



Model O231
OPERATORS MANUAL
Manual No. 513645 May 2010

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.



stoeltingfoodservice.com

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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.

TABLE OF CONTENTS

| Section | Description | Page |
|----------------|---|-------------|
| 1 | Description and Specifications | |
| 1.1 | Description | 1 |
| 1.2 | Specifications | 1 |
| 2 | Installation Instructions | |
| 2.1 | Safety Precautions | 3 |
| 2.2 | Shipment and Transit | 3 |
| 2.3 | Machine Installation | 3 |
| 2.4 | Installing Permanent Wiring | 3 |
| 3 | Initial Set-Up and Operation | |
| 3.1 | Operator's Safety Precautions | 5 |
| 3.2 | Operating Controls and Indicators | 5 |
| 3.3 | Important Information Regarding Cleaning and Sanitizing | 6 |
| 3.4 | Disassembly of Machine Parts | 8 |
| 3.5 | Cleaning Disassembled Parts | 8 |
| 3.6 | Sanitizing Machine Parts | 9 |
| 3.7 | Cleaning the Machine | 9 |
| 3.8 | Assembling the Machine | 9 |
| 3.9 | Sanitizing | 10 |
| 3.10 | Freeze Down and Operation | 10 |
| 3.11 | Mix Information | 11 |

| Section | Description | Page |
|----------------|---|-------------|
| 4 | Maintenance and Adjustments | |
| 4.1 | Accessing Control Readings and Settings | 13 |
| 4.2 | Navigation and Modifying Settings | 13 |
| 4.3 | User Interface Screens | 13 |
| 4.4 | Performance Screens | 14 |
| 4.5 | Settings Screens | 14 |
| 4.6 | Utilities Screens | 16 |
| 4.7 | Errors & Statistics Screens | 18 |
| 4.8 | Updating Firmware | 20 |
| 4.9 | Drive Belt Tension Adjustment | 20 |
| 4.10 | Condenser Cleaning | 20 |
| 4.11 | Preventative Maintenance | 21 |
| 4.12 | Extended Storage | 21 |
| 5 | Troubleshooting | |
| 5.1 | Error Codes | 23 |
| 5.2 | Troubleshooting | 23 |
| 5.3 | Troubleshooting - Machine | 25 |
| 6 | Replacement Parts | |
| 6.1 | Decals & Lubrication | 27 |
| 6.2 | Auger Shaft and Faceplate Parts | 28 |

SECTION 1 INTRODUCTION

1.1 DESCRIPTION

The Stoelting O231 floor machine is gravity fed. The machine is equipped with the IntelliTec2 control which provides a uniform product. The O231 is 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 O231 gravity machine.



