



**Model O212**  
**OPERATORS MANUAL**

Manual No. 513589

Rev.2



This manual provides basic information about the machine. 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 machine without notice, and without incurring any obligation to modify or provide new parts for machines built prior to date of change.

**DO NOT ATTEMPT** to operate the machine 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 machine, contact Stoelting.



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## ***A Few Words About Safety***

### **Safety Information**

**Read and understand the entire manual before operating or maintaining Stoelting equipment.**

This manual provides the operator with information for the safe operation and maintenance of Stoelting equipment. As with any machine, there are hazards associated with their operation. For this reason safety is emphasized throughout the manual. To highlight specific safety information, the following safety definitions are provided to assist the reader.

The purpose of safety symbols is to attract your attention to possible dangers. The safety symbols, and their explanations, deserve your careful attention and understanding. The safety warnings do not by themselves eliminate any danger. The instructions or warnings they give are not substitutes for proper accident prevention measures.

If you need to replace a part, use genuine Stoelting parts with the correct part number or an equivalent part. We strongly recommend that you do not use replacement parts of inferior quality.



### **Safety Alert Symbol:**

**This symbol** Indicates danger, warning or caution. Attention is required in order to avoid serious personal injury. The message that follows the symbol contains important information about safety.

### **Signal Word:**

Signal words are distinctive words used throughout this manual that alert the reader to the existence and relative degree of a hazard.



The signal word “WARNING” indicates a potentially hazardous situation, which, if not avoided, may result in death or serious injury and equipment/property damage.



The signal word “CAUTION” indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury and equipment/property damage.

### **CAUTION**

The signal word “CAUTION” not preceded by the safety alert symbol indicates a potentially hazardous situation, which, if not avoided, may result in equipment/property damage.

### **NOTE (or NOTICE)**

The signal word “NOTICE” indicates information or procedures that relate directly or indirectly to the safety of personnel or equipment/property.

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# SECTION 1 DESCRIPTION AND SPECIFICATIONS

## 1.1 DESCRIPTION

The Stoelting Optima 212 floor model freezer is gravity fed. The freezer is equipped with fully automatic controls to provide a uniform product. The freezer is designed to operate with almost any type of commercial shake mix available. This manual is designed to assist qualified service personnel and operators in the installation, operation and maintenance of the Stoelting Model Optima 212 freezer.



