



**Model SF144 I2 / SF121 I2**  
**OPERATORS MANUAL**

Manual No. 513677

Rev.0



**Owner's Manual  
For SF144 I2  
Stoelting Counter-Top Gravity Machine**

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 freezers 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 the company at the following location:

**STOELTING  
502 Hwy. 67  
Kiel, WI 53042**

**Ph: 800-558-5807**

**Fax: 920-894-7029**

## ***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.

### **NOTICE**

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

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# SECTION 1 INTRODUCTION

## 1.1 DESCRIPTION

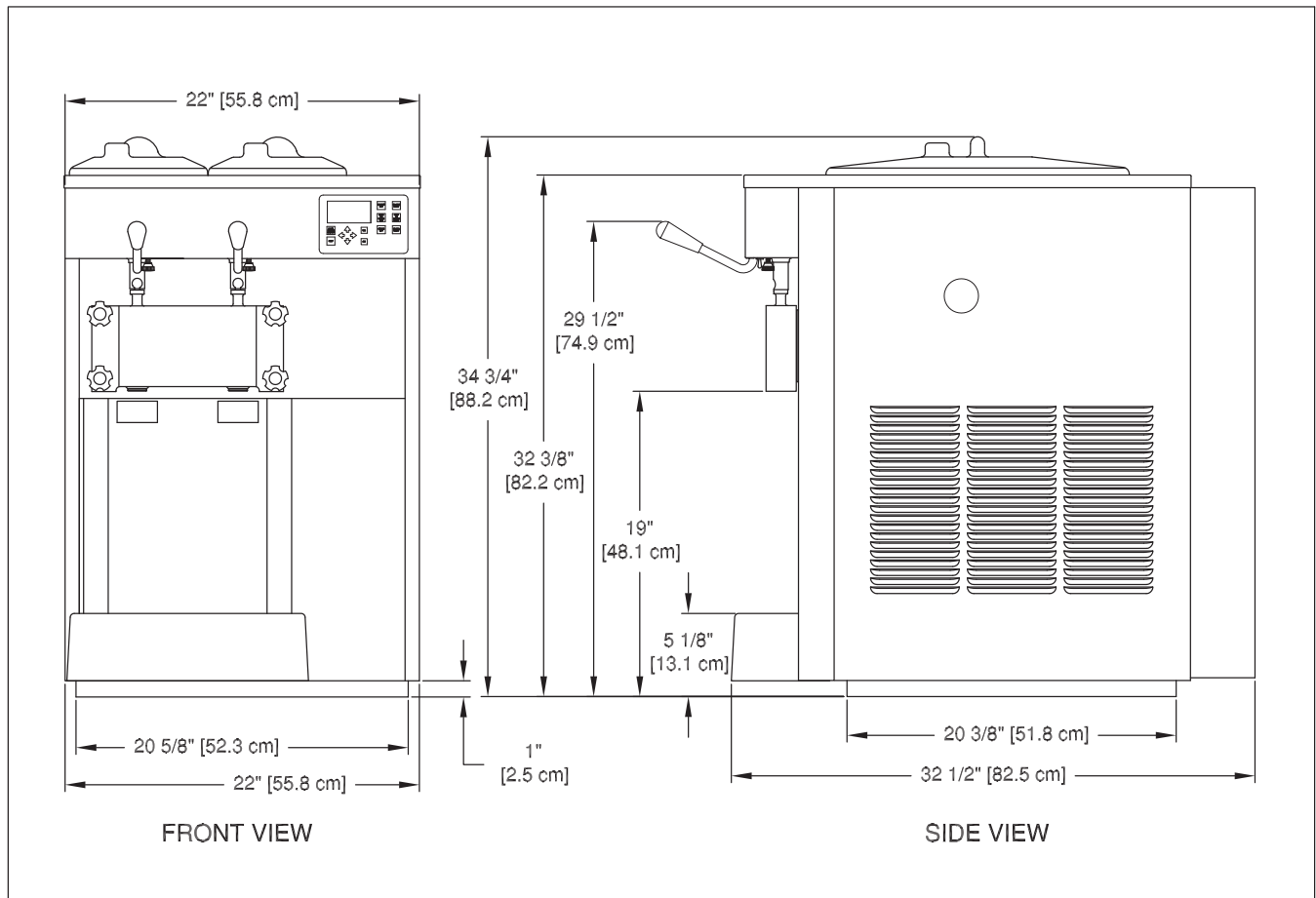
The Stoelting F144I2, SF144I2 and SF121I2 counter-top machines are gravity fed. The machines are equipped with the IntelliTec2™ control which provides a uniform product. The machines are designed to operate with almost any type of commercial soft serve or non-dairy mixes available, including: ice milk, 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 F144I2, SF144I2 and SF121I2 gravity machines.



**Figure 1-1 Model SF144 I2**

## 1.2 SPECIFICATIONS



**Figure 1-2 Specification**

## 1.2 SPECIFICATIONS

| <b>Model F144 I2 / SF144 I2</b> |  |                                   |
|---------------------------------|--|-----------------------------------|
| <b>Dimensions</b>               | <b>Machine</b>   | <b>with crate</b>                 |
| width                           | 22" (55,9 cm)  | 28" (71,1 cm)                     |
| height                          | 34-3/4" (88,3 cm)  | 40-1/4" (102,2 cm)                |
| depth                           | 28-1/2" (72,4 cm)  | 35-1/4" (89,5 cm)                 |
| <b>Weight</b>                   | 385 lbs (174,6 kg)   | 470 lbs (213,1 kg)                |
| <b>Electrical</b>               | <b>1 Phase, 208-240 VAC, 60Hz</b>                                | <b>3 Phase, 208-240 VAC, 60Hz</b> |
| running amps                    | 12A  | 10A                               |
| connection type                 | NEMA6-20P power cord provided                                    | NEMA L15-20P power cord provided  |
| International Option            | 1 Phase, 220-240 VAC, 50Hz                                       |                                   |
| <b>Compressor</b>               | 12,000 Btu/hr  |                                   |
| <b>Drive Motor</b>              | Two - 3/4 hp   |                                   |
| <b>Air Flow</b>                 | Air cooled units require 3" (7,6 cm) air space on both sides     |                                   |
| <b>Plumbing Fittings</b>        | Water cooled units require 3/8" N.P.T. water and drain fittings. |                                   |
| <b>Hopper Volume</b>            | Two - 3 gallon (11,35 liters)                                    |                                   |
| <b>Freezing Cylinder Volume</b> | Two - 0.85 gallon (3,22 liters)                                  |                                   |

| <b>Model SF121 I2</b>           |  |                                   |
|---------------------------------|--|-----------------------------------|
| <b>Dimensions</b>               | <b>Machine</b>   | <b>with crate</b>                 |
| width                           | 22" (55,9 cm)  | 28" (71,1 cm)                     |
| height                          | 34-3/4" (88,3 cm)  | 40-1/4" (102,2 cm)                |
| depth                           | 28-1/2" (72,4 cm)  | 35-1/4" (89,5 cm)                 |
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| <b>Freezing Cylinder Volume</b> | Two - 0.85 gallon (3,22 liters)                                  |                                   |



## SECTION 2 INSTALLATION INSTRUCTIONS

### 2.1 SAFETY PRECAUTIONS

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

Take notice of all warning labels on the machine. 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 machine. Labels should be checked periodically to be sure they can be recognized as warning labels.

