

MANUFACTURING
NUMBERS:

9100922

roundup
by A.J. Antunes & Co. ®

STEAMER/SCALE
Model STS-200



P/N 1010929 Rev. B 03/12



Owner's Manual

TABLE OF CONTENTS

Owner Information	2	Maintenance	9
General.....	2	Cleaning the STS-200 During Daily Use.....	9
Warranty Information	2	Daily Maintenance.....	10
Service/Technical Assistance	3	Weekly Maintenance	10
Important Safety Information	3	Monthly Maintenance	12
Specifications	5	Troubleshooting	13
Dimensions.....	5	Message Codes.....	13
Electrical Ratings.....	5	Error Codes	13
Electrical Cord & Plug Configurations	5	Technical Theory of Operation	17
Installation	6	Technical Theory of Operation	17
Unpacking.....	6	Replacement Parts	19
Equipment Setup	6	Wiring Diagram	27
Operation	7	Limited Warranty	28
Operating Instructions	7		
Calibrating the Steamer/Scale.....	7		
Rotary Switch Settings	8		

OWNER INFORMATION

General

The STS-200 Steamer/Scale produces steam using plain tap water for quick steaming of sliced meats. Simple push-button action delivers a consistent impulse of steam. Because the amount of steam is consistent, it removes the guesswork and produces a uniform finished product from one operator to the next.

This manual provides the safety, installation, and operating procedures for the Steamer/Scale. We recommend that all information contained in this manual be read prior to installing and operating the unit.

Your Steamer/Scale is manufactured from the finest materials available and is assembled to Roundup's strict quality standards. This unit has been tested at the factory to ensure dependable trouble-free operation.

Warranty Information

Please read the full text of the Limited Warranty in this manual.

If the unit arrives damaged, contact the carrier immediately and file a damage claim with them. Save all packing materials when filing a claim. Freight damage claims are the responsibility of the purchaser and are NOT covered under warranty.

The warranty does NOT extend to:

- Damages caused in shipment or damage as result of improper use.
- Installation of electrical service.
- Normal maintenance as outlined in this manual.
- Malfunction resulting from improper maintenance.
- Damage caused by abuse or careless handling.
- Moisture damage to electrical components.
- Damage from tampering with, removal of, or changing any preset control or safety device.

IMPORTANT! Keep these instructions for future reference. If the unit changes ownership, be sure this manual accompanies the equipment.

OWNER INFORMATION (continued)

Service/Technical Assistance

If you experience any problems with the installation or operation of your unit, contact your local Roundup Authorized Service Agency. They can be found in the service agency directory packaged with the equipment.

Fill in the information below and have it handy when calling your Authorized Service Agency for assistance. The serial number is on the specification plate located on the rear of the unit.

Purchased From: _____

Date of Purchase: _____

Model No.: _____

Serial No.: _____

Mfg. No.: _____

Refer to the service agency directory and fill in the information below:

Authorized Service Agency

Name: _____

Phone No.: _____

Address: _____

Use only genuine Roundup replacement parts in this unit. Use of replacement parts other than those supplied by the manufacturer will void the warranty. Your Authorized Service Agency has been factory trained and has a complete supply of parts for this unit.

You may also contact the factory at **1-877-392-7854** or **1-630-784-1000** if you have trouble locating your local Authorized Service Agency.

IMPORTANT SAFETY INFORMATION

Throughout this manual, you will find the following safety words and symbols that signify important safety issues with regards to operating or maintaining the steamer.

WARNING

GENERAL WARNING. Indicates information important to the proper operation of the equipment. Failure to observe may result in damage to the equipment and/or severe bodily injury or death.

WARNING

ELECTRICAL WARNING. Indicates information relating to possible shock hazard. Failure to observe may result in damage to the equipment and/or severe bodily injury or death.

CAUTION

GENERAL CAUTION. Indicates information important to the proper operation of the equipment. Failure to observe may result in damage to the equipment.

WARNING

HOT SURFACE WARNING. Indicates information important to the handling of equipment and parts. Failure to observe caution could result in personal injury.

IMPORTANT SAFETY INFORMATION (continued)

In addition to the warnings and cautions in this manual, use the following guidelines for safe operation of the unit.

- Read all instructions before using equipment.
- For your safety, the equipment is furnished with a properly grounded cord connector. Do NOT attempt to defeat the grounded connector.
- Install or locate the equipment only for its intended use as described in this manual. Do NOT use corrosive chemicals in this equipment.
- Do NOT operate this equipment if it has a damaged cord or plug, if it is not working properly, or if it has been damaged or dropped.
- This equipment should be serviced by qualified personnel only. Contact the nearest Roundup Authorized Service Agency for adjustment or repair.
- Do NOT block or cover any openings on the unit.
- Do NOT immerse cord or plug in water.
- Keep cord away from heated surfaces.
- Do NOT allow cord to hang over edge of table or counter.

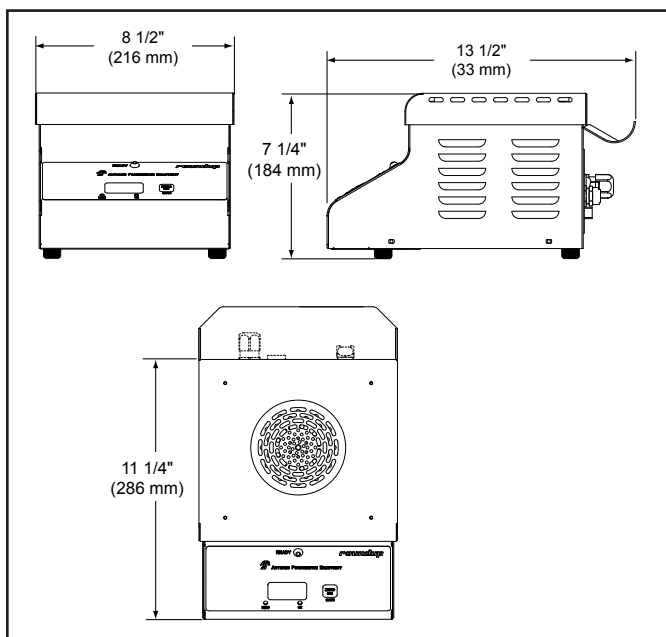
The following warnings and cautions appear throughout this manual and should be carefully observed.

- Turn the power off, unplug the power cord, and allow unit to cool down before performing any service or maintenance.
- The equipment should be grounded according to local electrical codes to prevent the possibility of electrical shock. It requires a grounded receptacle with separate electrical lines, protected by fuses or circuit breaker of the proper rating.
- All electrical connections must be in accordance with local electrical codes and any other applicable codes.
- **WARNING ELECTRICAL SHOCK HAZARD. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.**
 - Electrical ground is required on this unit.
 - Do NOT modify the power supply cord plug. If it does not fit the outlet, have a proper outlet installed by a qualified electrician.

- Do NOT use an extension cord with this appliance.
- Check with a qualified electrician if you are unsure if the appliance is properly grounded.
- This equipment is to be installed to comply with the basic plumbing code of the Building Officials and Code Administrators, Inc. (BOCA) and the Food Service Sanitation Manual of the Food and Drug Administration (FDA).
- If the supply cord is damaged, it must be replaced by the manufacturer or its service agent, or a similarly qualified person.
- Do NOT clean this appliance with a water jet.
- Do NOT use a sanitizing solution or abrasive materials. The use of these may cause damage to the stainless steel finish.
- To ensure proper steaming characteristics, some mineral deposits must be present on generator surface. If, during cleaning, the surface does become free of mineral deposits, one approved method is to add plain tap water to the generator surface and allow it to boil off. This will ensure proper steaming characteristics by creating a thin layer of mineral deposits on the casting.
- Chlorides or phosphates in cleaning agents (e.g. bleach, sanitizers, degreasers or detergents) could cause permanent damage to stainless steel equipment. The damage is usually in the form of discoloration, dulling of metal surface finish, pits, voids, holes or cracks. This damage is permanent and NOT covered by warranty.
- The following tips are recommended for maintenance of your stainless steel equipment:
 - Always use soft, damp cloth for cleaning, rinse with clear water and wipe dry. When required, always rub in direction of metal polish lines.
 - Routine cleaning should be done daily using soap and water.
 - Stains and spots should be removed using a vinegar solution as required.
 - Finger marks and smears should be removed using soap and water.
 - Hard water spots should be removed using a vinegar solution.

SPECIFICATIONS

Dimensions



Electrical Ratings

Model & Mfg. No	Voltage	Watts	Amps	Hertz
STS-200 9100922	120	1500	12.5	50/60

Electrical Cord & Plug Configurations

Model & Mfg. No.	Description	Configuration
STS-200 9100922	NEMA 5-15P, 15 Amp., 120 VAC., Non – Locking.	

⚠ WARNING ⚠

ELECTRICAL SHOCK HAZARD.

FAILURE TO FOLLOW THE INSTRUCTIONS IN THIS MANUAL COULD RESULT IN SERIOUS INJURY OR DEATH.

- Electrical ground is required on this appliance.
- Do NOT modify the power cord plug. If it does not fit the outlet, have a proper outlet installed by a qualified electrician.
- Do NOT use an extension cord with this appliance.
- Check with a qualified electrician if you are unsure if the appliance is properly grounded.

⚠ CAUTION ⚠

The Steamer/Scale uses a direct water line. Water pressure coming into the unit must be set to 7–9 psi using a Water Pressure Regulator.

⚠ CAUTION ⚠

This equipment is to be installed to comply with the basic plumbing code of the Building Officials and Code Administrators, Inc. (BOCA) and the Food Service Sanitation Manual of the Food and Drug Administration (FDA).

⚠ CAUTION ⚠

Handle the Steamer/Scale with care. Do NOT place objects other than sliced meat on the unit and NEVER place anything over 4 pounds (64 ounces) on the Steamer/Scale.

⚠ CAUTION ⚠

All electrical connections must be in accordance with local electrical codes and any other applicable codes.

INSTALLATION

Unpacking

1. Remove unit and all packing materials from shipping carton.
2. Open the carton. It should contain the following:
 - STS-200 Steamer/Scale
 - Water Pressure Regulator Kit
 - Owner's Manual and Maintenance Sheet
 - 16-Ounce Calibration Weight
 - Stainless Steel Cleaning Brush

NOTE: If any parts are missing or damaged, contact Antunes Technical Service IMMEDIATELY at 1-877-392-7854 or 1-630-784-1000.

3. Remove all packing materials and protective coverings from the unit.
4. Remove all removable parts and wipe them with a clean towel dampened with sanitizer. Allow them to air dry.
5. Wipe all surfaces of the unit with a clean towel dampened with sanitizer and allow to air dry.
6. Re-install all removed parts and verify that all parts are present.

Equipment Setup

GENERAL

The STS-200 Steamer/Scale is used to heat and portion sliced meats. The Air Bulb Switch initiates a shot of steam while the digital display shows the weight of the sliced meat (Figure 1).

