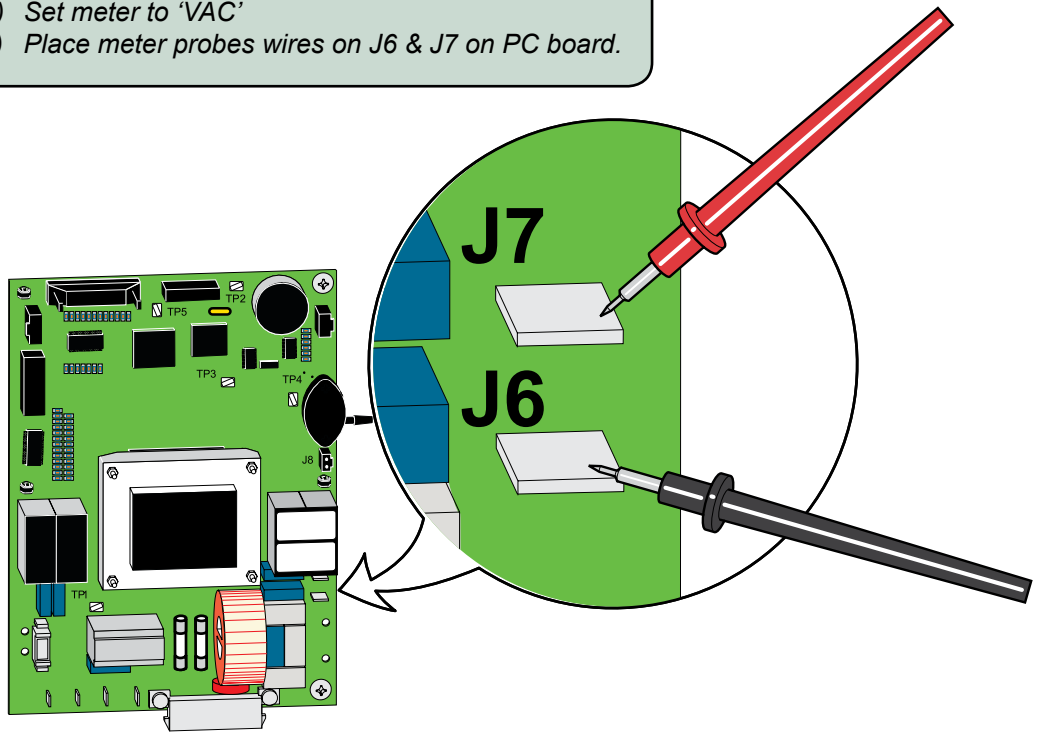
Testing

If you are testing the valve during a specific cycle mode (Fill Mode, Vent Mode, etc), steps A thru C are not required.

Refer to Service Diagnostics section for steps A thru C.

Air Valve: Supply Voltage Test

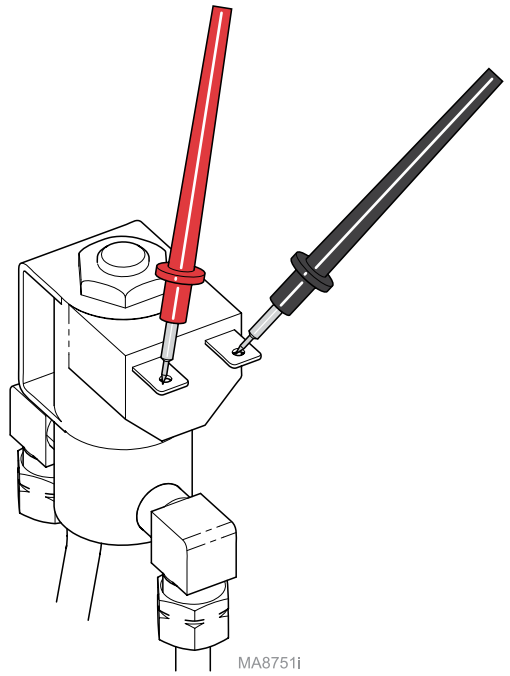
A) Activate the Service Diagnostics Mode.
B) Initiate the I/O Test.
C) Energize the air valve.
D) Disconnect wires from valve terminals.
E) Set meter to 'VAC'
F) Place meter probes wires on J6 & J7 on PC board.



Meter Reading	*Required Action*
Line voltage (120 or 230 VAC)	*PC board is OK Perform Continuity Test*
any reading other than line voltage	*Replace PC board*

Air Valve: Continuity Test

A) Disconnect wires from valve.
B) Set meter to 'M Ω'
C) Place meter probes on valve terminals.



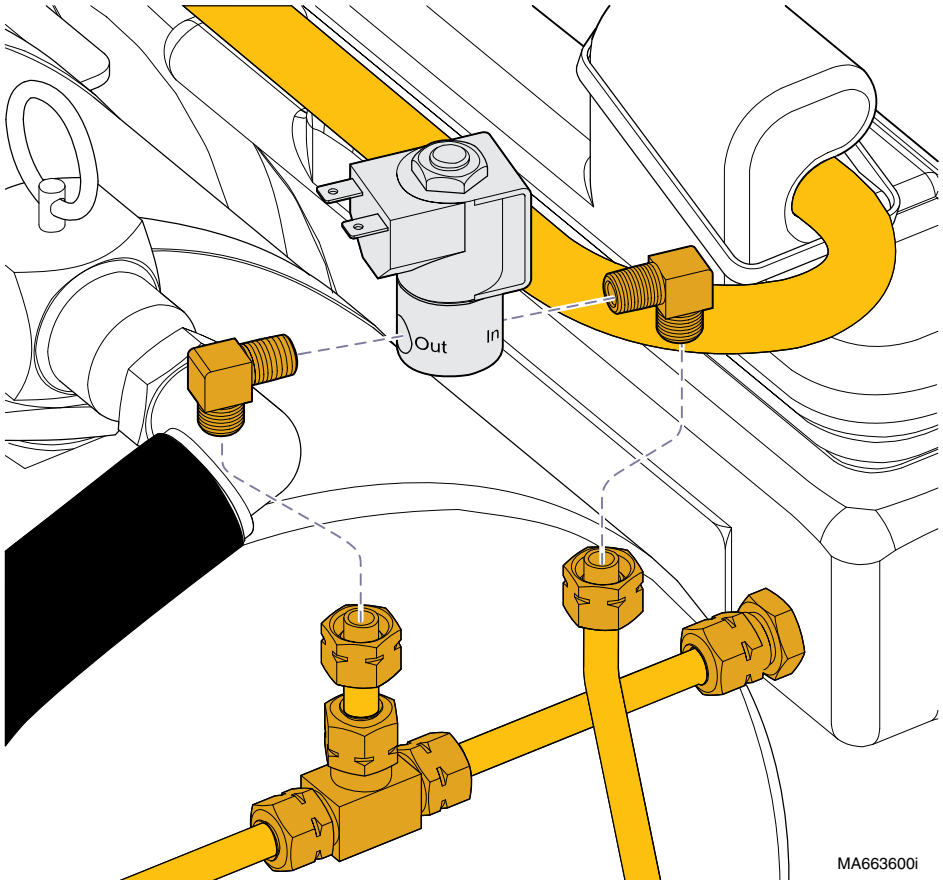
Meter Reading	*Required Action*
anything other than OL	*Air valve is OK*
OL	*Replace air valve*

Air Valve *- continued*

Replacement / Cleaning

To replace the air valve...

A) Loosen two compression fittings, then remove air valve.
B) Remove two elbow fittings from air valve.
C) Apply hi-temp sealant (Loctite 565) to threads of elbow fittings.
Do not use teflon tape!
D) Install elbow fittings onto air valve.
E) Position air valve, then tighten compression fittings.
F) Run test cycle / check for leaks.



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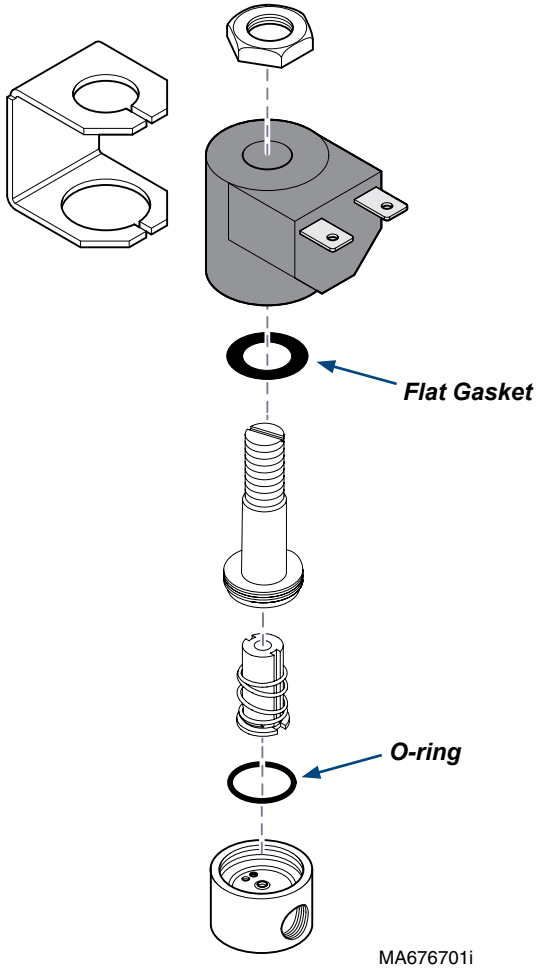

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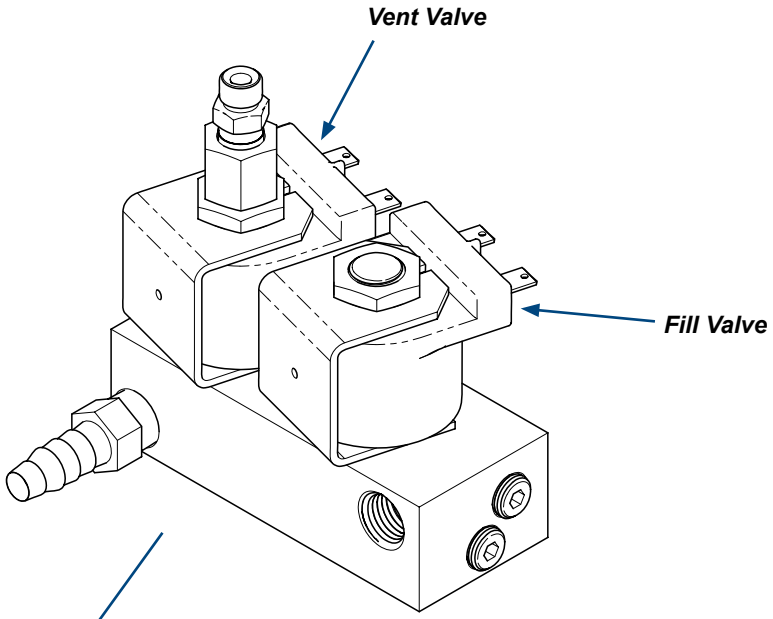
To disassemble / clean the air valve...

A) Remove nut, coil retainer, and coil.
B) Remove valve stem, then clean ports in valve body.
C) Inspect O-ring and flat gasket. Replace if necessary.
D) Reassemble valve components.

TP210 Rev. A

Fill / Vent Valve

Location / Function



Vent Valve

During the Fill / Heat-Up / Sterilization Modes...

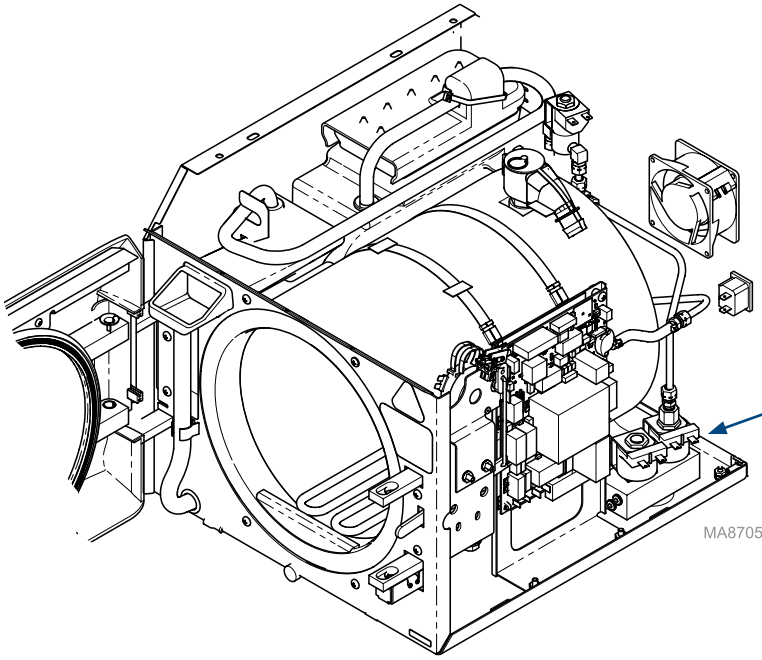
Voltage is supplied to the vent valve. This causes the valve to close so that pressure can build in the chamber.

During the Vent Mode...

The PC board stops the current flow to the vent valve. This allows the valve to open, releasing steam / pressure from the chamber.

During the Dry Mode...

There is no current flow to the vent valve. The valve is open.



Fill Valve

During the Fill Mode...

Voltage is supplied to the fill valve. This causes the valve to open, allowing water to flow into the chamber.

When the water in the chamber contacts the water level sensor, the PC board stops the current flow to the fill valve. This allows the valve to close, stopping the flow of water into the chamber.

During the Heat-Up / Sterilization / Vent / Dry Modes...

There is no current flow to the fill valve. The valve is closed.

Fill / Vent Valve - continued

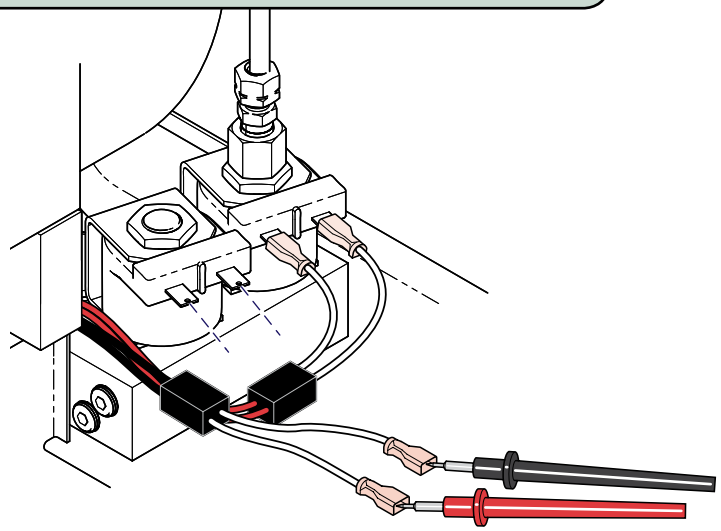
Testing

If you are testing the valve during a specific cycle mode (Fill Mode, Vent Mode, etc), steps A thru C are not required.

Refer to Service Diagnostics section for steps A thru C.

Fill / Vent Valve: Supply Voltage Test

A) Activate the Service Diagnostics Mode.
B) Initiate the I/O Test.
C) Energize the desired valve (Fill or Vent).
D) Disconnect wires from valve terminals.
E) Set meter to 'VDC'
F) Place meter probes wires.



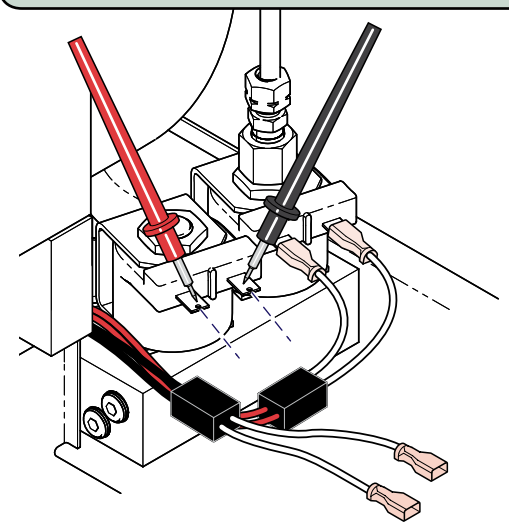
Meter Reading (Acceptable Range)	*Required Action*
115V models: 92.7 to 113.9 VDC*	*PC board is OK Perform Continuity Test*
*230V models**: 186.5 to 228.4 VDC*	
** For input line voltages of: 104 - 127 VAC ** For input line voltages of: 207 - 253 VAC*	

Meter Reading	*Required Action*
any reading out of the acceptable range	*Replace PC board*

Equipment Alert
Sterilizer door must be closed to perform fill valve test.

Fill / Vent Valve: Continuity Test

A) Disconnect wires from desired valve.
B) Set meter to 'M Ω'
C) Place meter probes on valve terminals.



MA8749i

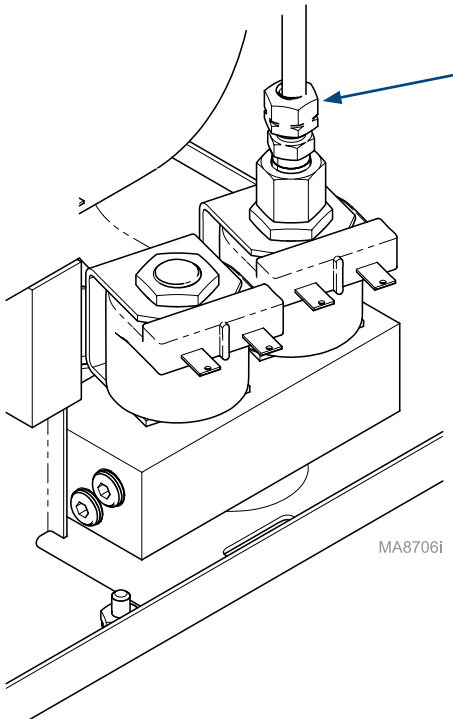
Meter Reading	*Required Action*
anything other than OL	*Valve OK*
OL	*Replace faulty valve*

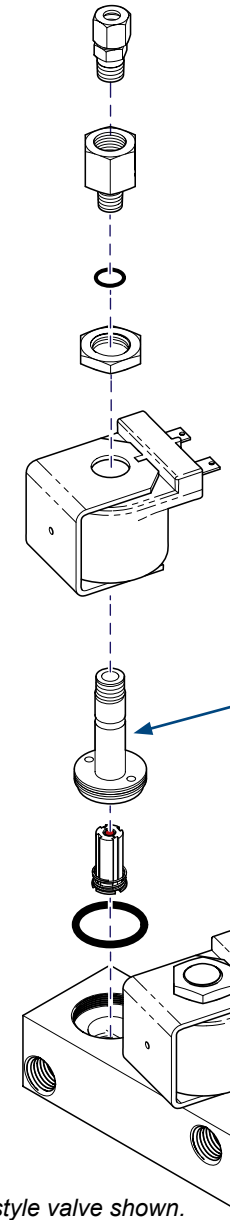
Fill / Vent Valve *- continued*

Cleaning / Repair

To clean or repair the fill / vent valve...