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:

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

### 2.2 SHIPMENT AND TRANSIT

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

With the method of packaging used, the machine 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 machine 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 MACHINE INSTALLATION

#### **WARNING**

**Installation must be completed by a qualified electrician/refrigeration specialist.**

Incorrect installation may cause personal injury, severe damage to the machine and will void factory warranty.

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

- A. Uncrate the machine.
- B. Accurate leveling is necessary for correct drainage of machine barrel and to insure correct overrun.



**Figure 2-1 Space and Ventilation Requirements**

Place a bubble level on top of the machine at each corner to check for level condition. If adjustment is necessary, level the machine by turning the bottom part of each leg in or out.

- C. The machine has a base gasket that must be installed. Separate the gasket and install it with the seam to the back. Make sure the angled side of the gasket is facing up.
- D. Correct ventilation is required. The right side of the machine is the air intake and left side is the discharge. Both sides must have 3" clearance.

#### **CAUTION**

Failure to provide adequate ventilation will void warranty.

- E. Connect the power cord to the proper power supply. The plug connected to the machine is either a NEMA 6-20P or L15-20P. Check the nameplate on your machine for proper supply. The unit must be connected to a properly grounded receptacle. The electrical cord furnished as part of the machine has a three prong grounding type plug. 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 circumvent the grounding requirement.

#### **WARNING**

Do not alter or deform electrical plug in any way. Altering the plug to fit into an outlet of different configuration may cause fire, risk of electrical shock, product damage and will void warranty.



## SECTION 3 INITIAL SET-UP AND OPERATION

### 3.1 OPERATOR'S SAFETY PRECAUTIONS

SAFE OPERATION IS NO ACCIDENT; observe these rules:

- A. Know the machine. Read and understand the Operating Instructions.
- B. Notice all warning labels on the machine.
- C. Wear proper clothing. Avoid loose fitting garments, and remove watches, rings or jewelry that 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 power for maintenance. Never attempt to repair or perform maintenance on the machine until the main electrical power has been disconnected.
- G. Do not operate under unsafe operating conditions. Never operate the machine if unusual or excessive noise or vibration occurs.

### 3.2 OPERATING CONTROLS AND INDICATORS

Before operating the machine, it is required that the operator know the function of each operating control. Refer to Figure 3-1 for the location of the operating controls on the machine. For the information regarding error codes displayed on the control panel, refer to the troubleshooting section of this manual.

#### A. INTELLITEC2™ TOUCHPAD



#### WARNING

High voltage will shock, burn or cause death. The OFF-ON switch must be placed in the OFF position prior to disassembling for cleaning or servicing. Do not operate machine with panels removed.

#### Main Power On/Off

The Main Power button is used to supply power to the IntelliTec2™ control, the freezing cylinder circuits and the storage refrigeration system. When the machine is first plugged in, the control defaults to the On status with power to the hopper only. If the Main Power On/Off button is pressed when the machine is on, the machine will turn off and a status message will be displayed on the screen.



Figure 3-1 Machine Controls

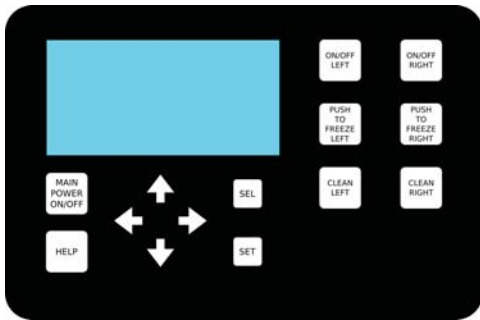


Figure 3-2 IntelliTec2™ Control

### Help

Pressing the Help button will display help information dependant on the cursor's location. Pressing the Help button again will exit the help screen.

### Selection Button (SEL)

The SEL button is used by technicians to select menu options.

### Set Button (SET)

The SET button is used by technicians to save changes when modifying control settings.

### On/Off Button

Power to the freezing cylinders can then be controlled with the On/Off Left and On/Off Right switches.

### Push to Freeze Button

Pressing the PUSH TO FREEZE button initiates "Serve Mode".

### Clean Button

The CLEAN button initiates "Clean Mode".

### Arrow Buttons (←, ↑, →, ↓)

The arrow buttons are used by technicians to navigate through the control readings and settings.

## B. SPIGOT SWITCH

The spigot switch is mounted to the spigot cam assembly behind the header panel. When the spigot is opened to dispense product, the spigot switch opens and the "Serve Mode" begins.

## C. DISPENSE RATE ADJUSTOR

The dispense rate adjustor is located under the header panel, to the immediate right of the spigot handles. Turning the knob counterclockwise will decrease the dispense rate.

## D. BLENDER POWER SWITCH (SF144 MODELS ONLY)

The blender power switch is a two position toggle switch used to supply power to the blender. When the switch is in the OFF position, the agitator will not turn. When the switch is in the ON position, the agitator will be activated every time the blender activation switch is pressed.

## E. BLENDER ACTIVATION SWITCH

The blender activation switch is a two speed, momentary contact switch that will activate the agitator to blend product when pressed and held. The HIGH speed position is used when blending product. The LOW speed position is used during cleaning procedures.

## F. USB ACCESS PORT

The USB access port is located on the right side panel of the machine. The port is used by technicians to import firmware and export machine statistics.

## 3.3 DISASSEMBLY OF MACHINE PARTS

Before using the machine for the first time, complete machine disassembly, cleaning and sanitizing procedures need to be followed. Routine cleaning intervals and procedures must comply with the local and state health codes. Inspection for worn or broken parts should be made at every disassembly of the machine. All worn or broken parts should be replaced to ensure safety to both the operator and the customer and to maintain good machine performance and a quality product. Check the wear line on the auger flights on a regular basis (Fig. 3-3) and replace as needed. Frequency of cleaning must comply with the local health regulations.