STEAMER/SCALE SETUP

When placing the Steamer/Scale into service, pay attention to the following guidelines:

- Do NOT block or cover any openings on the units.
 - Do NOT immerse cords or plugs in water.
 - Keep cords away from heated surfaces.
 - Do NOT allow cords to hang over edge of table or counter.
3. Connect the outlet hose/fitting from the Dual Water Regulator Kit to the Water Inlet Connection at the rear of the unit (Figure 2).
 4. Connect the Air Bulb Switch tubing to the Air Hose Connection on the back of the unit (Figure 2). Push the tubing onto the connector. See the instructions for optional mountings.

5. Plug the power cord into the appropriate outlet.
6. Note that the Rotary Switches on the back of the unit (Figure 2) are pre-set to
 - Temp Rotor Switch - 0
 - Cycle Rotor Switch - 4
 - Shot Rotor Switch - 4

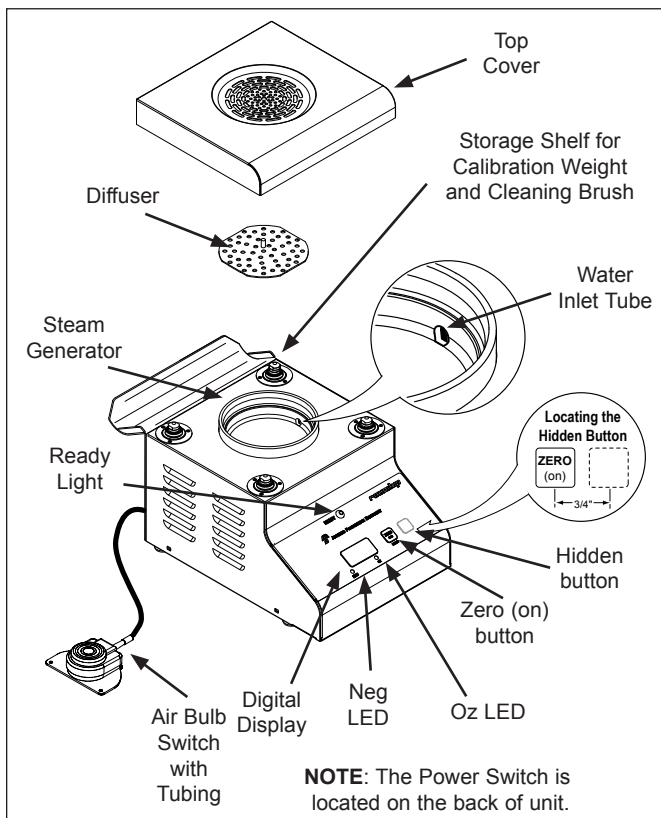


Figure 1. STS-200 Steamer/Scale

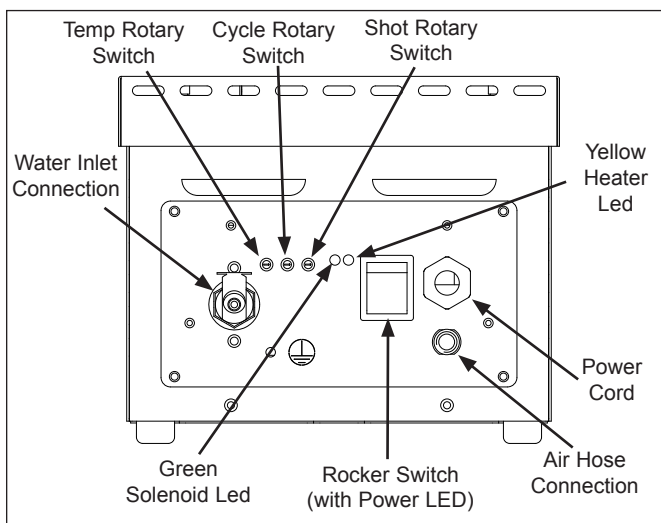


Figure 2. STS-200 Steamer/Scale (Back View) Without Storage Shelf Shown for Better View.

OPERATION

⚠ CAUTION ⚠

Handle the Steamer/Scale with great care. Do not place objects other than sliced meat on the unit and NEVER place anything over 4 pounds (64 ounces) on the Steamer/Scale. Damage to the unit may result due to careless handling or misuse.

⚠ IMPORTANT ⚠

Handle the Top Cover with care. If the Top Cover is bent, dented, or damaged, it may not sit properly on the Steamer/Scale resulting in inaccurate weight measurements.

Operating Instructions

1. Turn the power on and allow the unit to preheat for approximately 30 minutes. The Yellow LED located on the back of the unit will illuminate during the time that the heating element is heating up.
2. When the unit is ready for operation, the Blue LED on the front of the unit will turn on and remain lit. The unit will display 0.0. If it displays anything besides "0.0", zero the scale by pressing the **Zero (on)** button once. If the display still does not read "0.0", perform the procedures in the Calibrating the Steamer Scale section of this manual.

NOTE: Do NOT press any buttons or use the scale until it has warmed up and the Blue LED is on.

3. Place the sliced meat onto the center of the Steamer/Scale surface. At the same time, press the Air Switch (Figure 1). The Steamer/Scale will initiate a shot of steam.
4. The Blue LED will also turn off for 4 seconds. This is the timer cycle.
5. Note the weight of the sliced meat and adjust according to serving requirements.

⚠ IMPORTANT ⚠

Weight readings are accurate at the center of the scale surface ONLY. Do not weigh sliced meat on the edges or corners of the Steamer/Scale.

6. When the Blue LED turns on, another steam/time cycle can be initiated.
7. Remove steamed product and complete the assembly of the sandwich.

Calibrating the Steamer/Scale

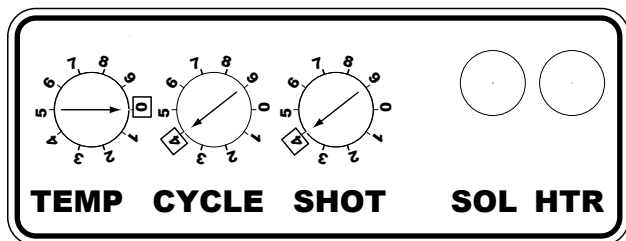
If the Steamer/Scale displays anything other than "0.0" during operation, first zero the scale. If the Steamer/Scale still does not display "0.0" after it has been zeroed, you must calibrate it as follows:

1. Turn the power on and allow the unit to warm up for 30 minutes.
2. Turn the unit off and wait for 20 seconds.
3. Ensure nothing is on the Steamer/Scale surface and that the Top Cover is seated correctly.
4. Directly to the right of the **Zero (on)** button is the **Hidden** button used to adjust the scale (Figure 1). Simultaneously press and hold both the **Zero** button and the **Hidden** button and then turn the unit on.
5. Continue holding the buttons. The system displays "888", "93", "r 18", and then "rb". At this point, release both buttons. The unit will then display "0.0". If the unit does not display "0.0", repeats Steps 2 through 5.
5. Press and release the **Zero (on)** button and wait for 10 seconds. Do NOT bump the unit, counter, or touch "the" Steamer/Scale during this 10-second period! The unit will then display "C" and then "C1".
6. Place the 1-pound (16 oz.) calibration weight on the center of the scale surface. Press and release the **Zero (on)** button. Wait 10 seconds. Do NOT bump the unit, counter, or touch the Steamer/Scale during this 10 seconds. During this 10 second time frame, the unit will display "C", "don", "Sov", and then "15.9", "16.0", or "16.1".
7. Remove the 1-pound (16 oz.) calibration weight.
8. The unit should read "0.0". If it does not, repeat Steps 2 though 7.

OPERATION (continued)

Rotary Switch Settings

At the back of the STS-200 unit are three Rotary Switches: Temp, Cycle, and Shot.



The Temp Rotary Switch sets the operating temperature of the unit. The Cycle Rotary Switch sets the length of a steam cycle in seconds. The Shot Rotary Switch sets the amount of water used in each cycle of operation. The standard settings and other possible settings are listed in the following table.

Setting	Temp.	Cycle/sec	Shot/Sec
0	375°F*	10.0	1.0
9	370°F	9.0	0.9
8	365°F	8.0	0.8
7	360°F	7.0	0.7
6	355°F	6.0	0.6
5	350°F	5.0	0.5
4	345°F	4.0*	0.4*
3	340°F	3.0	0.3
2	335°F	2.0	0.2
1	330°F	1.0	0.1

* These are the Standard Settings for the STS-200.

MAINTENANCE

Precaution: During these checks, hot surfaces will be exposed.
Hazard Communication Standard (HCS) – The procedures on this card include the use of chemical products. **These chemical products will be highlighted with bold face letters followed by the abbreviation (HCS) in the tools portion of the procedure.** See the Hazard Communication Standard (HCS) Manual for the appropriate Material Safety Data Sheet(s) (MSDS).

⚠ WARNING ⚠

Turn the power off, unplug the power cord, and allow the unit to cool down before performing any service or maintenance.

⚠ IMPORTANT ⚠

Read **ALL** instructions on the cleaning products used. Follow all instructions regarding the proper cleaning product to use as well as the proper mixture and/or handling of the cleaning product.

⚠ CAUTION ⚠

Chlorides or phosphates in cleaning agents (such as bleach, sanitizers, degreasers, or detergents) could cause permanent damage to stainless steel equipment. The damage is usually in the form of discoloration, dulling of metal surface finish, pits, voids, holes, or cracks. This damage is permanent and not covered by warranty.

The frequency of cleaning is determined by water conditions, usage and water filter systems.

The table below describes the types of cleaners and detergents used during maintenance of the Steamer/Scale.

You **MUST** use the appropriate cleaner for the task based on the appropriate supplier.

Document Term	Proctor & Gamble Product Name	Damon Product Name
General Detergent Cleaner (HCS)	Dawn™ Detergent Solution	Lark® Detergent Solution
Steam Generator Cleaner (HCS)	Spic and Span® Multi-surface Cleaner (the Green Liquid)	SF-77® Degreaser Detergent.
Delimer/Scale Remover (HCS)	DCT-Delimer Solution	---
Sanitizer Solution (HCS)	Clean Quick Sanitizer	Ster-O-Kem® #15 Sanitizer

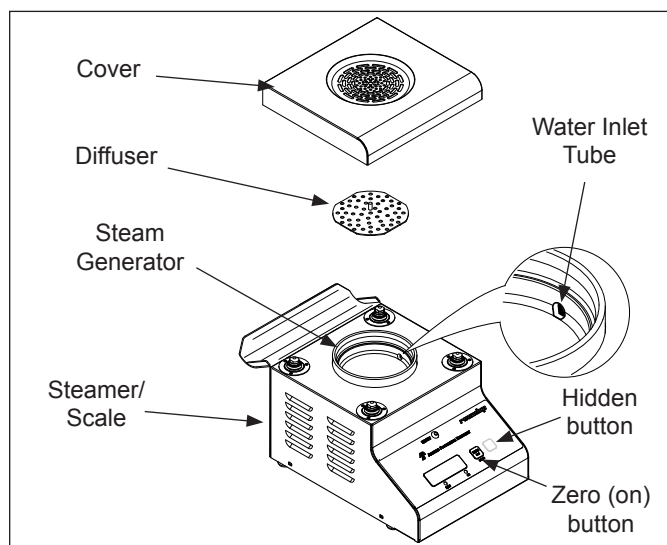


Figure 3. Steamer/Scale Components

Cleaning the STS-200 During Daily Use

⚠ CAUTION ⚠

The Top Cover, Diffuser, and Steam Generator are HOT when performing the following procedures.

