




**Endura/Futura 111/112**

**OWNER'S MANUAL**


Manual No. 513532-4 Feb. 2004, Rev. 0




# Need Parts or Service?



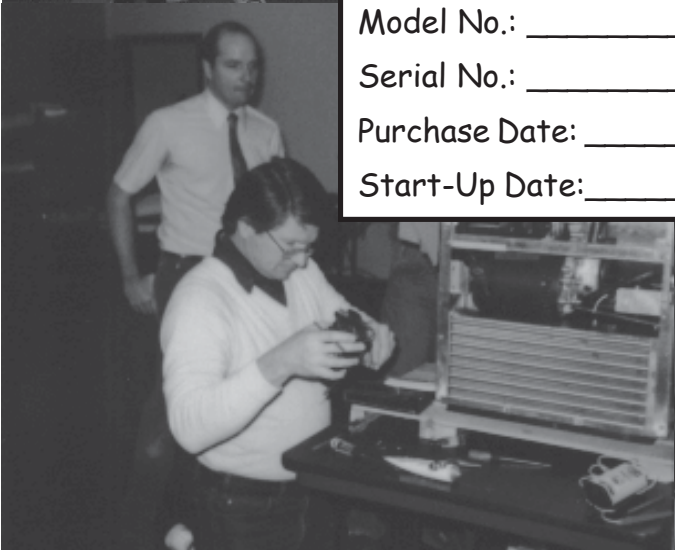
We stock the parts you need.  
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**OWNER'S MANUAL  
FOR  
MODEL ENDURA 111/112 AND FUTURA 111/112  
STOELTING COUNTER MODEL GRAVITY FREEZER  
SOFT SERVE**

This manual provides basic information about the freezer. Instructions and suggestions are given covering its operation and care.

The illustrations and specifications are not binding in detail. We reserve the right to make changes to the freezer without notice, and without incurring any obligation to modify or provide new parts for freezers built prior to date of change.

**DO NOT ATTEMPT** to operate the freezer until instructions and safety precautions in this manual are read completely and are thoroughly understood. If problems develop or questions arise in connection with installation, operation or servicing of the freezer, contact the company at the following location

**STOELTING, LLC  
502 HWY 67  
KIEL, WI 53042**

**PH: 920-894-2293**

**FAX: 920-894-7029**



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# SECTION 1 DESCRIPTION AND SPECIFICATIONS

## 1.1 DESCRIPTION

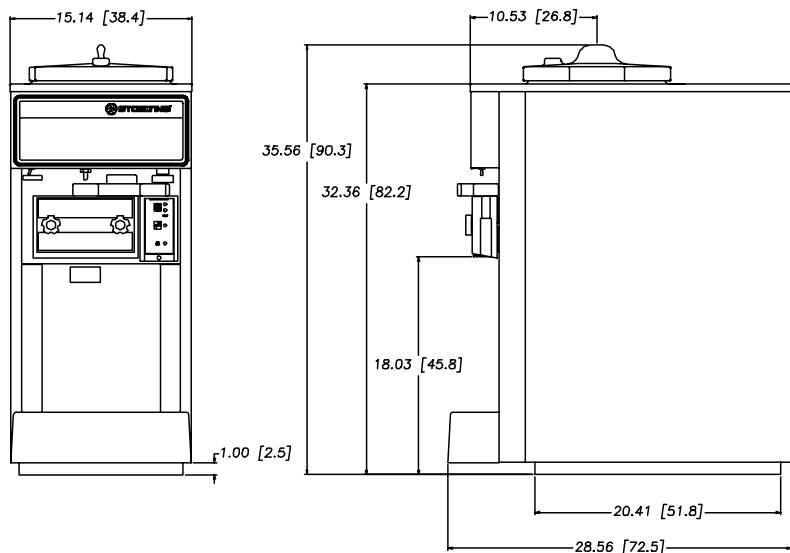
The Stoelting Endura/Futura 111/112 counter freezers are gravity fed. The freezers are equipped with fully automatic controls to provide a uniform product. The freezers are designed to operate with almost any type of commercial soft serve or non-dairy mixer available, including ice milk, ice cream, yogurt, and frozen dietary desserts. This manual is designed to assist qualified service personnel and operators in the installation, operation and maintenance of the Stoelting Model Endura 111/112 and Futura 111/112 gravity freezers.



Figure 1. Model Endura/Futura 111/112 Freezer

## 1.2 SPECIFICATIONS

### Model Endura/Futura Front View



### Model Endura/Futura Side Views

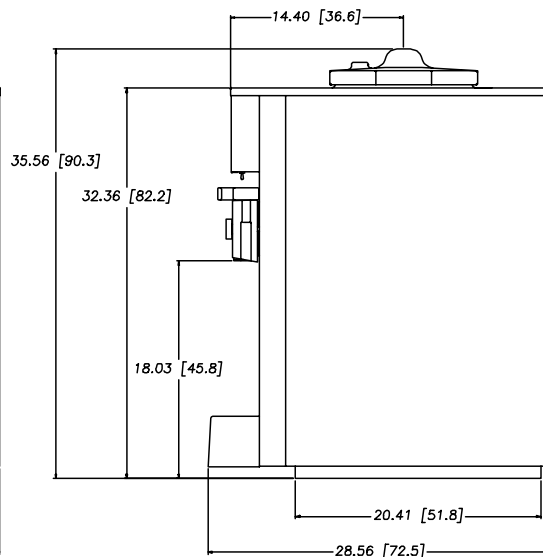


Figure 2. Specifications

**MODEL ENDURA/FUTURA 111/112  
COUNTER MODEL  
GRAVITY FREEZER**

**DIMENSIONS:**

Freezer: 15" (38 cm) wide x 28.6" (72 cm) deep x 35.6" (90 cm) high  
Crated: 19.5" (50 cm) wide x 33" (84 cm) deep x 40" (102 cm) high

**WEIGHT:**

Freezer: 230 lbs. (140 kg)      Crated: 275 lbs. (125 kg)

**ELECTRICAL:**

<b>Description</b>	<b>Endura 111-37G</b>	<b>Futura 111-38</b>
<b>Voltage AC</b>	1 PH 115V	1 PH 208/230
<b>Total Run Amps</b>	14.00	10.00
<b>Drive Motor</b>	3/4 HP	3/4 HP

Use 20 amp HACR circuit breaker.

Automatic safeguard circuit built into electronic control-protects major freezer components under abnormal operating conditions.

**COOLING:**

Air cooled requires minimum 3" (7.6 cm) air clearance on right and left hand side.  
No clearance needed in the rear. (See Fig.5).

**HOPPER:**

3 Gallons (11.5 liters) refrigerated and insulated.



## 2.2 SHIPMENT AND TRANSIT

The freezer has been assembled, operated and inspected at the factory. Upon arrival at the final destination, the complete freezer must be checked for any damage which may have occurred during transit.

With the method of packaging used, the freezer should arrive in excellent condition. THE CARRIER IS RESPONSIBLE FOR ALL DAMAGE IN TRANSIT, WHETHER VISIBLE OR CONCEALED. **Do not** pay the freight bill until the freezer has been checked for damage. Have the carrier note any visible damage on the freight bill. If concealed damage and/or shortage is found later, advise the carrier within 10 days and request inspection. The customer must place claim for damages and/or shortages in shipment with the carrier. **Stoelting, Inc. cannot make any claims against the carrier.**

## 2.3 FREEZER INSTALLATION

Installation of the freezer involves moving the freezer close to its permanent location, removing all crating, setting in place, assembling parts, and cleaning.

- A. Uncrate the freezer.
- B. Accurate leveling is necessary for correct drainage of freezer barrel and to insure correct overrun. Place a spirit level on top of the freezer at each corner to check for level condition. If adjustment is necessary, level the freezer by turning the bottom part of each leg in or out. Then separate freezer base gasket and install with seam to the back and angle to the top. (Fig. 4).



Figure 4 - Leveling

- C. The freezer is equipped with an air cooled condenser and requires correct ventilation. The right side of the freezer is the air intake and left side discharge. Both sides must have 3" clearance the top requires 10" of clearance. (Fig. 5).

**CAUTION**  
**FAILURE TO PROVIDE ADEQUATE VENTILATION**  
**WILL VOID WARRANTY!**

- D. Place the OFF-ON switch in the OFF position. (Fig.10).