Figure 3-3 Auger Flight Wear

To disassemble the machine, refer to the following steps:

### A. REMOVING MIX

For the first time cleaning the machine, skip to part B. Disassembly of Front Door.

1. Press the Clean button. After mix has melted (about 5 minutes) open the spigot to drain the mix.
2. Fill the hopper with 2 gallons (8 liters) of cool tap water.
3. Press the Clean button to run the machine. After 30 seconds press the Clean button again to stop the auger.

4. Drain the water out of the machine.

**NOTE**

*If the water does not drain clear, repeat steps 2-4.*

5. Use Stera-Sheen or equivalent sanitizing solution mixed according to manufacturer's instructions to provide a 100 parts per million strength solution. Mix sanitizer in quantities of no less than 2 gallons of 90° to 110°F (32°C to 43°C) water. Any sanitizer must be used only in accordance with the manufacturer's instructions.
6. Fill a tall cup with the sanitizing solution. Pour the remaining sanitizer into the hopper.
7. Using brushes provided, scrub the hopper.
8. Press the low speed on the blender activation switch and allow the agitator to run for 10-15 seconds. (Fig. 3.4)

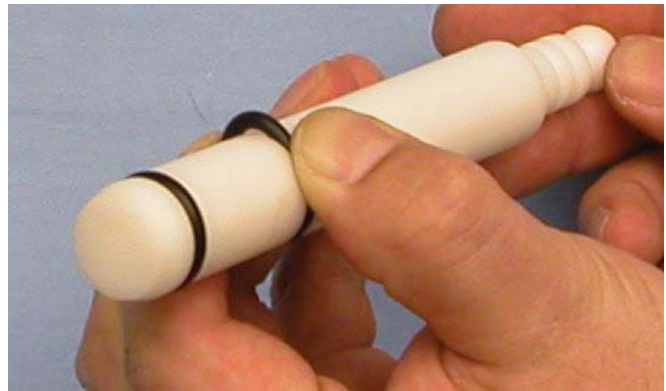


**Figure 3-4 Cleaning Agitator**

9. After 5 minutes, drain the sanitizer out of the freezing cylinder.

**B. DISASSEMBLY OF FRONT DOOR**

1. Turn the machine off by pressing the Main Freezer Power Off/On button on the IntelliTec2™ control.
2. Remove the knobs on the front door.
3. Remove the front door by pulling it off the studs.
4. Remove the spigot through the bottom of the front door.
5. Remove all o-rings from parts by first wiping off the lubrication using a clean towel. Then squeeze the o-ring upward to form a loop (Fig. 3-5). Roll the o-ring out of the groove.



**Figure 3-5 Removing O-Ring**

**B. DISASSEMBLY OF AUGER**

1. Remove the front auger support and bushing.
2. Remove the auger assembly from the machine. Pull the auger out of the machine barrel slowly. As the auger is being pulled out, carefully remove each of the plastic flights with springs.
3. Keep the rear of the auger tipped up once it is clear of the freezing cylinder to prevent the rear seal assembly from dropping.
4. Wipe the spline lubricant off of the hex end of the auger with a paper towel. Remove the rear seal assembly (Fig. 3-6).



**Figure 3-6 Rear Seal Assembly**

5. Unscrew the springs from the auger flights.

## B. DISASSEMBLY OF BLENDER



### CAUTION

#### Hazardous Moving Parts

Revolving blender agitator shaft can grab and cause injury. Remove watches and jewelry prior to operating the blender. Keep hands and clothing away from revolving agitator. The Blender Power switch must be placed in the OFF position when not in use.

1. Remove the clear acrylic splash guard from the blender.
2. Remove the blender's agitator from the agitator shaft. Grasp the agitator shaft in one hand and turn the agitator in a clockwise direction with the other hand (Fig. 3-7)



Figure 3-7 Removing Agitator

## 3.4 CLEANING DISASSEMBLED PARTS

Disassembled machine parts require complete cleaning, sanitizing and air drying before assembling. Local and state health codes will dictate the procedure required. Some state health codes require a four sink process (pre-wash, wash, rinse, sanitize, air dry), while others require a three sink process (without the pre-wash step). The following procedures are a general guideline only. Consult your local and state health codes for the procedures required in your location.

- A. Prepare Stera-Sheen or equivalent cleaner in 2 gallons of 90° to 110°F (32° to 43°C) water following manufacturers instructions. Place all parts in the solution and clean with provided brushes.
- B. Rinse all parts with clean 90° to 110°F (32° to 43°C) water.
- C. Wash the hopper and freezing cylinder with the Stera-Sheen solution and brushes provided.
- D. Clean the rear seal surfaces from the inside of the freezing cylinder with the Stera-Sheen Solution.

## 3.5 SANITIZING MACHINE PARTS

- A. Use Stera-Sheen or equivalent sanitizing solution mixed according to manufacturer's instructions to provide a 100 parts per million strength solution. Mix sanitizer in quantities of no less than 2 gallons of 90° to 110°F (32°C to 43°C) water. Any sanitizer must be used only in accordance with the manufacturer's instructions.
- B. Place all parts in the sanitizing solution for 5 minutes, then remove and let air dry completely before assembling in machine.

## 3.6 CLEANING THE MACHINE

The exterior should be kept clean at all times to preserve the luster of the stainless steel. A high grade of stainless steel has been used on the machine to ease cleanup. To remove spilled or dried mix, wash the exterior with 90° to 110°F (32°C to 43°C) Stera-Sheen solution or equivalent cleaner and wipe dry.

Do not use highly abrasive materials, as they will mar the finish. Use a soft cloth or sponge to apply the solution. For best results, wipe with the grain of the steel.

- A. Clean the rear seal surface from inside of the freezing cylinder.
- B. Using sanitizing solution and the large barrel brush provided, sanitize the freezing cylinder by dipping the brush in the sanitizing solution and brushing the inside of the freezing cylinder.

### NOTE

*Do not let sanitizing solution sit overnight in the freezing cylinder.*

- C. Remove the drip tray by pulling from the front panel. Clean and replace the drip tray.

## 3.7 ASSEMBLING MACHINE

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

### NOTICE

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

### NOTICE

*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 lubricant to exposed surfaces of the o-rings.



**Figure 3-8 Lubricate Rear Seal**

- B. Install the rear seal o-ring. Lubricate the outside of the rear seal o-ring with sanitary lubricant.