Figure 1. Model Optima 212 Freezer

## 1.2 SPECIFICATIONS

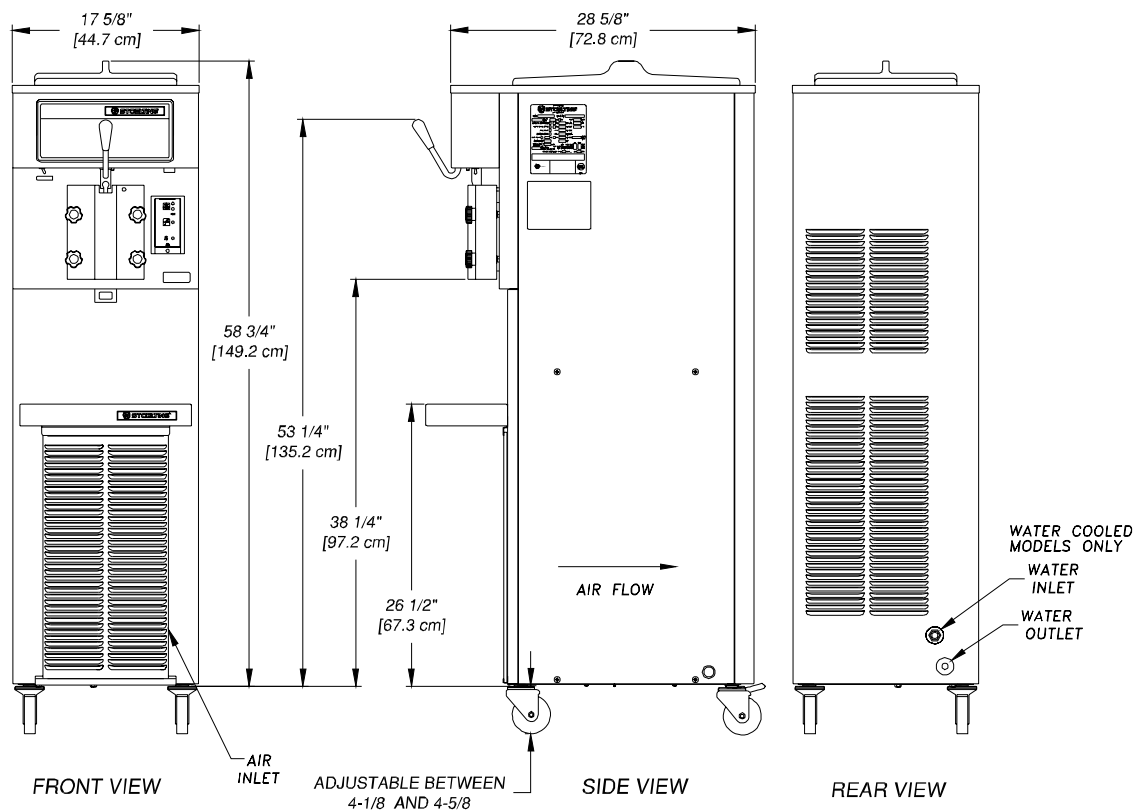


Figure 2. Specifications

**MODEL OPTIMA 212  
FLOOR MODEL  
GRAVITY SHAKE FREEZER**

**DIMENSIONS:**

Freezer: 17.6" (45cm) wide x 28.6" (73cm) deep x 63.75" (162cm) high  
Crated: 19.5" (50cm) wide x 33" (84cm) deep x 40" (102cm) high

**WEIGHT:**

Freezer: 332 lbs. (150kg)      Crated: 427 lbs. (193kg)

**ELECTRICAL:**

<b><u>Description</u></b>	<b><u>Optima 212-38</u></b>
<b>Voltage AC</b>	1 PH 208/230
<b>Total Run Amps</b>	10.5
<b>Drive Motor</b>	3/4 HP
<b>Compressor</b>	10,760 BTUH (90°F - 0°F)

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" (7.6cm) air clearance on back side.  
No clearance needed on sides.

**HOPPER:**

6.25 Gallons (23.7 liters) refrigerated and insulated.



## SECTION 2 INSTALLATION INSTRUCTIONS

### 2.1 SAFETY PRECAUTIONS

Do not attempt to operate the freezer until the safety precautions and operating instructions in this manual are read completely and are thoroughly understood.

If danger, warning or caution labels are needed, indicate the part number, type of label, location of label, and quantity required along with your address and mail to:

Take notice of all warning labels on the freezer. The labels have been put there to help maintain a safe working environment. The labels have been designed to withstand washing and cleaning. All labels must remain legible for the life of the freezer. Labels should be checked periodically to be sure they can be recognized as warning labels.