During the day's use, there is a build up of meat and meat juices on the Top Cover, Diffuser, and in the Steam Generator.

This should be cleaned throughout the day. To do so, remove the Top Cover and Diffuser and clean them with a damp cloth (not dripping).

Using the damp cloth, wipe out the Steam Generator to remove any meat and/or juices.

If the Water Inlet Tube becomes clogged so that water cannot flow onto the Steam Generator, refer to the Cleaning The Water Inlet Tube section in this document.

MAINTENANCE (continued)

Daily Maintenance

⚠ IMPORTANT ⚠

Turn off the power, unplug the power cord, and allow the unit to cool down before proceeding.

CLEANING THE STEAMER SCALE

1. Check the Water Quick Disconnect Fitting and all hose clamp connections for leakage. If leakage is apparent, tighten all clamps or replace part if required.
2. Remove the Top Cover and Diffuser and wash in a solution of **Steam Generator Cleaner (HCS)**.
3. Use a wire brush to clean/remove the meat residue from the Top Cover and Diffuser.
4. Rinse the Top Cover and Diffuser with clear water.
5. Rinse the Top Cover and Diffuser in **Sanitizer Solution (HCS)** and then again with clear water. Allow to air dry.
6. Clean the Steam Generator by wiping off any meat and meat juices.
7. Pour some **Steam Generator Cleaner (HCS)** into the Steam Generator. Wait 15 minutes and then use the wire brush to clean the Steam Generator by removing all meat and meat juices.
8. Rinse the Steam Generator with clear water.
9. Rinse the Steam Generator using **Sanitizer Solution (HCS)** and then again with clear water. Repeat this step as needed until the Steam Generator is cleaned.
10. **In this step, the cloths are to be damp, NOT dripping wet.** Clean the Steamer Scale base using a damp soft cloth and **General Detergent Cleaner (HCS)**.
11. Rinse the Steamer Scale base with a soft cloth dampened with clear water.
12. Rinse the Steamer Scale base using a soft cloth dampened with **Sanitizer Solution (HCS)** and then a soft cloth dampened with clear water.
13. Re-install the Diffuser and Top Cover and plug the power cord into the appropriate outlet.
14. Turn the Steamer/Scale on, allow the unit to preheat for 30 minutes, and zero it by pressing **Zero (on)** button on the front of the unit (Figure 3).
15. If the Water Inlet Tube becomes clogged so that water cannot flow onto the Steam Generator, refer to the Cleaning The Water Inlet Tube section in this document.

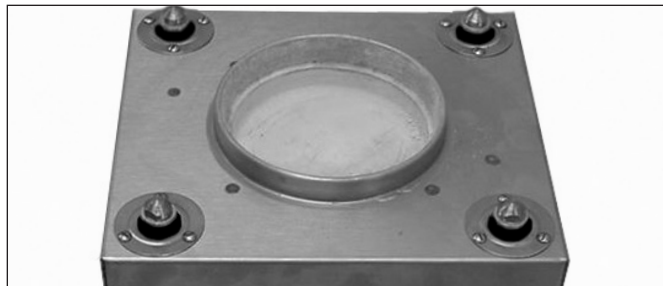


Figure 4. Dirty Steam Generator

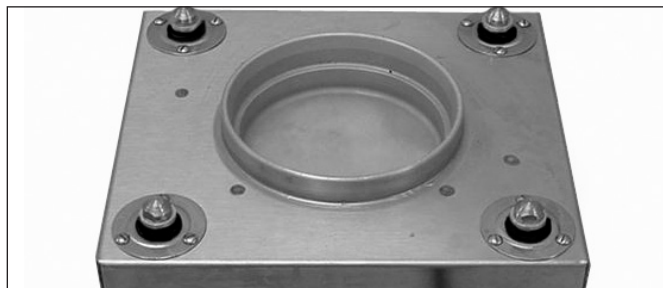


Figure 5. Clean Steam Generator

Weekly Maintenance

⚠ IMPORTANT ⚠

Turn off the power, unplug the power cord, and allow the unit to cool down before proceeding.

⚠ CAUTION ⚠

Observe all instructions, precautions, and warnings on cleaning product labels.

The STS-200 Steamer/Scale utilizes an open Steam Generator. Water sprayed into the Steam Generator surface flashes into steam immediately, but the minerals in the water do not steam. They stay on the Steam Generator surface and accumulate. A small amount of mineral deposits are needed for proper operation, but a build-up of excessive mineral deposits causes poor steaming efficiency, excessive moisture (wet steam) and will eventually severely retard the steaming action completely.

CLEANING STEAM GENERATOR

1. Perform the Daily Maintenance first.
2. Remove the Top Cover from unit.
3. Remove the Steam Diffuser.
4. Clean Steam Generator free of any product spills.

NOTE: If the mineral deposits come off in flakes or layers, build-up is excessive.

MAINTENANCE (continued)

5. Use a stainless steel wire brush to loosen and remove excessive deposits from the Steam Generator surface. Then, reinstall the Diffuser.
6. Pour **Delimer/Scale Remover (HCS)** so that it just covers the top of the Diffuser. Be sure to follow the delimer manufacturer's directions for proper mixture and use; it must be safe to be used on aluminum. Wait one hour.
7. Remove the **Delimer/Scale Remover (HCS)** from the Steam Generator and rinse with clear water to remove all remaining traces.
8. Clean the Cover and Diffuser in a hot solution of **General Detergent Cleaner (HCS)** and water, then rinse in clear water and allow to air dry.
9. Clean unit surface with a hot, clean, damp cloth (not dripping wet) and wipe dry. Re-install all parts.

IMPORTANT: To ensure proper steaming characteristics, some mineral deposits must be present on the Steam Generator surface. If during cleaning, the surface does become free of mineral deposits (bare aluminum), add plain tap water to the surface and allow it to boil off.

IMPORTANT: In soft water areas, it may be necessary to add a small amount of lime to the Steam Generator surface to "season" it.

This will ensure proper steaming characteristics by producing a thin coating of mineral deposits on the surface. To season the Steam Generator, Mix 1 teaspoon of Baking Soda with 3 ounces of water.

Pour the seasoning mixture onto the hot Steam Generator. After mixture is converted to steam, the remaining loose powder can be removed.

10. Plug the power cord into the appropriate outlet and connect the water line. Turn the Steamer/Scale on, allow the unit to preheat for 30 minutes, and zero the unit.
11. If the Water Inlet Tube becomes clogged so that water cannot flow onto the Steam Generator, refer to the Cleaning The Water Inlet Tube section of this manual.

CLEANING THE WATER INLET TUBE

Sometimes when cleaning the Steam Generator, small particles may be pushed into the Water Inlet Tube, causing it to become clogged.

In a clogged state, the unit is unable to spray water into the Steam Generator. Follow these steps to clean the Water Inlet Tube and to restore the unit to proper operating condition:

1. With the unit heated, insert a straightened paper clip **SLIGHTLY** into the Water Inlet Tube opening (Figure 1) and rotate in a circular motion.

NOTE: Do NOT shove the paper clip into the tube, otherwise you may further clog the tube.

2. After cleaning the Water Inlet Tube, remove the paper clip and cycle the unit several times to flush out any particles. If the water sprays, the unit is ready for use. If the water does NOT spray, follow Steps 3 through 5.
3. Set the adjustable Water Pressure Regulator between 20–25 psi.
4. Cycle the unit several times to flush out any particles.
5. Once the water sprays, set the water pressure back to 7–9 psi.

NOTE: Cycle the Steamer several times while adjusting the water pressure regulator knob until the water pressure gauge reads between 7–9 psi.

TESTING THE STS-200 FOR WEIGHING ACCURACY

1. Turn the unit on and allow it to warm up for 30 minutes.
2. Ensure nothing is on the Steamer/Scale surface and that the Top Cover is seated correctly.
3. Press the **Zero (on)** button once. The display should now read "0.0".
4. Place the certified 1-pound (16 ounce) calibration weight in the center of the scale surface.
5. The display should register 15.9 to 16.1 ounces (452.67 to 458.36 grams). If it does, the Steamer/Scale is weighing properly, and does not need calibrating.

If the unit does not register 15.9, 16.0, or 16.1 ounces (452.67 to 458.36 grams), you must calibrate the scale according to the Operating section of this manual.

MAINTENANCE (continued)**Monthly Maintenance****CHECKING/CLEANING THE WATER STRAINER**

The Water Strainer protects the unit from any foreign debris in the water line that could get into the food, damage the unit's solenoid (causing the unit to leak or flood), or interfere with the equipment's proper and consistent operation.

To ensure proper and consistent steaming results, check the Water Pressure Regulator and Strainer Cup regularly. If the pressure on the gauge has dropped, check the Strainer Cup and clean out the accumulated debris as follows.

1. Remove the Quick Disconnect #2 from the incoming water supply or shut off the water supply valve to the unit. Unscrew the Strainer Cup and carefully remove the Mesh Strainer Screen.
2. Take the Strainer Cup and Mesh Strainer to the sink and gently flush all the accumulated debris out of them, be especially careful not to damage the Mesh Strainer Screen.
3. Carefully place the Mesh Strainer Screen into its seat at the bottom of the Strainer Cup and verify that the orange O-ring is properly seated in its place before screwing the Strainer Cup and top back together.
4. Reinstall the quick disconnect until it clicks into place.
5. Purge the air out of the strainer by cycling the unit through several steam cycles.
6. Replace damaged or worn parts as needed.

NOTE: Refer to the Replacement Parts section of this manual for a complete list of parts.

TROUBLESHOOTING

Message Codes

The table below lists the possible message codes displayed by the unit during operation. Contact the factory if you have any questions about these message codes.

Message Code	Description
888	Display test, all digits on.
93	Software part number, DSW0093.
r0.3	Software revision.
Ld0	Loading zero, shown on start up.
don	Indicates that calibration is complete.
SA✓	Indicates that the current values are saved into memory.
Unit	Display Units (toggles between ounces or grams).
Int	Initialize or reset all scale settings in memory.
r b	Release button. Prompts user to release the Zero (On) or hidden buttons.

Error Codes

The table below lists the possible error codes displayed by the unit when an error occurs.

NOTE: If any of these errors appear on the Steamer/Scale display, contact the factory.