Figure 5. Space and Ventilation Requirements

- E. Connect the power cord. The plug is designed for 208 or 230 volt/20 amp duty. Check the nameplate on your freezer for proper supply. The unit must be connected to a properly grounded receptacle. The electrical cord furnished as part of the freezer has a three prong grounding type plug (Fig. 6). The use of an extension cord is not recommended, if necessary use one with a size 12 gauge or heavier with ground wire. Do not use an adapter to get around grounding requirement.

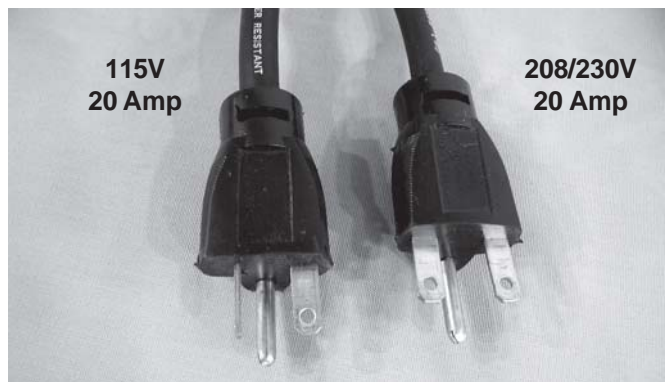


Figure 6. Electrical Plug

**CAUTION**  
**DO NOT ALTER OR DEFORM PLUG IN ANY WAY!**

- F. Install the drip tray, drain tray, hopper cover and other miscellaneous parts on the freezer. (Fig. 7).



Figure 7. Installing Tray and Cover

## 2.4 FLOOR STAND INSTALLATION

To install the E or F111/112 onto the floor stand, follow the steps outlined below:

- A. Uncrate the floor stand and place in an upright position.

### NOTE

Detailed instructions are included with each floor stand.

- B. Place a spirit level across the top of the stand to check for level condition, side to side and front to back. If adjustment is necessary, level the stand by turning the bottom part of each leg in or out, then tighten the lock nut.

### WARNING

**DO NOT INSTALL CASTERS ON THIS FLOOR STAND. THE STAND IS UNSTABLE WITH CASTERS AND COULD TIP CAUSING SERIOUS INJURY.**

- C. Place supports under freezer, then remove the 4 legs and replace with the rubber stud/plate mounts provided. Mounts must be fully tightened to the freezer.
- D. Place the freezer base gasket on the floor stand with the connected seam to the back and angle side up. Center the gasket side to side and 1-3/4 inches from the rear of the floor stand.
- E. Place the freezer on the floor stand with the front of the freezer to the door end. All 4 stud/plate mounts must engage the holes in the floor stand. Secure the mounts with the nuts and washers provided. (Fig. 8).



Figure 8 - Floor Stand

## 2.5 INSTALLING PERMANENT WIRING

If permanent wiring is required by local codes, the following procedure must be performed.

### WARNING

**DISCONNECT FREEZER FROM THE SOURCE OF ELECTRICAL SUPPLY BEFORE SERVICING.**

- A. Remove the back panel.
- B. Disconnect the wires from the terminal block. Disconnect the green ground wire from the grounding stud. (Fig. 9).

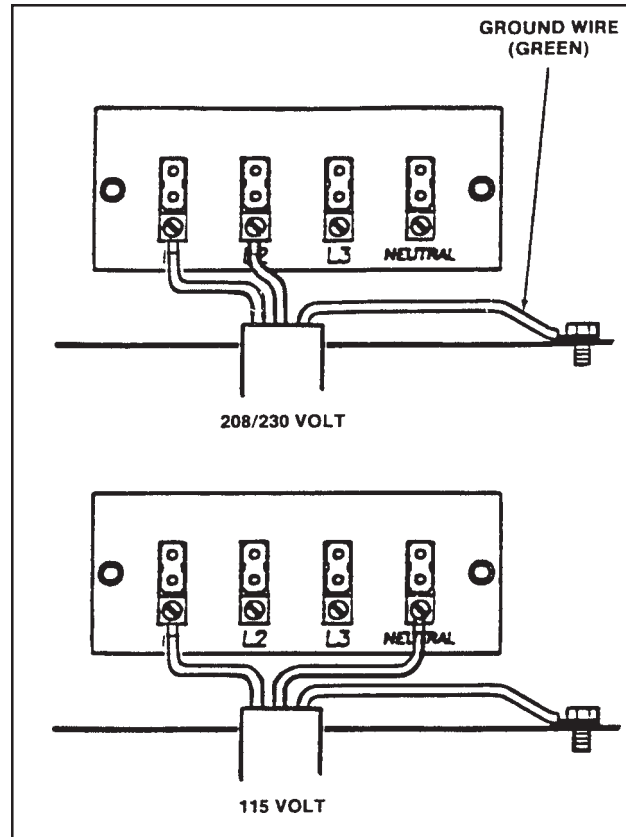


Figure 9. Power Cord Connection

- C. Remove the power cord.
- D. Install permanent wiring according to local code.
- E. Replace the back panel.



## SECTION 3 INITIAL SETUP AND OPERATION

### 3.1 OPERATOR'S SAFETY PRECAUTIONS

SAFE OPERATION IS NO ACCIDENT; Observe these rules:

- A. **Know the freezer.** Read and understand the Operating Instructions.
- B. **Notice all warning labels on the freezer.**
- C. **Wear proper clothing.** Avoid loose fitting garments, and remove watches, rings or jewelry which could cause a serious accident.
- D. **Maintain a clean work area.** Avoid accidents by cleaning up the area and keeping it clean.
- E. **Stay alert at all times.** Know which switch, push button or control you are about to use and what effect it is going to have.
- F. **Disconnect electrical cord for maintenance.** Never attempt to repair or perform maintenance on the freezer until the main electrical power has been disconnected.

- G. **Do not operate under unsafe operating conditions.** Never operate the freezer if unusual or excessive noise or vibration occurs.

### 3.2 OPERATING CONTROLS AND INDICATORS

Before operating the freezer, it is required that the operator know the function of each operating control. Refer to Figure 10 for the location of the operating controls on the freezer. For the information regarding flashing indicator lights, refer to the troubleshooting section.

#### WARNING

**THE OFF-ON SWITCH MUST BE PLACED IN THE OFF POSITION WHEN DISASSEMBLING FOR CLEANING OR SERVICING. THE FREEZER MUST BE DISCONNECTED FROM ELECTRICAL SUPPLY BEFORE REMOVING ANY ACCESS PANEL.**