**STOELTING, INC.**  
**ATTENTION: Customer Service**  
**502 Hwy. 67**  
**Kiel, Wisconsin 53042**

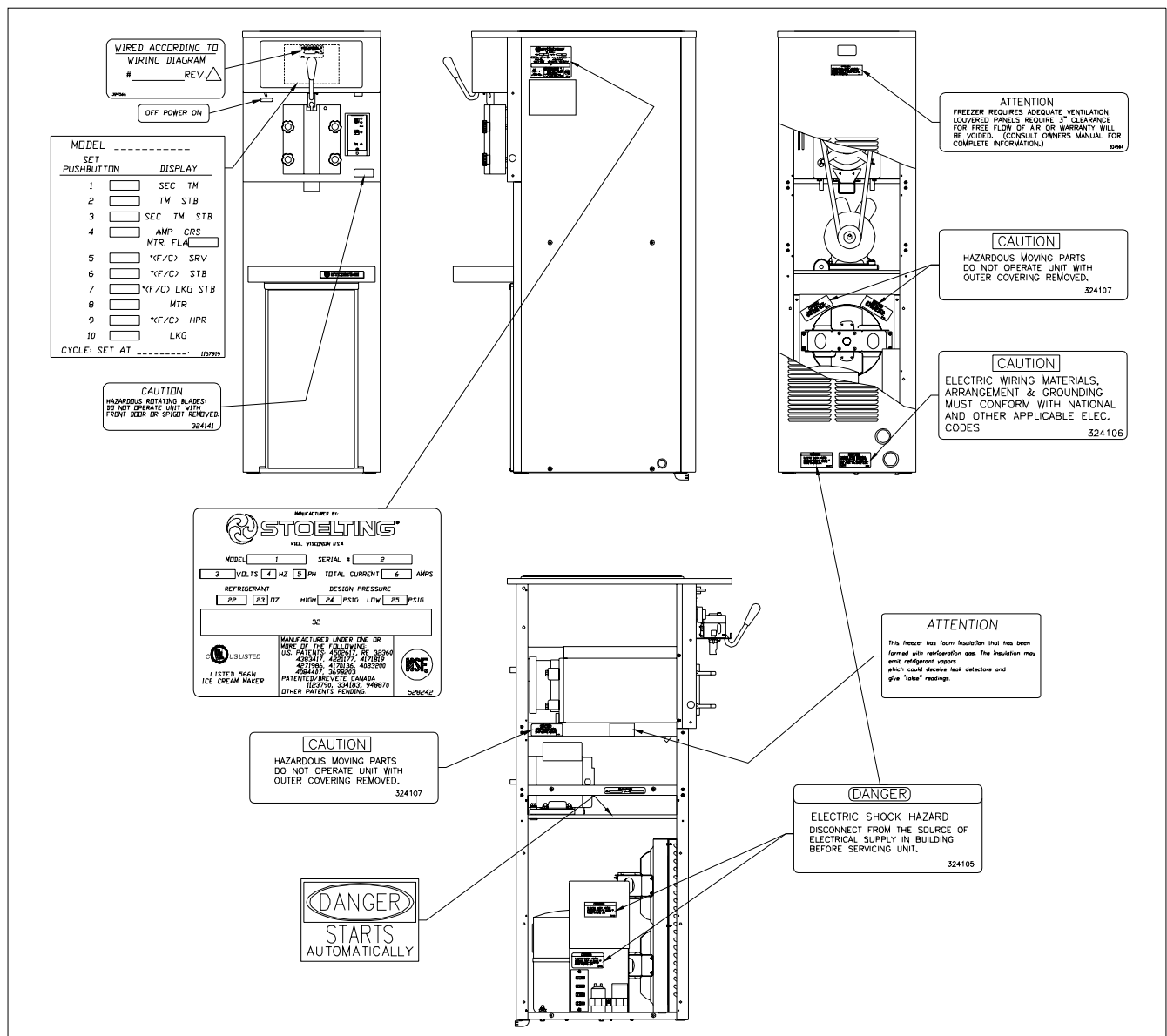


Figure 3. Warning Label Locations

## 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 caster in or out and tighten the locknut. (Fig. 4).

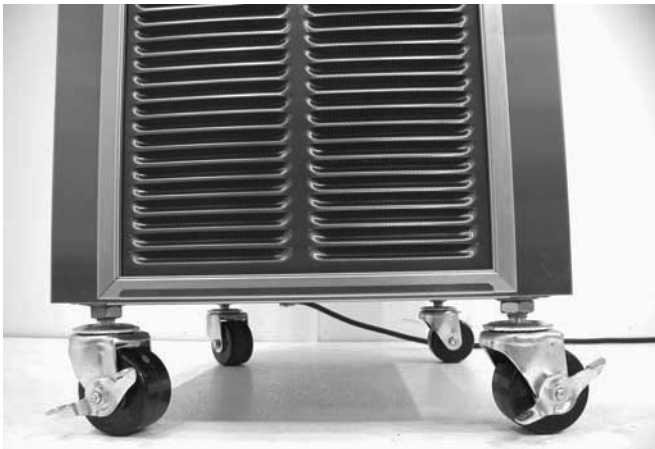


Figure 4. Leveling

- C. The freezer is equipped with an air cooled condenser and requires correct ventilation. The front of the freezer is the air intake and the back discharge. Both front and back must have a minimum of 3" 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).

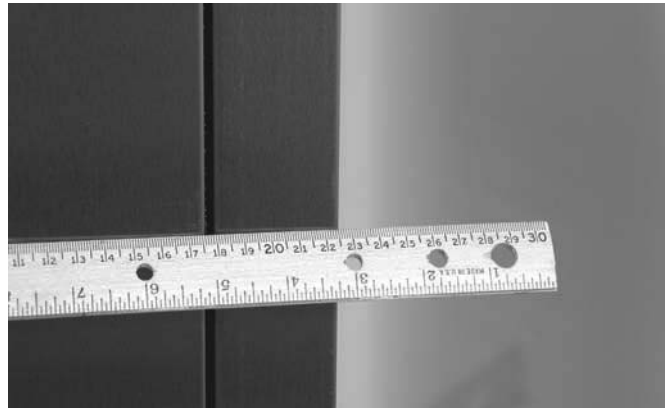


Figure 5. Space and Ventilation Requirements

- 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

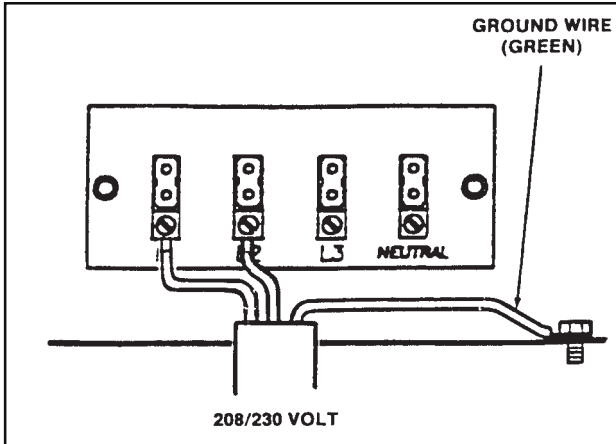
## 2.4 INSTALLING PERMANENT WIRING

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 left side panel and electrical box cover.
- B. Disconnect the wires from the terminal block. Disconnect the green ground wire from the grounding stud. (Fig. 8).