Error Code	Description and Corrective Action
"E1" Program Rom Error	The program memory in the Steamer/Scale has become corrupted. Have the Steamer/Scale serviced by a qualified Scale Repair Technician.
"E2" Gross Overload	The Steamer/Scale is in gross overload. The load exceeds the scale's input range and might result in damage to the Load Cell. Remove excess weight immediately or Load Cell connections may be wired in wrong. Ignore this message for the first 5 seconds after powering the Steamer/Scale.
"E3" Scale Overload	The Steamer/Scale is in overload. The load on the scale exceeds capacity by more than 103%. Remove excess weight from the Steamer/Scale.
"E4" Calibration Span Error	The Calibration Span is out of range, refer to A/D Ranging section for additional information.
"E5" EEPROM Error	The setup parameters loaded in nonvolatile memory have been corrupted. The Have the Steamer/Scale re calibrated by a qualified Steamer/Scale Technician.
"E6" Calibration Range Error	The "zero" Calibration is out of range. Refer to the A/D Ranging section for additional information.
"E7 A/D Failure	The scale has detected a failure in A/D circuit. Have the Steamer/Scale serviced by a qualified Steamer/Scale Repair Technician.

TROUBLESHOOTING (continued)

Problem	Possible Cause(s)	Corrective Action
The unit heats up and steams but the front display is blank.	Faulty scale Control Board.	Contact your maintenance person or an Authorized Service Agency for service.
	Faulty temperature Control Board.	
	Disconnected/Loose wiring harness.	
Unit operates, but the front display intermittently goes blank then comes back on after several minutes. NOTE: The generator surface temperature is in excess of 375°F. The hi-limit will trip at 450-470°F.	The automatic resetting hi-limit is tripping due to the generator overheating.	Contact your maintenance person or an Authorized Service Agency for service.
	Faulty temperature Control board.	
	Faulty thermistor.	
No heat, the front display is blank, and the light on the power switch is off.	Power cord not plugged into the appropriate outlet.	Verify that the power cord is plugged into the appropriate outlet.
	Circuit breaker is off or tripped.	Verify circuit breaker is on.
	Faulty power cord.	Contact your maintenance person or an Authorized Service Agency for service.
	Faulty terminal block.	
	Faulty power switch.	
No heat, the front display is on, and the Blue LED is on steady.	Thermistor is shorted.	Contact your maintenance person or an Authorized Service Agency for service.
	Faulty temperature Control Board.	
Blue LED flashes rapidly.	Thermistor is open.	Contact your maintenance person or an Authorized Service Agency for service.
	Loose, burnt, or broken wiring in heating circuit.	
	One of the two generator heaters is open.	
	Faulty temperature Control Board.	
No heat, front display is blank, but the light on the power switch is ON.	Faulty transformer.	Contact your maintenance person or an Authorized Service Agency for service.
	Faulty temperature Control Board.	
	Loose or broken wiring in circuit.	
The Blue LED repeatedly flashes 1 second on 3 seconds off NOTE: The electrical compartment temperature has exceeded 155°F.	Insufficient ventilation around unit.	Turn unit off and let cool down. If the problem persists, contact your maintenance person or an Authorized Service Agency for service.
	Faulty Temperature Control Board	
The Blue LED intermittently flashes 1 second on 1 second off during normal use. NOTE: The generator surface temperature has dropped below 280°F. Proper operating temperature is 375°F.	Water pressure regulator is improperly set.	Adjust regulator to 7-9 PSI.
	Rotary switches are not correctly set	Set switches to the proper settings shown under the "Equipment Setup" section in the manual.
	One of the two generator heaters is open	Contact your maintenance person or an Authorized Service Agency for service.
	Faulty Temperature Control Board.	

TROUBLESHOOTING (continued)

Problem	Possible Cause(s)	Corrective Action
Scale is not weighing properly and/or behaves erratically.	Scale requires calibration.	Calibrate scale according section titled "Calibrating the Steamer Scale" in the Operation section of this manual.
	Interference/binding with the floating "Spider" (refer to part number 0504087 on page 21 in the Replacement Parts section of this manual.)	If unit was recently disassembled and/or serviced, some possible wiring or component may be interfering / binding with the floating spider.
	Faulty load cell.	Contact your maintenance person or an Authorized Service Agency for service.
	Faulty scale Control Board.	Contact your maintenance person or an Authorized Service Agency for service.
Unit heats, does not steam, but the Green LED at the rear of the unit DOES turn on for a split second as the air bulb is pressed.	The water valve is in the OFF position.	Verify water valve is ON.
	The quick disconnect fitting is not fully inserted into the inlet side of the Water Pressure Regulator.	Remove and reinsert the quick disconnect fitting until a "click" is heard.
	The quick disconnect fitting is not fully inserted into the rear of the scale/steamer.	
	The water regulator strainer screen is clogged.	Clean the strainer according to the Maintenance section of this manual.
	The generator's water inlet tube is clogged.	Clean the inlet tube according to the Maintenance section of this manual.
	Faulty solenoid valve.	Contact your maintenance person or an Authorized Service Agency for service.
Unit heats, does not steam, but the Green LED at the rear of the unit DOES NOT turn on for a split second as the air bulb is pressed.	Air Bulb Hose is not properly connected to the rear of the unit.	Remove and reattach the Air Bulb Hose.
	Air Bulb Hose is damaged.	Replace Air Bulb or hose if damage is apparent.
	Air Bulb is damaged.	
	Faulty Air Bulb Switch.	Contact your maintenance person or an Authorized Service Agency for service.

TROUBLESHOOTING (continued)

Problem	Possible Cause(s)	Corrective Action
The unit is not steaming the product properly and/or the product requires re-steaming.	The Water Pressure Regulator is improperly set.	Adjust regulator to 7-9 PSI. Refer to the section titled "Adjusting the Water Pressure Regulator" in this manual.
	The water regulator strainer screen is clogged.	Clean the strainer according to the Maintenance section of this manual.
	Rotary switches are not correctly set.	Set switches to the proper settings shown in the "Equipment Setup" section of this manual.
	The generator water inlet tube is clogged.	Clean the inlet tube according to the Maintenance section of this manual.
	The generator needs cleaning.	Clean the generator according to the Maintenance section of this manual.
	The unit is not being cleaned as required.	Clean the unit according to the Daily, Weekly, & Monthly cleaning procedures found in the Maintenance section of this manual.
	The generator surface is not hot enough.	Preheat the unit and verify that the generator surface temperature is at least 375° F.
The generator surface continuously fills with water ONLY when the power switch is OFF.	The solenoid valve is leaking due to debris trapped within its plunger and seat.	Attempt to flush the debris out by increasing the water regulator to 30 PSI & cycling the unit several times. Reset the regulator back to 7-9 PSI. If the problem persists. Contact the Authorized Service Agency for service
	The Solenoid Valve is not installed correctly.	If the Solenoid Valve was replaced, verify that the "IN" and "OUT" labels on the valve correspond to the water flow.
The generator surface continuously fills with water ONLY when the power switch is turned ON.	Faulty temperature Control Board	Contact your maintenance person or an Authorized Service Agency for service.
No heat and the rear LEDS are off but the front display is on.	Faulty Temperature Control Board.	Contact your maintenance person or Authorized Service Agency for service.

TECHNICAL THEORY OF OPERATION

Technical Theory of Operation

TEMPERATURE/STEAMING THEORY

When the Power Switch is on, line voltage flows to the primary side of the step down transformer. The transformer's secondary side supplies 12 VAC to terminals T1 and T2 of the multifunctional temperature Control Board.

Once powered, and provided that the generator surface temperature is below 375°F (190°C), the multifunctional temperature Control Board calls for heat by energizing its on board mechanical relay. Once energized, the mechanical relay closes its contacts, which allows line voltage to flow to the generator.

As the generator begins to heat up, a 100 K ohm thermistor monitors the internal generator temperature. As the heat continues to increase, the thermistor's ohms begin to decrease. As the internal generator temperature approaches 375-390° (190-198° C), the thermistor is generating approximately 790-665 ohms.

The multifunctional temperature Control Board receives these ohms and then de-energizes the mechanical relay since the heating circuit is satisfied. Then, the mechanical relay contacts open, and the generator stops heating.

The heating circuit cycles on and off as needed, even at idle. Once the generator is up to temperature (a state indicated by a steady Blue LED), and if the pneumatic Air Bulb Switch is pressed and released to initiate a steam cycle, air is directed rapidly through the pneumatic hose which then activates a pneumatic switch.

Once activated, the pneumatic switch contacts momentarily close to complete a circuit to terminal J4 on the multifunctional temperature Control Board.

Simultaneously, the Blue LED turns off, and the multifunctional Control Board supplies line voltage to the Solenoid Valve Coil for a split second. The Solenoid Valve opens, and allows approximately 2-3 tablespoons of water to be disbursed onto the Generator surface for steaming. The water flashes into steam immediately then rises up through the steam ports and steams the product.

After approximately 4 seconds, the Blue LED turns back on to indicate that the unit is ready to run another steam cycle.

The multifunctional Control Board incorporates two status LEDs detailed below. If the heating circuit continues to call for heat and the Generator overheats, an automatic resetting Hi-Limit Thermostat will trip and open the generator circuit and transformer circuit at approximately 450-470° F (232-243°C).

NOTE: If this condition should repeat, the root cause must be determined and corrected.

NOTE: The STS-200 Scale/Steamer is shipped with a dual water pressure regulator assembly. The primary water pressure regulator is fixed at 30 PSI and is not adjustable. The secondary water pressure regulator is factory set and should remain set between 7-9 PSI. It should only be momentarily adjusted if required as per the maintenance section.

WEIGHT SCALE THEORY

As previously stated, when the power switch is on, line voltage flows to the primary side of the step down transformer. The transformer's secondary side supplies 12 VAC to the multifunctional temperature Control Board terminals T1 and T2.

Once powered, terminal J1 on the multifunctional temperature Control Board supplies 8-10 VDC to terminal J1 of the scale Control Board by means of a wiring harness. Once powered, the scale Control Board illuminates its display. In addition, the two outer pins of the scale Control Board's J2 terminal powers up the load cell. These two outer pins supply 4-5 VDC to the load cell's "Green" and "Black" wires. The two center pins receive a signal from the load cell's "Red" and "White" wires.

NOTE: The load cell is manufactured with an integrated wiring harness. The loose end of this harness plugs into the scale Control Board. The removable top platform sits on 4 floating steel pegs. The steel pegs are attached to a floating steel cage (known as a Spider). The steel cage is attached to the load cell. The Scale's maximum operating weight capacity is 4 lbs. The scale weighs in .1 oz increments.

TECHNICAL THEORY OF OPERATION (continued)**LED FUNCTION**

(The following LEDs are viewed from the rear of the unit)

Yellow (Heat): When lit, it indicates that the unit is in heat mode. During this time, line voltage is being supplied to the generator. When off, it indicates that the generator is up to operating temperature.

NOTE: This led will cycle on and off even at idle.