A) Drain water from reservoir.
*B) **Vent Valve only:** Disconnect compression fitting.*
C) Disconnect wires from valve terminals.
D) Disassemble the valve. (Vent valve shown. Fill valve similar)
E) Inspect O-rings, remove any debris.
F) Assemble the valve.
G) Connect wires to valve terminals.
*H) **Vent Valve only:** Connect compression fitting.*
I) Refill reservoir with distilled water.
J) Run test cycle / check for leaks.





New-style valve shown.
(Disassembly of old-style valves is similar.)

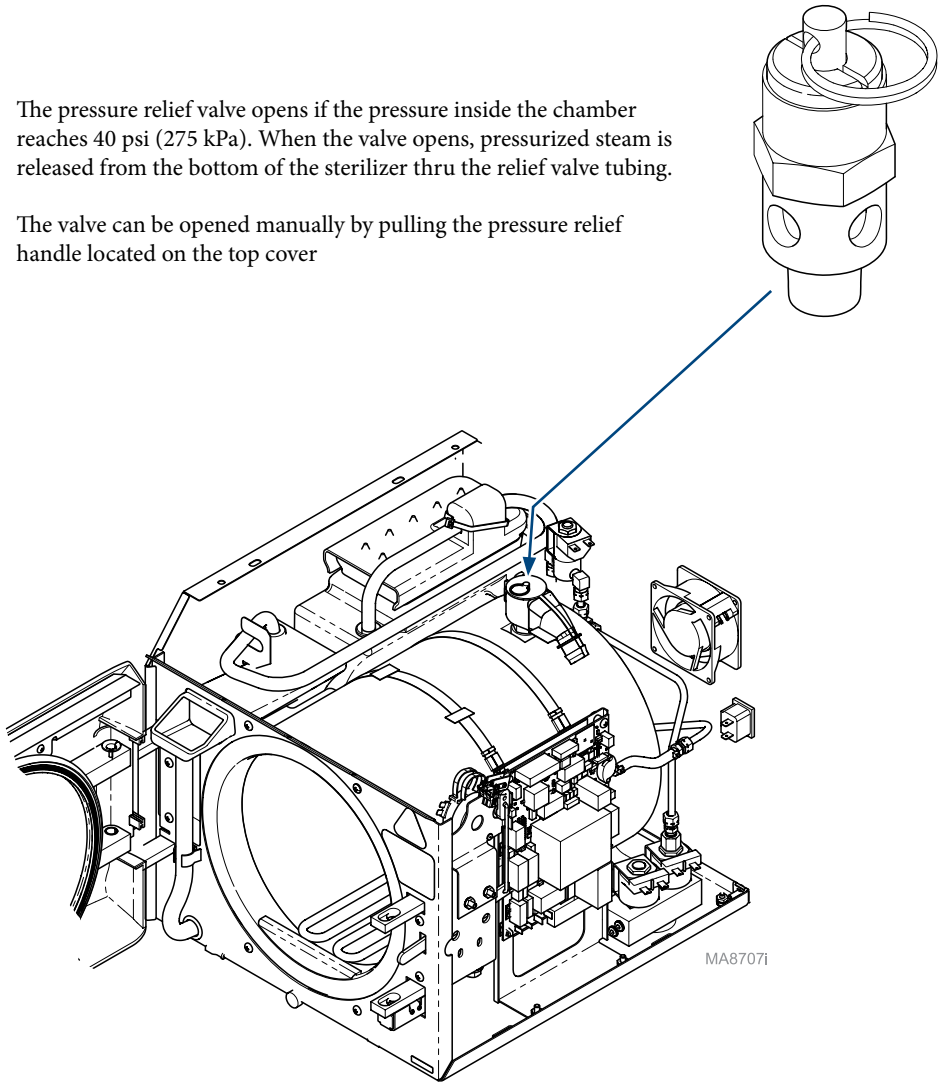
TP210 Rev. A

Pressure Relief Valve

Location / Function / Testing

The pressure relief valve opens if the pressure inside the chamber reaches 40 psi (275 kPa). When the valve opens, pressurized steam is released from the bottom of the sterilizer thru the relief valve tubing.

The valve can be opened manually by pulling the pressure relief handle located on the top cover



Caution
Steam / water will be expelled during this test.
To prevent burns, place a towel around the bottom of the sterilizer.

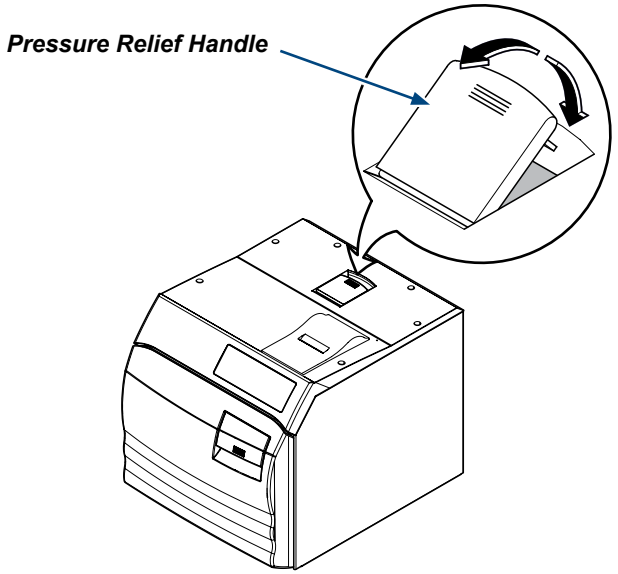
To test the pressure relief valve...

A) Start an Unwrapped cycle.

B) When chamber pressure reaches 20 psi (138 kPa), pull pressure relief handle for approx. 3 seconds, then release.

Steam should discharge when handle is pulled, and completely stop when handle is released.

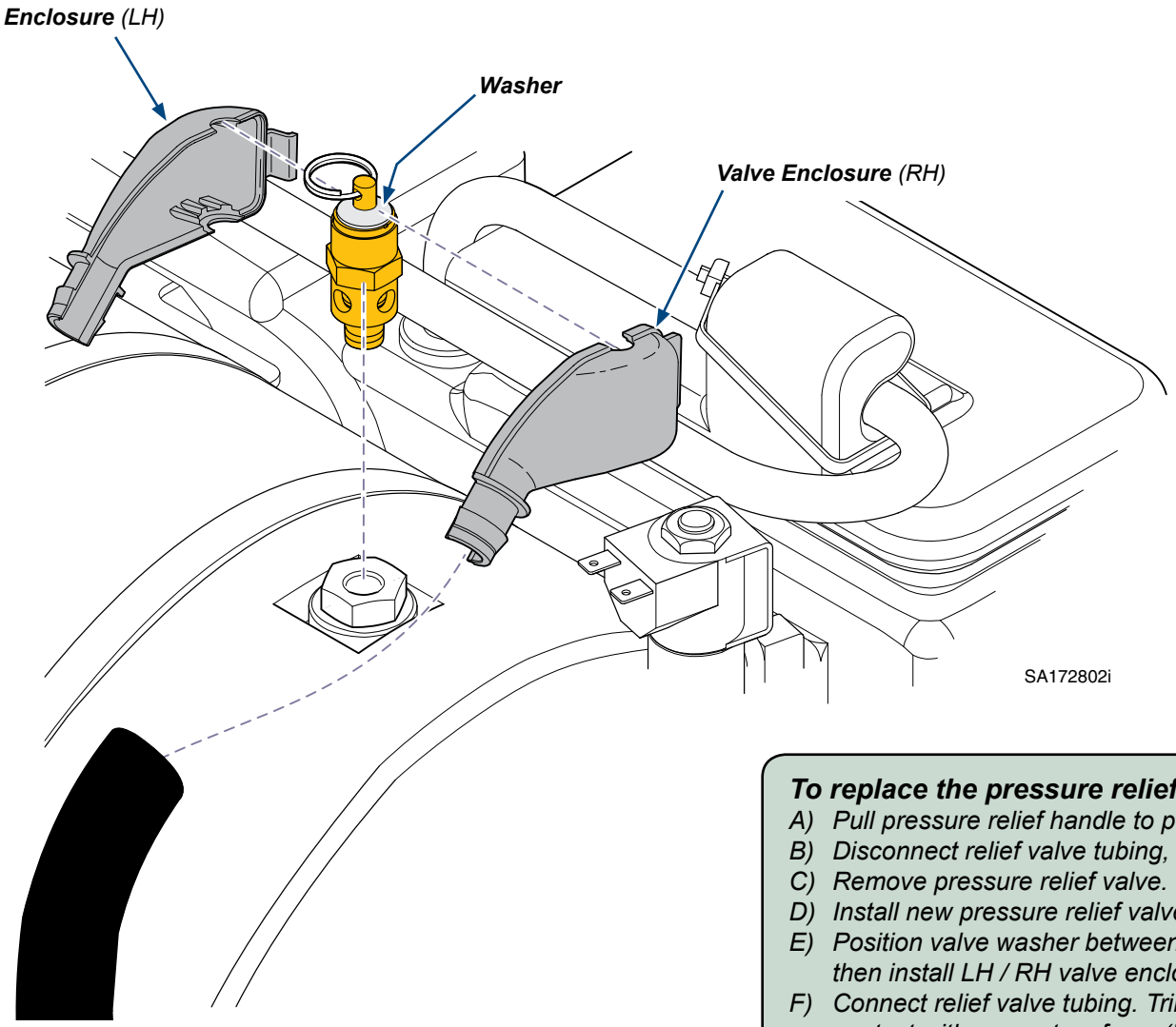
If steam continues to discharge when handle is released...
Pull handle, then quickly release until valve "snaps" closed.
If valve will not close, replace valve.



TP210 Rev. A

Pressure Relief Valve *- continued*

Replacement



To replace the pressure relief valve...

A) Pull pressure relief handle to purge pressure from chamber.
B) Disconnect relief valve tubing, then separate valve enclosure.
C) Remove pressure relief valve.
D) Install new pressure relief valve.*
E) Position valve washer between top of enclosure and valve ring, then install LH / RH valve enclosure.
F) Connect relief valve tubing. Trim tubing if necessary to prevent contact with support surface. (M9: 13 3/4" / M11: 16 1/4")

**Note: Pressure relief valves have thread sealant on them to prevent leakage.*

Heating Element

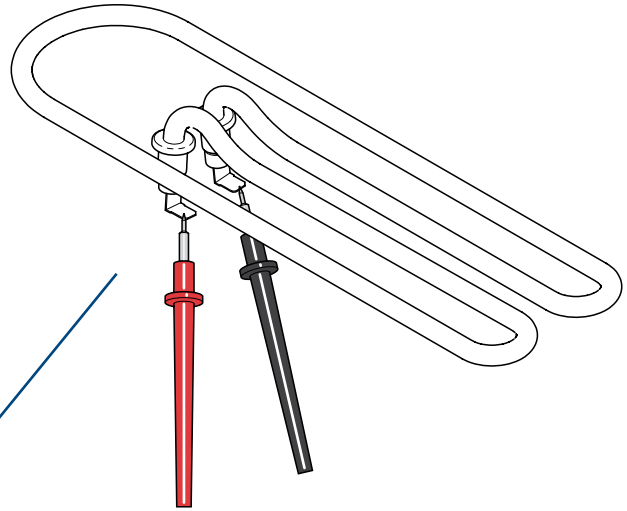
Location / Function

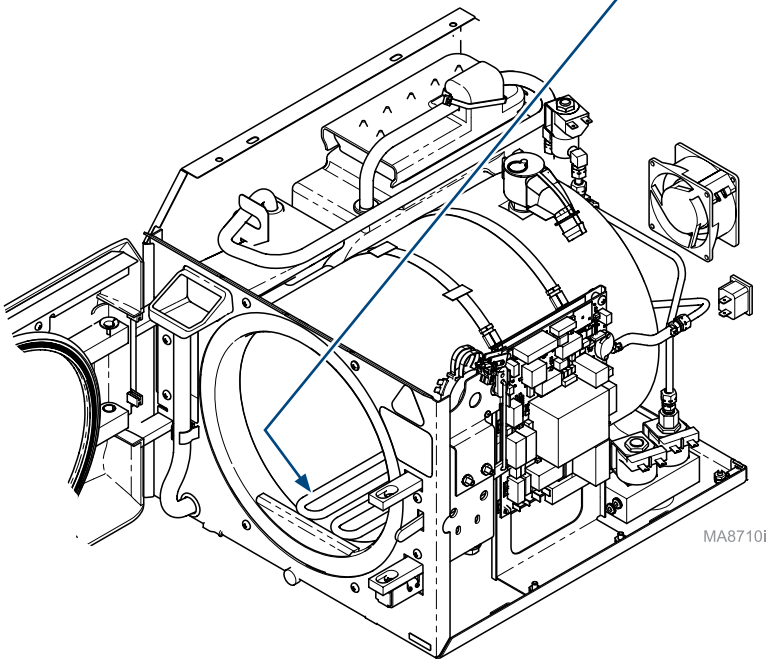
During the Fill / Vent Modes...
There is no current flow to the heating element.
The heating element is OFF.

During the Heat-Up Mode...
Line voltage is continually supplied to the heating element. The heating element heats the water in the chamber until sterilization temperature is achieved.

During the Sterilization Mode...
Based on the readings from the temperature and pressure sensors, the heating element is cycled ON / OFF to maintain the required parameters for the selected cycle.

During the Dry Mode...
Line voltage is supplied to the heating element at pre-set intervals to turn it ON / OFF. This continues for the duration of the Dry Mode.



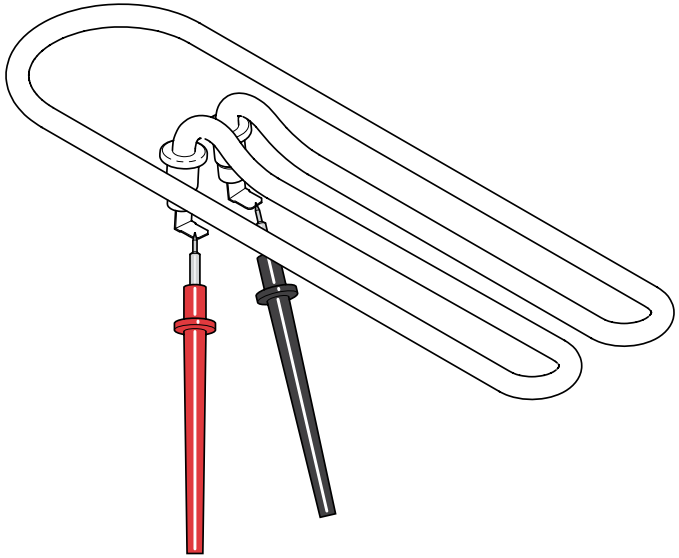


Heating Element *- continued*

Testing

Heating Element: Resistance Test

A) Remove the bottom cover.
B) Disconnect wires from heating element terminals.
C) Set meter to '200 Ω'
D) Place meter probes on heating element terminals.

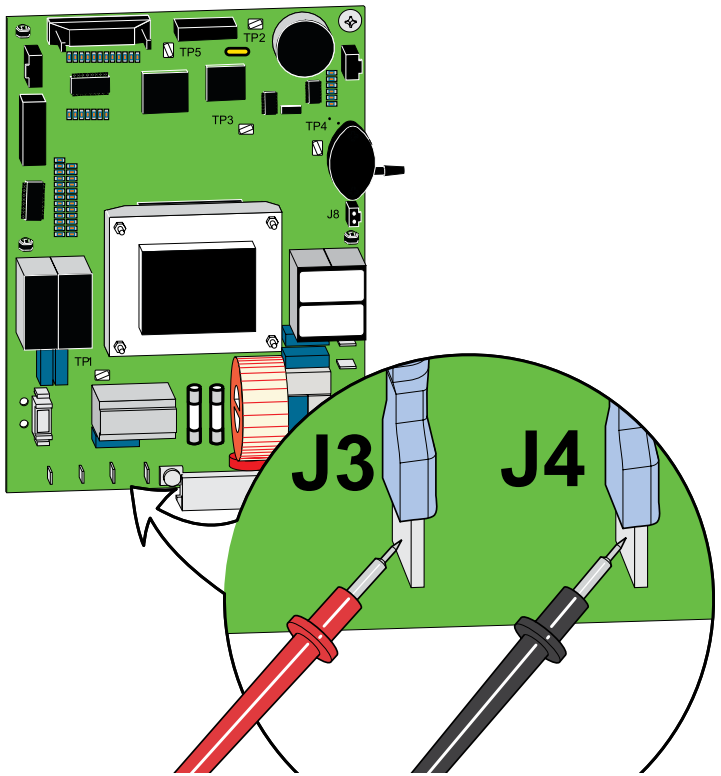


Meter Reading (Acceptable Range)	*Required Action*
115V models: 9 to 11 Ω	*Perform PC Board Relay Test*
230V models: 34 to 42 Ω	

Meter Reading	*Required Action*
any reading out of the acceptable range	*Replace heating element*

Heating Element: Supply Voltage Test

A) Back wire terminals slightly off J3 & J4 on PC board leaving them still attached.
B) Set meter to 'VAC'
C) Activate the Service Diagnostics Mode.
D) Initiate the I/O Test.
E) Energize the Steam Heater. [The heating element will energize for approx. 15 seconds, then shut off.]
F) Place meter probes on J3 & J4 on PC board.