**NOTE**

*Do not put Petrol-Gel directly onto the auger shaft.*

- C. Lubricate the inside metal surface of the rear seal and install it onto the auger shaft. **DO NOT** lubricate the outside of the rear auger seal (Fig. 3-8).
- D. Lubricate the hex drive end of the auger with a small amount of spline lubricant. A small container of spline lubricant is shipped with the machine.
- E. Screw the springs onto the studs in the plastic flights. The springs must be screwed into the flights completely to provide proper compression.

**NOTE**

*Make sure the rear of the freezing cylinder is clean and dry before installing the auger shaft. If the freezing cylinder is dirty or if there is moisture, the freezing cylinder may leak at the rear seal.*

- F. Install the two plastic flights onto the rear of the auger and insert it part way into the freezing cylinder.
- G. Install the remaining plastic flights, push the auger into the freezing cylinder and rotate slowly until the auger engages the drive shaft.
- H. Apply a thin layer of sanitary lubricant to the inside and outside of the auger support bushing. Install the bushing onto the auger support and install the auger support into the front of the auger. Rotate the auger support so that one leg of the support points straight up.
- I. Apply a thin layer of sanitary lubricant to the o-rings on the spigot body and install the spigot body through the bottom of the front door.
- K. Apply a thin film of sanitary lubricant to the door seal o-ring and fit it into the groove on the rear of the front door.

- M. Place the front door assembly on the mounting studs and the push front door against the machine carefully.
- N. Secure the front door to the machine by placing the knobs on the studs and tightening until finger tight. Do not overtighten. A proper o-ring seal can be observed through the transparent front door.
- O. Thread the agitator onto the blender shaft and install the clear acrylic splash guard.

**3.8 SANITIZING**

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

**NOTE**

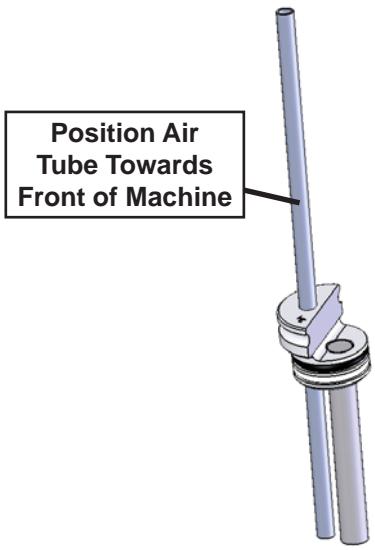
*The United States Department of Agriculture and the Food and Drug Administration require that all cleaning and sanitizing solutions used with food processing equipment be certified for this use.*

When sanitizing the machine, 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 of 90°F to 110°F (32°C to 43°C) 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.

- A. Prepare 2 gallons of Stera-Sheen sanitizing solution following the manufacturer's instructions.
- B. Install the mix inlet regulator into the hopper with the air tube towards the front of the machine.

**NOTE**

*Do not twist the mix inlet regulator when installing.*



**Figure 3-9 Mix Inlet Regulator**

- C. Fill a tall cup with the sanitizing solution. Pour the remaining sanitizer into the hopper.
- D. Make sure the display shows the freezing cylinder is off. If it is not, press the On/Off Left or On/Off Right button to turn it off.

**NOTE**

*If the freezing cylinder is not off, the control will not go into Clean mode. This is to protect from accidentally going into Clean mode.*

- E. Press the CLEAN button.
- F. Check for leaks.
  1. Check for leaks at the front door seals.
  2. Check the drain tray located under the front door for leaks coming from the rear of the rear auger seal.
- G. Using a sanitized soft bristle brush (or equivalent) dipped in sanitizing solution, clean the hopper sides, mix inlet regulator and underside of the hopper cover.
- H. To sanitize the blender agitator, completely immerse the blender's agitator shaft in the cup with the sanitizer solution (Fig. 3-10). Do not wipe dry.



**Figure 3-4 Cleaning Agitator**

- I. After five minutes, open the spigot to expel sanitizing solution. Drain all of the solution from the machine.
- J. When the solution has drained, press the CLEAN button to stop the auger. Allow the freezing cylinder to drain completely.

The machine is now sanitized and ready for adding mix.

**3.9 FREEZE DOWN AND OPERATION**

- A. Sanitize immediately before use.
- B. Make sure the display shows the freezing cylinder is off. If it is not, press the On/Off Left or On/Off Right button to turn it off.
- C. Fill the hopper with at least 2.5 gallons of mix.
- D. Place a container under the spigot and open the spigot to allow the mix to flush out about 8 ounces (0.23 liters) of sanitizing solution and liquid mix.
- E. Press the On/Off button for the cylinder.
- F. Press the PUSH TO FREEZE button.

**NOTE**

*After the drive motor starts, there is a 3-second delay before the compressor starts.*

- G. When the product is at 75% consistency, the display will read "SERVE". Open the spigot to dispense product.
- H. To use the blender, turn the blender power switch ON. Fill a cup with the desired ingredients and put the blender agitator into the cup. Press the blender activation switch to HIGH. Release the activation switch when blending is complete.
- I. The machine dispenses product at a reasonable draw rate. If the machine is overdrawn, the result is a soft product or a product that will not dispense at all. If this occurs, allow the machine to run for approximately 30 seconds before dispensing more product. A dispense rate adjuster is located under the header panel, to the immediate right of the spigot handle. Turning the knob counterclockwise will decrease the dispense rate.
- J. Do not operate the machine when the MIX LOW message is displayed. Refill the mix container immediately.

**NOTE**

*After a preset number of freezing cycles in Serve mode, the control will enter sleep mode and remain there until someone draws product or presses the PUSH TO FREEZE button. In the sleep mode, the machine will keep the product below 41°F (5°C). Sleep modes do not take the place of cleaning and sanitizing. Federal, State, and local regulatory agencies determine frequency of cleaning and sanitizing.*



### 3.10 FINE CONSISTENCY ADJUSTMENT

If the product consistency needs to be adjusted, use the Fine Consistency Adjustment. To access the setting, the Associate level password must be entered. Follow the steps below for the Fine Consistency Adjustment.

- A. Press the left arrow from the Current Status screen.
- B. Press the right arrow then the SEL button from the Password screen. After the password is accepted, move the cursor to the Fine Consistency Adjustment option and press the SEL button.
- C. On the Fine Consistency Adjustment screen, press the SEL button and use the arrows to modify the setting. Adjust the Fine Consistency higher to increase the consistency or lower to decrease the consistency.
- D. Press the SET button to save the changes. Make adjustments in increments of 5 for best results.