Green (Solenoid Valve): When lit, it indicates that line voltage is momentarily being supplied to the solenoid valve coil.

NOTE: This LED is only lit for a split second.

THE FOLLOWING PROVIDES UNIQUE FEATURES INVOLVING THE “BLUE” LIGHT. THESE ARE HANDY FOR TROUBLESHOOTING PURPOSES.

During cold start up, the “Blue” light remains off (indicating that the generator is not up to temperature). During this time, the solenoid valve circuit is disabled and the unit will not initiate a cycle even if the air bulb is pressed.

Within 5 minutes after cold start up, the “Blue” light will turn on steady (indicating that the generator is now up to operating temperature). During this time, the solenoid valve circuit is enabled.

NOTE: The unit should always be preheated for 30 minutes before use.

BLUE LIGHT BLINKING CODES (REFER ALSO TO THE TROUBLESHOOTING SECTION)

Rapid Flashing: Under this condition, the generator may, or may not get hot. The solenoid valve circuit is disabled until the cause is corrected.

Possible Cause(s): An open thermistor or loose, burnt, broken wiring in heating circuit or one of the two generator heaters is open, or faulty temperature Control Board.

Slow Flashing (1 second on and 1 second off):

Under this condition, the generator surface temperature has dropped below 280°F (137°C). The solenoid valve circuit is disabled until the temperature rises above 280°F (137°C) and reaches proper operating temperature.

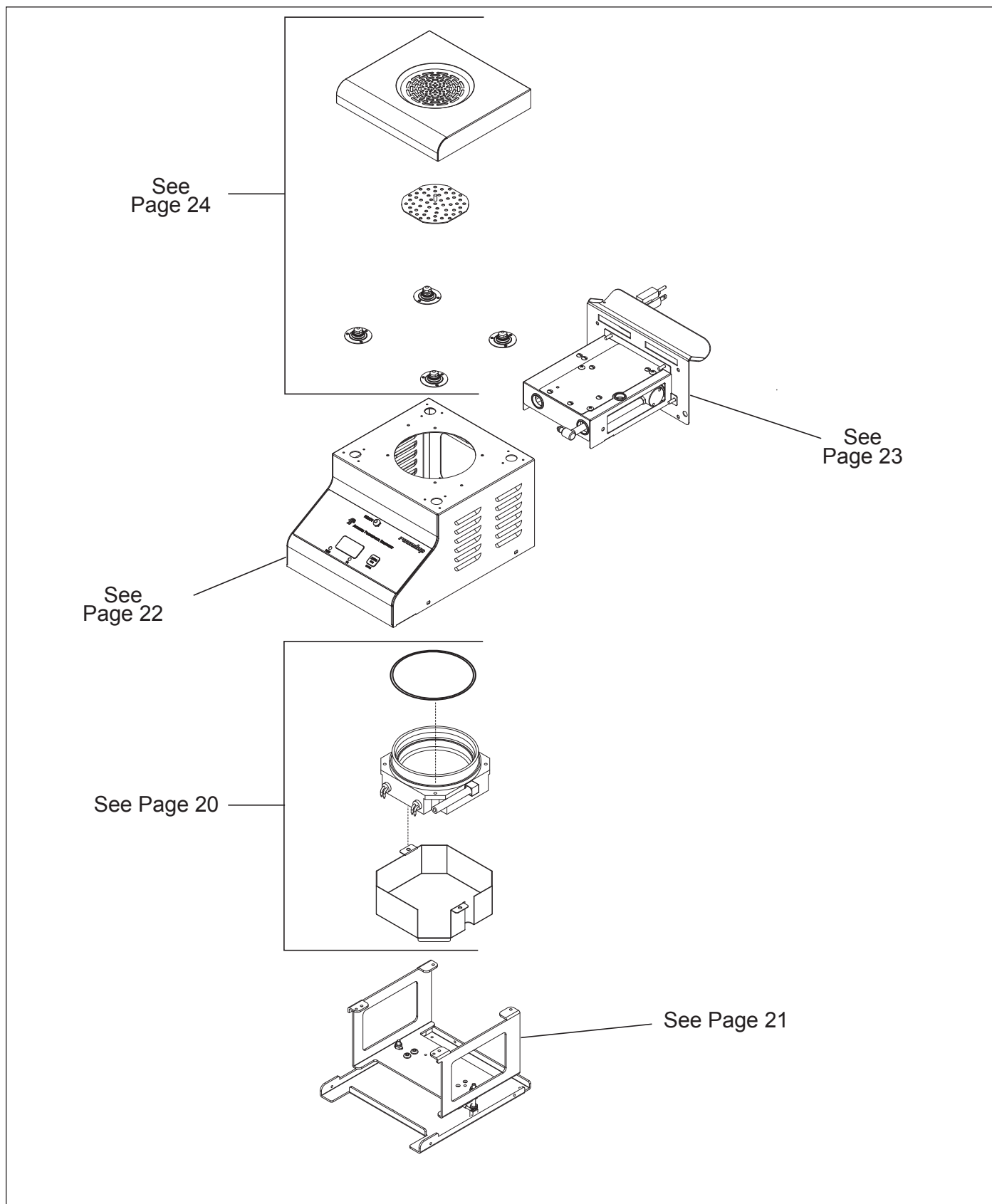
Possible Cause(s): The water pressure regulator is improperly set or rotary switches are not correctly set or one of the two generator heaters is open or faulty temperature Control Board.

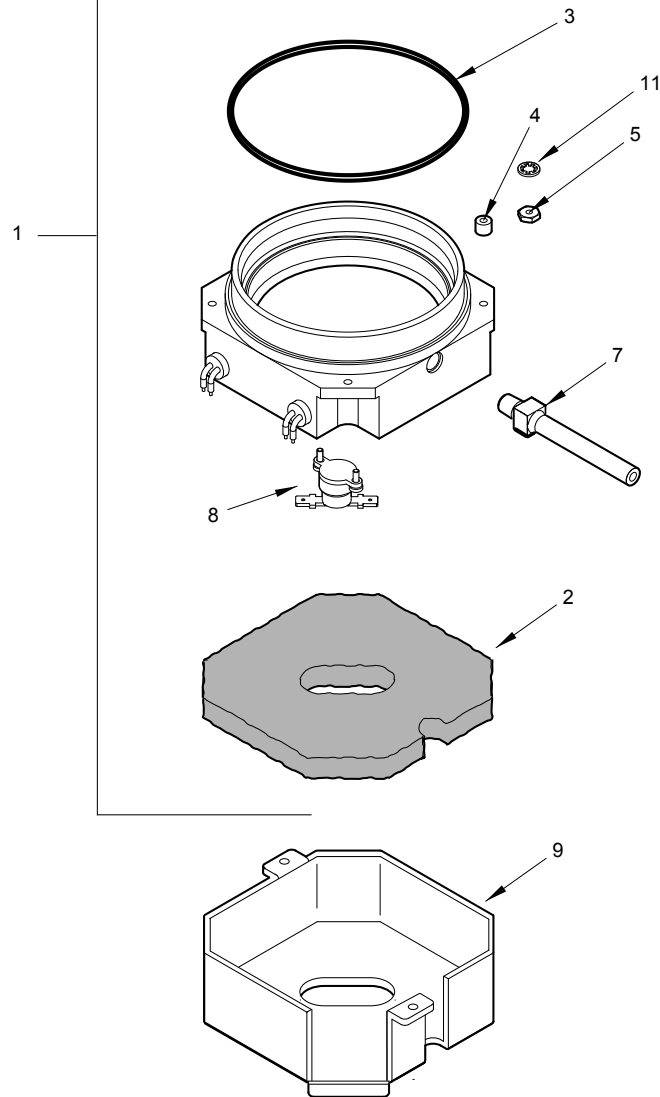
Slow Flashing (1 second on and 3 seconds off):

Under this condition, the electrical compartment temperature has exceeded 155°F (68°C). The solenoid valve circuit is disabled until the electrical compartment temperature drops below 155°F (68°C).

Possible Cause(s): Insufficient ventilation around the unit or faulty temperature Control Board.

REPLACEMENT PARTS



REPLACEMENT PARTS (continued)


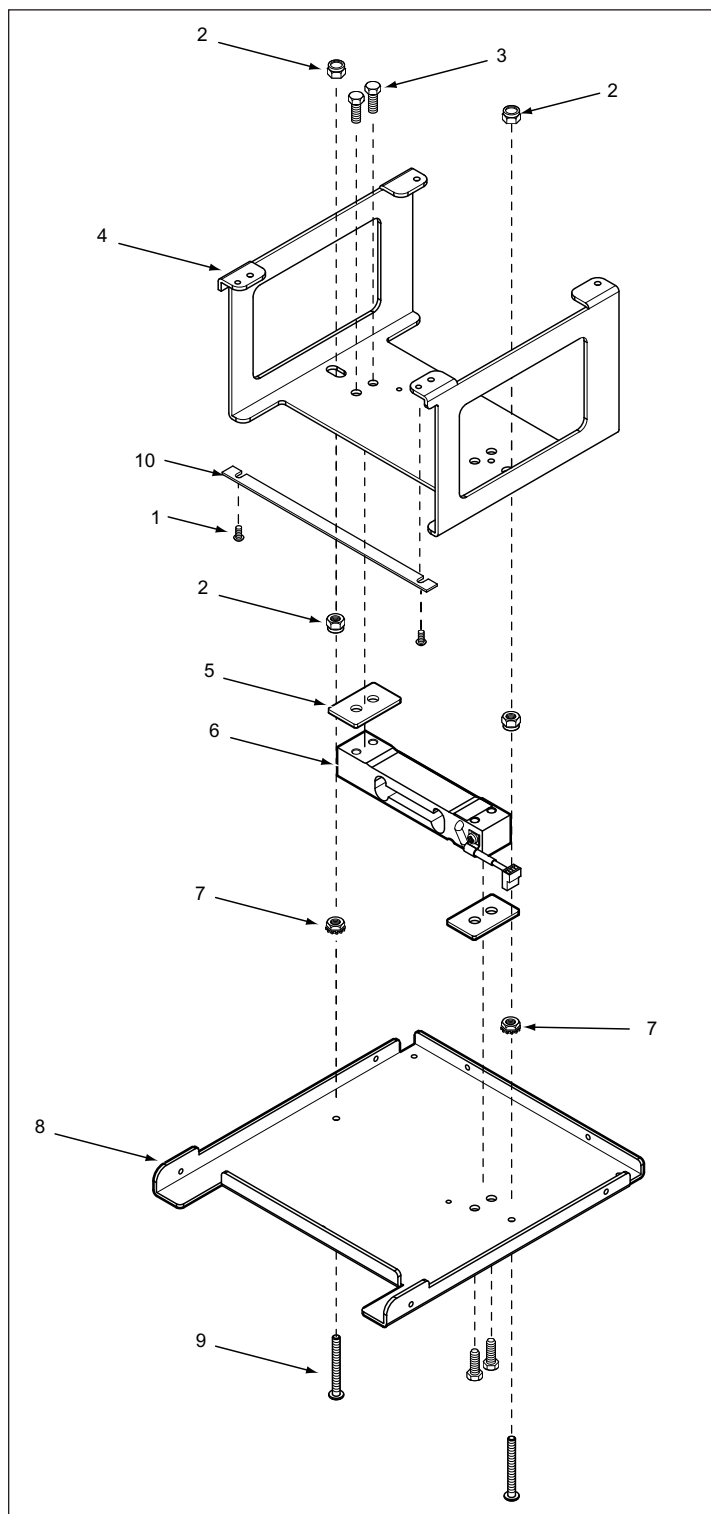
Item	Part No.	Description	Qty.
1	7000424	Generator Kit (Incl. 2, 4, 5, 7, 8, & 10)	1
	0100245**	Generator Machined	1
	4050228**	Probe, Thermistor	1
	0011787**	Cartridge Heater Assy. w/ Term.	2
	3080192**	Set Screw, 8-32 x 3/8 Cup Point	3
2	0400343	Insulation, Generator	1
3	0200242	O-Ring	1
4	2120168	Spacer, #6	4
5	306P101	Nut, Hex #6-32	1