Meter Reading	*Required Action*
Line voltage (120 or 230 VAC)	*PC board is OK*
any reading other than line voltage	*Replace PC board*

TP210 Rev. A

Heating Element *- continued*

Replacement

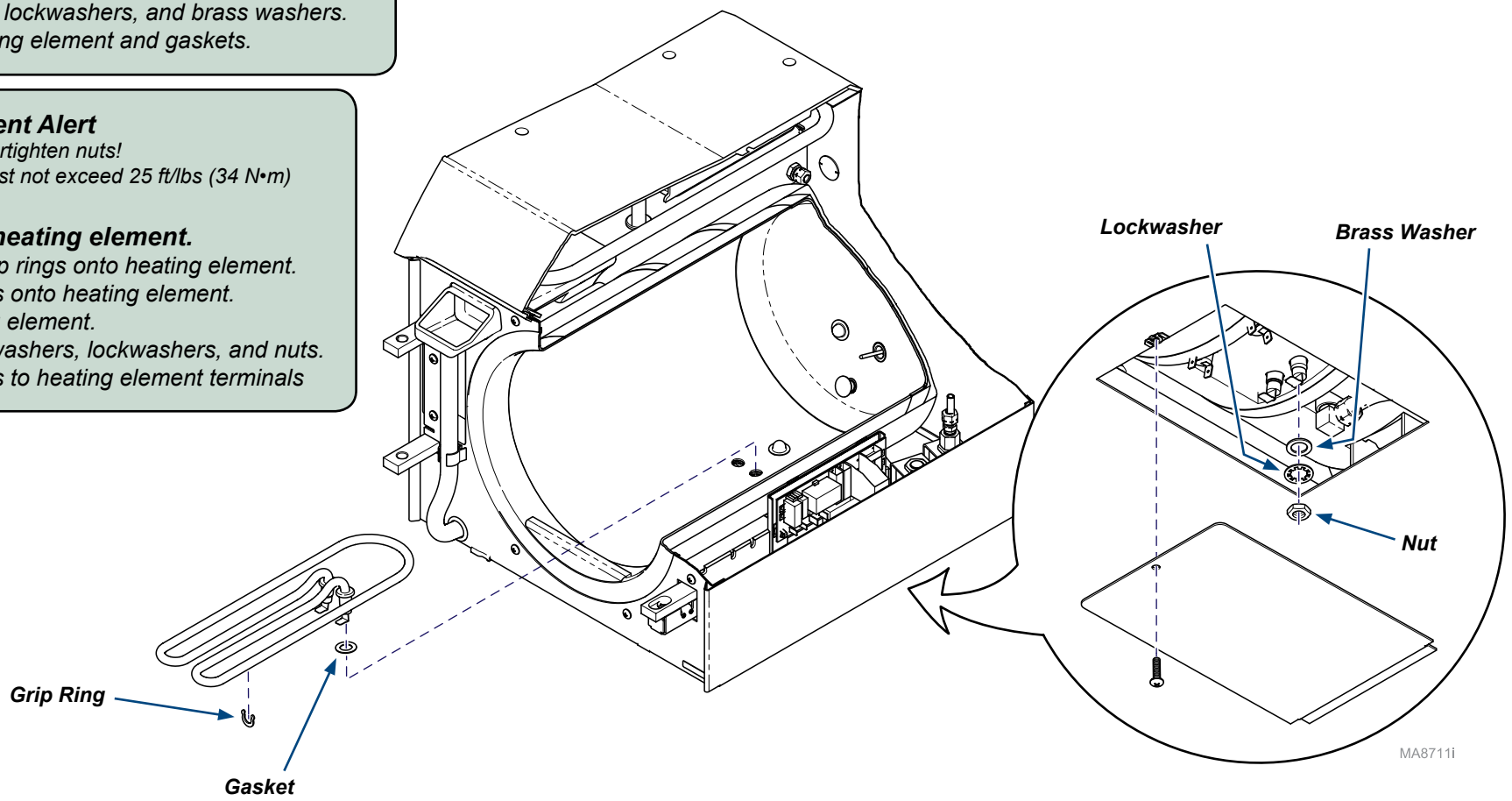
Step 1: Remove heating element.

A) Drain water from reservoir.
B) Remove bottom cover.
C) Disconnect wires from heating element terminals.
D) Remove nuts, lockwashers, and brass washers.
E) Remove heating element and gaskets.

Equipment Alert
Do not overtighten nuts!
Torque must not exceed 25 ft/lbs (34 N•m)

Step 2: Install heating element.

A) Install four grip rings onto heating element.
B) Install gaskets onto heating element.
C) Install heating element.
D) Install brass washers, lockwashers, and nuts.
E) Connect wires to heating element terminals



TP210 Rev. A

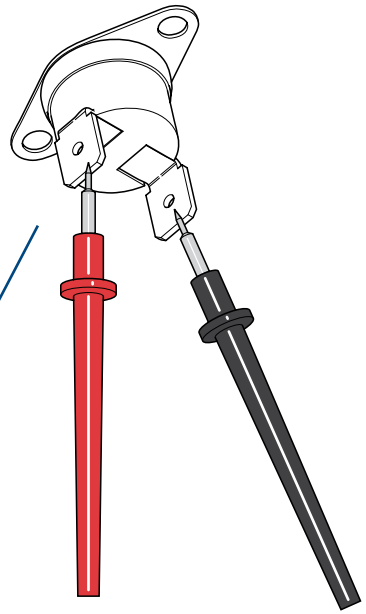
High-Limit Thermostats

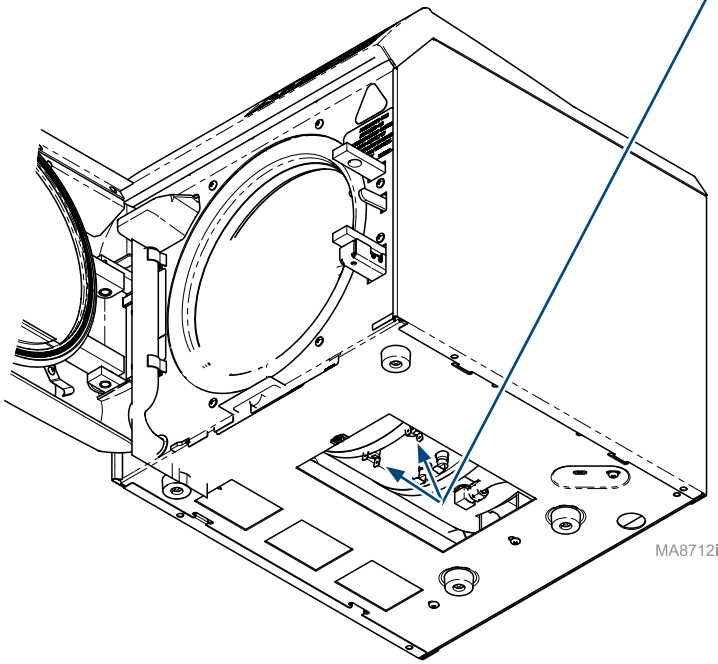
Location / Function / Testing

During all Modes...
Line voltage continually flows thru the normally closed contacts of the two high-limit thermostats. This circuit powers all of the line voltage components, except for the fan system.

If the temperature at either of the thermostats exceeds 450°F (+/- 25°) / 232°C (+/- 14°), the thermostat contacts open. This interrupts power, and terminates the cycle. [An error code will appear on the display].

The thermostat contacts reset to the closed position at approximately 325°F / 163°C.





Note: *Thermostats must be tested at room temperature.*

High-Limit Thermostat: Continuity Test

A) Disconnect sterilizer power cord.
B) Disconnect wires from thermostat.
C) Set meter to '200 Ω'
D) Place meter probes on thermostat terminals.

Meter Reading	Required Action
approx. 0.0 Ω	Thermostat is good
OL	Replace thermostat

TP210 Rev. A

High-Limit Thermostats *- continued*

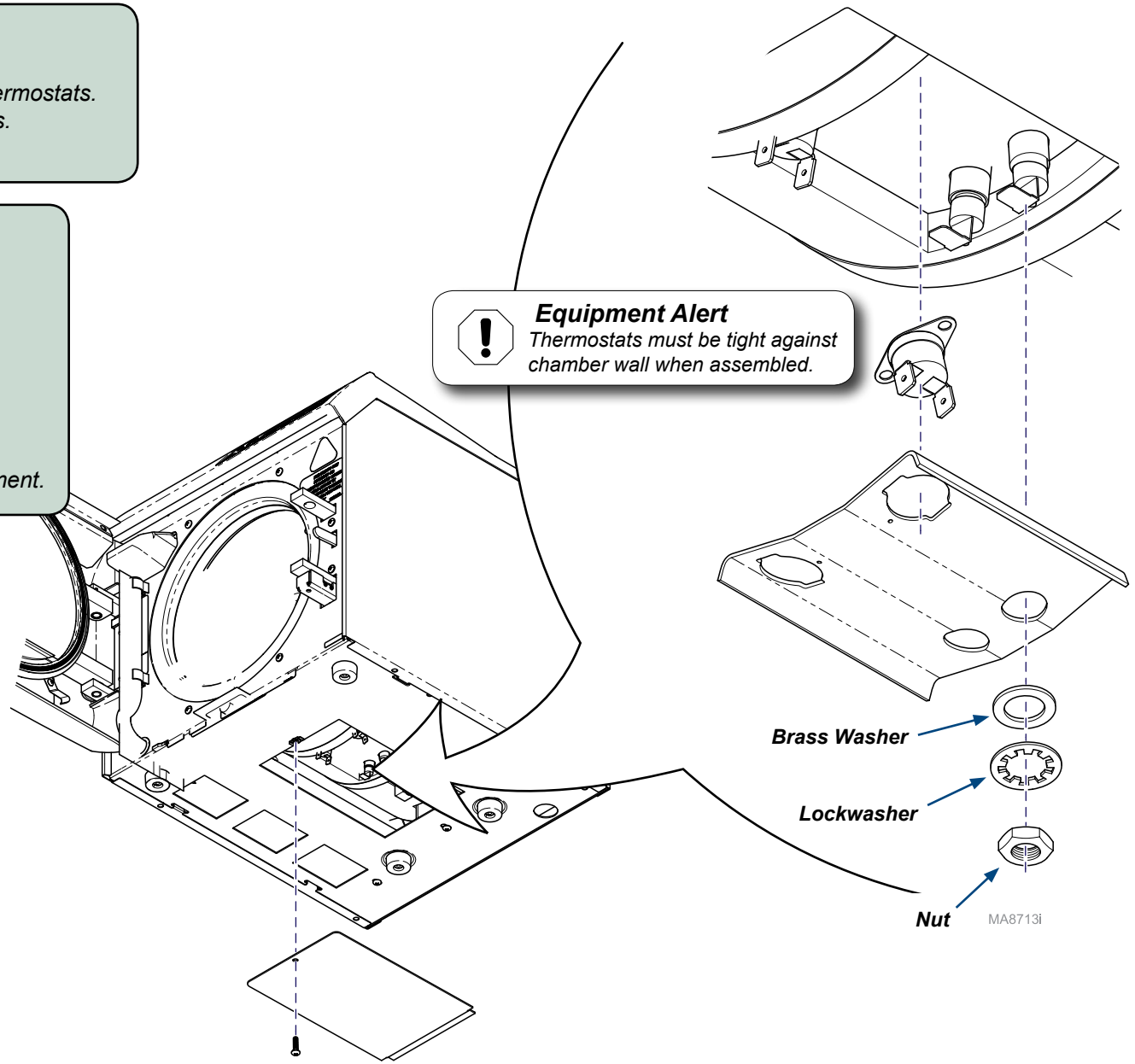
Replacement

Step 1: Remove thermostats.
A) Drain water from reservoir.
B) Disconnect wires from heating element and thermostats.
D) Remove nuts, lockwashers, and brass washers.
E) Remove bracket and thermostats.

Equipment Alert
Do not overtighten nuts!
Torque must not exceed 25 ft/lbs (34 N•m).

Step 2: Install thermostats.
A) Inspect heating element gaskets for damage. Replace gaskets if necessary.
B) Place thermostats and bracket in position.
C) Install brass washers, lockwashers, and nuts.
D) Connect wires to thermostats and heating element.

Equipment Alert
Thermostats must be tight against chamber wall when assembled.



Wire Connections

White Jumper wire	between Thermostats
Yellow wire	Thermostat
Red wire	Thermostat
Brown wire	Heating Element
Brown / White wire	Heating Element

TP210 Rev. A

Door Switch

Location / Function

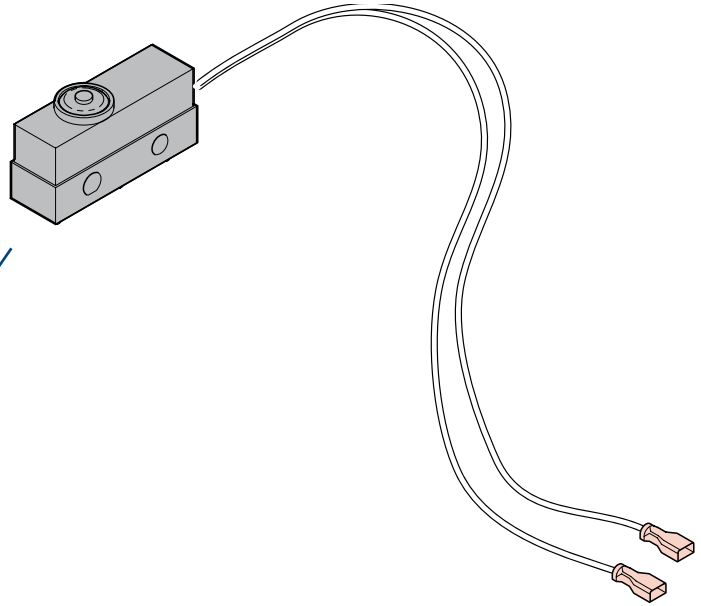
NOTE:
When the door is OPEN, the door switch is untripped / OPEN.
When the door is CLOSED, the door switch is tripped / CLOSED.

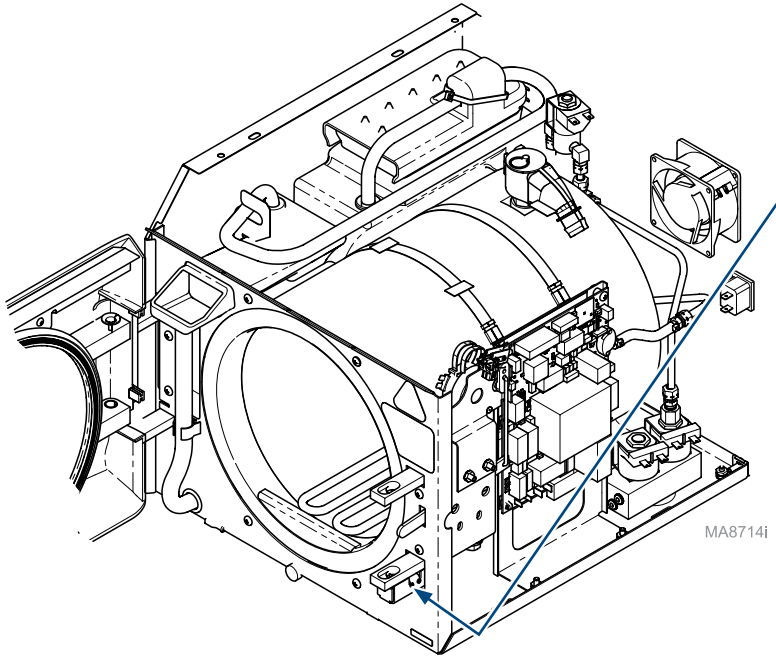
During the Fill / Heat-Up / Sterilization Modes...
When a cycle is initiated, the PC board monitors the status of the door switch.

If an open door is detected, the cycle will not start. If the door switch opens during a cycle, the cycle will be terminated and the corresponding error code will appear in the display.

During the Vent / Drying Modes...
The door switch is not monitored.

WARNING
The door switch should remain untripped until door latch is completely closed.





TP210 Rev. A

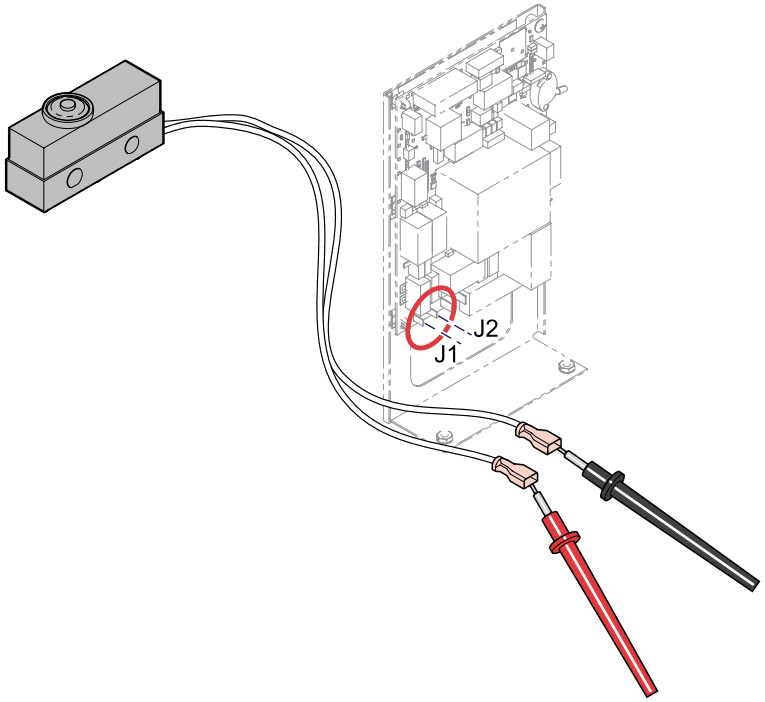
Door Switch - continued

Testing

Note: *Test switch with the door OPEN **and** CLOSED.*

Door Switch: Continuity Test

A) Disconnect switch wires from J1 & J2 on PC board.
B) Set meter to '200 Ω'
C) Place meter probes on switch wires.