**High Pressure Cutout  
Switch Located Back  
of Freezer  
(Some Models)**

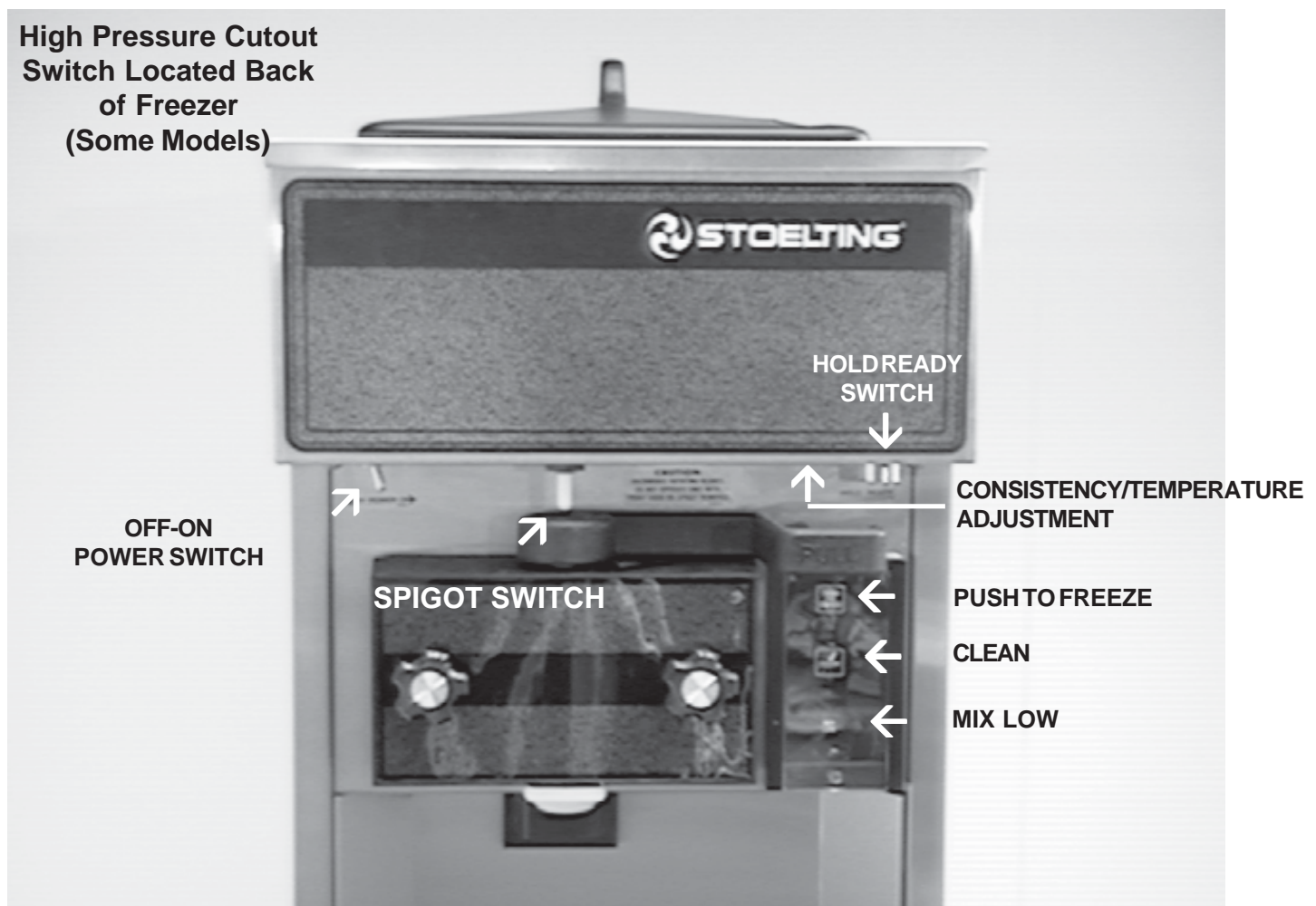


Figure 10. Controls

**A. SPIGOT SWITCH**

The SPIGOT switch will automatically actuate the auger drive and refrigeration systems when the spigot is opened to dispense product. When the spigot is closed, the drive motor and compressor will remain "on" until the product in the barrel reaches the proper consistency, or temperature.

**B. OFF-ON SWITCH**

The OFF-ON switch is a two position toggle switch used to supply power to the control circuit. When the switch is in the OFF position, nothing will run. When the switch is in the ON position the freezer will be in the idle mode until a switch is activated.

**C. PUSH TO FREEZE SWITCH**

The PUSH TO FREEZE switch is a "snap" switch used to start the freezing cycle. During initial freeze down, the OFF-ON switch is placed in the ON position. Then the PUSH TO FREEZE switch is pressed until the drive motor and compressor come "ON".

**NOTE**

After the gearmotor starts, there is a 3 second delay before the compressor starts.

During the normal operation, the red PUSH TO FREEZE switch light will illuminate after the freezer has been idle for the preset cycles. Before drawing product, press the PUSH TO FREEZE switch if it is illuminated. Wait until the green light is illuminated before dispensing.

**NOTE**

If the freezer shuts off and the PUSH TO FREEZE light flashes, you have an error condition. Turn the OFF-ON switch to the OFF position, correct the problem and turn the freezer back on. (See Troubleshooting.)

**D. GREEN LIGHT**

The green light is used to indicate that the product has reached the proper consistency or temperature and is ready to be dispensed.

**NOTE**

If the PUSH TO FREEZE red light is illuminated, push the PUSH TO FREEZE switch and wait until the green light illuminates before dispensing.

**E. CLEAN SWITCH**

The CLEAN switch is a "snap" switch. When the switch is pushed the refrigeration system will be OFF and the auger will rotate for cleaning. When the switch is pushed again, the auger will stop and the CLEAN light will flash indicating the freezer is in the CLEAN mode. To exit the CLEAN mode turn the OFF-ON switch to the OFF position. If the freezer is left in CLEAN for more than 30 minutes or is pushed three times in ten seconds, it will go in error. To reset place the CLEAN-OFF-ON switch in the ON position and allow the error light to flash a minimum of 10 minutes. Then turn to off, wait 5 seconds and turn on.

**F. DRIVE MOTOR OVERLOAD**

The internal DRIVE MOTOR OVERLOAD will trip if the drive motor is overloaded. It will reset after approximately 10-12 minutes. If the drive motor continues to trip, refer to Troubleshooting (Sec. 4).

**G. RED MIX LOW LENS**

The red MIX LOW light is designed to alert the operator to a low mix condition. The lens will illuminate with approximately one gallon of mix in the hopper. When the MIX LOW lens is lit, refill hopper immediately.

**NOTE**

Failure to refill hopper immediately may result in operational problems.

**H. HOLD READY SWITCH**

The HOLD READY switch is a push button switch. When pushed in and held for 5 seconds, the hold ready mode will be activated. The product will remain ready to serve and the freezer will not go to idle. To return to normal operation push and hold for 5 seconds.

**3.3 SANITIZING**

Sanitizing must be done after the freezer is cleaned and just before the hopper is filled with mix. Sanitizing the night before is not effective. However, you should always clean the freezer and parts after using it.

**WARNING**

**THE UNITED STATES DEPARTMENT OF AGRICULTURE AND THE FOOD AND DRUG ADMINISTRATION REQUIRE THAT ALL CLEANING AND SANITIZING SOLUTIONS USED WITH FOOD PROCESSING EQUIPMENT BE CERTIFIED FOR THIS USE.**

When sanitizing the freezer, refer to local sanitary regulations for applicable codes and recommended sanitizing products and procedures. The frequency of sanitizing must comply with local health regulations. Mix sanitizer according to manufacturer's instructions to provide a 100 parts per million strength solution. Mix sanitizer in quantities of no less than 2 gallons (7.5 liters) of 120°F water. Allow sanitizer to contact the surfaces to be sanitized for 5 minutes. Any sanitizer must be used only in accordance with the manufacturer's instructions.

**NOTE**

Stoelting, Inc. has found that STERA-SHEEN GREEN LABEL SANITIZER AND CLEANER does an effective job of properly sanitizing and cleaning a soft serve freezer. We therefore include a sample with each new freezer. Other products may be as effective. For further information refer to cleaning and sanitizing information Section 3.13.

**CAUTION**

**PROLONGED CONTACT OF SANITIZER WITH FREEZER MAY CAUSE CORROSION OF STAINLESS STEEL PARTS.**



In general, sanitizing may be conducted as follows:

- A. Push the mix inlet regulator into hopper with air inlet (long) tube toward the front of the freezer (Fig.11).



**Figure 11. Mix Inlet Regulator**

- B. Prepare 2 gallons (7.5 liters) of sanitizing solution following manufacturer's instructions. Pour into hopper with mix inlet regulator in place.
- C. Place the OFF-ON toggle switch in the ON position while pressing the CLEAN switch. Check for leaks. (Fig. 12.)



**Figure 12. Clean Control**

- D. Clean sides of hopper, mix inlet regulator and under side of hopper cover using a sanitized soft bristle brush dipped in the sanitizing solution. (Fig. 13).



**Figure 13. Sanitizing Hopper**

- E. After five minutes, place a bucket under the spigot and open spigot to drain sanitizing solution. When solution has drained, press the CLEAN snap switch to stop the auger. Allow the freezer barrel to drain completely (Fig. 14).



**Figure 14. Draining Solution**

### 3.4 FREEZE DOWN AND OPERATION

This section covers the recommended operating procedures to be followed for the safe operation of the freezer.

- A. Sanitize just prior to use.
- B. Place the OFF-ON switch in the OFF position.
- C. With spigot open, pour approximately 1 gallon (3.8 liters) of mix into the hopper. Allow the mix to flush out about 8 ounces (0.23 liters) of sanitizing solution and liquid mix. Close the spigot.
- D. Fill hopper with approximately 3 gallons (11.4 liters) of pre-chilled (40°F or 4°C) mix.