Item	Part No.	Description	Qty.
7	7000682	Generator Elbow Kit (Incl. 3)	1
	2020117**	Tube, Silicone	1
	2190168**	Barb Fitting 1/8" NPT*	1
8	7000458	Hi-Limit Thermostat Kit*	1
	4030373**	Thermostat	1
	3040114**	Screw #4-40 x 1/4	2
	2140119**	Therm Paste	1
9	0504053	Retainer, Insulation	1
10	7000356	Silicone Sealer Kit (Not Shown)	1
11	306P102	Internal Tooth Lock Washer #6	1

* Assembled onto the Generator Assembly.

** NOT available for individual purchase.

REPLACEMENT PARTS (continued)

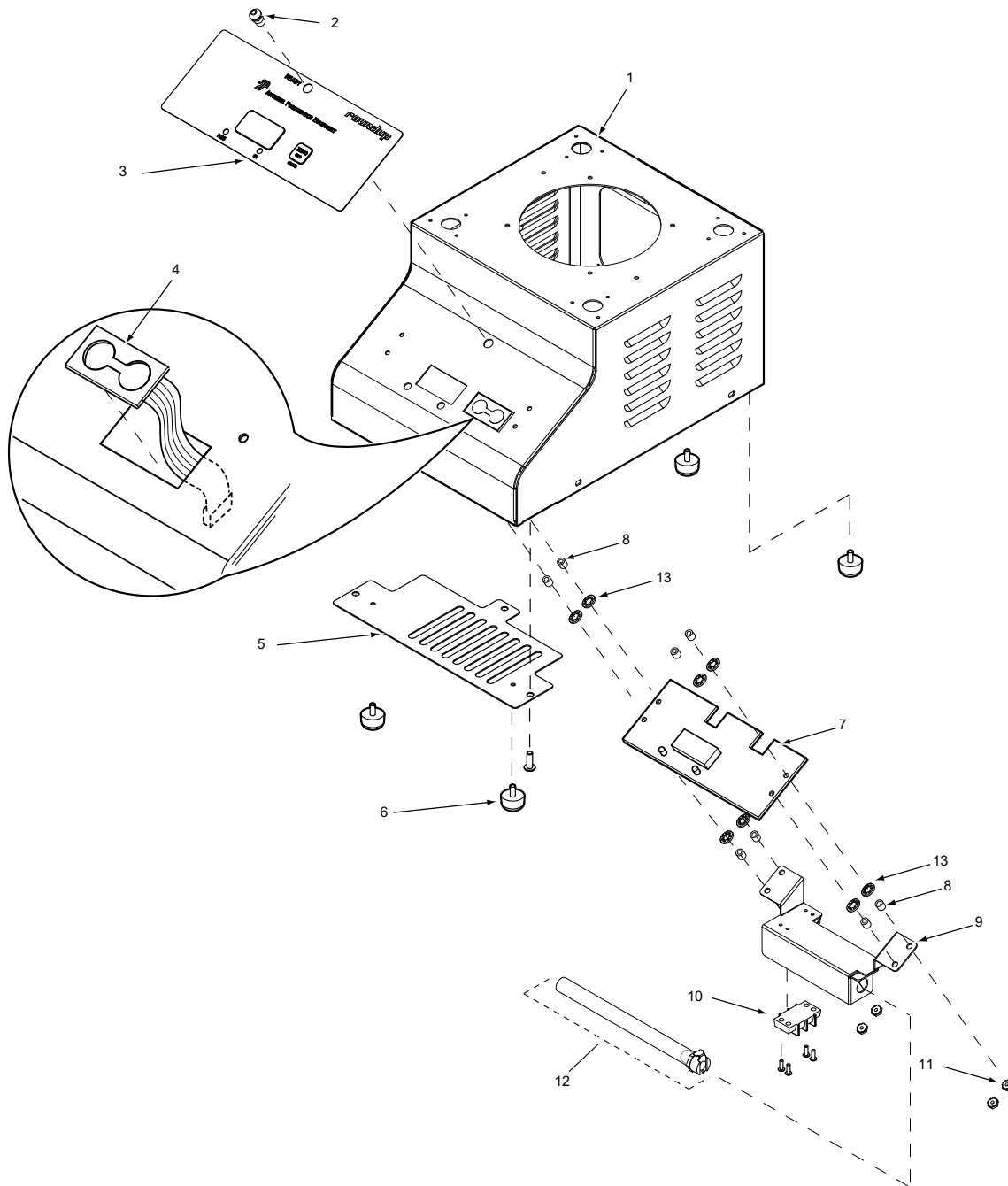


Item	Part No.	Description	Qty.
1	308P189	Screw 8-32 x 1/4" (10-pack)	1
2	310P170**	Nut, #10-32 NY-Lock (10-pack)	1
3	800P007**	Screw, M6 x 16 mm Hex Head	1
4	0504087**	Spider	1
5	0504122**	Spacer, Load Cell	2
6	4030367**	Load Cell	1
		Includes item #5, 3, and 2	
7	310P146**	Nut, Hex "KEPS" #10-32	1
8	0504082**	Plate, Base	1
9	310P180**	Screw, Mach. #10-32 x 1-3/4" Lg. (10-pack)	1
10	0504119	Brace, Spider	1
11	7000459	Base/Load Cell Assembly Kit (Incl. Items 1 through 10 assembled)	1
12	7000460	Load Cell Test Kit (not shown)	1

** Not available for individual purchase. You must use item #11, which consists of all of the items shown.

11

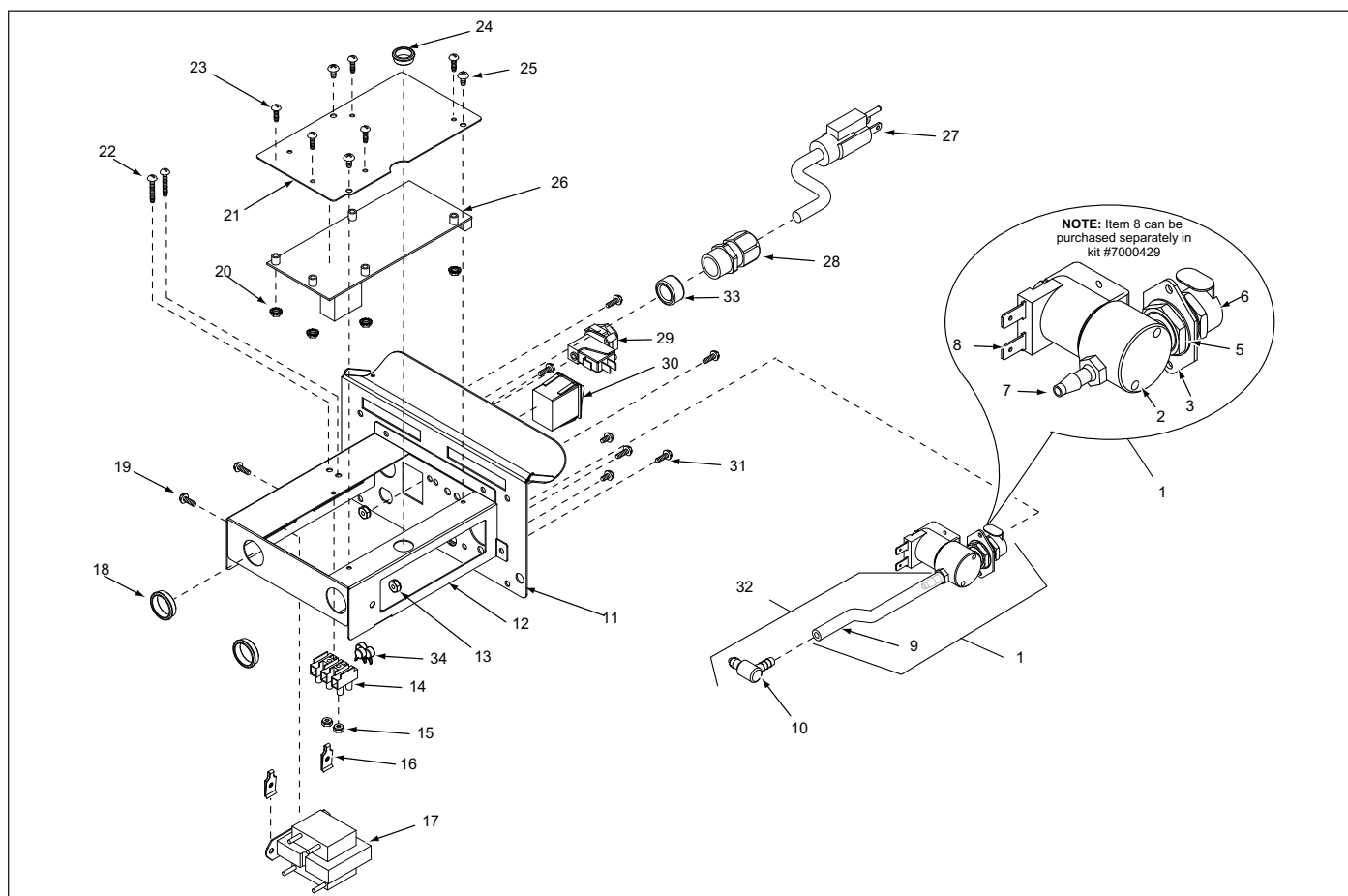
REPLACEMENT PARTS (continued)



Item	Part No.	Description	Qty.
1	0504057	Housing, Steamer	1
2	4060386	Indicator, LED Blue	1
3	1001305	Label, Control Panel	1
4	7000439	Membrane Switch (Incl. #3)	1
5	0504080	Plate, Cover	1
6	7000436	Leg Kit (4-Pack)	1
7	7000421	Scale Control Board	1
8	2120168	Spacer #6	8

Item	Part No.	Description	Qty.
9	0504123	Bracket, Terminal Mounting	1
10	4060387	Terminal, Double Row x 2 Con	1
11	306P130	Nut, Hex KEPS #6-32	1
12	7000427	Water Tube with Quick Disconnect Kit (Female)	1
13	306P102	Internal Tooth Lock Washer #6 (10-Pack)	1
14	7000747	Air Bulb Switch Kit	1

REPLACEMENT PARTS (continued)



Item	Part No.	Description	Qty.
1	7000425	Solenoid Assy. (incl. Items 2-9)	1
2	4040175**	Solenoid Valve	1
3	0504089**	Plate, Solenoid	1
5	3620102**	Lock Washer 5/8" Int.	1
6	2080117**	Quick Disconnect 1/8" NPT	1
7	2190143**	Barb 3/16" tube x 1/8" NPT	1
8	7000429	Solenoid coil 120 VAC	1
9	2020118**	Tube, Silicone 3/16" I.D. x 3/8" O.D. x 10" Lg.	1
10	2080124	Elbow, Quick Disconnect 1/8"	1
11	0504072	Panel, Control	1
12	0504071	Housing, Electrical	1
13	3080143	Nut, Hex KEPS #8-32	2
14	4060304	Terminal Block, 3-Pole	1
15	306P101*	Nut, Hex #6-32	2
16	300P102*	NU, Speed #8-32 "U"	2
17	4010201	Transformer 120v/12v	1
18	0400147	Bushing, Shorty 7/8"	2
19	308P104*	Screw, Mach #8-32 x 3/8" Sltrshd	2

NOTE: Item #8 comes included in Kit 7000425 but is also available for purchase by itself.