Figure 1-1 Model O231

1.2 SPECIFICATIONS

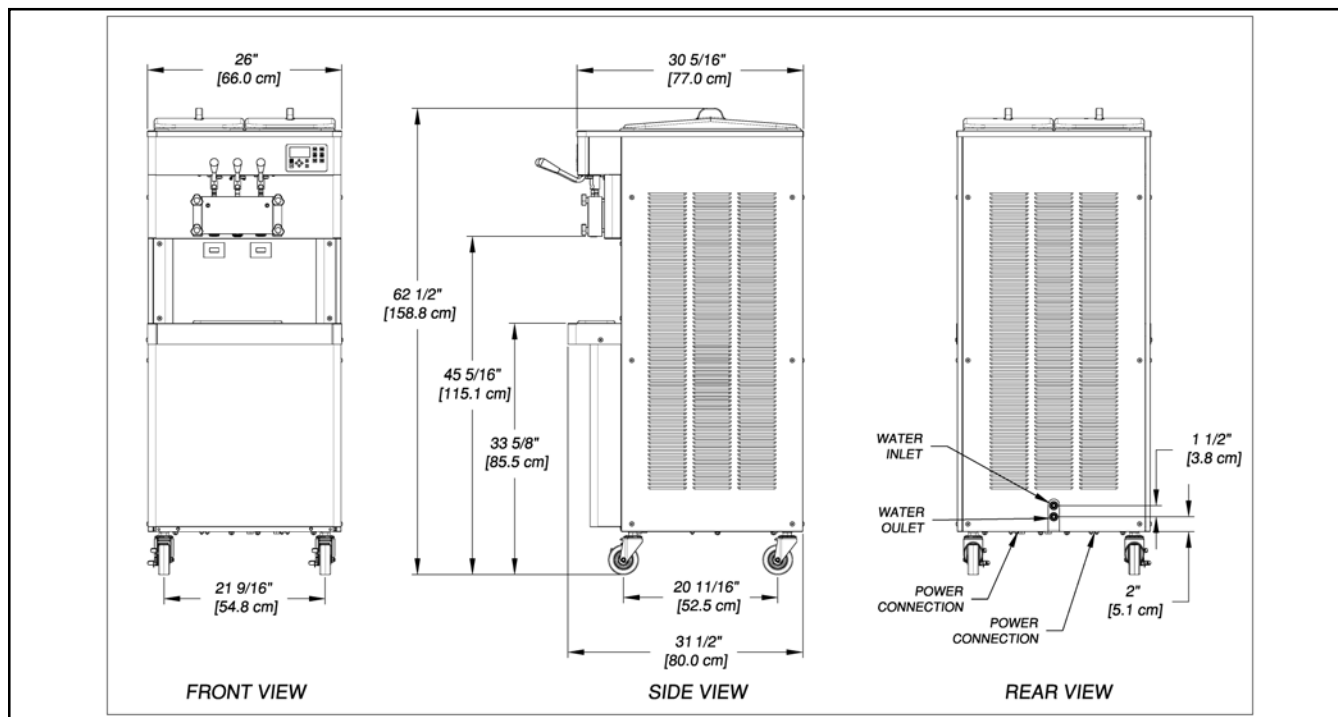


Figure 1-2 Specification

1.2 SPECIFICATIONS

| | O231 Water Cooled | | O231 Air Cooled | |
|--|---|--------------------|---|--------------------|
| Dimensions | Machine | with crate | Machine | with crate |
| width | 26" (66,0 cm) | 40-1/4" (102,2 cm) | 26" (66,0 cm) | 40-1/4" (102,2 cm) |
| height | 62-1/2" (158,8 cm) | 64-1/2" (163,8 cm) | 62-1/2" (158,8 cm) | 64-1/2" (163,8 cm) |
| depth | 31-1/2" (80,0 cm) | 33-1/4" (84,5 cm) | 31-1/2" (80,0 cm) | 33-1/4" (84,5 cm) |
| Weight | 640 lbs (290,2 kg) | 730 lbs (331,1 kg) | 640 lbs (290,2 kg) | 730 lbs (331,1 kg) |
| Electrical | 1 PH | 3 PH | 1 PH | 3 PH |
| circuit ampacity (per barrel) | 26A minimum | 19A minimum | 27A minimum | 20A minimum |
| overcurrent protection device (per barrel) | 40A maximum | 30A maximum | 40A maximum | 30A maximum |
| Compressor | Freezing Cylinders - Two 14,000 Btu/hr (R-404A) Storage - 1,300 Btu/hr Compressor (R-134a) | | | |
| Drive Motor | Two - 2 hp | | | |
| Cooling | Water cooled units require 3/8" N.P.T. water and drain fittings with 2 inlets and 2 outlets or 1/2" N.P.T. water and drain fittings with 1 inlet and 1 outlet | | Air cooled units require 3" (7,6 cm) air space at back and sides. | |
| Hopper Volume | Two - 6.5 gallon (24,7 liters) | | | |
| Freezing Cylinder Volume | Two - 1 gallon (4 quart), 3,79 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. Install the four casters. Turn the threaded end into the machine until no threads are showing. To level, turn out casters no more than 1/4" maximum, then tighten all jam nuts.
- C. The machine must be placed in a solid level position.

NOTE

Accurate leveling is necessary for correct drainage of freezing cylinder and to insure correct overrun.

- D. Machines with air cooled condensers require a minimum of 3" (7,5cm) of space on all sides and 10" (25cm) at the top for proper circulation. (Fig. 2-1)



Figure 2-1 Space and Ventilation Requirements

- E. Machines that have a water cooled condenser require 1/2" NPT supply and drain fittings.

2.4 INSTALLING PERMANENT WIRING

To install wiring follow the steps below:

- A. Refer to the nameplate on the side panel of the machine for specific electrical requirements. Make sure the power source in the building matches the nameplate requirements.
- B. Remove the back panel and the junction box cover located at the bottom of the machine.
- C. Install permanent wiring according to local code.

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.

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.

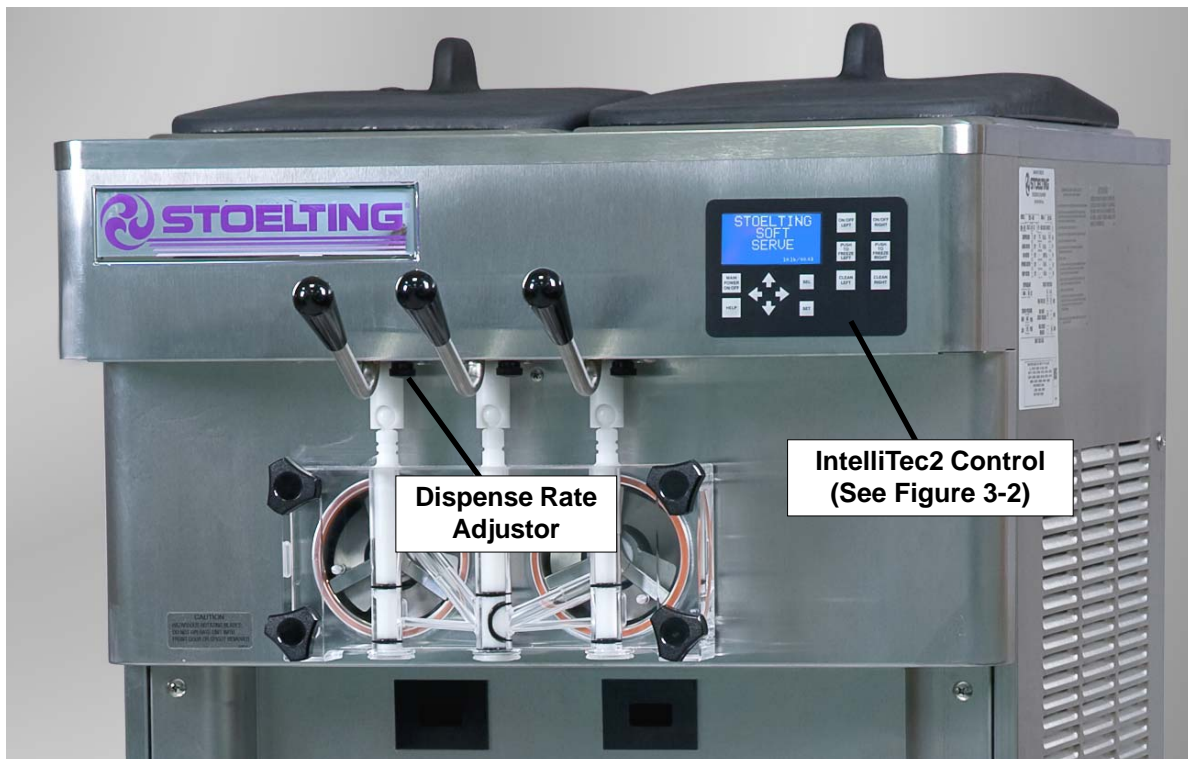


Figure 3-1 Machine Controls

A. INTELLITEC2 TOUCHPAD

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.

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 to select menu options. For details of the menu options, refer to Section 4.