#### CAUTION

**DO NOT OVERFILL THE HOPPER. MIX LEVEL MUST NOT BE HIGHER THAN THE AIR INLET TUBE ON THE MIX INLET REGULATOR.**

- E. The freezer barrel will automatically fill until it is about 1/2 full. If freezer barrel does not fill, check for obstruction in the mix inlet regulator. If freezer barrel fills over 1/2 full, indicated by low overrun, check for leaks at the mix inlet regulator "O" Ring or check if the mix inlet regulator was installed correctly or that the freezer is level.
- F. Place the OFF-ON switch in the ON position, then press the PUSH TO FREEZE switch until the freezer starts.

#### NOTE

After the gearmotor starts, there is a 3 second delay before the compressor starts.

- G. After about 6 to 10 minutes the freezer will shut OFF and the green lens will illuminate. The product is ready to serve. Freeze down time may be longer for some frozen diet dessert mixes. High ambient temperatures may extend freeze down time.
- H. For normal dispensing, move the spigot handle fully open 60° (Fig. 15).



Figure 15. Dispensing Product

**CAUTION**  
**REFRIGERATION IS AUTOMATICALLY ACTIVATED WHEN THE SPIGOT IS OPENED. CLOSE THE SPIGOT COMPLETELY AFTER DISPENSING.**

- I. The freezer is designed to dispense the product at a reasonable draw rate. If the freezer is overdrawn, the result is a soft product or a product that will not dispense at all. If this should occur, allow the freezer to run for approximately 30 seconds before dispensing additional product. After a while the operator will sense or feel when the freezer is beginning to fall behind, and will slow down on the rate of draw so as not to exceed the capacity.
- J. **Do not** operate the freezer when the MIX LOW light is on or with less than 1-3/4 inches (4.4 cm) of mix in the hopper. Refill the hopper immediately.

### 3.5 MIX INFORMATION

Mix can vary considerably from one manufacturer to another. Differences in the amount of butter-fat content and quantity and quality of other ingredients have a direct bearing on the finished frozen product. A change in freezer performance that cannot be explained by a technical problem may be related to the mix.

Proper product serving temperature varies from one manufacturer's mix to another. Soft serve mixes should provide a satisfactory product in the 18° to 20°F (-7° to -6°C) range, shake mixes 24° to 28°F (-4° to -2°C).

When checking the temperature, stir the thermometer in the frozen product to read the true temperature.

Mix does not improve with age. Old mix, or mix that has been stored at too high temperature, can result in a finished product that is less than satisfactory from the appearance and taste standpoint. To retard bacteria growth in dairy based mixes, the best storage temperature range is between 36° to 40°F (2.2° to 4.4°C).

Some products tend to foam more than others. If excess foam should occur, skim off with a sanitized utensil and discard. Periodically, stir the mix in the hopper with a sanitized utensil.

### 3.6 REMOVING MIX FROM FREEZER

To remove the mix from the freezer, refer to the following steps:

- A. Remove the mix inlet regulator from the hopper by pulling straight up (Fig. 16).



Figure 16. Removing Mix Inlet Regulator

- B. Place the OFF-ON rocker switch in the ON position and push the CLEAN switch to rotate the auger. Allow the mix to agitate in freezer barrel until the mix has become a liquid, about 5 minutes.
- C. Drain the liquid mix by opening the spigot. A bucket or container should be placed under the spigot to catch the liquid mix. (Fig. 17).
- D. Place the OFF-ON switch in the OFF position.



Figure 17. Draining Mix

### 3.7 CLEANING THE FREEZER

#### NOTE

The frequency of cleaning the freezer and freezer parts must comply with local health regulations.

After the mix has been removed from the freezer, the freezer must be cleaned. To clean the freezer, refer to the following steps:

- A. Close the spigot and fill the hopper with 2 gallons (7.5 liters) of cold tap water.
- B. Place the OFF-ON switch in the ON position while pushing the CLEAN switch to rotate the auger.
- C. Allow the water to agitate for approximately 5 minutes.

#### NOTE

If freezer is left in CLEAN for more than 30 minutes, it will go to error.

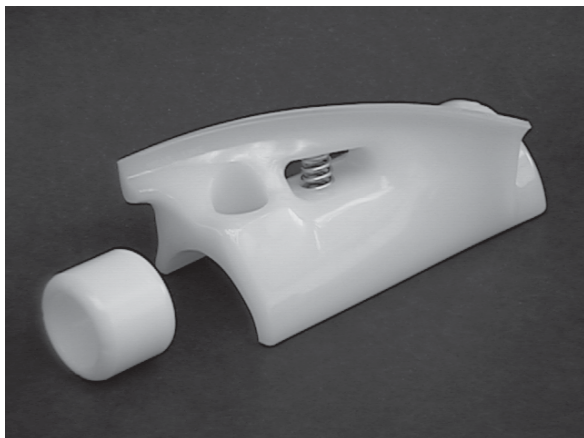
- D. Open the spigot to drain the water. Remember to place a bucket or container under the spigot to catch the water. When the water has drained, turn the OFF-ON switch to the OFF position. Allow the freezer barrel to drain completely.
- E. Repeat Steps A through D using a mild detergent solution.

### 3.8 DISASSEMBLY OF FREEZER PARTS

#### CAUTION

**PLACE THE OFF-ON TOGGLE SWITCH IN THE OFF POSITION BEFORE DISASSEMBLING FOR CLEANING OR SERVICING.**

Inspection for worn or broken parts should be made at every disassembly of the freezer for cleaning or other purposes. All worn or broken parts should be replaced to ensure safety to both the operator and the customer and to maintain good freezer performance and a quality product. Two normal wear areas are the auger flights and front auger support (Fig. 18). Frequency of cleaning must comply with the local health regulations.



**Figure 18. Auger Flight Wear and Front Auger Support Bushing Wear**

To disassemble the freezer, refer to the following steps:

- A. Remove hopper cover and drain tray (Fig. 19).
- B. Remove the mix inlet regulator from the hopper by pulling straight up.
- C. Remove the front door by turning off the circular knobs and then pulling the front door off the studs.



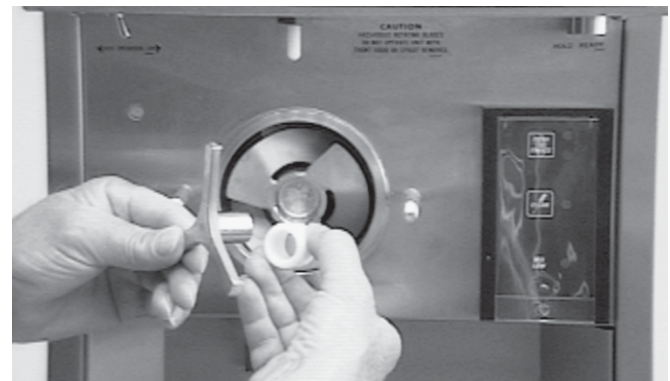
**Figure 19. Removing Front Door**

- D. Remove the rosette and adapter, then remove the spigot body from the front door by pulling the clevis pin out of the spigot handle. Push the spigot body through the bottom of the front door (Fig. 20). Remove spigot body and spring.



**Figure 20. Front Door Disassembly**

- E. Remove the front auger support and bushing (Fig. 21).



**Figure 21. Removing Auger Support**

- F. Remove the auger assembly from the freezer (Fig. 22). Pull the auger out of the freezer barrel slowly. As the auger is being pulled out, carefully remove each of the plastic flights with springs.



**Figure 22. Auger Shaft Removal**

- G. Keep the rear of the auger shaft tipped up once it is clear of the freezer to avoid dropping rear seal.
- H. Remove the rear seal.
- I. Wipe socket lubricant from the drive end (rear) of the auger with a cloth or paper towel.
- J. Remove all "O" Rings from parts by first wiping off the lubricant using a clean paper towel. Then squeeze the "O" Ring upward with a dry cloth (Fig. 23). When a loop is formed, roll out of the "O" Ring groove.

**WARNING**  
DO NOT USE ANY TYPE OF SHARP OBJECT TO REMOVE THE "O" RINGS.



**Figure 23. Removing "O" Ring**

### 3.9 CLEANING THE FREEZER PARTS

Place all loose parts in a pan or container and take to the wash sink for cleaning. To clean freezer parts refer to the following steps:

- A. Place all parts in warm mild detergent water and clean with brushes provided. Rinse all parts with clean hot water.

**CAUTION**  
DO NOT DAMAGE PARTS BY DROPPING OR ROUGH HANDLING.

- B. Wash the hopper and freezer barrel with warm detergent water and brushes provided. (Fig. 24).