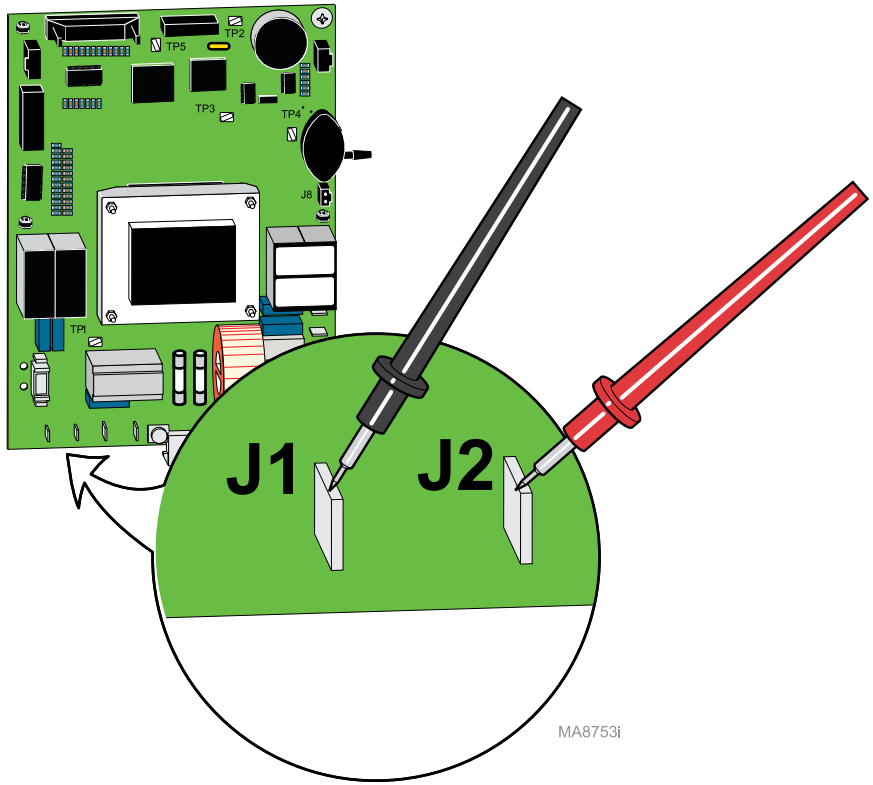


Door Position	*Meter Reading (Acceptable Range)*
OPEN	*OL*
CLOSED	*0.05 to 0.2 Ω*

Meter Reading	*Required Action*
any reading out of the acceptable range	*Replace door switch*

Door Switch: Supply Voltage Test

A) Disconnect switch wires from J1 & J2 on PC board.
B) Set meter to 'VAC'
C) Place meter probes wires on J1 & J2 on PC board.



Meter Reading	*Required Action*
Line voltage (120 or 230 VAC)	*PC board is OK*
any reading other than line voltage	*Replace PC board*

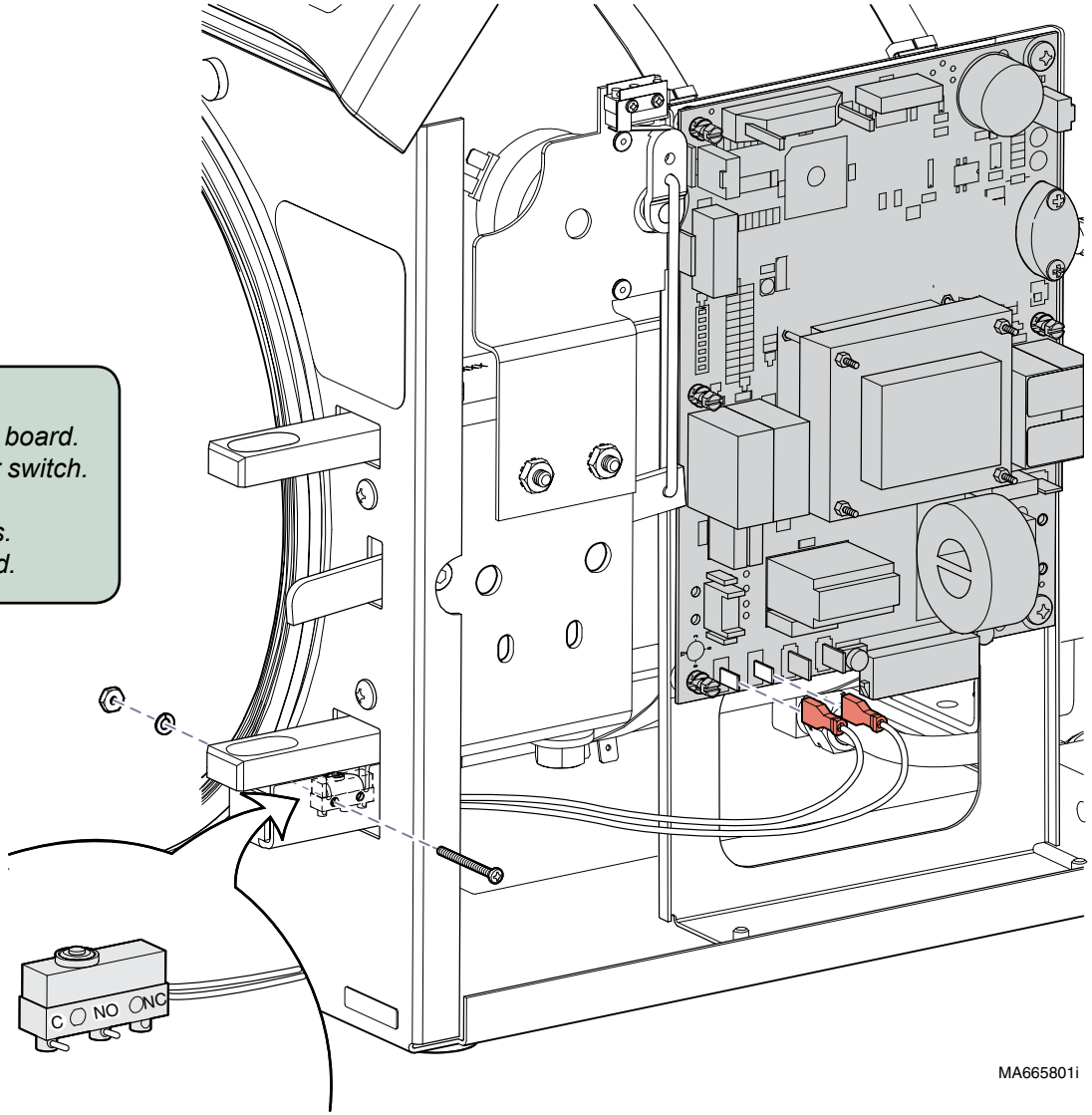
TP210 Rev. A

Door Switch *- continued*

Replacement

To replace the door switch...

A) Disconnect door switch wires from J1 & J2 on PC board.
B) Remove two screws, nuts, lockwashers, and door switch.
C) Position new door switch in housing.
D) Secure switch with screws, lockwashers, and nuts.
E) Connect door switch wires to J1 & J2 on PC board.



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TP210 Rev. A

Fan System

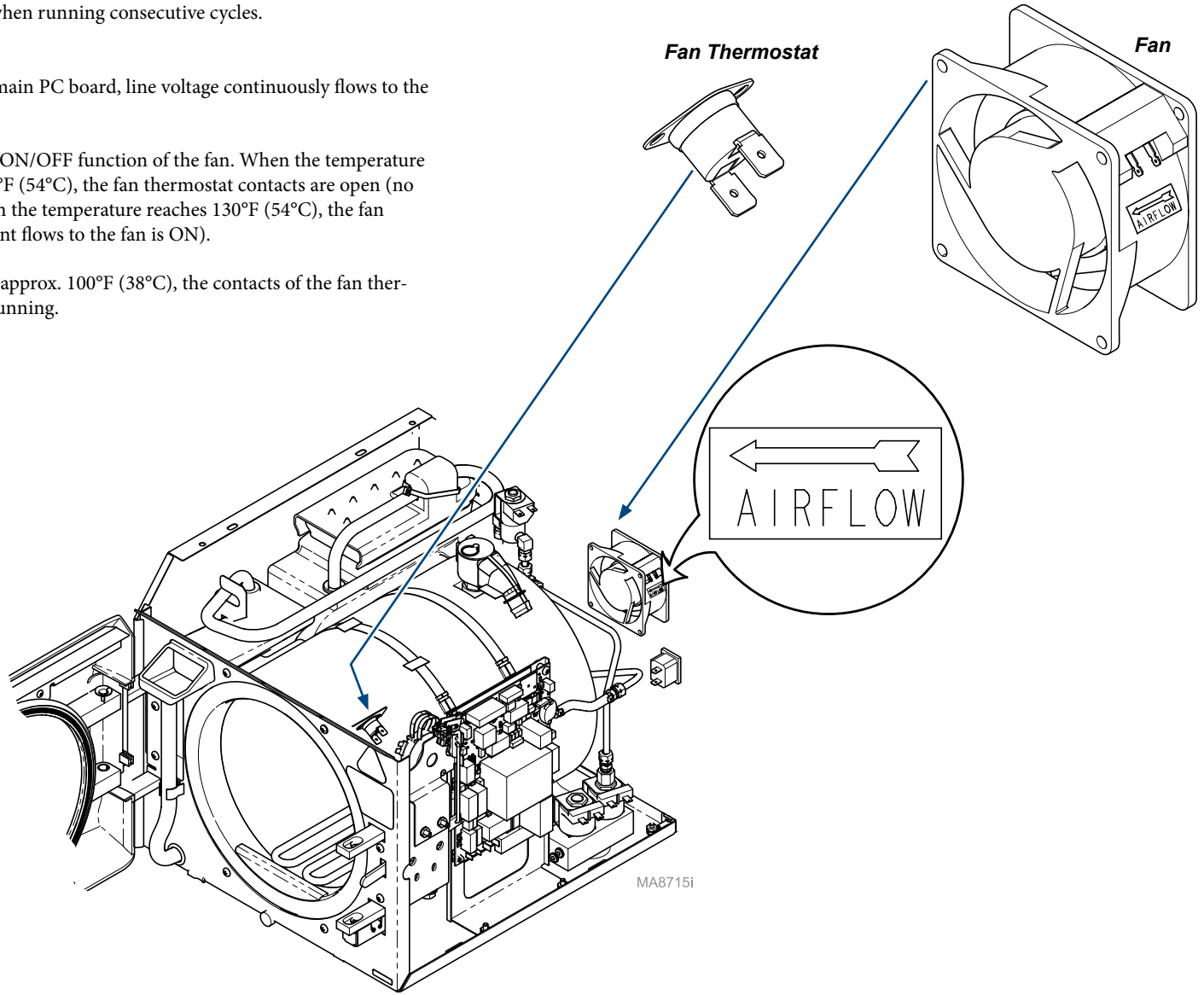
Location / Function

NOTE:
The fan may run continuously when running consecutive cycles.

During all Modes...
When power is supplied to the main PC board, line voltage continuously flows to the fan thermostat.

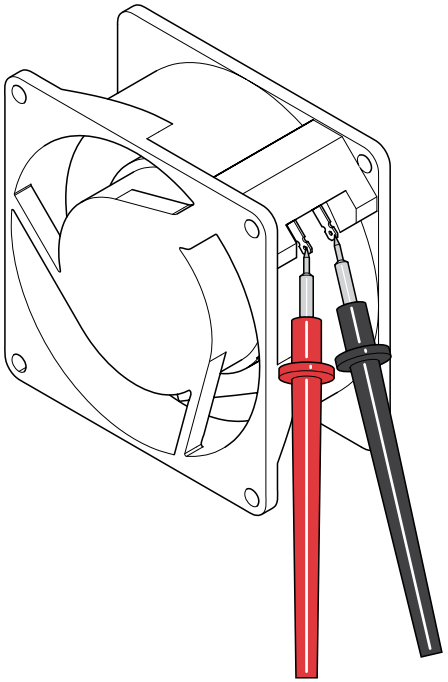
The fan thermostat controls the ON/OFF function of the fan. When the temperature (at the thermostat) is below 130°F (54°C), the fan thermostat contacts are open (no current to the fan is OFF). When the temperature reaches 130°F (54°C), the fan thermostat contacts close (current flows to the fan is ON).

When the temperature drops to approx. 100°F (38°C), the contacts of the fan thermostat open and the fan stops running.



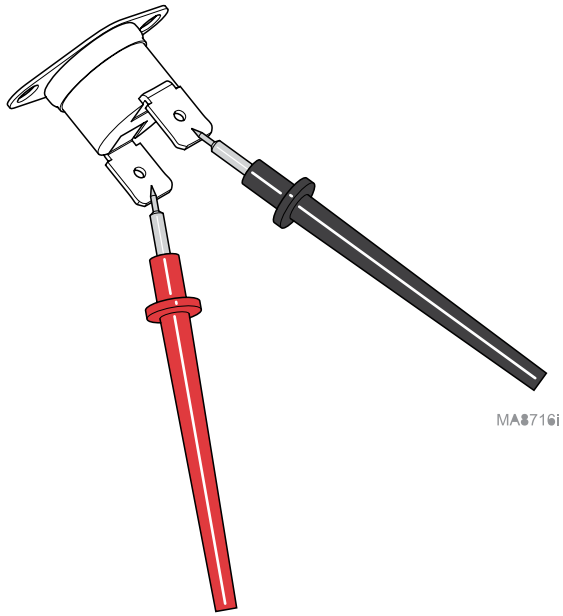
Fan System *- continued*

Testing



To test the fan...
A) Disconnect two wires from fan.
B) Set meter to '200 Ω'
C) Place meter probes on fan terminals.

Meter Reading	*Required Action*
Continuity (Ω)	*Fan is OK*
'0' or no reading	*Replace fan*



To test the fan thermostat...
A) Disconnect two wires from fan thermostat.
B) Set meter to '200 Ω'
C) Place meter probes on thermostat terminals.

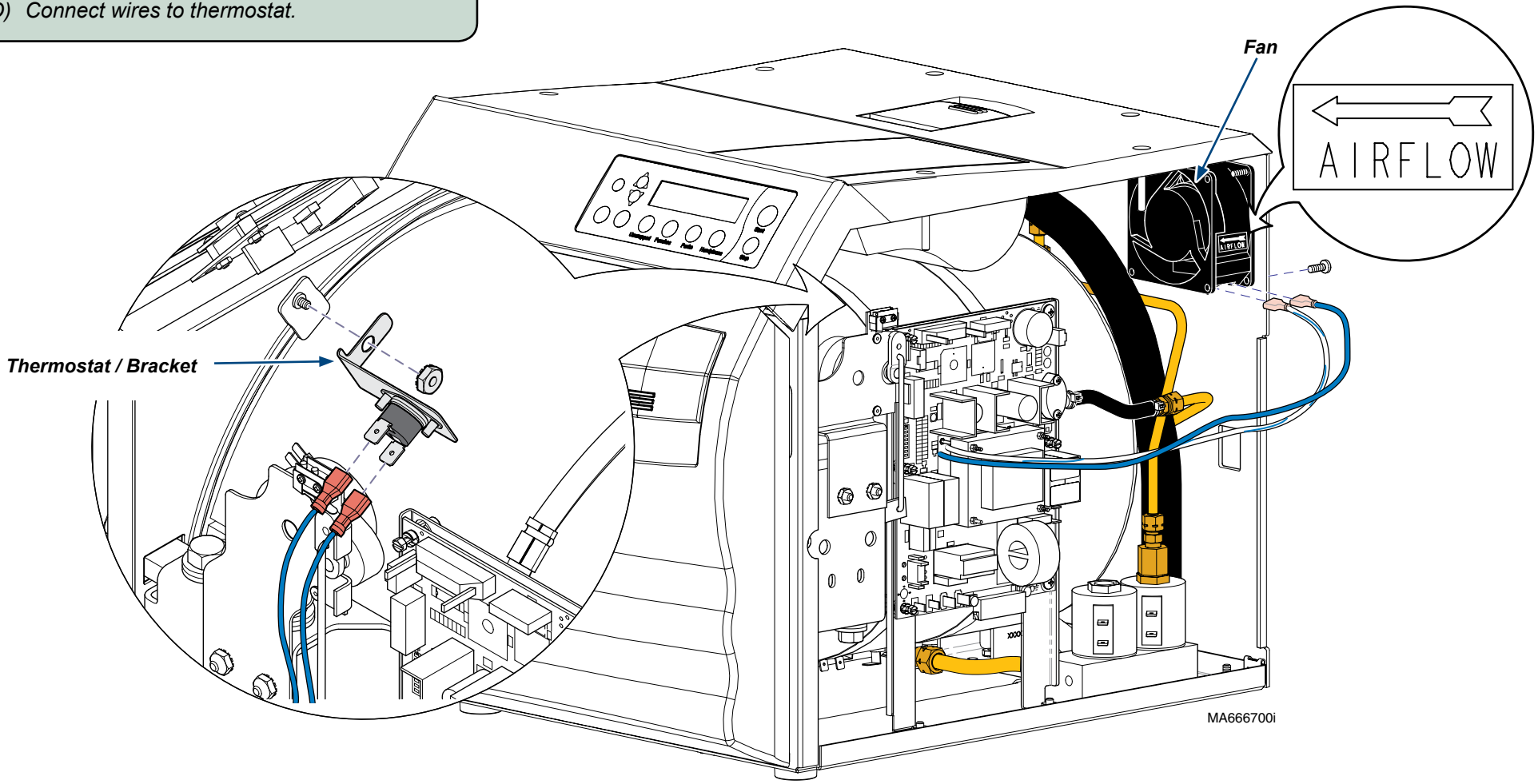
Meter Reading	*Required Action*
OL	*Fan thermostat is OK*
anything other than OL	*Replace fan thermostat*

Fan System *- continued*

Replacement

To replace the fan thermostat...
A) Disconnect wires from fan thermostat.
B) Remove nut and thermostat / bracket.
C) Position thermostat / bracket, secure with nut.
D) Connect wires to thermostat.