### 3.11 MIX INFORMATION

Mix can vary considerably from one manufacturer to another. Differences in the amount of butterfat content and quantity and quality of other ingredients have a direct bearing on the finished frozen product. A change in machine 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. Mixes should provide a satisfactory product in the 20°F to 24°F range. Diet and low-carb mixes typically freeze to proper consistency at higher temperatures.

When checking the temperature, stir the thermometer in the frozen product to get an accurate reading.

Old mix, or mix that has been stored at too high a temperature, can result in a finished product that is unsatisfactory. To retard bacteria growth in dairy based mixes, the best storage temperature range is between 33° to 38°F (0.5° to 3.3° C).



## SECTION 4 MAINTENANCE AND ADJUSTMENTS

This section is intended to provide maintenance personnel with a general understanding of the machine adjustments. It is recommended that any adjustments be made by a qualified person.

### 4.1 DRIVE BELT TENSION ADJUSTMENT

To check belt tension, refer to Figure 4-1 and follow the steps below:



#### WARNING

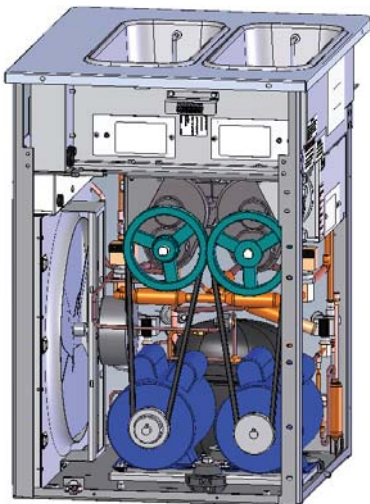
##### Hazardous voltage

Make sure the machine is off when disassembling for servicing. The machine must be disconnected from electrical supply before removing any access panel. Failure to disconnect power before servicing could result in death or serious injury.

- A. Remove the back panel.
- B. Use a Burroughs Belt Tension Gauge to set the tension for the drive belt. Set the belt tension to 35-40 lbs.
- C. If an adjustment is necessary, loosen the four motor plate retaining nuts, adjust belt tension then retighten the four nuts.
- D. Using a straightedge, check that the drive motor pulley is aligned with the speed reducer pulley. Align the pulley if necessary.

#### NOTE

*Belt life will be increased if new drive belts are tightened after two or three weeks of operation.*



**Figure 4-1 Belt Tension Adjustment**

### 4.2 CONDENSER CLEANING (AIR-COOLED MACHINES)

The machine has an air-cooled or water-cooled condenser.

The air-cooled condenser is a copper tube and aluminum fin type. Condensing is totally dependent upon airflow. A plugged condenser, or restrictions in the louvered panel will restrict airflow. This will lower the capacity of the system and damage the compressor. The condenser must be kept clean of dirt and grease. The machine must have a minimum of 3" (7.6 cm) of ventilation on the sides of the unit for free flow of air. Make sure the machine is not pulling over 100° F (37° C) air from other equipment in the area.

The water-cooled condenser is a tube and shell type. The condenser needs a cool, clean supply of water to properly cool the machine, inlet and discharge lines must be 3/8" I.D. minimum.

The air-cooled condenser requires periodic cleaning. To clean, refer to the following procedures.

- A. Visually inspect the condenser for dirt.
- B. If the condenser is dirty, place a wet towel over the condenser.
- C. Using compressed air or CO<sub>2</sub> tank, blow out the dirt from the back of the condenser. Most of the dirt will cling to the wet towel.
- D. An alternative method is to clean with a condenser brush and vacuum.

#### NOTE

*If the condenser is not kept clean, refrigeration efficiency will be lost.*

### 4.3 PREVENTATIVE MAINTENANCE

It is recommended that a preventative maintenance schedule be followed to keep the machine clean and operating properly. The following steps are suggested as a preventative maintenance guide.

The United States department of agriculture and the food and drug administration require that lubricants used in food zones be certified for this use. Use lubricants only in accordance with the manufacturer's instructions.

- A. Daily checks  
Check for any unusual noise or condition and repair immediately.
- B. Monthly checks  
Check the condenser for dirt and clean if necessary.
- C. Quarterly Checks  
Check drive belts for wear and tighten belts if necessary.

#### 4.4 EXTENDED STORAGE

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

- A. Clean all the parts that come in contact with mix thoroughly with a warm detergent water. Rinse in clear water and dry all parts. Do not sanitize.

##### NOTE

*Do not let cleaning solution stand in the freezing cylinder or hopper during the shutdown period.*

- B. Remove, disassemble, and clean the front door, and auger shaft. Leave disassembled during the shutdown period.
- C. Place the auger flights and auger support bushing in a plastic bag with a moist paper towel. This will prevent them from becoming brittle if exposed to dry air over an extended period of time (over 30 days).
- D. For water-cooled machines that are left in unheated buildings, or buildings subject to freezing, the water must be shut off and disconnected. Disconnect the water inlet fitting. The fitting is located at the rear of the machine. Run the compressor for 2 - 3 minutes to open water valve (the front door must be attached for the compressor to run). Blow out all water through water inlet. Drain the water supply line coming to the machine. Disconnect the water outlet fitting.
- E. Press the Main Power On/Off button to turn the machine off.
- F. Disconnect the machine from the source of electrical supply.

## SECTION 5 TROUBLESHOOTING

### 5.1 ERROR CODES

When the machine experiences a problem, one of the following error codes will be displayed on the control panel. Each error code directs you to the system location of the malfunction.

#### ERROR CODE MALFUNCTION

|    |  |
|----|--|
| 2  | High Torque                            |
| 3  | Run Time                               |
| 4  | Clean                                  |
| 5  | Freezing Cylinder Sensor               |
| 6  | Hopper Sensor (single hopper machines) |
| 7  | Drive Motor                            |
| 8  | Cab Sensor                             |
| 9  | High Pressure Cutout                   |
| 10 | Auxiliary Sensor                       |
| 11 | Prime (cab units only)                 |
| 12 | Left Hopper Sensor                     |
| 13 | Right Hopper Sensor                    |
| 21 | Spigot Open Time                       |

To return the machine to normal operation, any error causing condition must be corrected and the power to the affected freezing cylinder must be cycled. Turn the power to the freezing cylinder off then back on using the On/Off button of the affected freezing cylinder.

### 5.2 TROUBLESHOOTING

#### Error Code 2 - High Torque

If the control panel displays a High Torque Error (E2), the controller has sensed that the drive motor is running at a high load for 10 or more seconds. This may be due to the product consistency adjustment being set too high. Press the On/Off button for the cylinder to turn it off, wait until the product in the freezing cylinder thaws and then turn the cylinder back on. If the error persists, contact your Authorized Stoelting Distributor for further assistance.