**Figure 24. Cleaning Freezer Barrel**

- C. Clean the drip tray and insert with a soap solution. Rinse with clean hot water.

### 3.10 SANITIZE FREEZER AND FREEZER PARTS

- A. Use a sanitizing solution of 100 parts per million to sanitize the parts before assembly.
- B. Place all parts in the sanitizing solution, then remove and let air dry.
- C. Using this sanitizing solution and the large barrel brush provided, sanitize the rear of the barrel by dipping the brush in the sanitizing solution and brushing.

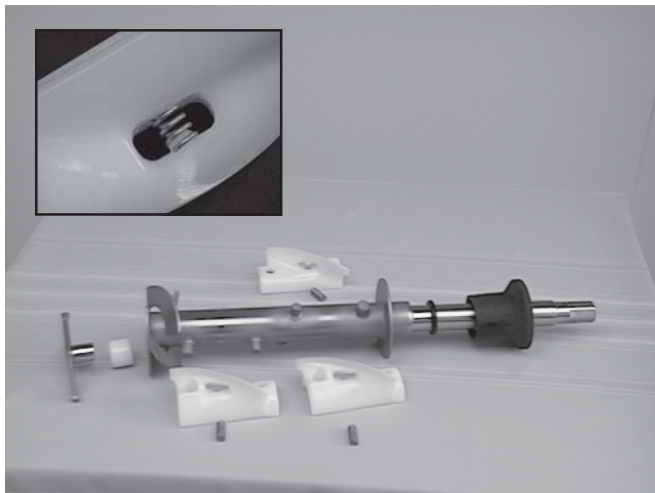
### 3.11 ASSEMBLY OF FREEZER

To assemble the freezer parts, refer to the following steps:

**NOTE**  
Petro-Gel sanitary lubricant or equivalent must be used when lubrication of parts is specified.

**NOTE**  
The United States Department of Agriculture and the Food and Drug Administration require that lubricants used on food processing equipment be certified for this use. Use lubricants only in accordance with the manufacturer's instructions.

- A. Assemble all "O" Rings onto parts dry, **without lubrication**. Then apply a thin film of sanitary lubrication to exposed surfaces of the "O" Rings. Apply a thin film of sanitary lubricant to metal part of rear seal. Also apply a thin film of sanitary lubricant inside and outside of the front auger support bushing.
- B. Assemble the rear seal onto the auger with the large end to the rear. Be sure the "O" Ring is in place before installing the rear seal.
- C. Lubricate the auger drive (rear) with a small amount of white socket lubricant. A small container of socket lubricant is shipped with the freezer.
- D. Screw the springs onto the studs in plastic flights. **Springs must be screwed into the flights completely** to provide proper compression (Fig. 25).



**Figure 25. Exploded View of Auger (E111 Shown)**

**CAUTION**

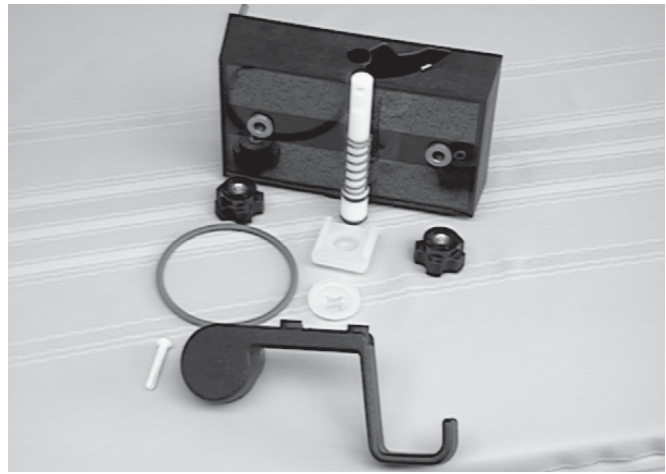
**DO NOT PLACE THE MIX INLET REGULATOR INTO THE HOPPER BEFORE INSTALLING THE AUGER.**

- E. Install the two plastic flights onto rear of the auger and insert part way into freezer barrel.
- F. Install the remaining plastic flights, push the auger into the freezer barrel and rotate slowly until the auger engages the drive shaft.
- G. Install the bushing and auger support into the front of the auger with one leg of the support pointing straight up.

**NOTE**

Apply a small amount of Petro-Gel to the surface of the cam on the spigot handle prior to assembly of handle to the spigot body.

- H. Install the spigot body with "O" Rings and spring into the front door from bottom (Fig. 26). Push straight up until the spigot is in place. Place the spigot handle on top of the spigot and insert clevis pin, then install the adapter and rosette.



**Figure 26. Exploded View of Front Door**

**NOTE**

The spigot handle can only be installed one way.

- I. Install the front door on the freezer. Shoulder on the rear of the door must be inside of freezer barrel.
- J. Install the circular knobs on the freezer studs.

**CAUTION**

**FINGER TIGHTEN THE CIRCULAR KNOBS EVENLY. DO NOT OVERTIGHTEN KNOBS.**

Look for the proper seal between the freezer barrel, "O" Ring, and front door.

- K. Install the mix inlet regulator into the freezer with the air tube to the front of the freezer (Fig. 27).
- L. Install hopper cover and drain tray.



**Figure 27. Mix Inlet Regulator**

**3.12 ROUTINE CLEANING**

To remove spilled or dried mix from the freezer exterior, simply wash in the direction of the finish with warm soapy water and wipe dry. **Do not** use highly abrasive materials as they will mar the finish.

### 3.13 PREVENTIVE MAINTENANCE

It is recommended that a maintenance schedule be followed to keep the freezer clean and operating properly.

#### A. Cleaning and Sanitizing Information

Soft serve freezers require special consideration when it comes to food safety and proper cleaning and sanitizing.

The following information has been compiled by Purdy Products Company, makers of Stera-Sheen Green Label Cleaner/Sanitizer and specifically covers issues for cleaning and sanitizing frozen dessert machines. This information is meant to *supplement* a comprehensive food safety program.

#### Soil Materials Associated with Frozen Dessert Machines

**MILKFAT/BUTTERFAT** – As components of ice-cream/frozen custard mix, these soils will accumulate on the interior surfaces of the machine and its parts. Fats are difficult to remove and help attribute to milkstone build-up.

**MILKSTONE** – Is a white/gray film that forms on equipment and utensils that come in contact with dairy products. These films will accumulate slowly on surfaces because of ineffective cleaning, use of hard water, or both. **Milkstone is usually a porous deposit, which will harbor microbial contaminants and eventually defy sanitizing efforts.**

Once milkstone has formed, it is very difficult to remove. Without using the correct product and procedure, it is nearly impossible to remove a thick layer of milkstone.

(NOTE: general-purpose cleaners DO NOT remove milkstone.) ***This can lead to high bacteria counts and a food safety dilemma.***

#### **IT IS BEST TO CONTROL MILKSTONE ON A DAILY BASIS BEFORE IT CAN BECOME A SIGNIFICANT FOOD SAFETY PROBLEM.**

In addition to food safety, milkstone can cause premature wear to machine parts which can add to costs for replacement parts or possibly more expensive repairs if worn machine parts are not replaced once they have become excessively worn.

#### Important Differences Between Cleaning and Sanitizing

#### **CLEANING vs. SANITIZING**

It is important to distinguish between cleaning and sanitizing. Although these terms may sound synonymous, they are not. BOTH are required for adequate food safety and proper machine maintenance.

#### **CLEANING**

- Is the removal of soil materials from a surface.
- Is a prerequisite for effective sanitizing.

#### **NOTE**

**An UNCLEAN surface will harbor bacteria that can defy sanitizing efforts.**

Bacteria can develop and resist sanitizing efforts within a layer of soil material (milkstone). ***Thorough cleaning procedures that involve milkstone removal are critical for operators of frozen dessert machines.***

#### **SANITIZING**

- Kills bacteria.
- Can be effective on clean surfaces only.
- **DOES NOT** clean or remove milkstone.

#### **NOTE**

Using a **SANTITIZER** on an unclean surface **will not** guarantee a clean and safe frozen dessert machine.