Set Button (SET)

The SET button is used to save changes when modifying control settings. Refer to Section 4 for details.

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 to navigate through the control readings and settings. Section 2 contains details on all the 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.

3.3 IMPORTANT INFORMATION REGARDING CLEANING AND SANITIZING

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

The following information specifically covers issues for cleaning and sanitizing frozen dessert machines. This information is meant to supplement a comprehensive food safety program.

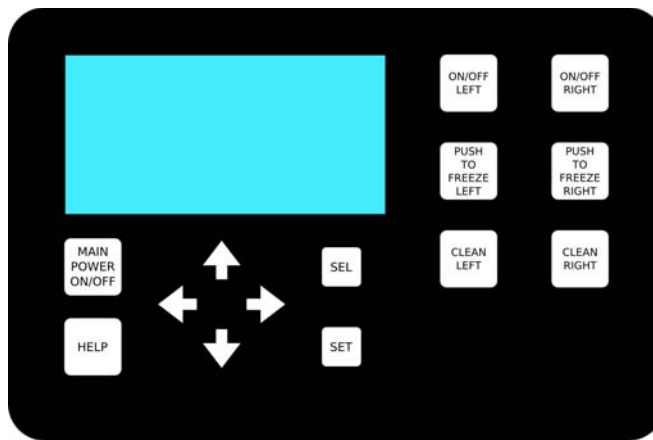


Figure 3-2 IntelliTec2 Control

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 buildup.

MILKSTONE – Is a white/gray film that forms on equipment and utensils that are exposed to 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.

NOTE

Using a SANITIZER 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 freezing cylinder 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 most 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. Individual parts are also soaked in a deliming solution for an extended period of time (more about delimers in Additional Information).
3. **SANITIZING** – After the machine has been cleaned and contains no milkstone, the machine is reassembled. Then a FDA-approved sanitizing solution is run through the machine to kill bacteria. The machine is then ready for food preparation.

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

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

ADDITIONAL INFORMATION

THE USE OF DELIMERS

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

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

With proper daily use of STERA-SHEEN or its 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 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.

Two main factors contribute to falling chlorine concentrations in a sanitizing solution.

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

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

3.4 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. 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. 3-4). Roll the o-ring out of the groove.



Figure 3-4 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. 3-5).
5. Unscrew the springs from the auger flights.



Figure 3-5 Rear Seal Assembly

3.5 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 detergent water by mixing 2 oz. of Palmolive detergent or equivalent in 2 gallons of 90° to 110°F (32° to 43°C) water. Place all parts in the detergent 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 90° to 110°F (32° to 43°C) detergent water and brushes provided (Refer to Figure 3-6).
- D. Clean the rear seal surfaces from the inside of the freezing cylinder with the 90° to 110°F (32° to 43°C) detergent water.

3.6 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.

3.7 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) detergent water and wipe dry.

Do not use highly abrasive materials, as they will mar the finish. A mild alkaline cleaner is recommended. Use a soft cloth or sponge to apply the cleaner. 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.
- C. Remove the drip tray by pulling from the front panel. Clean and replace the drip tray.

3.8 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.
- B. Lubricate the rear seal area on the auger shaft with a thin layer of sanitary lubricant. Install the rear seal o-ring. Lubricate the outside of the rear seal o-ring with sanitary lubricant.
- 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. 3-6).



Figure 3-6 Lubricate Rear Seal

- 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.
- 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.

3.9 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 sanitizing solution following the manufacturer's instructions.
- B. Install the mix inlet regulator into the hopper.
- C. Pour the sanitizing solution 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. After five minutes, open the spigot to expel sanitizing solution. Drain all of the solution from the machine.
- I. 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.

3.10 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.

NOTE

If the product consistency needs to be adjusted, use the Technician passcode and go to the Basic Settings menu. Adjust the CutOut Consistency higher to increase the consistency or lower to decrease the consistency. Make adjustments in increments of 5 for best results.

- H. 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 adjustor is located under the header panel, to the immediate right of the spigot handle. Turning the knob counterclockwise will decrease the dispense rate.
- I. Do not operate the machine when the MIX LOW message is displayed. Refill the mix container immediately.

NOTE

The machine has a standby and sleep mode. After a preset number of freezing cycles, it will enter the standby mode (followed by 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.

3.11 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 in this section be made by a qualified person.

4.1 ACCESSING CONTROL READINGS AND SETTINGS

The readings and settings on the IntelliTec2 control are accessed by using a keypad sequence. Press the left arrow button from the Current Status screen to access the passcode input screen.

The specific readings and parameters available depend on the keypad sequence entered. The lowest level is Associate and has limited access. The Manager level has access to the Associate level options as well as performance, error and statistics screens. The Technician level has full access to the control including the Associate and Manager level options.

Following are the keypad sequences for the three levels available.

- Associate** Press the right arrow then the SEL button.
- Manager** Press the right arrow, up arrow then the SEL button
- Technician** Press the right arrow, SET, then the SEL button

4.2 NAVIGATION AND MODIFYING SETTINGS

Navigating through the IntelliTec2 screen is done with the arrow keys on the touchpad. After positioning the cursor on a desired menu, press the SEL button to select that option. If the option is a setting, press the SET button to change the value. Use the arrow keys to change the value. Press the SET button to save the changes.

The SEL button changes the cylinder selection on screens that show the cylinder.

Pressing the left arrow button from any menu will go back one screen. Pressing the left arrow button at the Main Menu screen goes to the Current Status screen.

4.3 USER INTERFACE SCREENS

A. Current Status

```
Current Status            01/01/01
                             12:34:56
Left                      Serve
Right                     Sleep 1
Storage Left              On
Storage Right             On
_ Service Contact Information
```

The Current Status screen gives an overview of the machine's operation. It shows the mode of the freezing cylinders and the storage refrigeration. If there is an error, the error text description replaces the status information.