#### Error Code 3 - Run Time

The Run Time Error (E3) occurs when the compressor runs continuously for an extended period. This error is generally caused by very low mix levels in the hopper or from product breakdown. Another common cause results from a restriction preventing mix from entering the freezing cylinder. Check the mix in the hopper. If the level mix is low, add mix. If there is a possibility that the mix has broken down, clean and sanitize the machine and replace the mix with fresh product.

Ice crystals in the hopper can clog the mix inlet system and prevent mix from entering the freezing cylinder. Thoroughly thaw mix per manufacturer's recommendations. To check for ice crystals, pour a small amount of product from the mix container through a clean and sanitized sieve or strainer. If ice crystals are in the mix, check temperature of the walk-in cooler where the mix is stored.

In air cooled machines, the Run Time Error may indicate that airflow within the machine has reduced or stopped. Check the sides of the machine for anything that would restrict airflow.

If the error persists after attempting to clear it, contact your Authorized Stoelting Distributor for further assistance.

#### Error Code 4 - Clean

If the machine is left in the Clean Mode for more than 20 minutes, the control panel will display a Clean Error (E4). This condition does not reflect a problem with the machine itself. The Clean Error has been programmed into the controller as a safeguard to protect the machine from potential damage caused by the machine being accidentally left in "Clean Mode". To clear the Clean Error, press the On/Off button for the cylinder to turn it off then back on.

### **Error Code 5 - Freezing Cylinder Sensor**

The Freezing Cylinder Sensor Error (E5) indicates a failure of the barrel sensor or if the sensor is out of range. If the control panel displays an E5, press the On/Off button for the cylinder to turn it off then back on. If the error persists, contact your Authorized Stoelting Distributor for further assistance.

#### **NOTE**

*When the machine encounters a Freezing Cylinder Sensor Error, the machine will continue to run using preset timers. This mode will allow the operator to continue serving product until the machine can be serviced.*

### **Error Code 6 - Hopper Sensor (single hopper machines)**

The Hopper Sensor Error (E6) will not occur on the machine.

### **Error Code 7 - Drive Motor**

If the control panel displays a Drive Motor Error (E7), the control does not sense current coming from the drive motor. Press the On/Off button for the cylinder to turn it off then back on. If the error persists, contact your Authorized Stoelting Distributor for further assistance.

### **Error Code 8 - Cab Sensor**

A Cab Sensor Error (E8) will not occur on the machine.

### **Error Code 9 - High Pressure Cutout**

High Pressure Cutout Errors (E9) are usually caused by a dirty or inefficient condenser. If the control panel displays an E9 on an air cooled machine, check for proper air clearance around the machine. If there is an E9 on a water cooled machine check for proper flow from the water supply or kinks in the hoses.

If the error persists, contact your Authorized Stoelting Distributor for further assistance.

### **Error Code 10 - Auxiliary Sensor**

An Auxiliary Temperature Sensor Error (E10) occurs if the temperature sensor on the control board fails. Press the On/Off button for the cylinder to turn it off then back on. If the error persists, contact your Authorized Stoelting Distributor for further assistance.

### **Error Code 11 - Prime Error**

The Prime Error (E11) will not occur on the machine.

### **Error Code 12 - Left Hopper Sensor**

The Left Hopper Sensor Error (E12) indicates a failure of the hopper sensor or if the sensor is out of range. If the control panel displays an E12, press the On/Off button for the cylinder to turn it off then back on. If the error persists, contact your Authorized Stoelting Distributor for further assistance.

### **Error Code 13 - Right Hopper Sensor**

The Right Hopper Sensor Error (E13) indicates a failure of the hopper sensor or if the sensor is out of range. If the control panel displays an E12, press the On/Off button for the cylinder to turn it off then back on. If the error persists, contact your Authorized Stoelting Distributor for further assistance.

### **Error Code 21 - Spigot Open Time**

The Spigot Open Time Error (E21) indicates a failure of the spigot switch. If the control senses the spigot is open continuously for 10 minutes, the machine will go into Sleep 3 mode. If the control panel displays an E21, press the On/Off button for the cylinder to turn it off then back on. If the error persists, contact your Authorized Stoelting Distributor for further assistance.

### 5.3 TROUBLESHOOTING - MACHINE

| PROBLEM                                  | POSSIBLE CAUSE   | REMEDY  |
|--|--|---|
| <b>Machine does not run.</b>             | <ol style="list-style-type: none"> <li>1 Power to machine is off.</li> <li>2 Freeze-up (auger will not turn).</li> <li>3 Front door not in place.</li> </ol>   | <ol style="list-style-type: none"> <li>1 Supply power to machine.</li> <li>2 Turn machine off for 15 minutes, then restart.</li> <li>3 Assemble front door in place.</li> </ol>   |
| <b>Machine will not shut off.</b>        | <ol style="list-style-type: none"> <li>1 Refrigeration problem.</li> </ol>   | <ol style="list-style-type: none"> <li>1 Check system. (Call distributor for service)</li> </ol>  |
| <b>Product is too firm.</b>              | <ol style="list-style-type: none"> <li>1 CutOut Consistency setting too high</li> </ol>  | <ol style="list-style-type: none"> <li>1 Adjust the CutOut Consistency (See Section 3)</li> </ol>   |
| <b>Product is too soft.</b>              | <ol style="list-style-type: none"> <li>1 No vent space for free flow of cooling air.</li> <li>2 Condenser is dirty.</li> <li>3 CutOut Consistency setting too low</li> <li>4 Auger is assembled incorrectly.</li> <li>5 Refrigeration problem.</li> </ol>                            | <ol style="list-style-type: none"> <li>1 A minimum of 3" of air space on the sides. (See Section 2)</li> <li>2 Clean the condenser. (See Section 4)</li> <li>3 Adjust the CutOut Consistency (See Section 3)</li> <li>4 Remove mix, clean, reassemble, sanitize and freeze down.</li> <li>5 Check system. (Call distributor for service)</li> </ol> |
| <b>Product does not dispense.</b>        | <ol style="list-style-type: none"> <li>1 No mix in hopper.</li> <li>2 Drive motor overload tripped.</li> <li>3 Drive belt failure.</li> <li>4 Freeze-up (Auger will not turn).</li> </ol>  | <ol style="list-style-type: none"> <li>1 Add mix to the hopper.</li> <li>2 Wait for automatic reset. (If condition continues, call distributor for service.)</li> <li>3 Replace drive belt.</li> <li>4 Turn off cylinder, wait for 15 minutes, then restart.</li> </ol>   |
| <b>Drive belt slipping or squealing.</b> | <ol style="list-style-type: none"> <li>1 Worn drive belt.</li> <li>2 Freeze-up (Auger will not turn).</li> <li>3 Not tensioned properly.</li> </ol>  | <ol style="list-style-type: none"> <li>1 Replace drive belt.</li> <li>2 Turn off cylinder, wait for 15 minutes, then restart.</li> <li>3 Adjust belt tension</li> </ol>   |
| <b>Rear auger seal leaks.</b>            | <ol style="list-style-type: none"> <li>1 Outside surface of rear auger seal is lubricated.</li> <li>2 Rear seal missing or damaged.</li> <li>3 Seal o-ring missing, damaged or installed incorrectly.</li> <li>4 Worn or scratched auger shaft.</li> </ol>                           | <ol style="list-style-type: none"> <li>1 Clean lubricant from outside of rear seal and thoroughly clean rear of freezing cylinder. Lubricate inside of seal and reinstall.</li> <li>2 Check or replace.</li> <li>3 Check or replace.</li> <li>4 Replace auger shaft.</li> </ol>   |
| <b>Front door leaks.</b>                 | <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 Section 3.</li> <li>3 Replace o-rings.</li> <li>4 Remove spigot and check o-ring.</li> <li>5 Replace front door.</li> </ol>  |