To replace the fan...
A) Disconnect wires from fan.
B) Remove screws and fan.
C) Position fan, secure with screws.
D) Connect wires to fan.

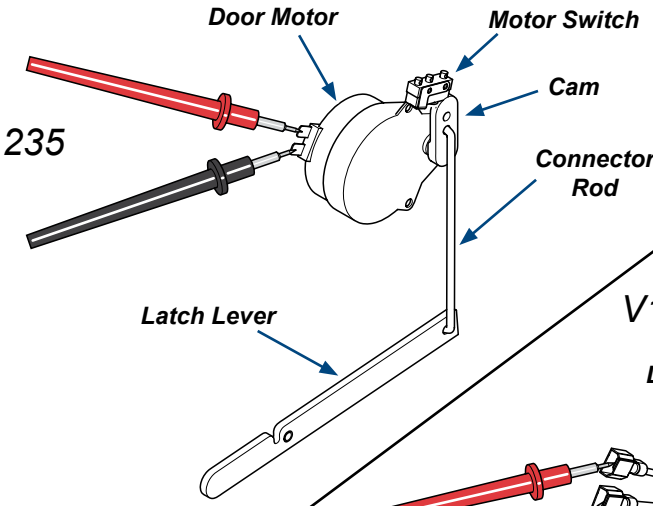


TP210 Rev. A

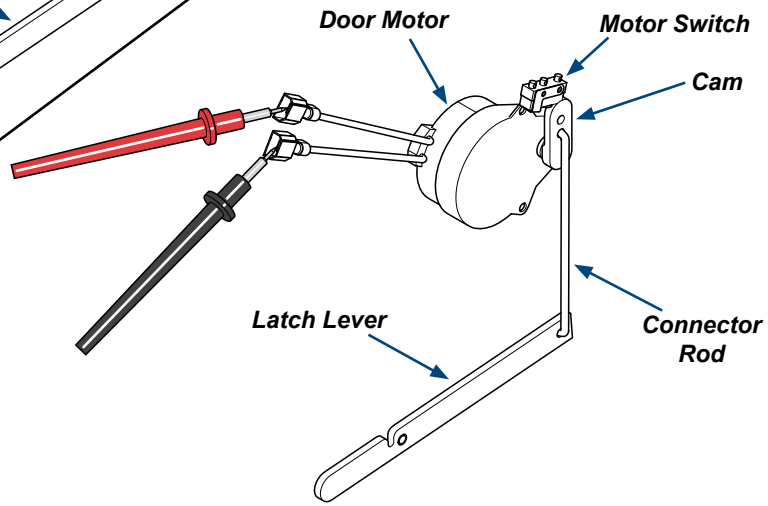
Door Motor System

Location / Function / Testing

Before V1731235



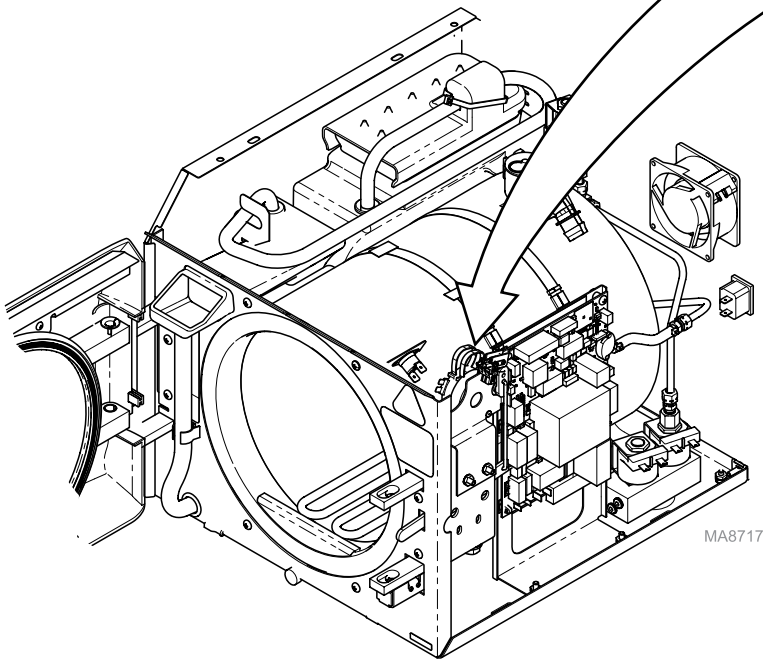
V1731235 and after



At the end of the Sterilization Mode...

When pressure in the chamber drops to 0.7 psi (5 kPa), the PC board bypasses the motor switch and supplies line voltage to the door motor.
The door motor rotates the cam causing the motor switch to close. Now, the current to the door motor flows thru the motor switch. As the cam rotates, the connector rod causes the latch lever to open the door.

When the cam reaches the bottom of its travel, the motor reverses direction. When the cam reaches its starting position, the motor switch opens, stopping the current flow to the door motor.



To test the door motor...

A) Disconnect two wires from door motor.
B) Set meter to '20K Ω'
C) Place meter probes on door motor terminals.

Meter Reading (Acceptable Ranges)	*Required Action*
115V models: 6620 Ω (+/- 20%)	*Perform PC Board Relay Test*
230V models: 12,200 Ω (+/- 20%)	

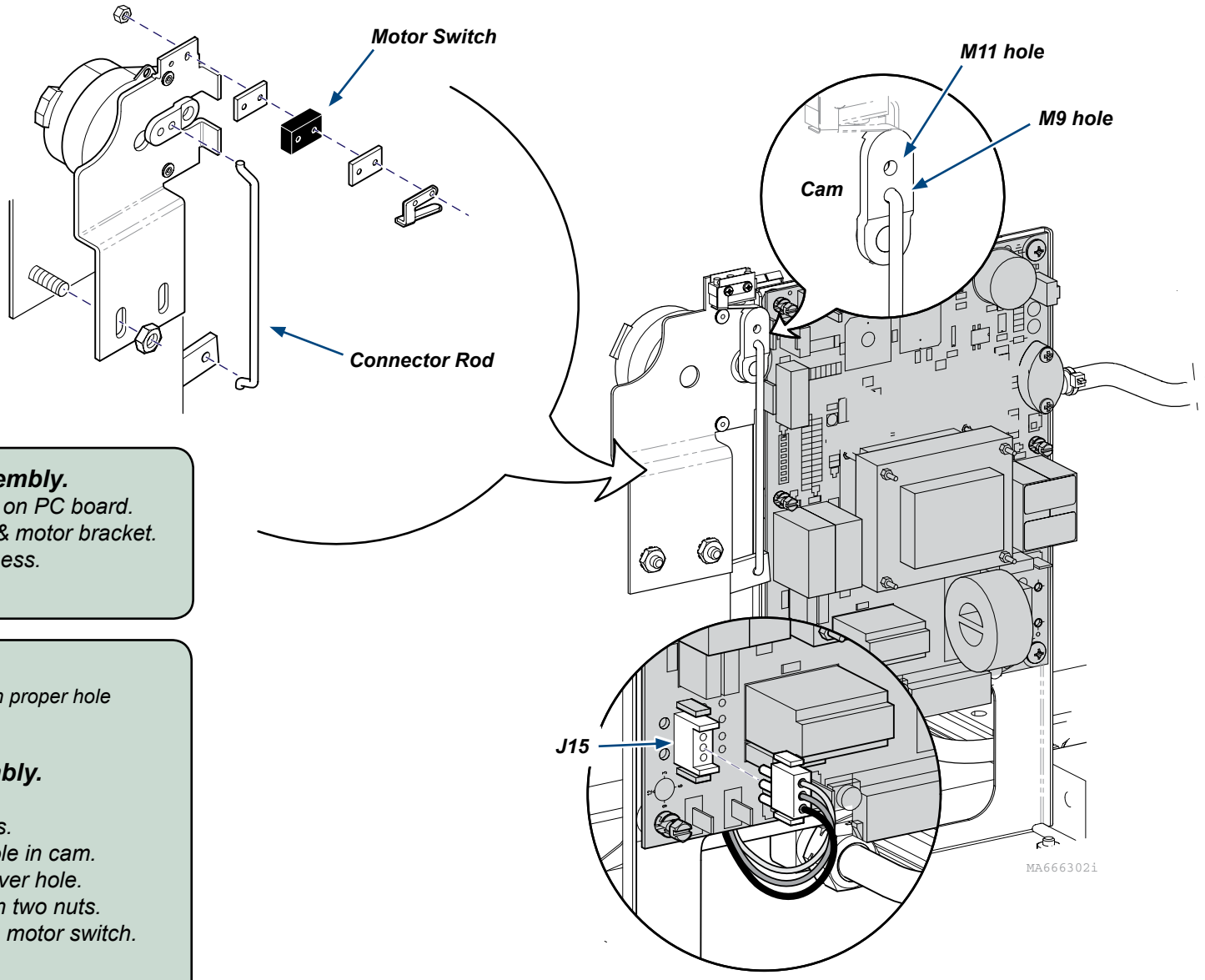
Meter Reading	*Required Action*
any reading out of the acceptable range	*Replace door motor*

TP210 Rev. A

004-1032-00 [Revised: 8/10/15]

Door Motor System - *continued*

Replacement



Step 1: Remove door motor assembly.

A) Disconnect wire harness from J15 on PC board.
B) Remove two nuts, connector rod, & motor bracket.
C) Disconnect motor switch wire harness.
D) Remove motor switch.

Equipment Alert
Connector rod must be installed in proper hole in cam. (See illustration).

Step 2: Install door motor assembly.

A) Install motor switch.
B) Connect motor switch wire harness.
C) Insert connector rod into proper hole in cam.
D) Insert other end of rod into latch lever hole.
E) Position motor bracket, secure with two nuts.
F) Rotate cam down until it clears the motor switch.
G) Loosen motor switch screws.
H) Push right side of motor switch down.
I) Tighten motor switch screws.

Temperature Sensor

Location / Function

During the Fill Mode...
The temperature sensor is not monitored.

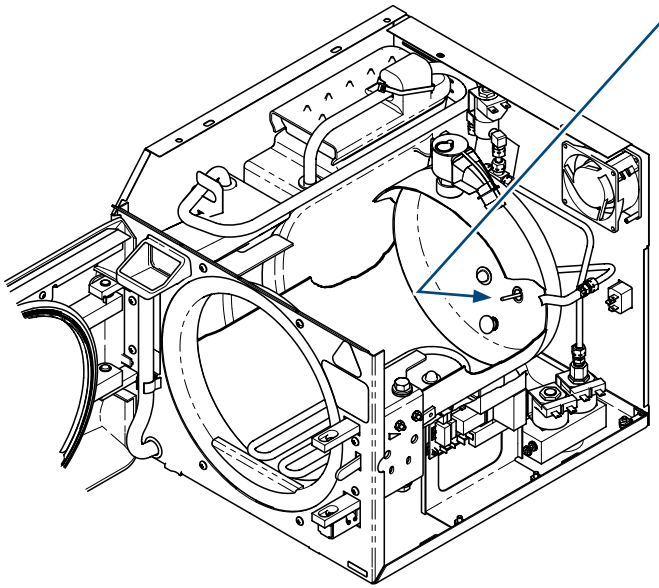
During the Heat-Up / Sterilization Modes...
The temperature sensor continually monitors the chamber temperature and transmits this information to the PC board.

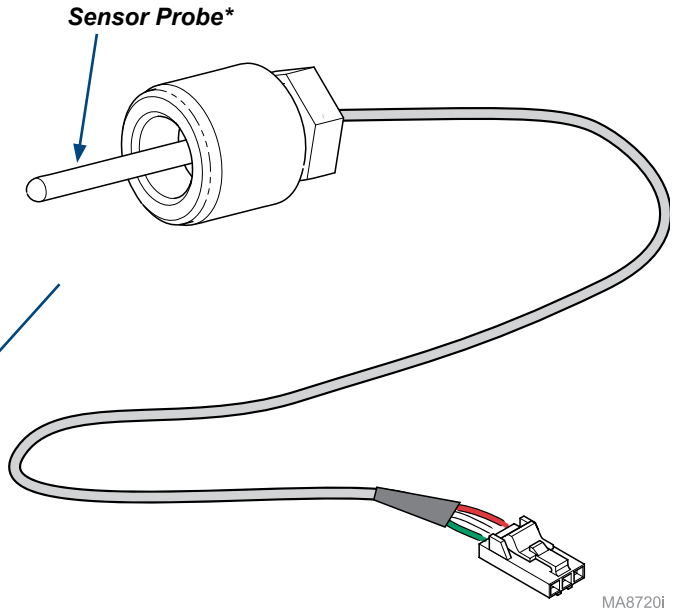
The PC board turns the heating element ON / OFF based on the readings from the temperature sensor.

During the Vent Mode...
The temperature sensor continually monitors the chamber temperature and transmits this information to the PC board.

During the Dry Mode...
The temperature sensor continually monitors the chamber temperature and transmits this information to the PC board.

If the temperature exceeds 240°F (115°C), the PC board stops the current flow to the heating element until the temperature drops.





**** Service Tip***
Residue build-up can cause inaccurate temperature / pressure readings. Clean the sensor probe with Speed-Clean and distilled water.

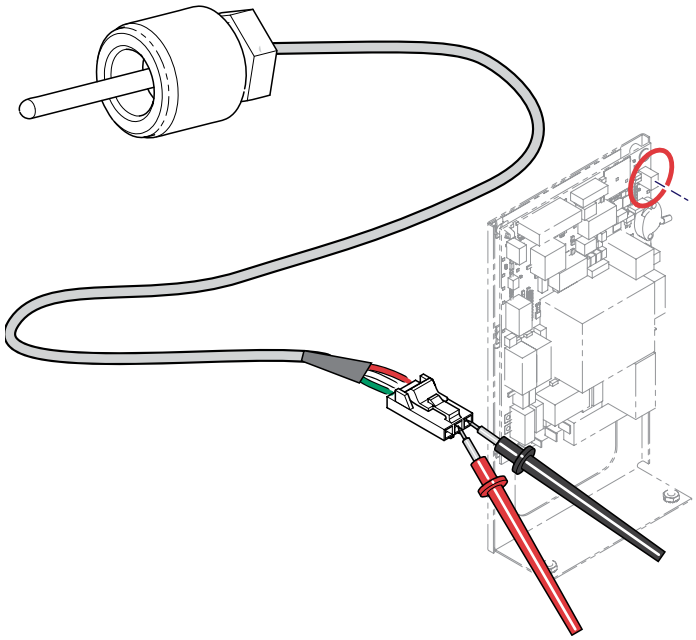
Temperature Sensor *- continued*

Testing

Service Tip:
Residue build-up can cause inaccurate temperature / pressure readings.
Clean the sensor probe with Speed-Clean and distilled water.

Temperature Sensor: Resistance Test

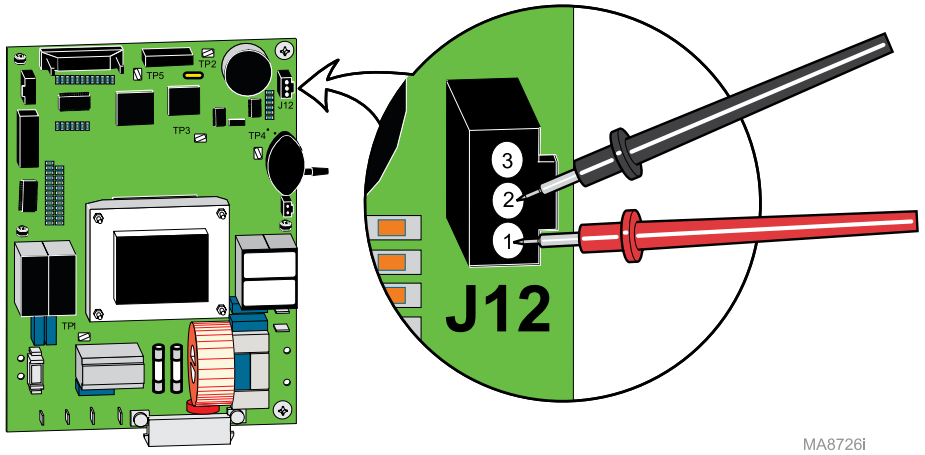
A) Allow sensor to cool to room temperature before testing.
B) Disconnect sensor harness from J12 on PC board.
C) Set meter to '2K Ω'
D) Place meter probes on red and white sensor wires as shown.



Meter Reading	*Required Action*
acceptable range: 1.07 to 1.1 kΩ	*Perform Supply Voltage Test*
any reading out of the acceptable range	*Replace temperature sensor*

Temperature Sensor: Supply Voltage Test

A) Disconnect sensor harness from J12 on PC board.
B) Set meter to '20 VDC'
C) At J12 on PC board, place meter probes on pins 1 & 2 as shown.