The Service Contact Information screen is accessed from the Current Status screen. Move the cursor to the Service Contact Information option and press the SEL button.

B. Service Contact Information

```
Service Contact Information

Name
    Stoelting
Telephone Number
    920 - 894 - 2293

Version 00.00/00.00
```

The Service Contact Information screen provides the name and telephone number for service. The default is Stoelting Technical Customer Service. The Manager level can change the default by selecting the Modify Contact Information option.

C. Main Menu

```
Main Menu
- Technician Level Access
_ Fine Consistency Adjustment
_ Performance
_ Modify Settings
_ Utilities
_ Errors and Statistics
_ Start Up
```

The Main Menu screen provides access to all the readings and settings on the IntelliTec2 control. To access the Main Menu, use one of the keypad sequences from Section 4.1. The example above shows the options available when entering the Technician keypad sequence. The Associate will only see the Fine Consistency Adjustment, Start Up and Exit options. The Manager will see the Associate options as well as the Performance, Modify Settings and Errors and Statistics options.

D. Fine Consistency Adjustment

| | |
|---|-------|
| Fine Consistency Adjustment Cylinder | Right |
| Changing the fine consistency change the firmness of the product. | |
| New Consistency Limit | 99 |
| _ Fine Consistency | 000 |

Product consistency can be adjusted by the Associate level by using the Fine Consistency Adjustment screen. Increasing the Fine Consistency number increases the product consistency (firmer product).

The New Consistency Limit shows the Fine Consistency adjustment added to the Consistency number.

4.4 PERFORMANCE SCREENS

A. Performance (1 of 2)

| | |
|----------------------------------|----------|
| Performance (1 of 2) Cylinder | Right |
| Consistency | 000.00 |
| Cylinder Temp | -000.0°F |
| Motor Amps | 00.000A |
| Input Voltage | 000.0V |

The Performance screens display the current status of the machine. These screens are available to the Manager and Technician levels. Press the right arrow to go to the second screen.

Cylinder

The performance information displayed is for the selected cylinder. To change cylinders press the SEL button.

Consistency

This is the current consistency number of the selected cylinder. The consistency number represents how thick or thin the product in the freezing cylinder is. A higher number means the product is thicker. Go to the Modify Operating Settings menu to change the operating setting.

Cylinder Temperature

This is the current suction line temperature of the selected cylinder.

Motor Amps

This is the current motor amps of the selected cylinder.

Input Voltage

This is the current voltage of the selected cylinder.

B. Performance (2 of 2)

| | |
|----------------------------------|----------|
| Performance (2 of 2) Cylinder | Right |
| Ambient Temp | -000.0°F |
| Storage Temp | -000.0°F |
| Number of Cycles | 000 |
| Error Status | No Error |

The Performance screens display the current status of the machine. This screen shows the current ambient temperature, storage temperature and number of cycles since the Push to Freeze button was pressed or the spigot was pulled. Press the left arrow to go to the first screen.

4.5 SETTINGS SCREENS

A. Modify Operating Settings

| |
|---------------------------|
| Modify Operating Settings |
| _ Basic Settings |
| _ Advanced Settings |
| _ Storage Settings |
| _ User Preferences |
| _ Time and Date |

This menu provides access to view and change the different operating settings on the machine. The Manager level has access to the User Preferences and Time and Date settings. The Technician level has access to the Manager level and to all other settings as shown.

B. Basic Settings

| | |
|----------------------------|----------|
| Basic Settings Cylinder | Right |
| _ CutOut Consistency | 000 |
| _ CutIn Temp | 00.0°F |
| _ Cycles Until Sleep | 000 |
| _ Stir On | 0000 sec |
| _ Stir Off | 0000 sec |

This menu contains settings for the CutIn and CutOut, cycles in serve mode and auger cycle times. This screen is available to the Technician level.

Cylinder can be changed by pressing the SEL button.

CutOut Consistency is a number that represents how thick or thin the product in the freezing cylinder is. Increasing the setting creates a thicker product. Decreasing the setting makes a thinner product.

CutIn Temperature is the suction line temperature in the cylinder when a freezing cycle will start.

Cycles Until Sleep is the number of freezing cycles before the freezing cylinder goes into Sleep Mode.

Stir On is the amount of time that the auger rotates during the stir cycle. Stir cycles occur in Serve Mode, Standby Mode and Sleep 2 Mode.

Stir Off is the amount of time between stir cycles. Stir cycles occur in Serve Mode, Standby Mode and Sleep 2 Mode.

C. Advanced Settings (1 of 2)

| Advanced Settings (1 of 2) | |
|----------------------------|----------|
| Cylinder | Right |
| _ Standby On Time | 0000 sec |
| _ Standby Off Time | 0000 sec |
| _ Standby Time | 000 min |
| _ Sleep 1 Drive On | 0000 sec |
| _ Sleep 1 Drive Off | 0000 sec |

The Advanced Settings menu contains standby and sleep mode adjustments and is available to the Technician level. Press the right arrow to go to the second screen.

Cylinder can be changed by pressing the SEL button.

The **Standby On Time** setting determines the length of the freezing cycle in Standby Mode.

The **Standby Off Time** setting determines the length between freezing cycles in Standby Mode.

The **Standby Time** setting determines the total amount of time in Standby Mode.

Sleep 1 Drive On is the amount of time that the auger rotates during the stir cycle in Sleep 1 Mode.

Sleep 1 Drive Off is the amount of time between stir cycles in Sleep 1 Mode.

D. Advanced Settings (2 of 2)

| Advanced Settings (2 of 2) | |
|----------------------------|----------|
| Cylinder | Right |
| _ Sleep 2 CutIn | -00.0°F |
| _ Sleep 2 CutOut | -00.0°F |
| _ Default Off Time | 0000 sec |

The Advanced Settings menu contains standby and sleep mode adjustments and is available to the Technician level. Press the left arrow to go to the first screen.