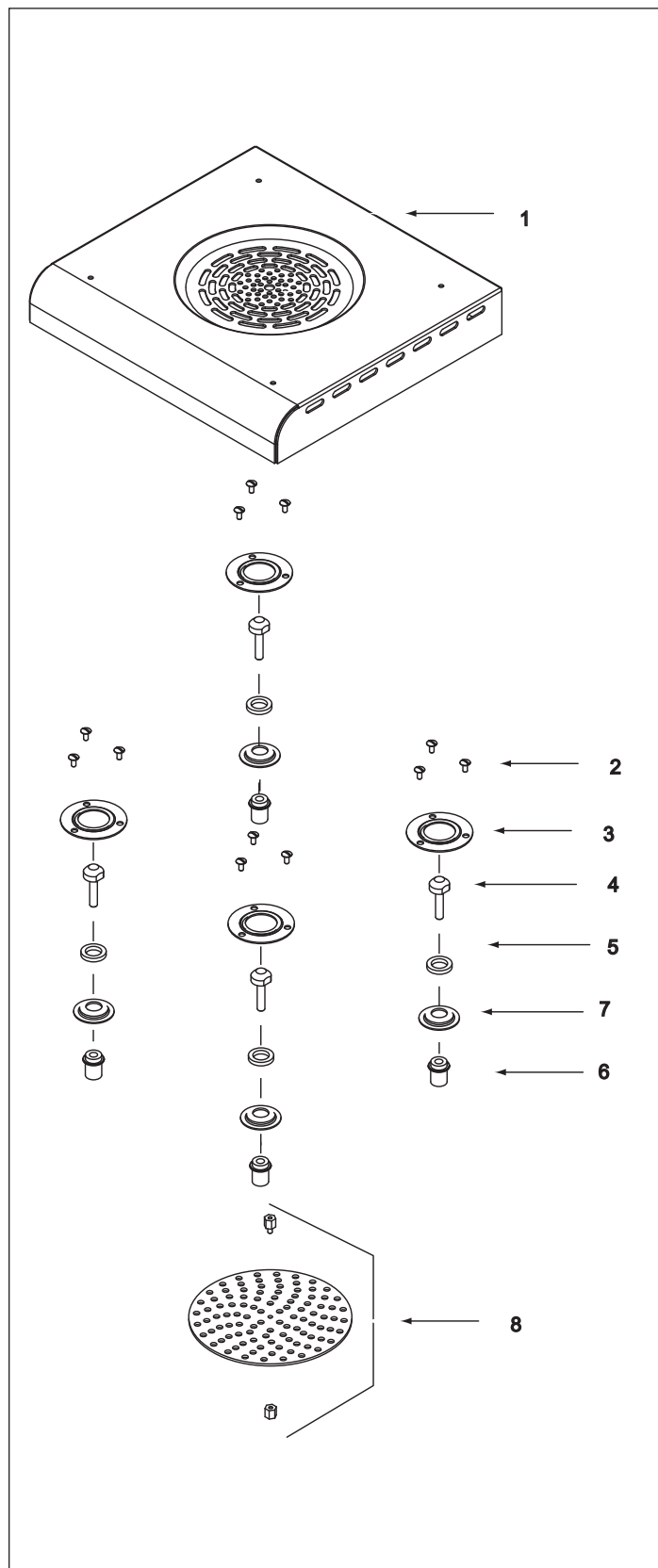
NOTE: Items #11 and 12 are sold as one piece ONLY.

Item	Part No.	Description	Qty.
20	306P130*	Nut, Hex KEPS #6-32	5
21	0504088	Plate, Control	1
22	306P123*	Screw, Mach #6-32 x 7/8" Sltrshd	2
23	306P105*	Screw, Mach #6-32 x 1/2" Sltrshd.	5
24	040P119*	Bushing, Shorty 5/8"	1
25	3080189	Screw, Machine #8-32 x 1/4"	5
26	7000422	Temperature Control Board Kit	1
27	0700674	Power Cord 5-15P 120V	1
28	040K251	Strain Relief - Cord Connector	1
29	4010212	Air Switch	1
30	4010151	Switch, Rocker (25 A - 125V)	1
31	308P124*	Screw, Mach One-way #8-32	5
32	7000426	Water Supply Kit (Incl. Items #9 and 10)	1
33	4060389	Ferrite 100 Ohm/100 Mhz	1
34	4060388	Varistor (Mov) Assembly	1
35	1001141*	Setting Label (Not shown)	1
36	1001153*	Water Label (Not shown)	1

* Only available in packages of 10.

** NOT available for individual purchase.

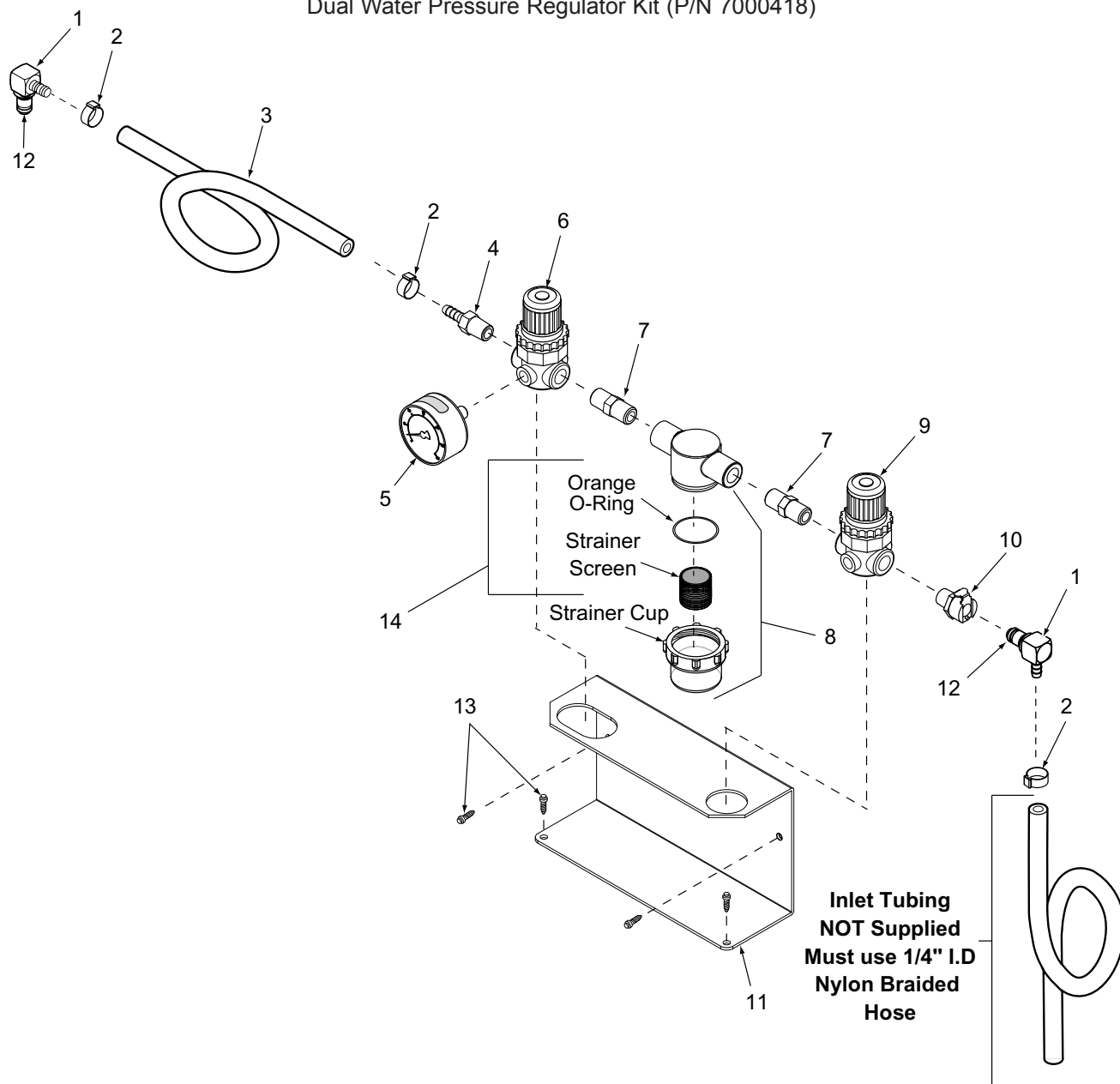
REPLACEMENT PARTS (continued)



Item	Part No.	Description	Qty.
1	0011784	Top Cover Weldment	1
2	304P114	Screw, Machine #4-40 x 1/4" (10 pack)	2
3	0504121	Seal Retainer	4
4	0300145	Screw, Locator (peg, steel)	4
5	2120157	Spacer	4
6	2120154	Standoff	4
7	7000423	Seal Kit, pack of 4 (Incl. #2)	4
8	0011776	Diffuser Assembly	1

REPLACEMENT PARTS (continued)