**Figure 8. Power Cord Connection**

- C. Remove the power cord.
- D. Install permanent wiring according to local code.
- E. Replace the electrical box cover and left side 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 9 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)

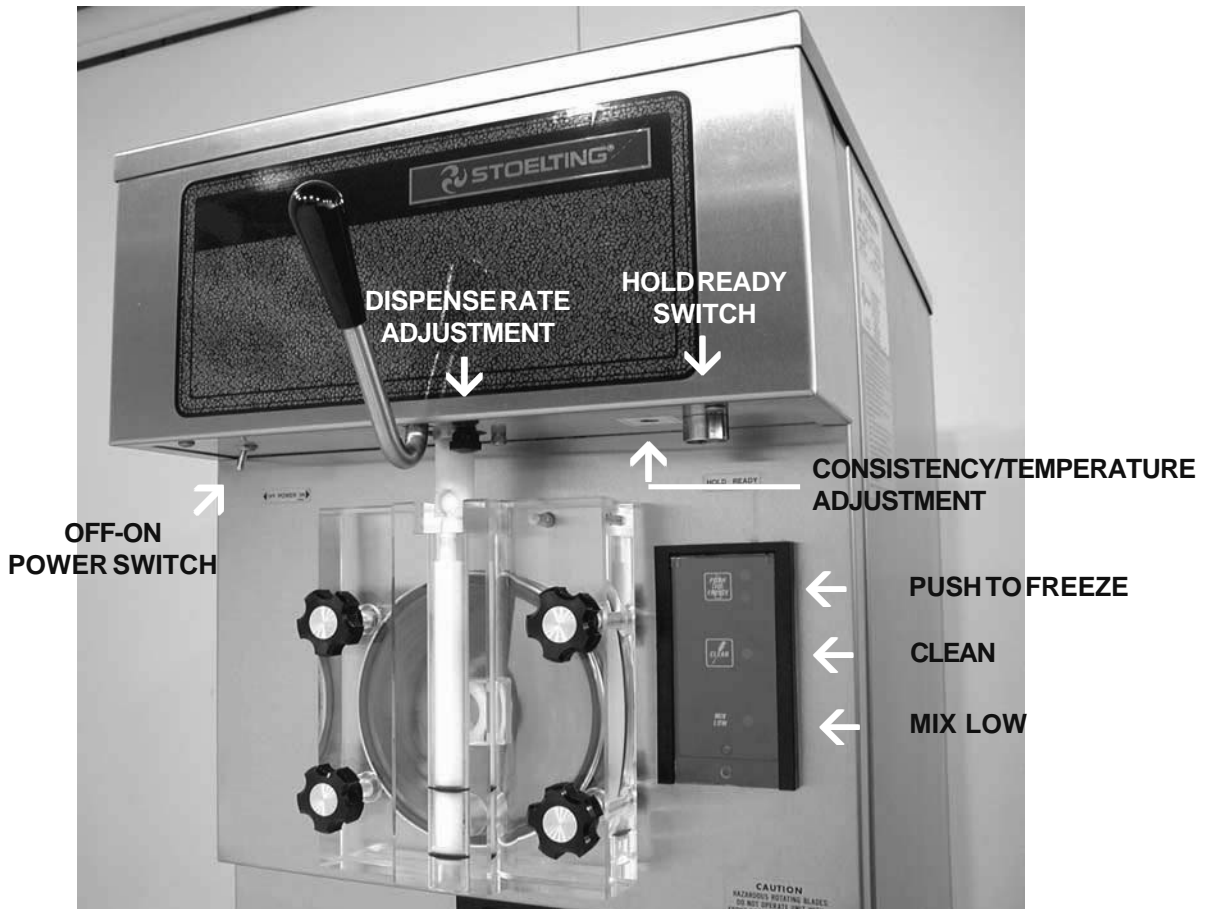


Figure 9. Controls

#### 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 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 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 LIGHT

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

#### I. DISPENSE RATE ADJUSTER

The dispense rate adjuster limits the opening of the spigot. To adjust product dispense rate, turn the adjusting knob clockwise for slower flow and counter-clockwise for faster flow.

### 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.10).



**Figure 10. Mix Inlet Regulator**

- B. Prepare 4 gallons (15 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. 11.)



**Figure 11. 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. 12).



**Figure 12. 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. 13).



**Figure 13. 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 5 gallons (19 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, 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 7 to 10 minutes the freezer will shut OFF and the green light will illuminate indicating the product is ready to serve. Freeze down time may be longer for some mixes. High ambient temperatures may extend freeze down time.
- H. For normal dispensing, move the spigot handle fully open. (Fig. 14).



**Figure 14. 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 very thin product. 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. Shake mixes range from 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. 15).