Sleep 2 CutIn is the temperature that a freezing cycle starts in Sleep 2 Mode.

Sleep 2 CutOut is the temperature that a freezing cycle stops in Sleep 2 Mode.

Default Off Time is the maximum time between freezing cycles during Serve Mode.

E. Storage Settings (1 of 2)

| Storage Settings (1 of 2) | |
|---------------------------|----------|
| _ Storage CutIn | -00.0°F |
| _ Storage CutOut | -00.0°F |
| _ Storage Offset | 00°F |
| _ Storage Off | 00 min |
| _ Storage On | 0000 sec |

This Storage Settings menu contains storage refrigeration parameters and is available to the Technician level. Press the right arrow to go to the second screen.

Storage CutIn is the temperature at which the storage refrigeration cycle starts. This is how warm it will get before starting a storage freezing cycle.

Storage CutOut is the temperature at which the storage refrigeration cycle stops. This is how low the temperature will get before ending the storage freezing cycle.

The **Storage Offset** value is added to the storage temperature reading to determine if storage refrigeration starts with a freezing cycle. This setting helps prevent short cycling and saves energy.

The **Storage Off** setting determines the time between storage refrigeration cycles during a sensor failure.

The **Storage On** setting determines the length of a storage refrigeration cycle during a sensor failure.

F. Storage Settings (2 of 2)

| Storage Settings (2 of 2) | |
|---------------------------|---------|
| _ Storage Max On | 00 min |
| _ Storage Recovery | 0 min |
| _ Storage Too Warm | 00.0°F |
| _ Storage Too Warm | 000 min |
| _ Clean Alarm Period | 0 day |

This Storage Settings menu contains storage refrigeration parameters and is available to the Technician level. Press the left arrow to go to the first screen.

The **Storage Max On** setting is the maximum time that a storage refrigeration cycle will run.

The **Storage Recovery** setting is the minimum time between storage refrigeration cycles if the Storage Max On time ends the cycle.

The **Storage Too Warm** values are the temperature and amount of time. When the temperature is above the set temperature for the set period, the Storage too Warm message will be displayed.

The **Clean Alarm Period** is the amount of days the machine will operate before requiring a cleaning. If this setting is reached, the machine will a clean message. Press the Clean button to clear the message. The default setting is 10 days and can be set up to 20 days.

The alarm will reset if one of the following parameters are met.

- The cylinder is in clean mode for a minimum period.
- The suction line temperature has risen to a minimum temperature
- The door is removed from the cylinder.

G. User Preferences

| User Preferences | |
|-------------------------------|----------------|
| _ Language | English |
| _ Temp Units | Fahrenheit(°F) |
| _ Service Contact Information | |
| _ Touchpad Lockup | |

The User Preferences menu contains language options, temperature units, service contact information and touchpad lockup. The screen is available to the Manager and Technician levels.

The **Language** setting changes the language displayed. English is the only language currently available.

The **Temperature Units** setting changes the units displayed to Fahrenheit or Celsius.

The **Service Contact Information** option changes the service contact details.

The **Touchpad Lockup** option is used to lock and unlock the keypad for self serve locations.

H. Time and Date

| Time and Date | |
|------------------------|-------------|
| Time | 00:00:00 AM |
| Date | 00/00/00 |
| Daylight Savings | Off |
| Clock Type | 12 HR |
| _ Modify Time and Date | |

The Time and Date menu shows the time and date settings. The Manager and Technician levels can change the time and date by using the Modify Time and Date option.

4.6 UTILITIES SCREENS

| Utilities | |
|--------------------------------|--|
| _ Testing and Manual Operation | |
| _ Restore Factory Defaults | |
| _ Adjust LCD Contrast | |
| _ Clear Error Log | |
| _ Clear Statistics | |

The Utilities menu gives access for testing and for manual operations, restoring factory defaults, adjusting the LCD contrast and clearing error logs or statistics.. The Utilities menu is only available to the Technician level.

A. Testing and Manual Operation

| Testing and Manual Operation | |
|------------------------------|--|
| Select below for testing | |
| _ Left Output Control | |
| _ Right Output Control | |
| _ Left / Right Monitoring | |

The Testing and Manual Operation menu provides access for individual components to be energized to assist with troubleshooting. There are also test monitoring screens that provide details of the machine status during testing. Any energized component will deenergize after leaving the Testing and Manual Operations menu.

Selecting Left or Right Output Control goes to a screen that allows motors, solenoids or the compressor to be individually activated. Activate by moving the cursor to the desired component and press the SET button.

| | |
|-------------------------|------|
| Testing and Manual Ops, | Left |
| _ Drive Motor | Off |
| _ Fan Motor | Off |
| _ Liquid Solenoid | Off |
| _ Compressor | Off |
| _ Refer Solenoid | Off |
| _ Aux Solenoid | Off |
| _ Pump Motor | Off |

Selecting Left/Right Monitoring goes to screens that show current statistics of the selected cylinder.

| | |
|--------------------------|--------|
| Test Monitoring (1 of 3) | |
| Cylinder | Right |
| Motor Voltage | 0.0 V |
| Motor Current | 0.000 |
| I/V Phase Angle | 0.0° |
| Frequency | 0.0 Hz |
| Consistency | 0.0 |

| | |
|--------------------------|---------|
| Test Monitoring (2 of 3) | |
| Cylinder | Right |
| Ambient Temp | +00.0°F |
| Cylinder Temp | +00.0°F |
| Hopper Temp | +00.0°F |
| Pressure Sensor | |
| Pressure Sw | On |

| | |
|--------------------------|--------|
| Test Monitoring (3 of 3) | |
| Cylinder | Right |
| Cabinet Door | Closed |
| Spigot | Closed |
| Door | Closed |
| Hi Pressure | No |
| Liquid Level | Low |

The Test Monitoring screens can be used for immediate feedback when troubleshooting. For example the spigot switch can be tested by opening the spigot and observing if the status text changes from "Closed" to "Open".