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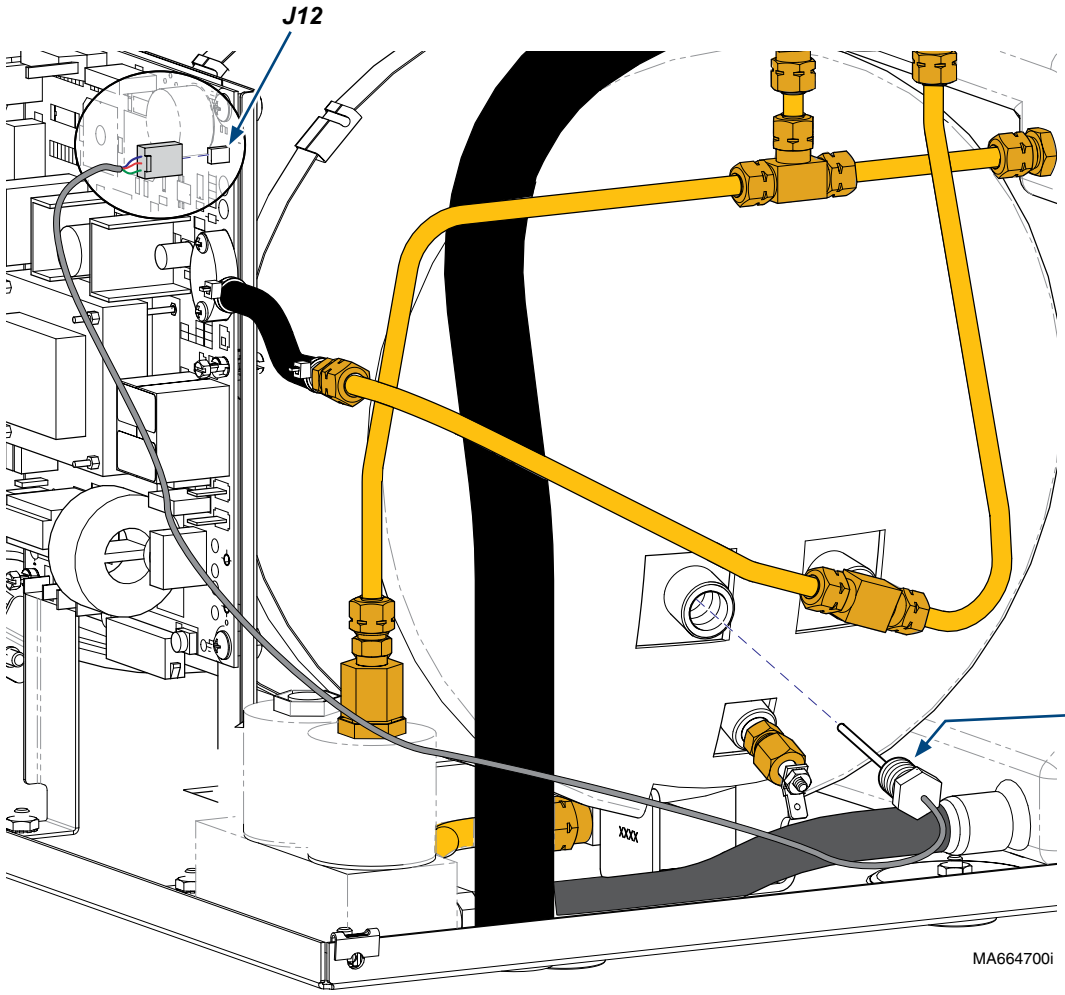
Meter Reading	*Required Action*
acceptable range: 4.0 to 6.0 VDC	*Main PC board is OK*
any reading out of the acceptable range	*Replace Main PC board*

Temperature Sensor *- continued*

Replacement



Apply hi-temp hydraulic sealant to sensor threads.

Service Tip:
Residue build-up can cause inaccurate temperature / pressure readings. Clean the sensor probe with Speed-Clean and distilled water.

To replace the temperature sensor...

A) Disconnect sensor harness from J12 on PC board.
B) Remove temperature sensor.
C) Apply hi-temp hydraulic sealant (Loctite 565) to temperature sensor threads. ***Do not use teflon tape!***
D) Install temperature sensor.
E) Connect sensor harness to J12 on PC board.

TP210 Rev. A

Water Level Sensor

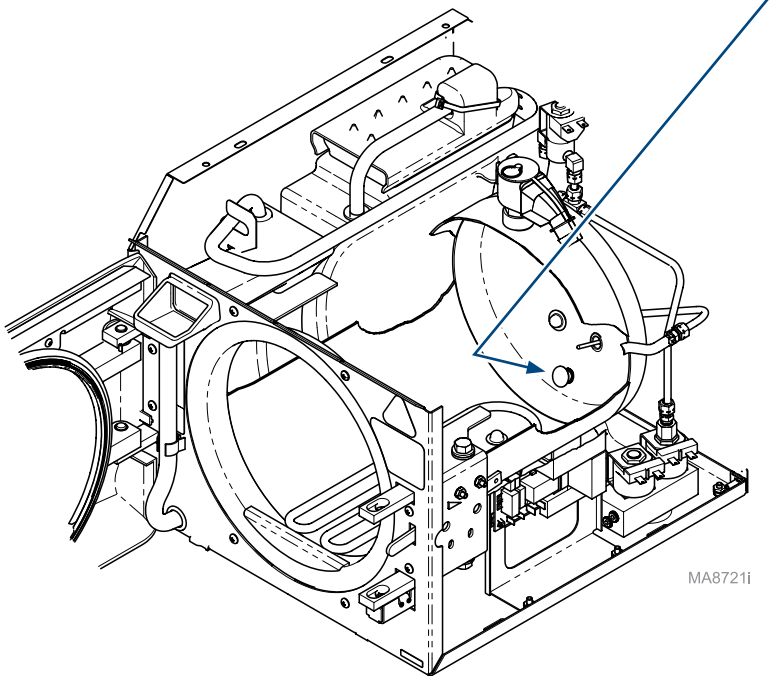
Location / Function

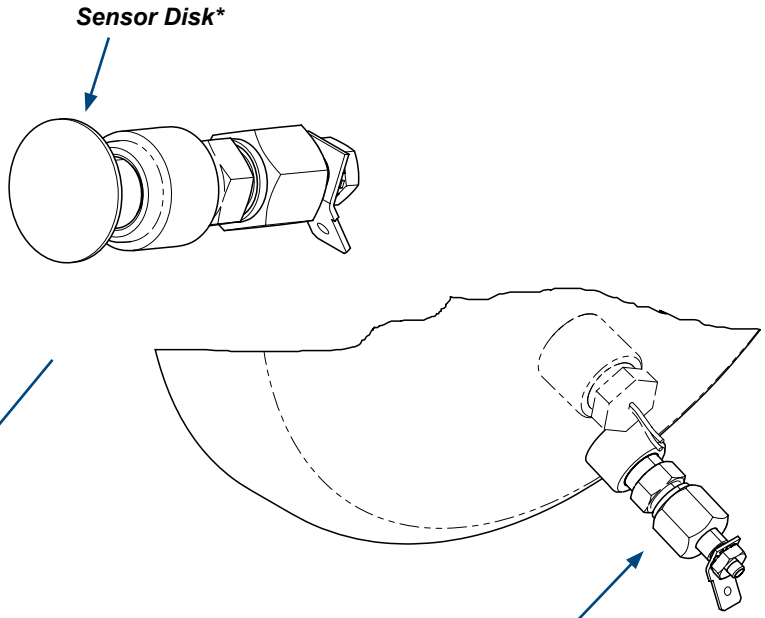
During the Fill Mode...
5 VDC is supplied to the water level sensor. When the water level in the chamber reaches the sensor disk, a circuit is completed, and current flows back to the PC board.

When the 5 VDC from the water level sensor is detected, the PC board stops the current flow to the fill valve.

Approximate quantities of water to reach water level sensor:
M9 units .....650 ml
M11 units .....750 ml

During the Heat-Up / Sterilization / Vent / Dry Modes...
The water level sensor is not monitored.





**** Service Tip***
Residue build-up on the sensor disk can cause malfunctions during the Fill mode. Clean the sensor disk with Speed-Clean and an abrasive pad, then dry disk thoroughly.

TP210 Rev. A

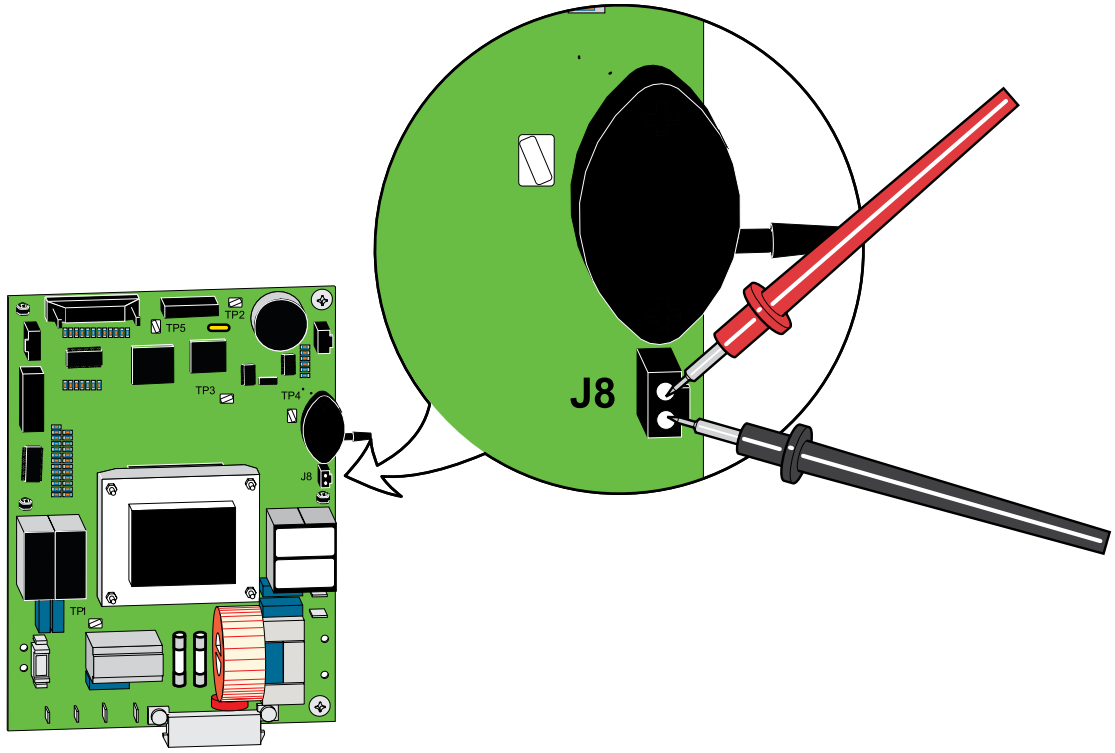
004-1032-00 [Revised: mo/dd/yr]

Water Level Sensor *- continued*

Testing

Water Level Sensor: Supply Voltage Test

A) Disconnect sensor harness from J8 on PC board.
B) Set meter to '20 VDC'
C) Place meter probes on two pins at J8 as shown.

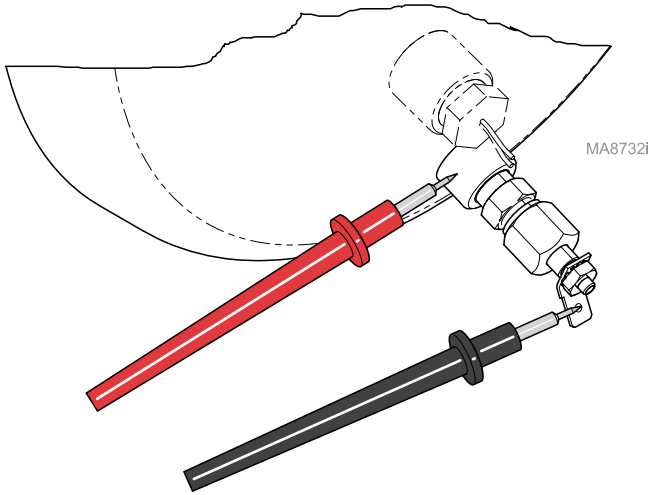


Meter Reading	*Required Action*
acceptable range: 4.0 to 6.0 VDC	*Main PC board is OK* *Perform Continuity Test*
any reading out of the acceptable range	*Replace Main PC board*

Service Tip:
Residue build-up on the sensor disk can cause malfunctions during the Fill mode. Clean the sensor disk with Speed-Clean and an abrasive pad, then dry disk thoroughly.

Water Level Sensor: Continuity Test

A) Disconnect wire from sensor terminal.
B) Set meter to '2K Ω'
C) Place one meter probe on sensor terminal, and the other probe on the chamber wall as shown.



Meter Reading	*Required Action*
OL	*Water level sensor is OK*
any reading other than OL	*Replace water level sensor*

TP210 Rev. A

Water Level Sensor - *continued*

Replacement

Service Tip:
Residue build-up on the sensor disk can cause malfunctions during the Fill mode.
Clean the sensor disk with Speed-Clean and an abrasive pad, then dry disk thoroughly.

Step 1: Remove water level sensor.

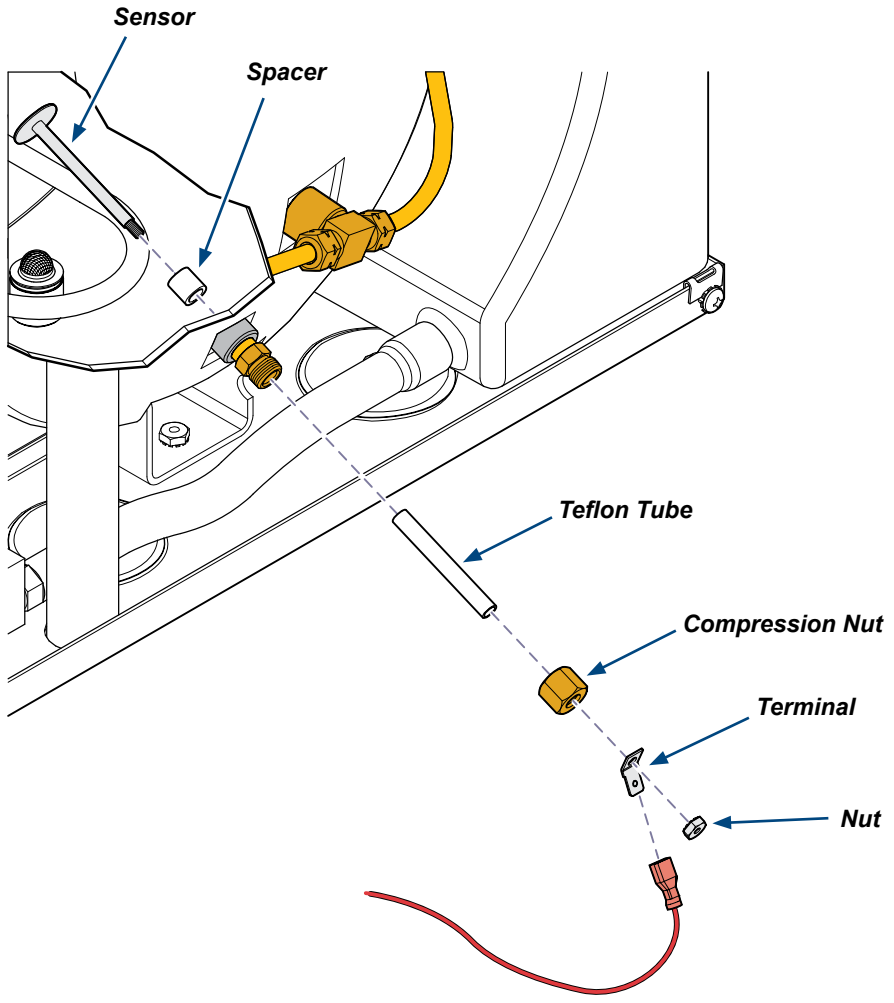
A) Disconnect wire from sensor terminal.
B) Remove nut, terminal, and compression nut.
C) (From inside chamber) Remove sensor, spacer, and teflon tube.

Equipment Alert

Do not overtighten compression nut!
Tighten 1-1/4 turns past finger-tight.

Step 2: Install water level sensor.

A) Install teflon tube and spacer onto sensor.
B) Insert sensor thru hole in chamber.
C) Install compression nut.
D) Install terminal and nut.
E) Perform water level sensor test to be sure the sensor is not grounded.
F) Connect wire to sensor terminal.



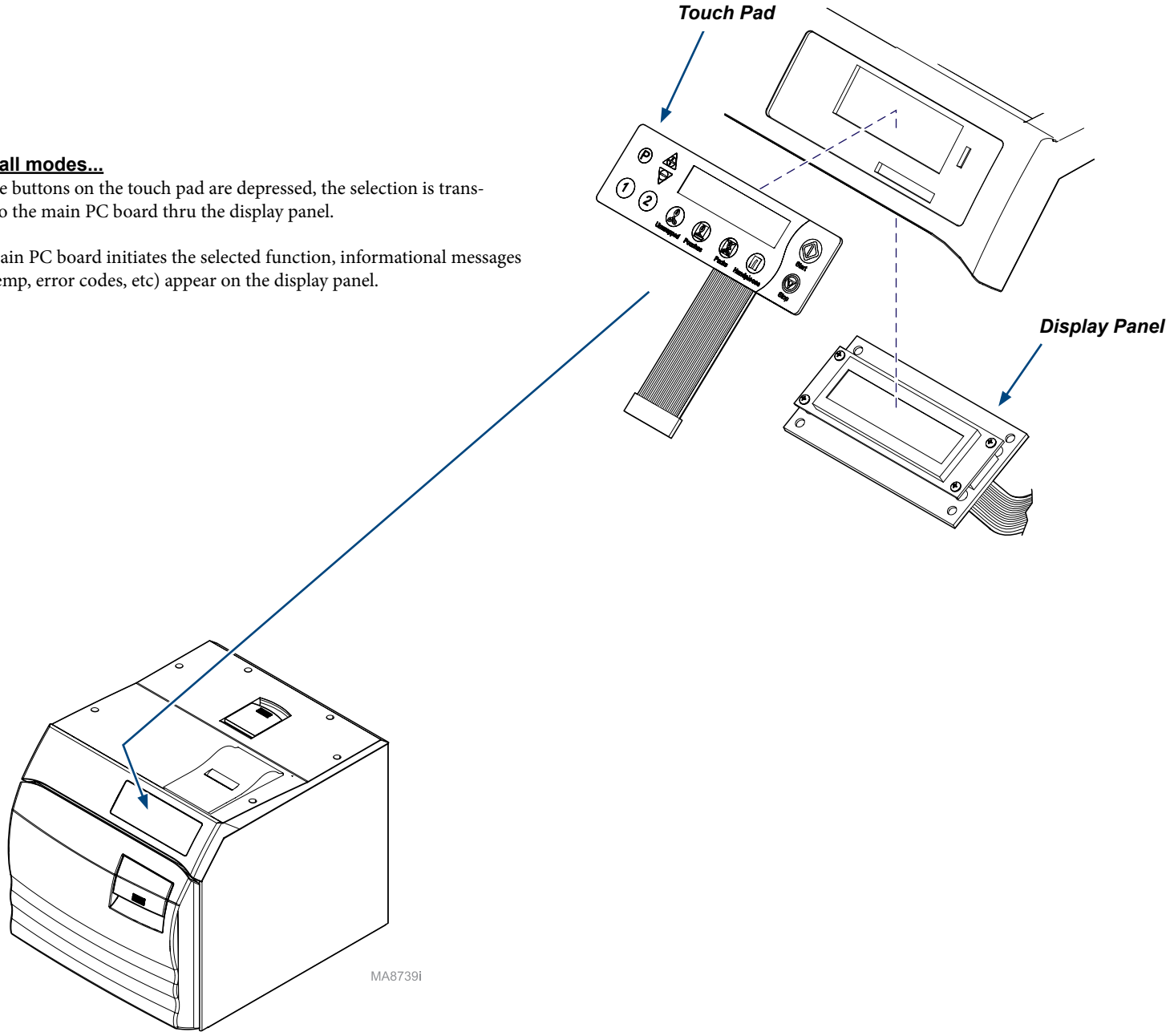
TP210 Rev. A

Touch Pad / Display Panel

Location / Function

During all modes...
When the buttons on the touch pad are depressed, the selection is transformed to the main PC board thru the display panel.