**Figure 15. Removing Mix Inlet Regulator (Shown with no mix in hopper)**

- 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 about 5 minutes.



- C. Empty the freezer by opening the spigot and draining into a bucket. (Fig. 16).
- D. Place the OFF-ON switch in the OFF position.
- E. Repeat Steps A through D using a warm (120°F) mild detergent (Joy or equivalent) solution.



**Figure 16. 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 4 gallons (15 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.

### 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. Frequency of cleaning must comply with the local health regulations.

To disassemble the freezer, refer to the following steps:

- A. Remove hopper cover and drain tray (Fig. 17).



**Figure 17. Removing Front Door**

- 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.
- D. Remove the spigot body from the front door by pushing the spigot body through the bottom of the door. Remove auger support bushing.

- E. Remove the auger assembly from the freezer (Fig.18). Keep the rear of the auger shaft tipped up once it is clear of the freezer to avoid dropping rear seal.
  - F. Remove scaper blades and the rear seal assembly.
  - G. Wipe socket lubricant from the drive end (rear) of the auger with a cloth or paper towel.
  - H. 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. 19). When a loop is formed, roll out of the "O" Ring groove.
- A. Place all parts in warm (120°F) mild detergent (Joy or equivalent) water and clean with brushes provided. Rinse all parts with clean hot (135°F) water.

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



**Figure 20. Cleaning Freezer Barrel**

- B. Wash the hopper and freezer barrel with warm (120°F) detergent (Joy or equivalent) water and brushes provided. (Fig. 20).
- C. Clean the drip tray and insert with a detergent (Joy or equivalent) solution. Rinse with clean hot (135°F) water.

**WARNING**

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



**Figure 19. 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:

**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:

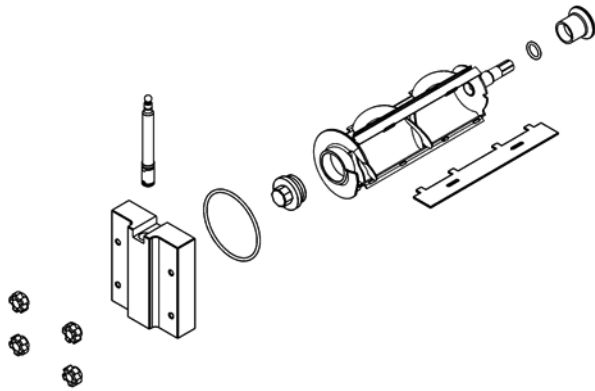
**NOTE**

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. 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 container of socket lubricant is shipped with the freezer.



**Figure 21. Exploded View of Auger (Front Door and Related Parts)**

**CAUTION**

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

- D. Install the two plastic flights onto the auger and insert into freezer barrel.
- E. Rotate slowly until the auger engages the drive shaft.
- F. Install the auger support bushing into the front door.
- G. Install the spigot body with "O" Rings into the front door from bottom. Push straight up until the spigot is in place.

- H. Install the front door on the freezer.
- I. Install the circular knobs on the freezer studs and tighten hand tight.

**CAUTION**

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

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

- J. Install the mix inlet regulator into the freezer with the air tube to the front of the freezer (Fig. 22).
- K. Install hopper cover and drain tray and drip tray with insert.



**Figure 22. 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.

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*).

- 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:

- PRODUCT SAFETY** – Strong acids are dangerous chemicals and handling them requires safety
- 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.

- PRODUCT USE** – As the chlorine in the solution is being used, chlorine concentrations fall.
- 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.**

### **3.13 PREVENTIVE MAINTENANCE**

#### **A. DAILY**

- 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.**

#### **B. WEEKLY**

- 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.

### C. MONTHLY

#### CAUTION

**THE FREEZER HAS AN AIR COOLED CONDENSER AND MUST HAVE PROPER AIR CIRCULATION. MAINTAIN 3" OF CLEARANCE AT ALL LOUVERED PANELS. FAILURE TO CLEAN THE CONDENSER FILTER ON A REGULAR BASIS MAY RESULT IN SERIOUS FREEZER DAMAGE AND COULD VOID FREEZER WARRANTY.**

1. Remove the condenser filter by lifting up and pulling bottom out and down. Then clean with warm soapy water. Rinse in clean water and shake dry, taking care not to damage the filter in any way.
2. Replace the condenser filter.