B. Restore Factory Settings

| |
|--|
| Restore Factory Settings |
| This will reset all machine settings to the original factory configurations. Are you sure you want to do that? |
| _ Yes |
| _ No |

The Restore Factory Settings screen will revert all settings to their original values.

C. Adjust LCD Contrast

| |
|----------------------------|
| Adjust LCD Contrast |
| 0123456789 |
| ABCDEFGHIJKLMNPOQRSTUVWXYZ |
| Press ▲ ▼ to change |

The Adjust LCD Contrast screen adjusts the contrast between the background lighting and the text on the screen.

D. Clear Error Log

| |
|---|
| Clear Error Log |
| This will clear the error log. Are you sure you want to do that |
| _ No |
| _ Yes |

The Clear Error Log screen will clear all the errors in memory.

E. Clear Statistics

| |
|--|
| Clear Statistics Log |
| This will clear the statistics log. Are you sure you want to do that |
| _ No |
| _ Yes |

The Clear Statistics screen will clear all the statistics in memory.

F. Export

```
Export

Connect a USB flash drive to
the port on the control board
move the cursor to the export
data option and press SEL

_ Export Data
```

The Export screen allows you to export all the data and statistics stored in the control. Connect a USB flash drive to the display panel module and select the export option.

4.7 ERRORS & STATISTICS SCREENS

The Errors & Statistics menu gives the Technician access to machine statistics and error history.

A. Machine Statistics (1 of 10)

```
Machine Statistics (1 of 10)
Cylinder                               Right
Time in Serve Mode                     0000 hr
    Last 24hrs                          0000 min
    Last 7days                          0000 hr
Time in Off Mode                         0000 hr
    Last 24hrs                           0000 min
    Last 7days                           0000 hr
```

The Machine Statistics screen 1 of 10 shows the time in serve mode and time in sleep mode. The screen shows a running total, the total for the previous day and the total for the previous week for both statistics.

B. Machine Statistics (2 of 10)

```
Machine Statistics (2 of 10)
Cylinder                               Right

Total Low Mix Run Time                 0000 hr
    Last 24hrs                          0000 min
    Last 7days                           0000 hr
```

The Machine Statistics screen 2 of 10 shows the low mix running time. This is the total time, including serve mode and sleep mode, that the freezing cylinder was operating with a low mix error. The screen shows a running total, the total for the previous day and the total for the previous week.

C. Machine Statistics (3 of 10)

```
Machine Statistics (3 of 10)
Cylinder                               Right

Last Clean Cycle                       00/00/00
                                         00:00:00 AM

Last Clean Total Time                   0000 min
```

The Machine Statistics screen 3 of 10 provides the time and date that the freezing cylinder was last cleaned. This value is recorded when the Clean button is pressed on the touchpad. The screen also shows how long the most recent clean mode lasted.

D. Machine Statistics (4 of 10)

```
Machine Statistics (4 of 10)
Cylinder                               Right

Spigot Open Total                       0000 min
    Last 24hrs                           0000 min
    Last 7days                           0000 min
Spigot Total Cycles                     0000
Average Spigot Open                     0000 sec
```

The Machine Statistics screen 4 of 10 shows the total time that the spigot has been open during serve mode. The screen shows a running total, the total for the previous day and the total for the previous week. The screen also shows the total times that the spigot has been opened.

E. Machine Statistics (5 of 10)

```
Machine Statistics (5 of 10)
Cylinder                               Right

Estimated Serve Amount                 0000 gal
    Last 24hrs                           0000 gal
    Last 7days                           0000 gal
Last Serve Reset                       00/00/00
                                         00:00:00 AM

_ Reset Serve Amount
```

The Machine Statistics screen 5 of 10 gives the estimated serve amount of the freezing cylinder based on the time the spigot is open during serve mode. The estimation is also calculated for the previous day and the previous week. The screen gives an option to reset the serve amount and shows when the last reset was done.

F. Machine Statistics (6 of 10)

| | |
|------------------------------|----------|
| Machine Statistics (6 of 10) | |
| Cylinder | Right |
| Total Compressor Run Time | 0000 hr |
| Total Compressor Cycles | 0000 |
| | |
| Last Compressor Reset | 00/00/00 |
| | 00:00:00 |
| _ Reset Compressor Time | |

The Machine Statistics screen 6 of 10 shows the total run time for the compressor and counts the total cycles. There is an option to reset the timer and the screen shows when the last reset was done. The reset should be used if the compressor is changed.

G. Machine Statistics (7 of 10)

| | |
|------------------------------|-------------|
| Machine Statistics (7 of 10) | |
| Cylinder | Right |
| Total Motor Run Time | 0000 hr |
| Total Motor Cycles | 0000 |
| | |
| Last Motor Reset | 00/00/00 |
| | 00:00:00 AM |
| _ Reset Motor Run Time | |

The Machine Statistics screen 7 of 10 shows the total run time for the drive motor and counts the total cycles. There is an option to reset the timer and the screen shows when the last reset was done. The reset should be used if the drive motor is changed.

H. Machine Statistics (8 of 10)

| | |
|------------------------------|-------------|
| Machine Statistics (8 of 10) | |
| Cylinder | Right |
| Total Pump Run Time | 0000 hr |
| Total Pump Cycles | 0000 |
| | |
| Last Pump Reset | 00/00/00 |
| | 00:00:00 AM |
| _ Reset Pump Run Time | |

The Machine Statistics screen 8 of 10 shows the total run time for the pump and counts the total cycles. There is an option to reset the timer and the screen shows when the last reset was done. The reset should be used if the pump is changed.

I. Machine Statistics (9 of 10)

| | |
|------------------------------|-------------|
| Machine Statistics (9 of 10) | |
| Cylinder | Right |
| | |
| Current Hose Usage | 0000 hr |
| | |
| Last Hose Reposition | 00/00/00 |
| | 00:00:00 AM |
| _ Reset Hose Service Time | |

The Machine Statistics screen 9 of 10 shows the amount of time the pump hose has been in use and when the last reposition was completed. There is also an option to reset the hose timer.