As the main PC board initiates the selected function, informational messages (time / temp, error codes, etc) appear on the display panel.



TP210 Rev. A

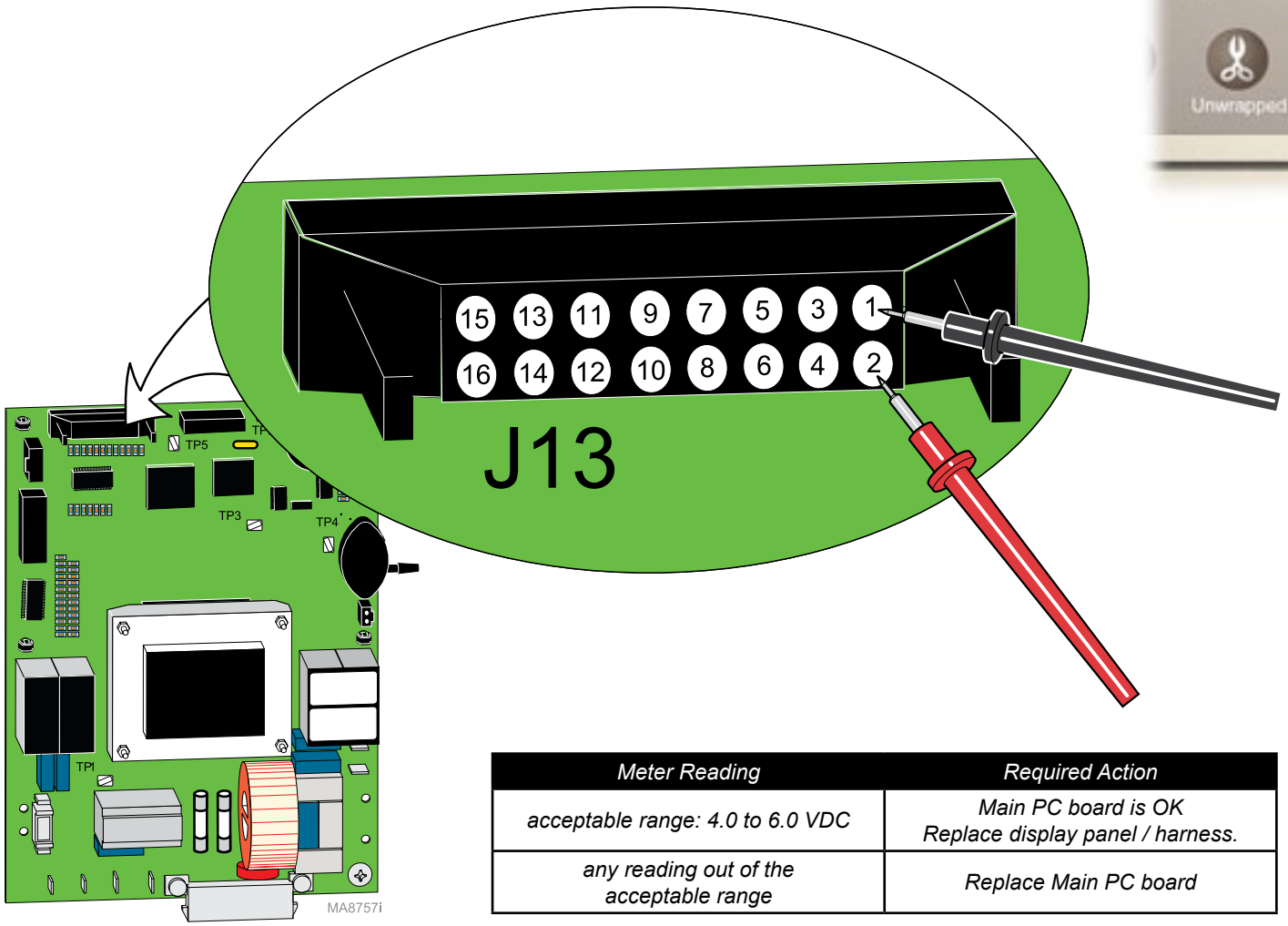
Touch Pad / Display Panel *- continued*

Testing

Refer to: 'Service Diagnostics / Keytest' to test the Touch Pad & Display Panel.

Display Panel: Supply Voltage Test

A) Disconnect sensor harness from J13 on PC board.
B) Set meter to '20 VDC'
C) At J13 on PC board, place meter probes on pins 1 & 2 as shown.



Meter Reading	*Required Action*
acceptable range: 4.0 to 6.0 VDC	*Main PC board is OK* *Replace display panel / harness.*
any reading out of the acceptable range	*Replace Main PC board*

TP210 Rev. A

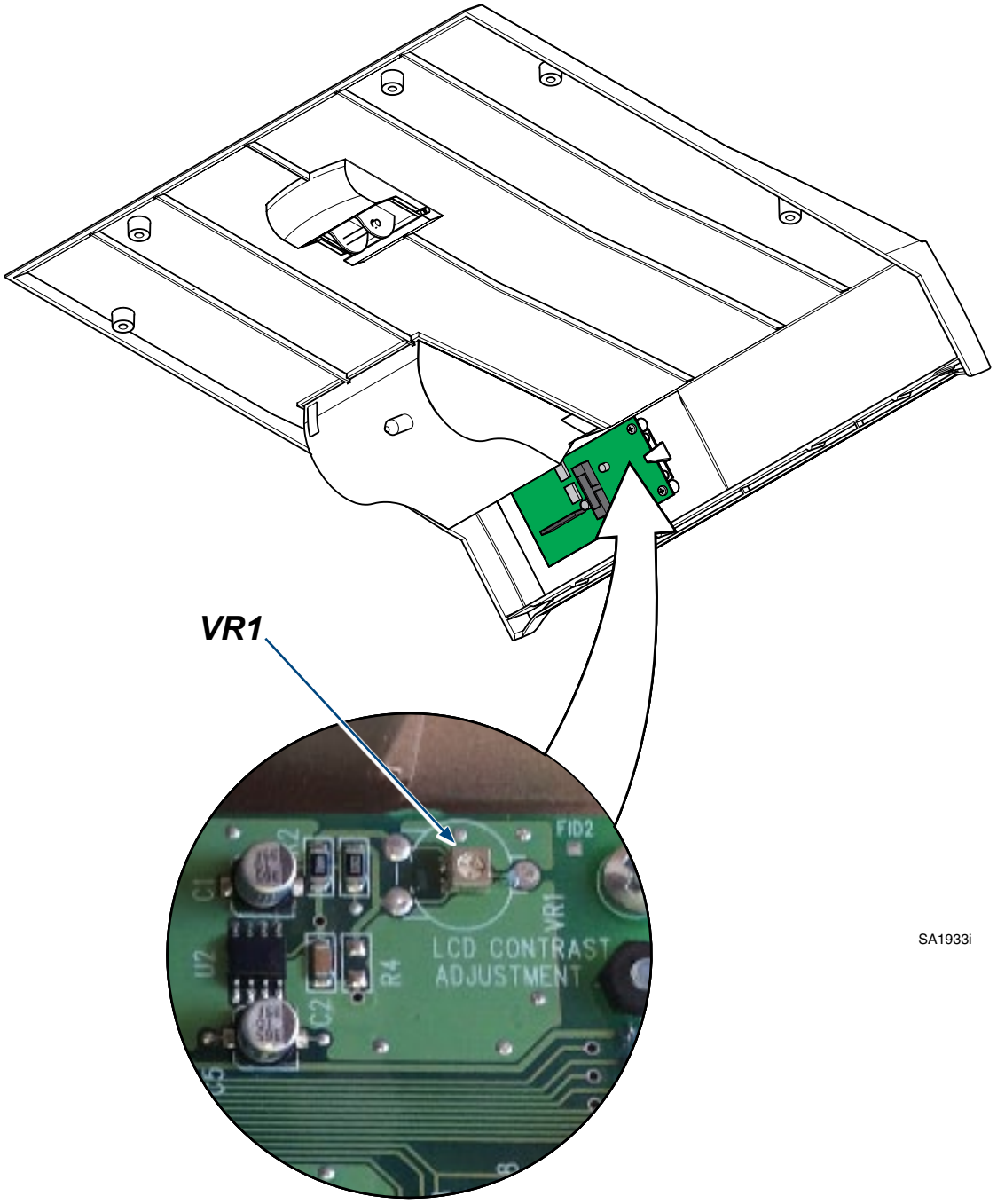
Touch Pad / Display Panel *- continued*

LCD Contrast Adjustment

Step 1: Display LCD Contrast Adjustment

A) Remove top cover.
B) Locate Potentiometer VR1.
C) Rotate VR1 to adjust.
(counter-clockwise = darker / clockwise = lighter)
D) Replace top cover.

Note: Use a small jewelers screwdriver to adjust VR1. Do not over rotate.



TP210 Rev. A

Touch Pad / Display Panel - *continued*

Replacement

Step 1: Remove touch pad / display panel.

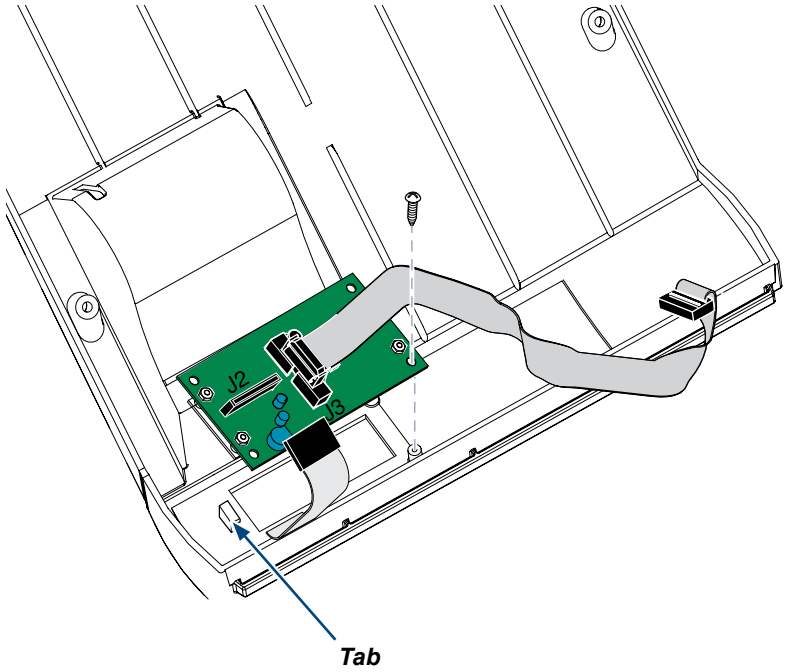
A) Remove top cover.
B) Disconnect ribbon harnesses from display panel (J2 & J3).
C) Remove two screws.
D) Slide display panel out from under tab.
E) Peel touch pad off of top cover.

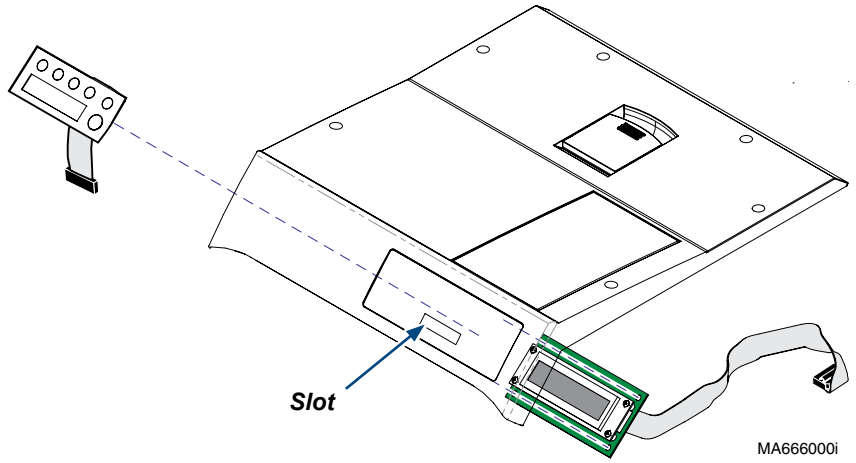
Note: Remove adhesive residue w/ citrus-based solvent that is safe for use on plastics.

Equipment Alert
Be sure the arrow on the display panel points UP when installing panel.

Step 2: Install touch pad / display panel.

A) Peel backing from touch pad.
B) Feed ribbon harness thru slot.
C) Position touch pad on top cover.
D) Slide display panel under tab, secure with two screws.
E) Connect ribbon harnesses to display panel (J2 & J3).
F) Install top cover.





TP210 Rev. A

Main PC Board

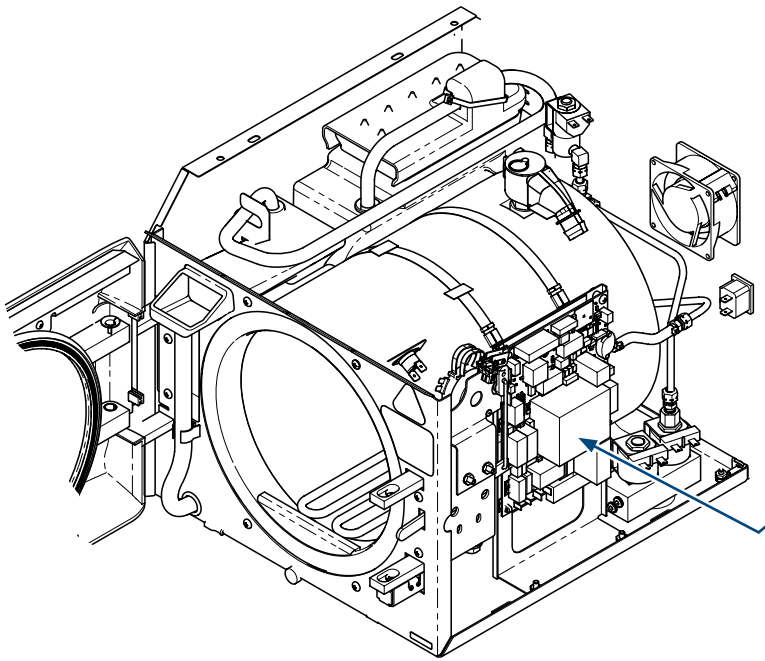
Location / Function

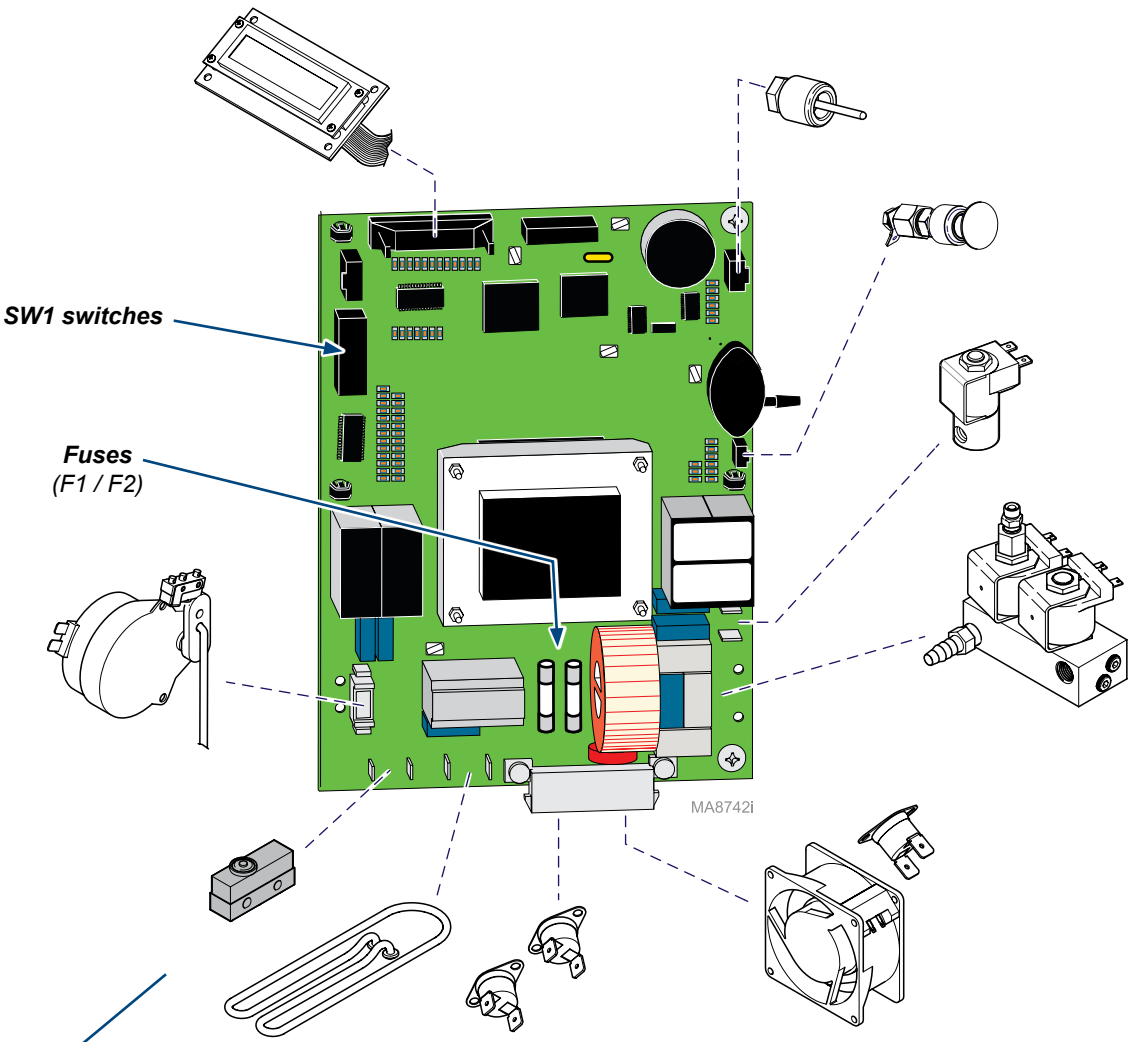
During all modes...