### D. 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. 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. 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 20 minutes.</li> <li>2. CLEAN switch has been activated 3 times within 10 seconds.</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> </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. Temperature setting is too cold.</li> <li>2. Push to freeze switch failure.</li> <li>3. Spigot switch failure.</li> <li>4. Reduced air flow.</li> <li>5. Refrigeration problem.</li> </ol>	<ol style="list-style-type: none"> <li>1. Readjust. Call distributor for service.</li> <li>2. Call distributor for service.</li> <li>3. Call distributor for service.</li> <li>4. Check for proper air flow thru the condenser</li> <li>5. Check system. Call distributor for service.</li> </ol>
Product is too thin.	<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. Temperature setting too warm.</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.</li> <li>3. Change location or direct hot air away from freezer.</li> <li>4. Clean.</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 thick.	<ol style="list-style-type: none"> <li>1. Small portions are being dispensed in a short time.</li> <li>2. Temperature setting is too cold.</li> <li>3. Line voltage fluctuating.</li> </ol>	<ol style="list-style-type: none"> <li>1. Allow freezer to sit idle for 5 minutes before dispensing.</li> <li>2. Readjust. Call distributor for service.</li> <li>3. 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. Drive motor overload tripped.</li> <li>5. Drive belt failure.</li> <li>6. 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. 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. Assemble &amp; lube correctly.</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. EPR valve needs adjustment.</li> <li>2. Refrigeration problem.</li> <li>3. Hopper cover not fitted properly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust EPR valve.</li> <li>2. Check system. Call distributor for service.</li> <li>3. Check hopper cover for proper fit.</li> </ol>

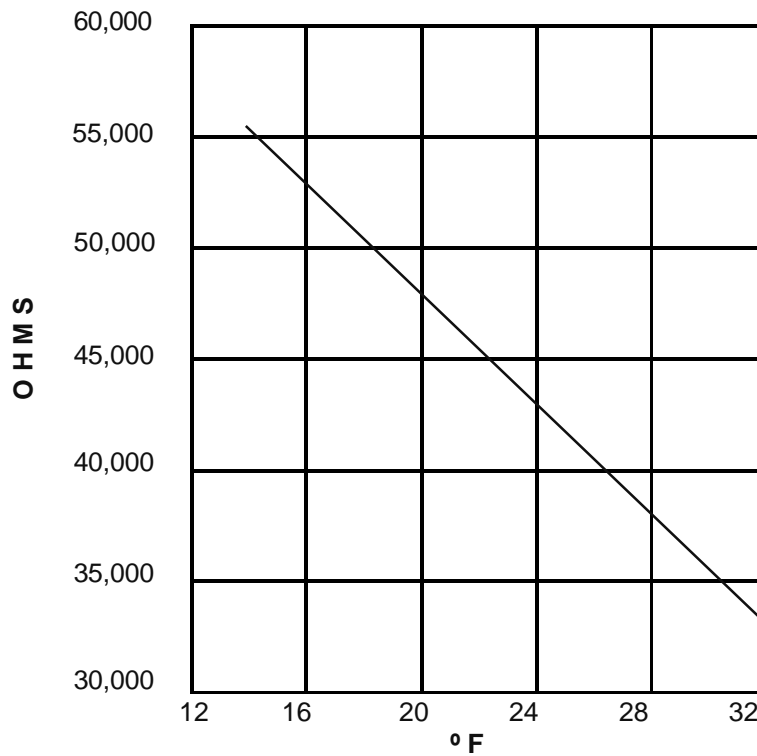


ERROR CODES		
	Malfunction	Indicator
Program Board	01	ERR
Power Board	02	ERR
Low Torque Error	03	ERR
Clean Error	04	ERR
Barrel Sensor	05	ERR
Hopper Sensor	06	ERR
Drive Motor	07	ERR

**To Clear Error Modes**

Clean Error 04: Allow freezer to remain on (light blinking) with the power switch in the ON position for ten (10) minutes minimum. Next, place the power switch in the OFF position for five (5) seconds minimum, then place the power switch in the ON position to restart freezer. All other errors turn power switch off for five (5) seconds minimum. Then place the power switch in the ON position to restart freezer.

**SENSOR RESISTANCE**



**NOTE: SENSOR IS 10,000 OHMS AT 77°**

SPECIFICATIONS	MODEL O212	
<b>DIMENSIONS</b>	<b>Air Cooled</b>	
	<b>FREEZER</b>	<b>WITH CRATE</b>
<b>Depth</b>	17.6" (47.7cm)	25" (63.5cm)
<b>Width</b>	63.75" (161.9cm)	66" (167.7cm)
<b>Height</b>	28.625 (72.7cm)	51" (129.5cm)
<b>WEIGHT</b>	<b>FREEZER</b> 332 lbs. (150kg)	<b>WITH CRATE</b> 427 lbs. (193kg)
<b>ELECTRICAL</b>	<b>1 phase, 208/230 AC</b> Cord connected 10.5 running amps 20 amp HACR circuit breaker.	
<b>COMPRESSOR</b>	One Compressor, 10760 BTUH, 90°F - 0°F	
<b>DRIVE MOTOR</b>	3/4 H.P.	
<b>COOLING</b>	Air or water cooled available.	
<b>HOPPER VOLUME</b>	25 Quart (23.66 liters)	
<b>BARREL VOLUME</b>	8 Quart (7.57 liters)	
<b>FREEZING CAPACITY *</b>	16-20 Gallons per hour (70-80°F) 73-91 Liter per hour (21.1 - 26.7°C)	
* Proper operating conditions		