NOTE

The hose timer must be reset each time the hose is repositioned or replaced to keep an accurate record of the hose service time.

J. Machine Statistics (10 of 10)

| | |
|-------------------------------|----------|
| Machine Statistics (10 of 10) | |
| | |
| Last Unit Power Up | 00/00/00 |
| | 00:00:00 |
| | |
| Avg Power KWH/Day | 0 Watts |

The Machine Statistics screen 10 of 10 shows when the machine was last powered on. The screen also gives an average power consumption per day.

K. Error History

| | |
|---------------------------|----------------------|
| Error History 25 of 25 | |
| Type | Cylinder Sensor |
| Date | 00/00/00 00:00:00 AM |
| Cylinder | Right |
| _ Status At Time of Error | |
| _ Help | |

The Error History screen shows the last error that occurred. The screen shows the type of error, the time and date and the cylinder that had the error. Up to 25 errors are stored. Press the up or down arrow to scroll through the errors. Select the Status at Time of Error option to view data for the time the error occurred. The Help option explains the error and provides quick troubleshooting tips.

L. Status at Time of Error

| | |
|-------------------------|------------|
| Status at Time of Error | |
| Operating Mode | Off |
| Mix Levels | Full Level |
| Consistency | 000.00 |
| Input Voltage | 000.0V |
| Motor Amps | 00.000A |
| Ambient Temp | -000.0°F |
| Cylinder Temp | -000.0°F |

The Status at Time of Error screen gives data for the time the error occurred.

4.8 UPDATING FIRMWARE

Updating the firmware on the IntelliTec2 is simple. Any USB flash drive will work. Download the .rom file onto the top level of the USB drive (don't put the file in a folder) and follow the instructions below.

- Unplug the machine from electrical power.
- Remove the header panel and locate the USB connector on the display module.
- Connect the USB flash drive to the display module.
- Connect power to the machine.
- The display should say "Restoring Factory Defaults" in a large font and a bar will be shown at the bottom that fills up as the process nears completion.

NOTE

If the display does not show the "Restoring Factory Defaults" text, make sure the .rom file is in the top level of the USB flash drive. The .rom file cannot be in any folders within the flash drive.

4.9 DRIVE BELT TENSION ADJUSTMENT

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

- Remove the back panel.
- Use a Burroughs Belt Tension Gauge to set the tension for the drive belt. Set the belt tension to 45-55 lbs.
- If an adjustment is necessary, loosen the four motor plate retaining nuts, adjust belt tension then retighten the four nuts.
- 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.

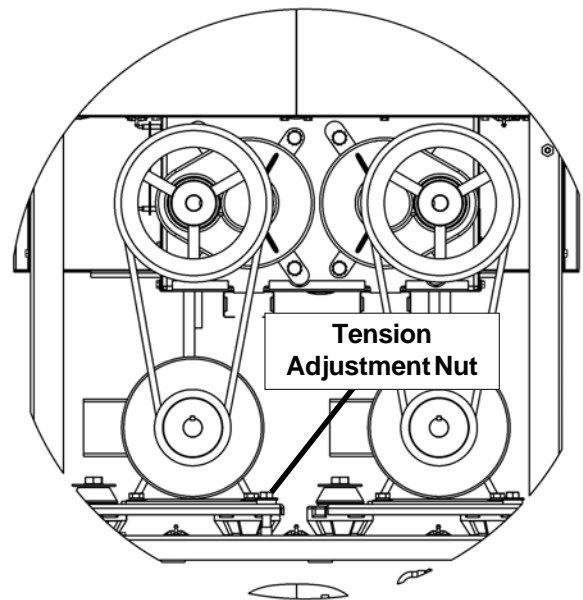


Figure 4-1 Belt Tension Adjustment

4.10 CONDENSER CLEANING

The O231 has two condensers. An air-cooled or water-cooled condenser and a condensing unit for the hopper.

The air-cooled condenser (and hopper 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 at the back 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 and hopper condenser require 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 CO₂ 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.

4.11 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.

4.12 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 |

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. Follow the instructions in Section 3 to reduce the product consistency by a few levels. 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 and top 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 (R10) 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.