#### **Proper Daily Maintenance: The Only Way to Assure Food Safety and Product Quality**

Proper daily maintenance can involve a wide variety of products and procedures. Overall, the products and procedures fall into three separate categories. *(Please note that this is a brief overview intended for informational purposes only.)*

1. **CLEANING** – This involves draining mix from the freezer barrel and rinsing the machine with water. Next, a cleaner is run through the machine. Then, the machine is disassembled and removable parts are taken to the sink for cleaning.
2. **MILKSTONE REMOVAL** – Since almost all cleaners do not have the ability to remove milkstone, the use of a delimer becomes necessary. Although this procedure may not be needed on a daily basis, it will usually follow the cleaning procedure. It requires letting a delimer solution soak in the machine for an extended period of time. Individual parts are also soaked in a deliming solution for an extended period of time (more about delimers in *Additional Information*).

3. **SANITIZING** – After the machine has been cleaned and contains no milkstone, the machine is reassembled. Then a FDA-approved sanitizing solution is run through the machine to kill bacteria. The machine is then ready for food preparation.

As a recommended cleaner and sanitizer for your frozen dessert machine, STERA-SHEEN has proven to be one of the best daily maintenance products for:

- **CLEANING** – Thorough removal of all solids including butterfat and milk fat.
- **MILKSTONE REMOVAL** – Complete removal of milkstone.
- **SANITIZING** – FDA-approved no rinse sanitizer for food contact surfaces.

### Additional Information

#### **THE USE OF DELIMERS**

A delimer is a strong acid that has the ability to dissolve milkstone. This type of chemical may become necessary once high levels of milkstone have developed. While these products are very effective for removing HIGH levels of milkstone, they are not ideal for two reasons:

1. **PRODUCT SAFETY** – Strong acids are dangerous chemicals and handling them requires safety
2. **MACHINE DAMAGE** – Strong acids will attack metal and rubber causing premature wear of parts. The use of a delimer needs to be closely monitored to avoid damage to machine surfaces and parts.

With proper daily use of STERA-SHEEN or it's equivalent, there is no need for the use of a *DELIMER*.

#### **DO NOT USE BLEACH**

- BLEACH HAS ABSOLUTELY **NO** CLEANING PROPERTIES.
- BLEACH IS CORROSIVE. It can and will damage components of the machine causing premature wear and metal corrosion.

#### **GENERAL PURPOSE CLEANERS**

General purpose cleaners **do not** have the ability to remove milkstone. Milkstone will become a problem *if not remedied* with additional products and procedures.

#### **THE USE OF CHLORINE TEST STRIPS**

“Test strips” are used to determine concentrations of active chlorine in sanitizing solutions. To use the strips, tear off a small portion and submerge it into the sanitizing solution. Then, compare the color change to the color key on the side of the test strip dispenser to determine the approximate chlorine concentration.

The ideal concentration of chlorine needs to be 100 ppm (as stated by the FDA).

#### **NOTE**

Follow the directions on the container for proper concentration.

There are two main factors that contribute to falling chlorine concentrations in a sanitizing solution.

1. **PRODUCT USE** – As the chlorine in the solution is being used, chlorine concentrations fall.
2. **TIME** – As time passes, small amounts of chlorine “evaporate” from the solution. (That is why you can smell it.)

Sanitizing solutions *should not* be allowed to fall below 100 ppm chlorine. New solutions should be mixed once old solutions become ineffective

#### **WARNING**

**NEVER ATTEMPT TO REPAIR OR PERFORM MAINTENANCE ON FREEZER UNTIL THE MAIN ELECTRICAL POWER HAS BEEN DISCONNECTED.**

#### **B. DAILY**

1. The exterior should be kept clean at all times to preserve the lustre of the stainless steel. A mild alkaline cleaner is recommended. Use a soft cloth or sponge to apply the cleaner.

#### **CAUTION**

**DO NOT USE ACID CLEANERS, STRONG CAUSTIC COMPOUNDS OR ABRASIVE MATERIALS TO CLEAN ANY PART OF THE FREEZER EXTERIOR OR PLASTIC PARTS.**

#### **C. WEEKLY**

1. Check "O" Rings and rear seal for excessive wear and replace if necessary.
2. Remove the drip tray by gently lifting up to disengage from the support and pulling out. Clean behind the drip tray and front of the freezer with a soap solution.

## D. MONTHLY

### CAUTION

**THE FREEZER HAS AN AIR COOLED CONDENSER AND MUST HAVE PROPER AIR CIRCULATION. DO NOT PLACE RIGHT SIDE OF FREEZER ANY CLOSER THAN 3 INCHES FROM THE WALL. FAILURE TO CLEAN THE CONDENSER FILTER ON A REGULAR BASIS MAY RESULT IN SERIOUS FREEZER DAMAGE AND COULD VOID FREEZER WARRANTY.**

1. Remove the phillips head screws from the lower side of the right side panel and pull the side panel down and out.
2. Remove the condenser filter and clean in warm soapy water. Rinse in clean water and squeeze dry, taking care not to damage the filter in any way.
3. Replace the condenser filter and side panel.

## E. SEMI-ANNUALLY

1. Check drive belt for proper tension. Push belt in with one finger, belt should deflect about 3/8".
2. Lubricate condenser fan motor with S.A.E. 20 weight oil. Three to six drops is required.

### CAUTION

**DO NOT OVER LUBRICATE; RESULTING DAMAGE COULD CAUSE MOTOR FAILURE.**

## 3.14 EXTENDED STORAGE

Refer to the following steps for storage of the freezer over any long period of shutdown time:

- A. Turn the OFF-ON switch to the OFF position.
- B. Disconnect (unplug) from the electrical supply source.
- C. Clean thoroughly with a warm detergent all parts that come in contact with the mix. Rinse in clean water and dry parts. Do not sanitize.

### NOTE

**Do not** let the cleaning solution stand in the hopper or in the freezer barrel during the shutdown period.

- D. Remove, disassemble and clean the front door, mix inlet regulator and auger parts. Place the auger flights and the front auger support bushing in a plastic bag with a moist paper towel to prevent them from becoming brittle.



**SECTION 4  
TROUBLESHOOTING CHARTS**

PROBLEM	POSSIBLE CAUSE	REMEDY
Freezer does not run.	<ol style="list-style-type: none"> <li>1. Power to freezer is off.</li> <li>2. Fuse or circuit if blown or tripped.</li> <li>3. Freeze-up (auger will not turn).</li> <li>4. High pressure cut-out tripped.</li> <li>5. Front door not in place.</li> </ol>	<ol style="list-style-type: none"> <li>1. Supply power to freezer.</li> <li>2. Replace or reset. (If condition continues, see notes 1 or 2).</li> <li>3. Turn OFF-ON switch to OFF for 15 minutes, then restart.</li> <li>4. Reset high pressure cut-out.</li> <li>5. Assemble front door in place.</li> </ol>
Freezer does not run, PUSH TO FREEZE light flashes in sequence of four.	<ol style="list-style-type: none"> <li>1. Freezer has been left in the CLEAN mode for more than 30 minutes.</li> <li>2. CLEAN switch has been activated 3 times within 10 seconds.</li> <li>3. Low torque error.</li> </ol>	<ol style="list-style-type: none"> <li>1. Let light flash for 10 minutes, then place the OFF-ON switch to the OFF position to reset.</li> <li>2. Leave OFF-ON switch in the ON position for 10 minutes, then place the OFF-On switch to the OFF position to reset.</li> <li>3. Place the OFF-ON switch to the OFF position to reset.</li> </ol>
Freezer does not run, PUSH TO FREEZE light flashes in sequence of five.	<ol style="list-style-type: none"> <li>1. No mix in hopper.</li> <li>2. Mix inlet regulator not allowing mix to flow into barrel.</li> <li>3. Sensor problem.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fill hopper with mix.</li> <li>2. Remove mix inlet regulator, clean, sanitize, and replace.</li> <li>3. Call distributor for service.</li> </ol>
Freezer will not shut off.	<ol style="list-style-type: none"> <li>1. Not enough mix in hopper.</li> <li>2. Drive belt failure.</li> <li>3. Consistency temperature setting is too firm.</li> <li>4. Consistency temperature control failure.</li> <li>5. Alcohol content in cocktail mix is too high.</li> <li>6. Reduced air flow.</li> <li>7. Refrigeration problem.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fill hopper with mix.</li> <li>2. Replace drive belt.</li> <li>3. Readjust. Refer to Page 9 for location. (Call distributor for service.)</li> <li>4. Replace. (Call distributor for service.)</li> <li>5. Reduce percent of alcohol content.</li> <li>6. Check for proper air flow thru the condenser</li> <li>7. Check system. (Call distributor for service)</li> </ol>
Product is too soft.	<ol style="list-style-type: none"> <li>1. Product is being dispensed when the PUSH TO FREEZE light is illuminated red.</li> <li>2. No vent space for free flow of cooling air.</li> <li>3. Air temperature entering condenser is above 100°F.</li> <li>4. Condenser is dirty.</li> <li>5. Consistency setting too soft.</li> <li>6. Stabilizers in mix are broken down.</li> <li>7. Auger is assembled wrong.</li> <li>8. Reduced air flow.</li> <li>9. Refrigeration problem.</li> </ol>	<ol style="list-style-type: none"> <li>1. Press the PUSH TO FREEZE push button. Wait until the green light illuminates before dispensing.</li> <li>2. A minimum of 3 inches of vent space required. (See paragraph 2.3)</li> <li>3. Change location or direct hot air away from freezer.</li> <li>4. Clean. (See paragraph 3.7)</li> <li>5. Readjust. (Call distributor for service.)</li> <li>6. Remove mix, clean, sanitize and freeze down with fresh mix.</li> <li>7. Remove mix, clean, reassemble, sanitize and freeze down.</li> <li>8. Check for proper air flow thru the condenser.</li> <li>9. Check system. (Call distributor for service.)</li> </ol>