### CONTROL SETTINGS

SET PUSHBUTTON	DISPLAY	O212-38
1	SEC TM	3
2	TM STB	10
3	SEC TM STB	48
4	AMP CRS	3.5
5	SRV	28
6	STB	32
7	LKG STB	5
8	MTR	0.5
9	HPR	45
10	LKG	32
CYCLE		8
Continuous research leads to on-going improvements. Spec's subject to change.		

### REFRIGERATION SPECIFICATIONS

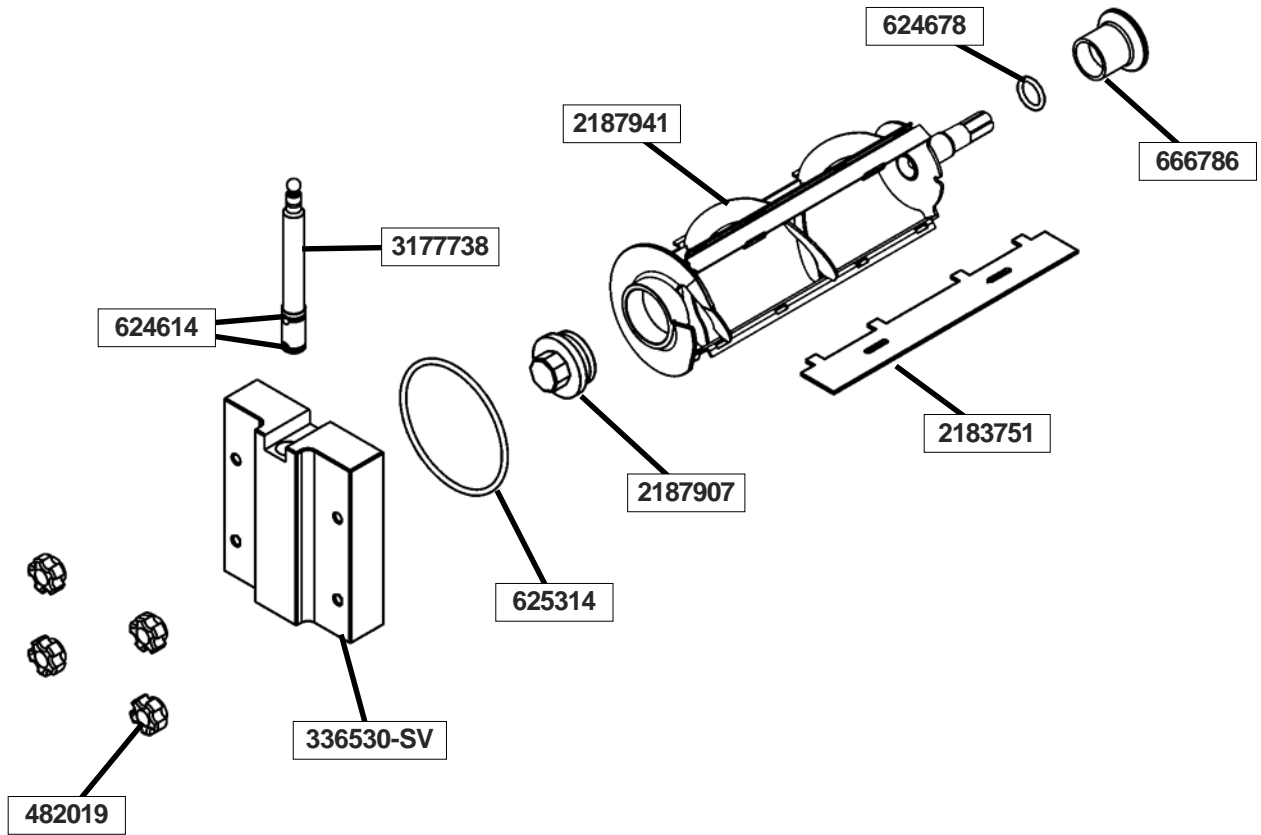
MODEL	O212
<b>Refrigerant</b>	R-404A
<b>Charge</b>	35 oz. A/C (992.3 grams)
<b>Super Heat out of Evaporator</b>	2-12°F (-16.7 to -11.1°C) At Capacity
<b>Suction Pressure</b>	29-31 psig At Capacity
<b>Head Pressure</b>	240-250 lbs. A/C
<b>Hopper Pressure</b>	69-71 psig