5.3 TROUBLESHOOTING - MACHINE

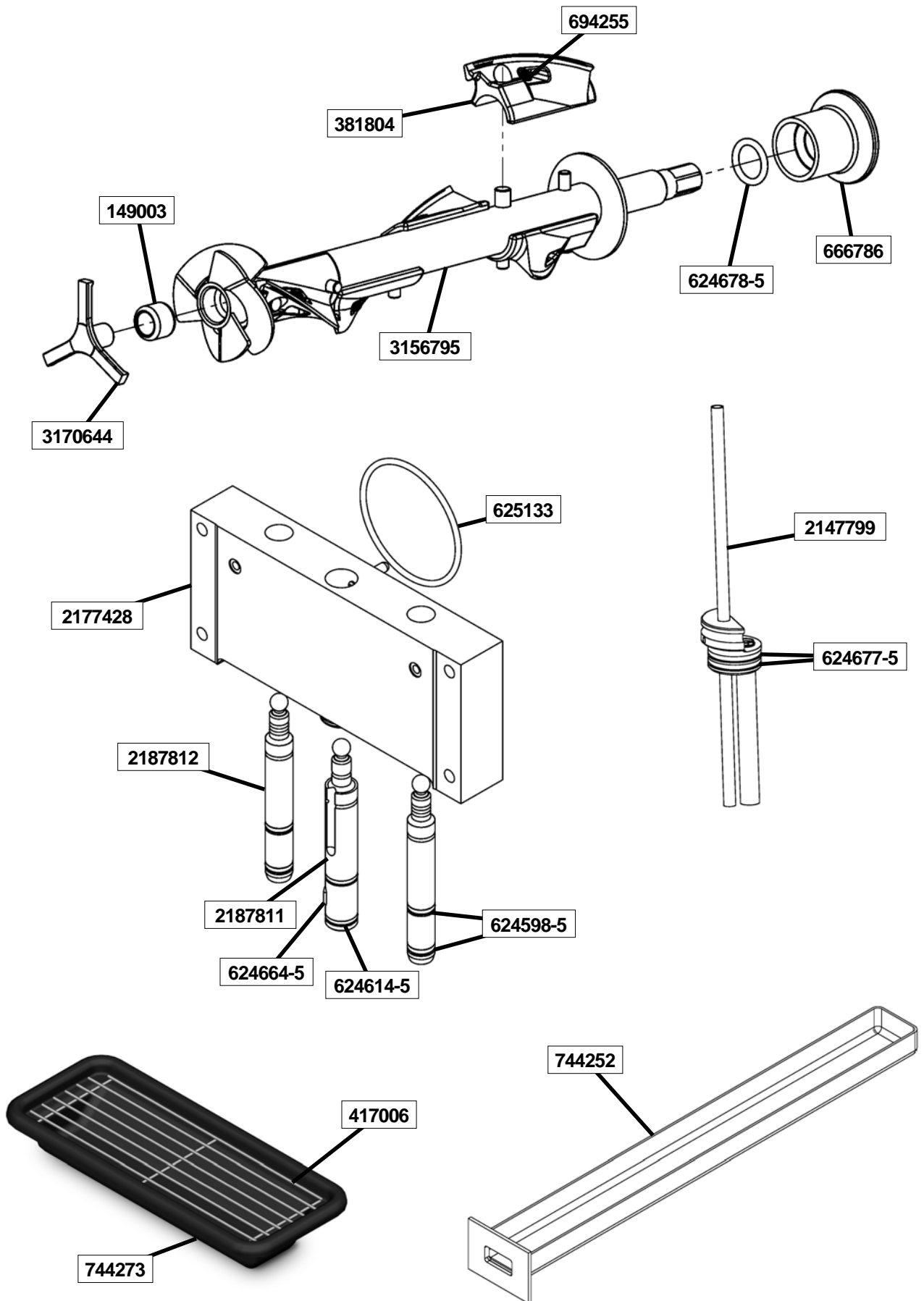
| PROBLEM | POSSIBLE CAUSE | REMEDY |
|--|--|--|
| Machine does not run. | <ol style="list-style-type: none"> 1 Power to machine is off. 2 Freeze-up (auger will not turn). 3 Front door not in place. | <ol style="list-style-type: none"> 1 Supply power to machine. 2 Turn Clean/Off/On switch Off for 15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

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 |
| 236059 | Card - Cleaning Instruction | 1 |
| 324103 | Decal - Caution Rotating Shaft | 1 |
| 324105 | Decal - Caution Electrical Shock | 1 |
| 324106 | Decal - Caution Electrical Wiring Materials | 1 |
| 324107 | Decal - Caution Hazardous Moving Parts | 1 |
| 324125 | Decal - Danger Electric Shock Hazard | 1 |
| 324141 | Decal - Caution Rotating Blades | 1 |
| 324200 | Decal - High Pressure Cut-Out | 1 |
| 324208 | Decal - Attention Refrigerant Leak Check | 1 |
| 324509 | Decal - Cleaning Instructions | 1 |
| 324548 | Decal - Adequate Ventilation 6" | 1 |
| 324566 | Decal - Wired According To | 1 |
| 324594 | Decal - Attention Heat Sensitive | 4 |
| 324686 | Decal - Danger Automatic Start | 1 |
| 324728 | Decal - Contactor Identification | 1 |
| 324803 | Decal - Domed Stoelting Logo (Large) (Header Panel) | 1 |
| 324888 | Decal - Fan Motor Reset | 1 |
| 324896 | Decal - Contactor Identification | 1 |
| 324901 | Decal - Transformer Switch | 1 |
| 368448 | Filter - Air (Condenser) | 1 |
| 508048 | Lubricant - Spline (2 oz Squeeze Tube) | 1 |
| 508135 | Petrol Gel - 4 oz Tube | 1 |

6.2 AUGER SHAFT AND FACEPLATE PARTS



6.2 AUGER SHAFT AND FACEPLATE PARTS (CONTINUED)

| Part | Description | Quantity |
|-------------|---|-----------------|
| 149003 | Bushing - Front Auger Support | 2 |
| 232734 | Cap - Rosette - Teardrop | 3 |
| 314477 | Cover - Hopper | 2 |
| 381804 | Auger Flight | 10 |
| 417006 | Grid - Drip Tray (Metal) | 1 |
| 482019 | Knob - Front Door (Black) | 4 |
| 624598-5 | O-Ring - Outside Spigot - Black (5 Pack) | 4 |
| 624614-5 | O-Ring - Top & Bottom Center Spigot - Black (5 Pack) | 2 |
| 624664-5 | O-Ring - Middle Center Spigot - Black (5 Pack) | 1 |
| 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 | 5 |
| 744273 | Tray - Drip | 1 |
| 744252 | Tray - Drain (Black Plastic) | 1 |
| 2147799 | 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" | - |
| 2177428 | Door w/Pins | 1 |
| 2187811 | Spigot Body - Center | 1 |
| 2187812 | Spigot Body - Outer | 2 |
| 3170644 | Support - Front Auger | 2 |
| 3156795 | Auger Shaft | 2 |



**DOMESTIC WARRANTY
(Including Mexico)
SOFT SERVE / SHAKE EQUIPMENT**

1. **Scope:**
PW Stoelting, L.L.C. (“Stoelting”) warrants to the first user (the “Buyer”) that the freezing cylinders, hoppers, compressors, drive motors, speed reducers, and augers of Stoelting soft serve / shake equipment 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 Start-Up and Training Checklist 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 flights, 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.