The Main PC Board controls all of the electronic components of the sterilizer. During operation, the pressure sensor monitors the chamber conditions to maintain the parameters for the selected cycle.

The two fuses (F1 & F2) protect the circuitry from excessive current draw. If either fuse is faulty, the unit will not operate.

The SW1 switches are used for *Service Diagnostics*, and to adjust the display to metric units.





TP210 Rev. A

Main PC Board - continued

SW1 Switch Settings

The eight SW1 switches are set to the OFF position when shipped from the factory.
These switches are used when:

- Activating the Service Diagnostics Mode
- Configuring the PC Board (required when board is replaced)
- Changing the display to metric units (Celsius / kPa)

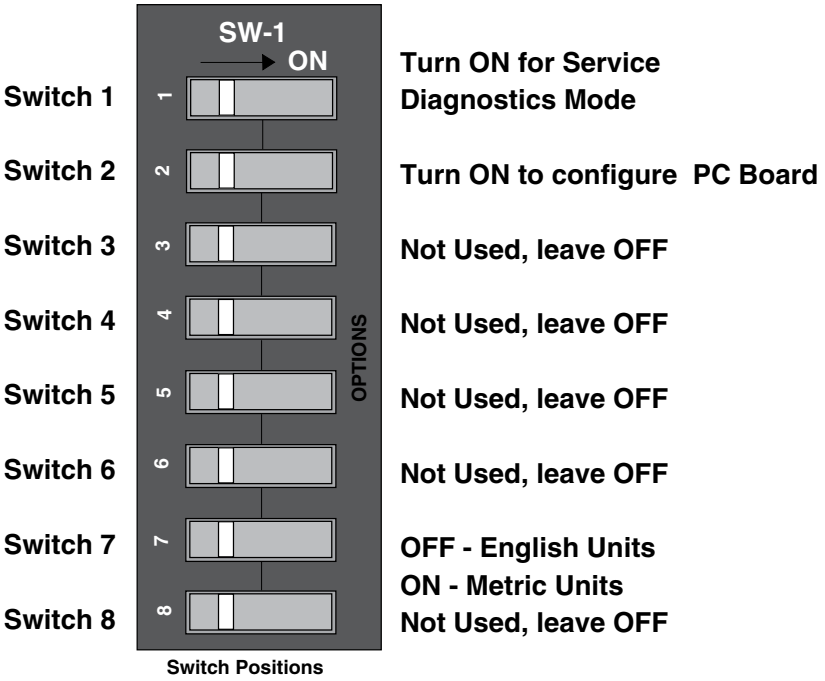
To activate the Service Diagnostics Mode...
Move Switch 1 to ON position.

Note: This switch must be turned OFF to resume normal operation.

To configure the PC Board...
Move Switch 2 to ON position.

Note: This procedure changes the software settings for chamber size (ex. M9 / M11), and the door opening function (ex. M9 / M9D).

To change the display to metric units...
Move Switch 7 to ON position.



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TP210 Rev. A

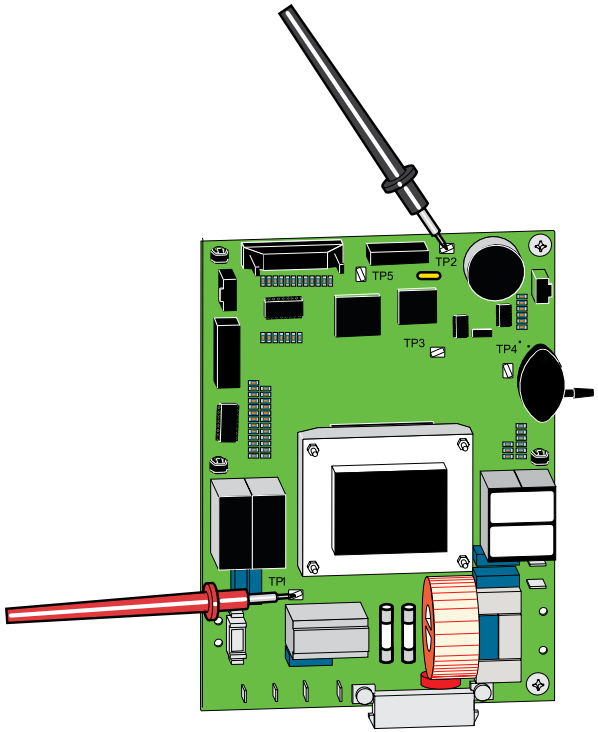
Main PC Board *- continued*

Testing

Service Tip:
This test checks for proper supply voltage to all of the following components: Heating Element, Door Motor, Fill / Vent Valve, Air Valve.

Main PC Board: Relay Test

A) Set meter to '20 VDC'
B) Place black meter probe on TP2 as shown.
C) Place red meter probe on TP1 as shown.



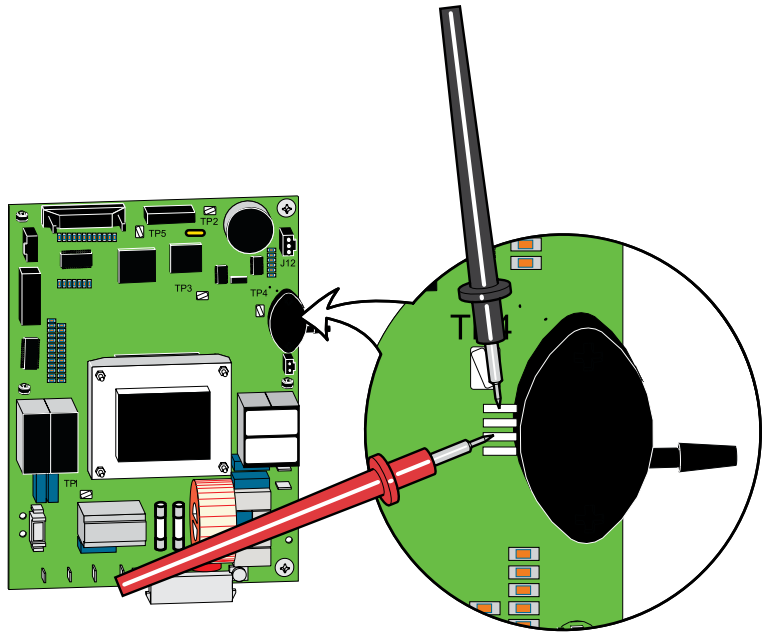
Meter Reading	*Required Action*
acceptable range: 10 to 14 VDC	*Main PC board is OK*
any reading out of the acceptable range	*Replace Main PC board*

Service Tip:
This test checks for proper supply voltage to pressure transducer.

Main PC Board: Pressure Transducer Voltage Test

A) Set meter to '20 VDC'
B) Place meter probes on transducer pins 1 & 3 as shown.*

**Note: Pin position is referenced top to bottom. (top pin = 1, bottom pin=4)*



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Meter Reading	*Required Action*
acceptable range: 4.0 to 6.0 VDC	*Main PC board is OK*
any reading out of the acceptable range	*Replace Main PC board*

TP210 Rev. A

Main PC Board *- continued*

Replacement

Step 1: Remove main PC board.
A) Tag / disconnect all wire harnesses from PC board.
B) Cut cable tie, then disconnect pressure sensor tubing.
C) Remove two nuts and PC board / bracket.

Step 2: Install main PC board.
A) Install PC board / bracket, secure with two nuts.
B) Connect pressure sensor tubing, then secure with high-temperature cable tie.
C) Connect all wire harnesses to PC board.
D) Unplug the power cord.
E) Move switch 2 on the SW1 block to ON.
F) Reconnect power cord.

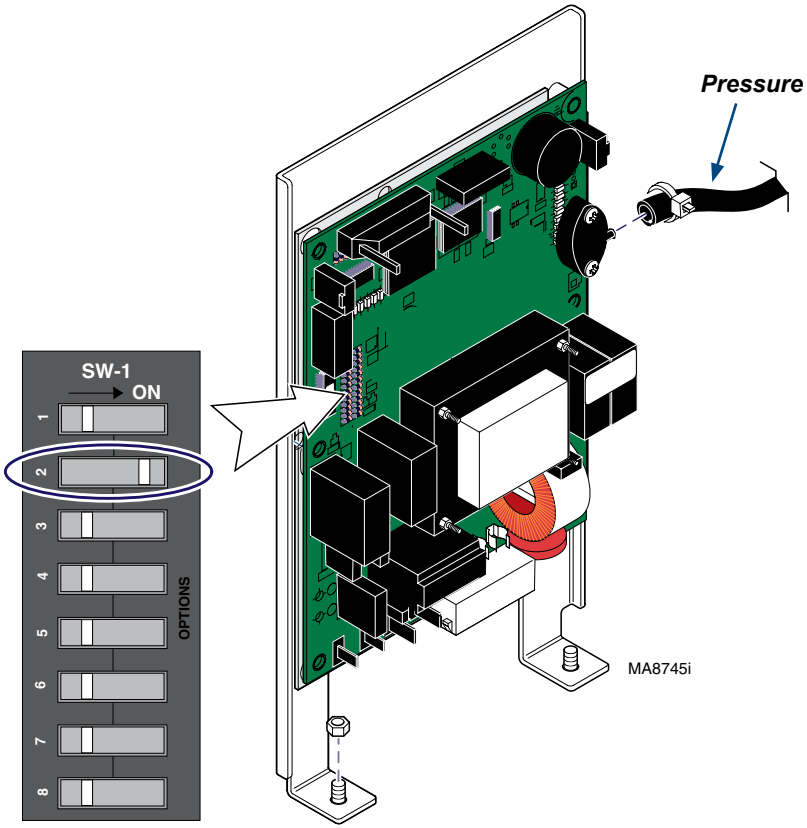
Step 3: Configure the main PC board.
A) Adjust the PC board configuration by following the prompts on the display panel.

Use the < + > < - > buttons to adjust settings.
Press the < P > button when finished.

CHAMBER DIAMETER:
M9/M9D.....9 INCH
M11/M11D.....11 INCH

FEATURE SET:
M9/M11.....FULLY FEATURED
M9D/M11D.....DEFEATURED

Step 4: Return to normal operating mode.
A) Disconnect power cord.
B) Move switch #2 (SW1 block) to OFF.
C) Reconnect power cord.



TP210 Rev. A

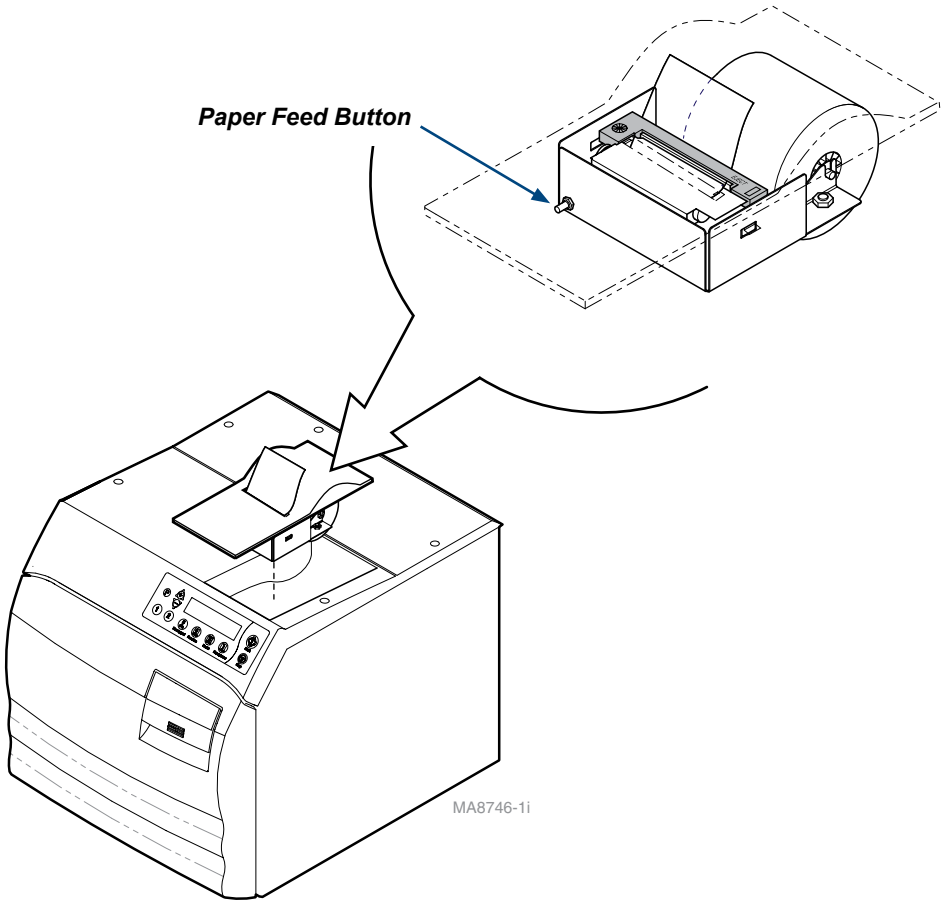
004-1032-00 [Revised: 9/26/17]

Printer

Software Reset Procedure

To reset the printer software...

A) Disconnect sterilizer power cord.
B) Press & hold paper feed button while connecting sterilizer power cord.
C) When test script begins to print, release paper feed button.

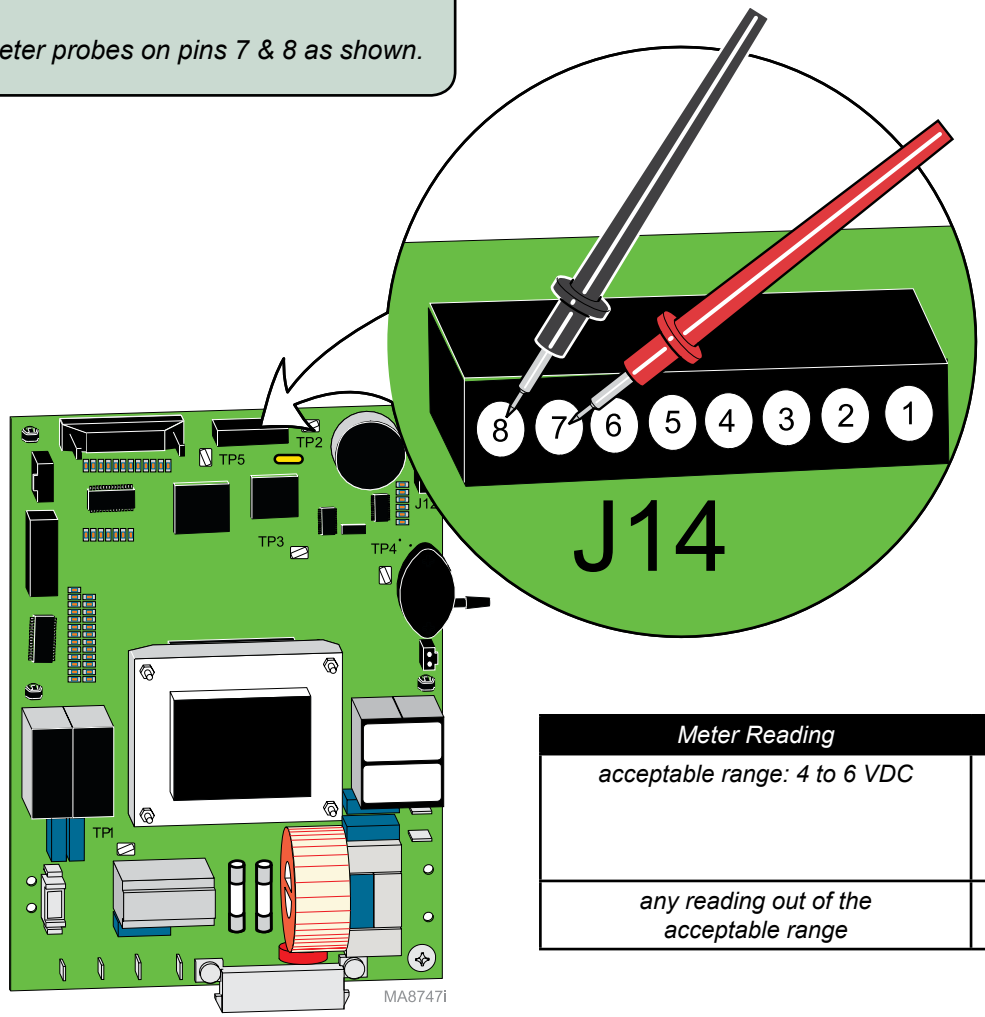


TP210 Rev. A

Testing

Printer: Supply Voltage Test

A) Disconnect sensor harness from J14 on PC board.
B) Set meter to '20 VDC'
C) At J14 on PC board, place meter probes on pins 7 & 8 as shown.



Meter Reading	*Required Action*
acceptable range: 4 to 6 VDC	*Perform continuity test on printer harness.* *If broken wires are found, replace harness.* *If harness is OK, replace printer.*
any reading out of the acceptable range	*Replace Main PC board*

TP210 Rev. A

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004-1032-00 [Revised: mo/dd/yr]