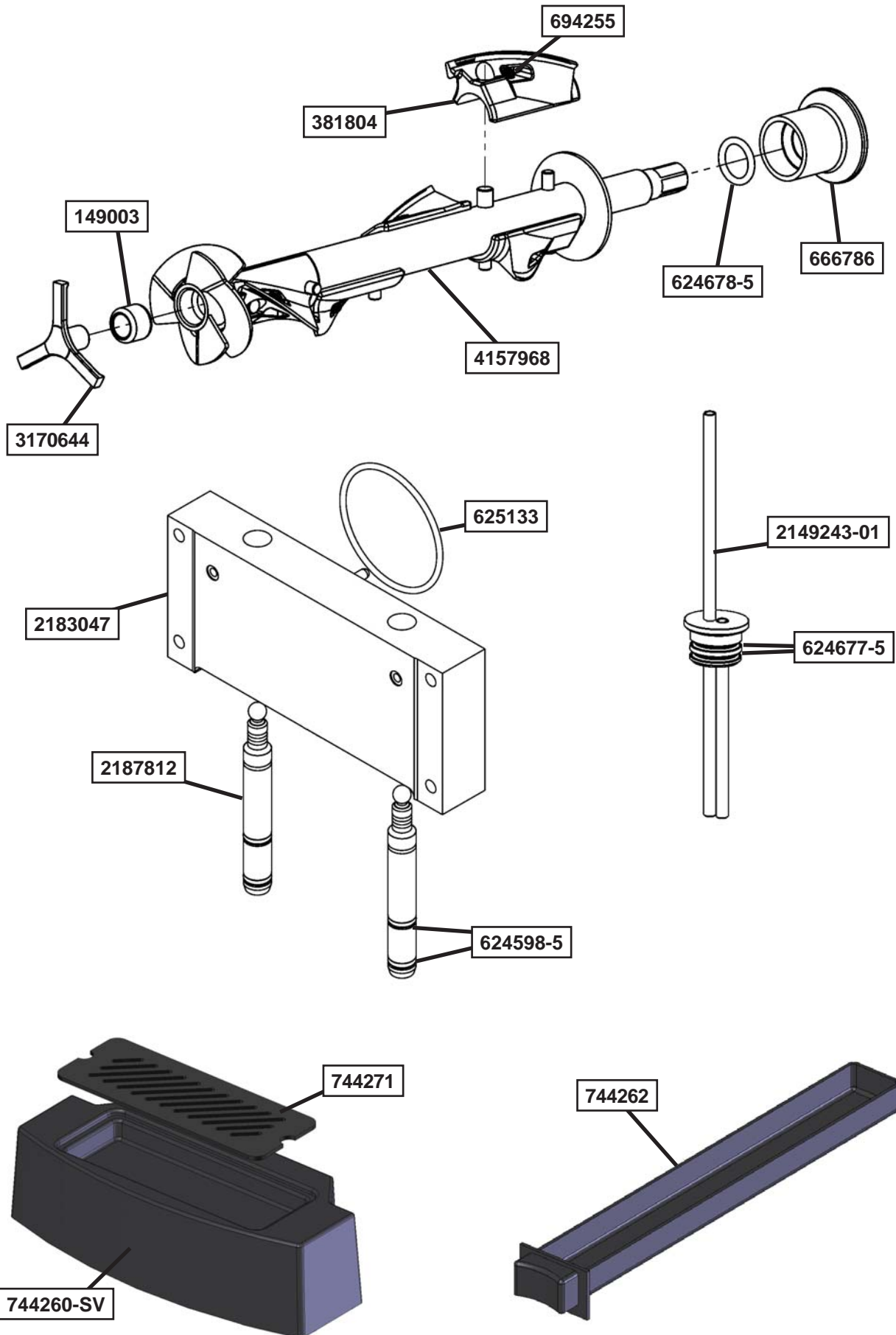


## SECTION 6 REPLACEMENT PARTS

### 6.1 DECALS AND LUBRICATION

| Part    | 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        |
| 208467  | Brush - 3/8" X 1" X 5"                              | 1        |
| 324065  | Decal - Water Inlet                                 | 1        |
| 324105  | Decal - Caution Electrical Shock                    | 1        |
| 324106  | Decal - Caution Electrical Wiring Materials         | 1        |
| 324107  | Decal - Caution Hazardous Moving Parts              | 1        |
| 324141  | Decal - Caution Rotating Blades                     | 1        |
| 324208  | Decal - Attention Refrigerant Leak Check            | 1        |
| 324509  | Decal - Cleaning Instructions                       | 1        |
| 324566  | Decal - Wired According To                          | 1        |
| 324584  | Decal - Adequate Ventilation 3"                     | 3        |
| 324594  | Decal - Attention Heat Sensitive                    | 4        |
| 324686  | Decal - Danger Automatic Start                      | 1        |
| 324803  | Decal - Domed Stoelting Logo (Large) (Header Panel) | 1        |
| 324833  | Decal - Ice Cream                                   | 1        |
| 324835  | Decal - Blender Power On/Off                        | 1        |
| 324836  | Decal - Blender High/Low                            | 1        |
| 324837  | Decal - Caution Blender                             | 1        |
| 324839  | Decal - Ground                                      | 1        |
| 324909  | Decal - USB Port                                    | 1        |
| 324922  | Decal - Assembly Check                              | 1        |
| 324926  | Decal - Milkshake                                   | 1        |
| 324940  | Decal - Thermistor ID                               | 1        |
| 368140  | Filter - Air (Condenser)                            | 1        |
| 396241  | Gasket - Freezer Base                               | 1        |
| 508048  | Lubricant - Spline (2 oz Squeeze Tube)              | 1        |
| 508135  | Petrol Gel - 4 oz Tube                              | 1        |
| 2177917 | Brush Kit   | 1        |