## SECTION 5 REPLACEMENT PARTS

### 5.1 BRUSHES, DECALS AND LUBRICATION

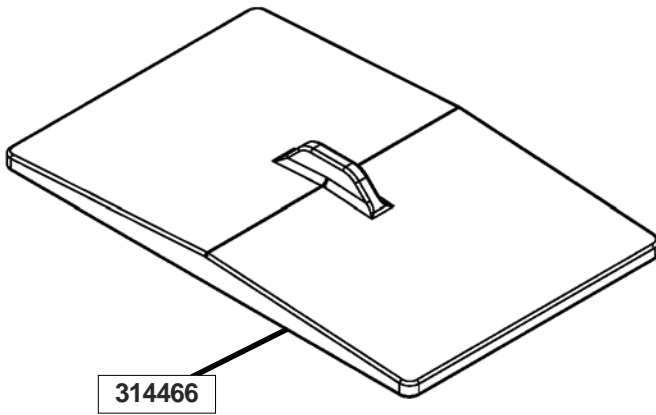
Part Number	Description	Quantity
208135	Brush - 4" X 8" X 16" (Barrel)	1
208380	Brush - 1/4" X 3" X 14"	1
208401	Brush - 1" X 3" X 10"	1
324065	Decal - Water Inlet	-
324105	Decal - Caution Electrical Shock	-
324106	Decal - Caution Electrical Wiring Materials	-
324107	Decal - Caution Hazardous Moving Parts	-
324141	Decal - Caution Rotating Blades	-
324200	Decal - High Pressure Cut-Out	-
324208	Decal - Attention Refrigerant Leak Check	-
324393	Decal - Stoelting Swirl Logo (Drip Tray Support)	-
324509	Decal - Cleaning Instructions	-
324566	Decal - Wired According To	-
324584	Decal - Adequate Ventilation 3"	1
324593	Decal - Power	1
324686	Decal - Danger Automatic Start	2
324803	Decal - Domed Stoelting Logo (Large) (Header Panel)	1
324804	Decal - Domed Stoelting Swirl (Header Panel)	1
324877	Decal - Sonic Logo (Header Panel)	-
508048	Lubricant - Spline (2 oz Squeeze Tube)	1
508135	Petrol Gel - 4 oz Tube	1
1177990	Caster Kit - 4" (Set Of 4)	1
1183954	O-Ring Kit (Ser. #0 - #28937)	-
2177917	Brush Kit	-

## 5.2 AUGER SHAFTS AND FRONT DOOR PARTS

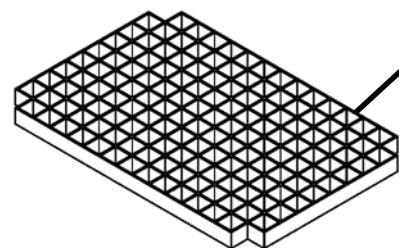


Part Number	Description	Quantity
149002	Bushing - Front Auger Support (Ser. #0 - #28937)	-
162155	Scraper Blade (Ser. #0 - #28937)	-
482019	Knob - Front Door (Black)	4
336530-SV	Door w/Pins	1
624614-5	O-Ring - Spigot - Black (5 Pack)	2
624678-5	O-Ring - Rear Seal - Black (5 Pack)	1
625314	O-Ring - Front Door - Black	1
666786	Seal - Rear Auger - Black	1
2183751	Blade - Scraper (Ser. #28938 Plus)	1
2187907	Bushing - Front Auger Support (Ser. #28938 Plus)	1
2187941	Auger Shaft (Ser. #28938 Plus)	1
3177738	Spigot Body	1

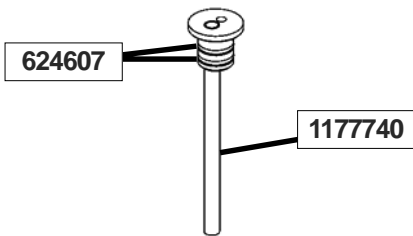
### 5.3 BLENDER PARTS AND DRIP TRAY



314466

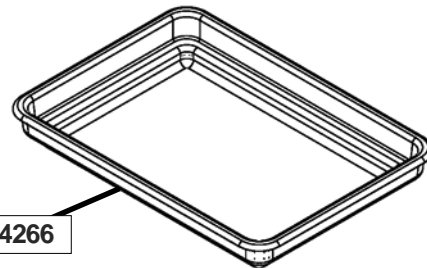


417009



624607

1177740



744266

Part Number	Description	Quantity
314466	Cover - Hopper	1
417009	Grid - Drip Tray (White Honeycomb)	1
624607-5	O-Ring - Mix Inlet - Black (5 Pack)	2
744266	Tray - Drip (White)	1
1177740	Mix Inlet Assembly	1
3177732	Tray - Drain	1





## 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, augers 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.**

January 30, 2003  
721-013, Rev. 0