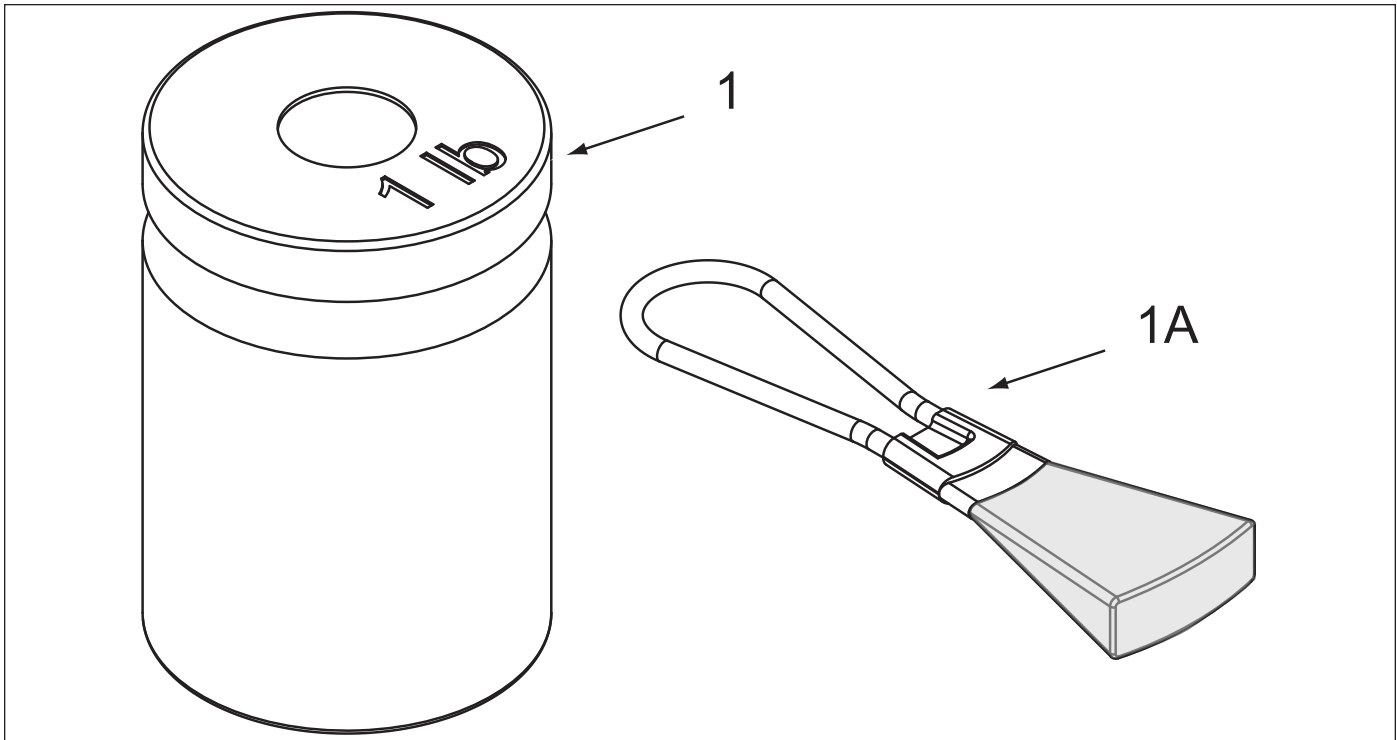
Dual Water Pressure Regulator Kit (P/N 7000418)



Item	Part No.	Description	Qty.
1	7000139	Elbow, Quick Disconnect (Incl 2 & 12)	2
2	2110160	Clamp, Ear 17/32"	3
3	2030128	Tubing - 1/4" ID PVC Brd. 30" long	1
4	2040130	Male Adaptor, Barbed - 1/4"	1
5	7000437	Gauge, Pressure (0-30 PSI)	1
6	2170122	Regulator Pressure (adjustable)	1
7	2190129	Nipple 1/4" NPT x 1/4" NPT	2

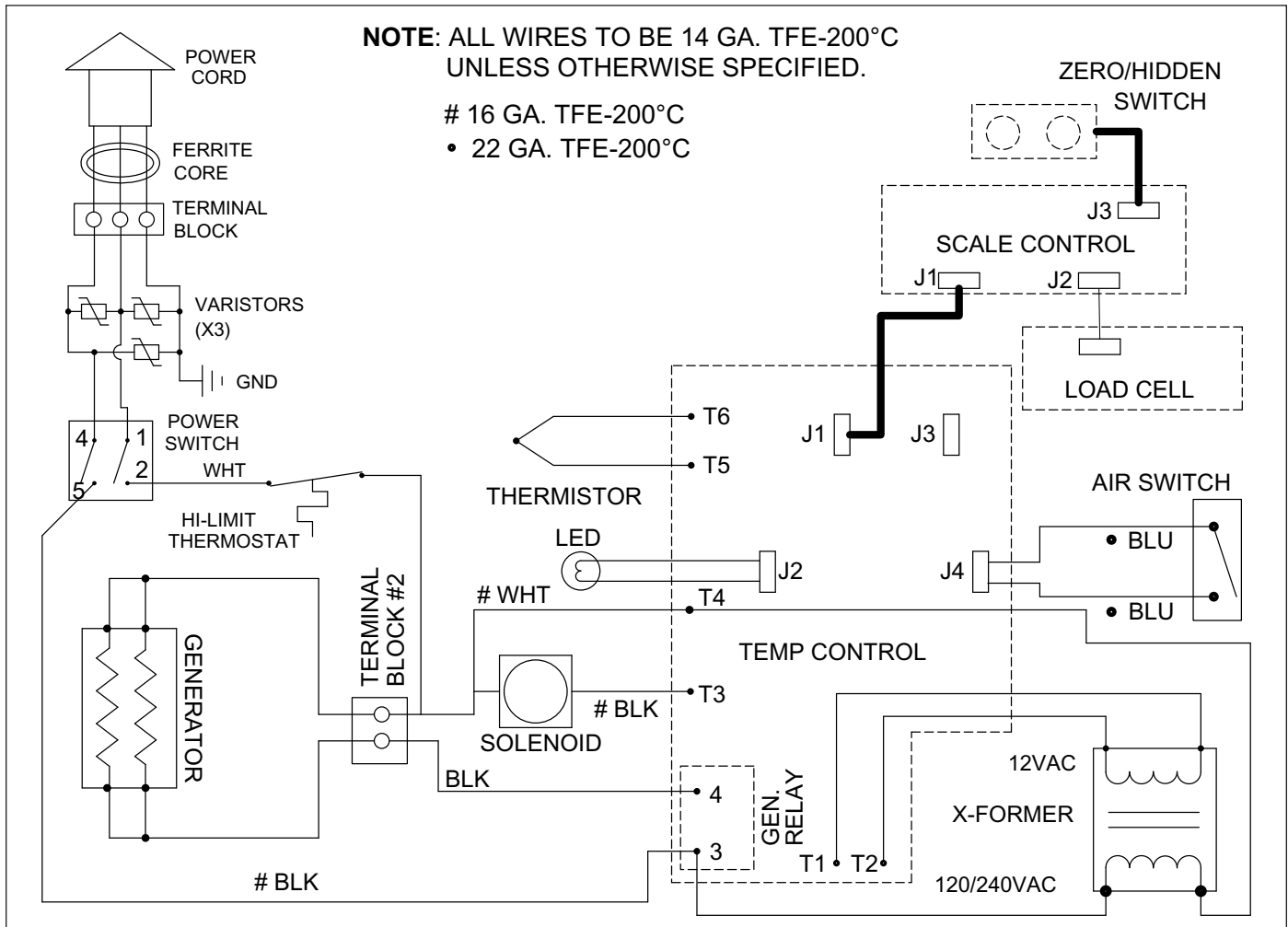
Item	Part No.	Description	Qty.
8	7000333	Strainer 1/4 FTP (includes O-Ring, Strainer Screen, and Strainer Cup)	1
9	2170124	Regulator, Pressure (non-adjustable)	1
10	2080118	Quick Disconnect 1/4" NPT	1
11	0504195	Bracket, Regulator	1
12	020P117	O-Rings, Spare (10 Pack)	3
13	306P144	Screw- Self Tapping (10 Pack)	1
14	7000334	Screen & Gasket Kit	1

REPLACEMENT PARTS (continued)



Item	Part No.	Description	Qty.
1	7000435	Weight 1 lb (16 ounces) (Incl 1A)	1
1a	2130173	Wire Brush	1

WIRING DIAGRAM



LIMITED WARRANTY

Equipment manufactured by Roundup Food Equipment Division of A.J. Antunes & Co. has been constructed of the finest materials available and manufactured to high quality standards. These units are warranted to be free from electrical and mechanical defects for a period of one (1) year from date of purchase under normal use and service, and when installed in accordance with manufacturer's recommendations. To insure continued operation of the units, follow the maintenance procedures outlined in the Owner's Manual. During the first 12 months, electro-mechanical parts, non-overtime labor, and travel expenses up to 2 hours (100 miles/160 km), round trip from the nearest Authorized Service Center are covered.

1. This warranty does not cover cost of installation, defects caused by improper storage or handling prior to placing of the Equipment. This warranty does not cover overtime charges or work done by unauthorized service agencies or personnel. This warranty does not cover normal maintenance, calibration, or regular adjustments as specified in operating and maintenance instructions of this manual, and/or labor involved in moving adjacent objects to gain access to the equipment. This warranty does not cover consumable/wear items. This warranty does not cover damage to the Load Cell or Load Cell Assembly due to abuse, misuse, dropping of unit/shock loads or exceeding maximum weight capacity (4 lbs). This warranty does not cover water contamination problems such as foreign material in water lines or inside solenoid valves. It does not cover water pressure problems or failures resulting from improper/incorrect voltage supply. This warranty does not cover Travel Time & Mileage in excess of 2 hours (100 miles/160 km) round trip from the nearest authorized service agency.
2. Roundup reserves the right to make changes in design or add any improvements on any product. The right is always reserved to modify equipment because of factors beyond our control and government regulations. Changes to update equipment do not constitute a warranty charge.
3. If shipment is damaged in transit, the purchaser should make a claim directly upon the carrier. Careful inspection should be made of the shipment as soon as it arrives and visible damage should be noted upon the carrier's receipt. Damage should be reported to the carrier. This damage is not covered under this warranty.
4. Warranty charges do not include freight or foreign, excise, municipal or other sales or use taxes. All such freight and taxes are the responsibility of the purchaser.
5. THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EACH OF WHICH IS HEREBY EXPRESSLY DISCLAIMED. THE REMEDIES DESCRIBED ABOVE ARE EXCLUSIVE AND IN NO EVENT SHALL ROUNDUP BE LIABLE FOR SPECIAL CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR THE BREACH OR DELAY IN PERFORMANCE OF THIS WARRANTY.



A.J. Antunes & Co.
We exist to make our customers successful.

A.J. Antunes & Co.
Headquarters/Manufacturing
Carol Stream, Illinois 60188 USA
Phone: (630) 784-1000
Toll Free: (800) 253-2991
Fax: (630) 784-1650

Antunes Equipment
Manufacturing (Suzhou) Ltd.,
Suzhou, Jiangsu, China 215011
Phone: 86-512-6841-3637
Toll Free: 400-0-7878-22
Fax: 86-512-6841-3907

www.ajantunes.com