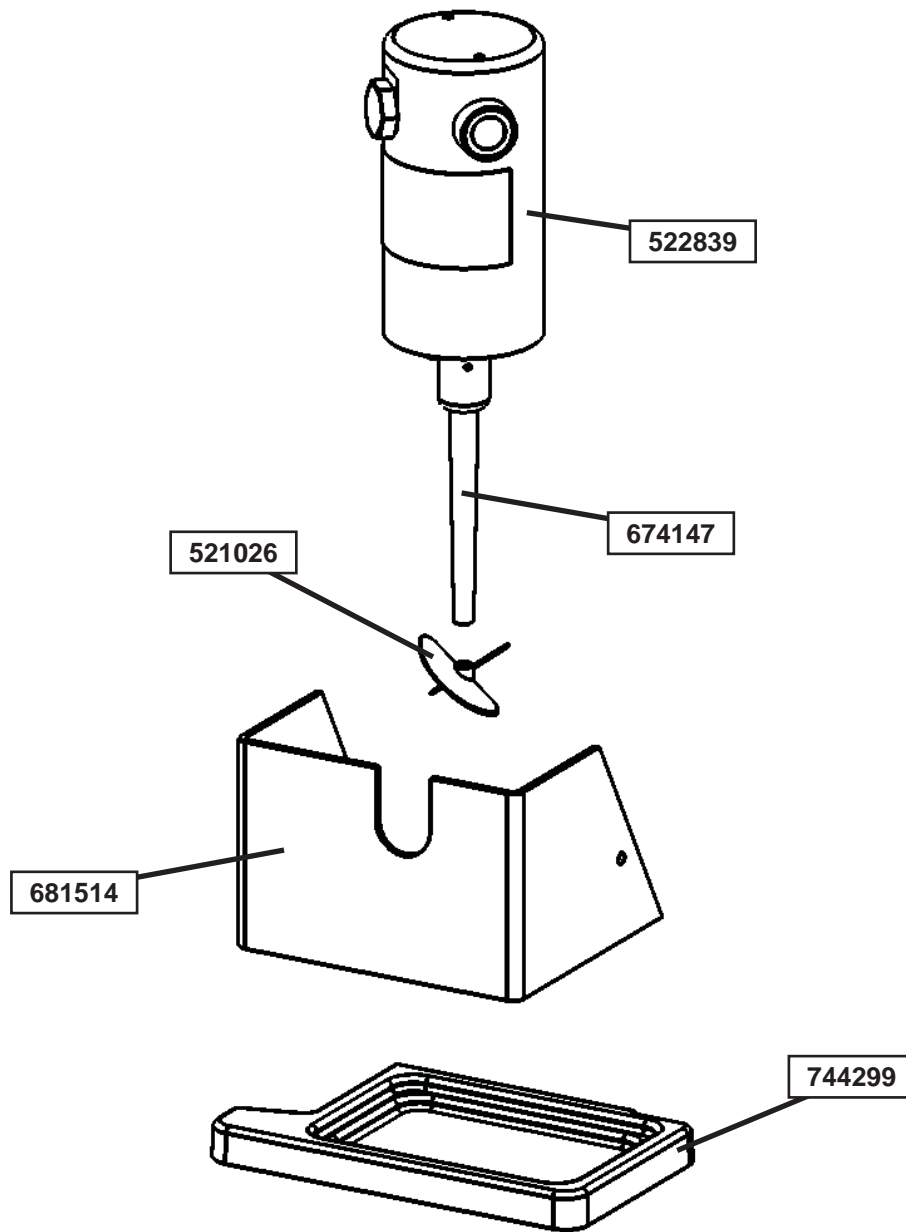
## 6.2 AUGER SHAFT AND FACEPLATE PARTS



## 6.2 AUGER SHAFT AND FACEPLATE PARTS (CONTINUED)

| <b>Part</b> | <b>Description</b>                                      | <b>Quantity</b> |
|-------------|---|-----------------|
| 149003      | Bushing - Front Auger Support                           | 2               |
| 232734      | Cap - Rosette - Teardrop                                | 3               |
| 314453      | Cover - Hopper  | 2               |
| 381804      | Auger Flight  | 8               |
| 482019      | Knob - Front Door (Black)                               | 4               |
| 624598-5    | O-Ring - Outside Spigot - Black (5 Pack)                | 4               |
| 624677-5    | O-Ring - Mix Inlet - Black (5 Pack)                     | 4               |
| 624678-5    | O-Ring - Rear Seal - Black (5 Pack)                     | 2               |
| 625133      | O-Ring - Front Door - Red                               | 2               |
| 666786      | Seal - Rear Auger - Black                               | 2               |
| 694255      | Spring - Auger Flight                                   | 8               |
| 744260-SV   | Tray - Drip   | 1               |
| 744262      | Tray - Drain (Black Plastic)                            | 1               |
| 744271      | Insert - Drip Tray (Black Plastic)                      | 1               |
| 2149243-01  | Mix Inlet Assembly - 3/16" Hole - Extended Length (2LA) | 2               |
| 2177072     | Extension - Spigot - 1.5"                               | -               |
| 2177073     | Extension - Spigot - 2.5"                               | -               |
| 2177074     | Extension - Spigot - 3.2"                               | -               |
| 2183047     | Door w/Pins   | 1               |
| 2187812     | Spigot Body - Outer                                     | 2               |
| 3170644     | Support - Front Auger                                   | 2               |
| 4157968     | Auger Shaft   | 2               |

### 6.3 BLENDER PARTS



| Part   | Description            | Quantity |
|--------|------------------------|----------|
| 521026 | Blender Agitator       | 1        |
| 522839 | Blender Motor          | 1        |
| 674147 | Blender Shaft          | 1        |
| 681514 | Swing Shield (Plastic) | 1        |
| 744299 | Tray - Drip (Blender)  | 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