Product is too firm.	<ol style="list-style-type: none"> <li>1. No mix in hopper.</li> <li>2. Small portions are being dispensed in a short time.</li> <li>3. Consistency temperature setting is too firm.</li> <li>4. Consistency temperature control failure.</li> <li>5. Line voltage fluctuating.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fill hopper with mix.</li> <li>2. Allow freezer to sit idle for 5 minutes before dispensing.</li> <li>3. Readjust. ( Refer to Page 9 for location. Call distributor for service.)</li> <li>4. Replace. (Call distributor for service.)</li> <li>5. Check. (Call distributor for service.)</li> </ol>
Product does not dispense.	<ol style="list-style-type: none"> <li>1. No mix in hopper.</li> <li>2. Mix inlet regulator tube is plugged.</li> <li>3. Special mix inlet regulator needed for mix being used.</li> <li>4. Capacity of freezer is being exceeded.</li> <li>5. Drive motor overload tripped.</li> <li>6. Drive belt failure.</li> <li>7. Freeze-up. (Auger will not turn.)</li> </ol>	<ol style="list-style-type: none"> <li>1. Fill hopper with mix.</li> <li>2. Unplug, using small sanitized brush.</li> <li>3. Order special mix inlet regulator.</li> <li>4. Slow up on the draw rate.</li> <li>5. Automatic reset. Wait 15 to 30 minutes.</li> <li>6. Replace drive belt.</li> <li>7. Turn OFF-ON switch to OFF for 15 minutes, then restart.</li> </ol>
Drive belt slipping or squealing.	<ol style="list-style-type: none"> <li>1. Worn drive belt.</li> <li>2. Freeze-up (Auger will not turn).</li> </ol>	<ol style="list-style-type: none"> <li>1. (Call distributor for service)</li> <li>2. Turn OFF-ON switch to OFF for 15 minutes, then restart.</li> </ol>
Low overrun.	<ol style="list-style-type: none"> <li>1. Mix inlet regulator missing.</li> <li>2. Mix inlet regulator "O"ring missing</li> <li>3. Mix inlet regulator air tube blocked.</li> <li>4. Product breakdown.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace mix inlet regulator.</li> <li>2. Replace mix inlet regulator "O" ring.</li> <li>3. Clean with sanitized brush.</li> <li>4. Fill freezer with fresh product.</li> </ol>
Front door leaks	<ol style="list-style-type: none"> <li>1. Front door knobs are loose.</li> <li>2. Spigot parts are not lubricated.</li> <li>3. Chipped or worn spigot "O" rings.</li> <li>4. "O" rings or spigot installed wrong.</li> <li>5. Inner spigot hole in front door nicked or scratched.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten knobs.</li> <li>2. See paragraph 3.11</li> <li>3. Replace "O" rings.</li> <li>4. Remove spigot and check "O" ring.</li> <li>5. Replace front door.</li> </ol>
Hopper will not maintain mix temperature below 45°F (7°C)	<ol style="list-style-type: none"> <li>1. Consistency control on board needs to be adjusted.</li> <li>2. Consistency control failure.</li> <li>3. EPR valve needs adjustment.</li> <li>4. Refrigeration problem.</li> <li>5. Hopper cover not fitted properly.</li> </ol>	<ol style="list-style-type: none"> <li>1. (Call distributor for service.)</li> <li>2. Replace. (Call distributor for service.)</li> <li>3. Adjust EPR valve.</li> <li>4. Check system. (Call distributor for service.)</li> <li>5. Check hopper cover for proper fit.</li> </ol>

## ERROR CODE SYSTEM

CODE	P.T.F. LIGHT FLASHES	MEANING
01	Sequence of one	*Program board
02	Sequence of two	*Power board
03	Sequence of three	*Low torque error
04	Sequence of four	*Clean error
05	Sequence of five	*Barrel sensor
06	Sequence of six	*Hopper sensor
07	Sequence of seven	*Drive motor

\*Refer to Page 17 for Troubleshooting.

### NOTE

Flashing CLEAN light is not an error. It indicates the freezer is in the CLEAN mode. To exit, turn the OFF-ON switch to the OFF position.



## SECTION 5 REPLACEMENT PARTS

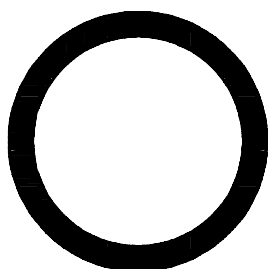
### 5.1 HOW TO ORDER PARTS

To assure receipt of the proper replacement parts, supply your dealer or distributor with the following information:

- A. Model number of equipment.
- B. Serial number of model, stamped on nameplate
- C. Part number, part name and quantity needed. Common part names and numbers are listed in this manual.

Part Number	Description
208401	Brush, 2.54 cm (1") diameter
208135	Brush, 10 cm (4") diameter
208381	Brush, .95 cm (3/8") diameter
208467	Brush, .80 cm (5/16") diameter
324107	Decal - Hazardous Moving Parts
324105	Decal - Electrical Shock Hazard
324106	Decal - Applicable Electrical Code
324108	Decal - Caution
324141	Decal - Caution - Rotation Blade
324584	Decal - Adequate Ventilation
368140	Air Filter
508135	Petro-Gel Lubricant
508048	Spline Lubricant
1158022	Small Parts Kit

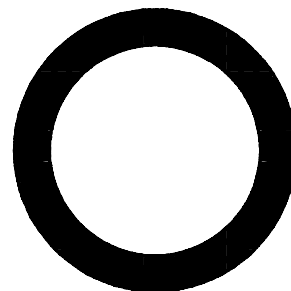
### O-RING IDENTIFICATION SHEET MODELS ENDURA/FUTURA 111



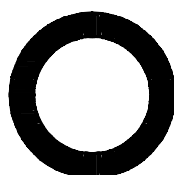
**Carburetor (2)**  
**624677**  
**1-1/8" ID x 1/8" CS**



**Front Door (1)**  
**625133**  
**4" ID x 3/16" CS**

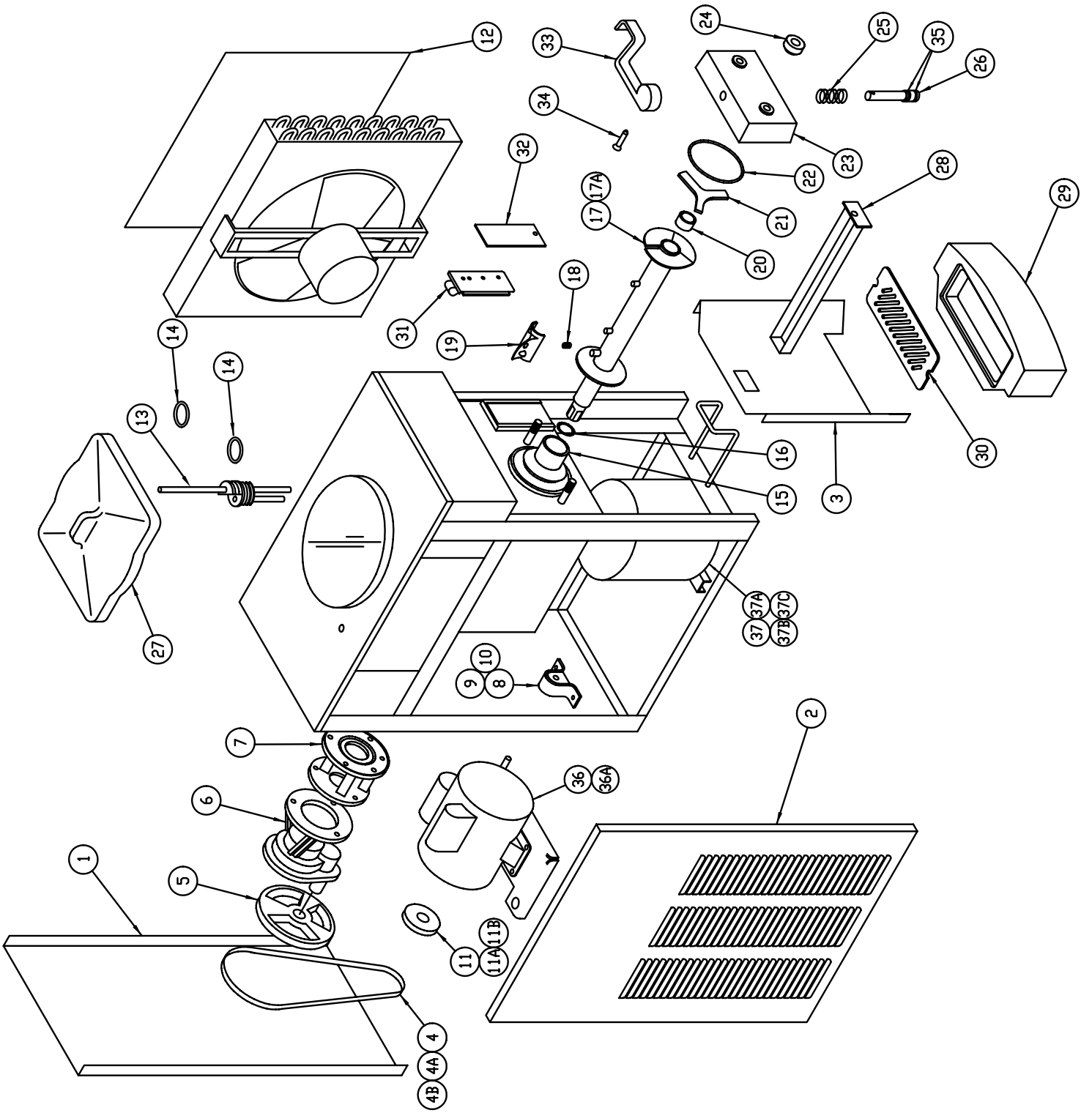


**Rear Seal (1)**  
**624678**  
**1-1/8" ID x 3/16" CS**



**Spigot (2) 624600**  
**5/8" ID x 1/8" CS**

**O-Rings are drawn to  
Approximate Size**



ITEM	STOELTING PN	QTY	DESCRIPTION
1	3157963-SV	1	BACK PANEL
2	3157964-SV	2	SIDE PANEL
3	3157955-SV	1	LOWER FRONT PANEL
4	152294	1	BELT (E/F111 60 HZ)
4A	152307	1	BELT (E/F111 50 HZ)
4B	152322	1	BELT (E/F112)
5	598245	1	PULLEY
6	614233	1	GEAR REDUCER
7	246048	1	SPACER (E111)
8	2100737	2	MOTOR MOUNT CLAMP
9	524028	2	RUBBER MOTOR MOUNT
10	221610	2	NYLON BUSHING
11	598072	1	PULLEY (E/F111 60 HZ)
11A	598100	1	PULLEY (E/F111 50 HZ)
11B	598137	1	PULLEY (E/F112)
12	368140	1	CONDENSER FILTER
13	2149238	1	CARBURETOR ASSY
14	624677	1	O-RING
15	666786	1	REAR SEAL
16	624678	1	O-RING
17	4157952	1	AUGER (E111)
17A	4157968	1	AUGER (F111)
18	694255	1	SPRING
19	381804	3	AUGER FLIGHT

ITEM	STOELTING PN	QTY	DESCRIPTION
20	149003	1	AUGER BUSHING
21	3170644	1	FRONT AUGER SUPPORT
22	625133	1	DOOR O-RING
23	2158251-SV	1	DOOR
24	482019	2	KNOB
25	694311	1	SPRING
26	3143817	1	SPIGOT
27	314452	1	HOPPER COVER
28	744262	1	DRAIN TRAY
29	744260-SV	1	DRIP TRAY
30	744271	1	DRIP TRAY INSERT
31	718866-SV	1	TOUCHPAD SWITCH
32	521216	1	TOUCHPAD COVER
33	521173	1	HANDLE
34	521163	1	PIN
35	624600	2	SPIGOT O-RING
36	522858-SV	1	MOTOR 3/4HP 1/115-208-230/60
36A	523330	1	MOTOR 3/4HP 1/220-240/50
37	282004-SV	1	COMPRESSOR 115 (E111-37)XSER# 0-12520)
37A	282043-SV	1	COMPRESSOR 115 (E111-37G)XSER# 12521 +)
37B	282005-SV	1	COMPRESSOR 208-230/60/1 (E111-38)
37C	282009	1	COMPRESSOR 220-240/50/1 (E111-302)
37D	282006-SV	1	COMPRESSOR 208-230/60/1 (F111-38)
37E	282010-SV	1	COMPRESSOR 220-240/50/1 (F111-302)







## WARRANTY

### SOFT SERVE / SHAKE FREEZERS

1. **Scope:**

Stoelting, LLC warrants to the first user (the "Buyer") that the freezer cylinders, hoppers, compressors, drive motors, speed reducers, auger and auger flights of Stoelting soft serve / shake freezers will be free from defects in materials and workmanship under normal use and proper maintenance appearing within five (5) years, and that all other components of such equipment manufactured by Stoelting will be free from defects in material and workmanship under normal use and proper maintenance appearing within twelve (12) months after the date that such equipment is originally installed.

2. **Disclaimer of Other Warranties:**

**THIS WARRANTY IS EXCLUSIVE; AND STOELTING HEREBY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE.**

3. **Remedies:**

Stoelting's sole obligations, and Buyer's sole remedies, for any breach of this warranty shall be the repair or (at Stoelting's option) replacement of the affected component at Stoelting's plant in Kiel, Wisconsin, or (again, at Stoelting's option) refund of the purchase price of the affected equipment, and, during the first twelve (12) months of the warranty period, deinstallation/reinstallation of the affected component from/into the equipment. Those obligations/remedies are subject to the conditions that Buyer (a) signs and returns to Stoelting, upon installation, the Checklist/Warranty Registration Card for the affected equipment, (b) gives Stoelting prompt written notice of any claimed breach of warranty within the applicable warranty period, and (c) delivers the affected equipment to Stoelting or its designated service location, in its original packaging/crating, also within that period. Buyer shall bear the cost and risk of shipping to and from Stoelting's plant or designated service location.

4. **Exclusions and Limitations:**

This warranty does not extend to parts, sometimes called "wear parts", which are generally expected to deteriorate and to require replacement as equipment is used, including as examples but not intended to be limited to o-rings, auger seals, auger support bushings and drive belts. All such parts are sold

**AS IS.**

Further, Stoelting shall not be responsible to provide any remedy under this warranty with respect to any component that fails by reason of negligence, abnormal use, misuse or abuse, use with parts or equipment not manufactured or supplied by Stoelting, or damage in transit.

**THE REMEDIES SET FORTH IN THIS WARRANTY SHALL BE THE SOLE LIABILITY STOELTING AND THE EXCLUSIVE REMEDY OF BUYER WITH RESPECT TO EQUIPMENT SUPPLIED BY STOELTING; AND IN NO EVENT SHALL STOELTING BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER FOR BREACH OF WARRANTY OR OTHER CONTRACT BREACH, NEGLIGENCE OR OTHER TORT, OR ON ANY STRICT LIABILITY THEORY.**