



Model SU412
OPERATORS MANUAL

Manual No. 513625

Rev.3

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.

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SECTION 1 DESCRIPTION AND SPECIFICATIONS

1.1 DESCRIPTION

The SU412 is an ultra high capacity floor model shake machine. It is equipped with fully automatic controls to provide a uniform product. This manual is designed to assist qualified service personnel and operators with installation, operation and maintenance of the SU412 machine.



Figure 1-1 Model SU412 Machine

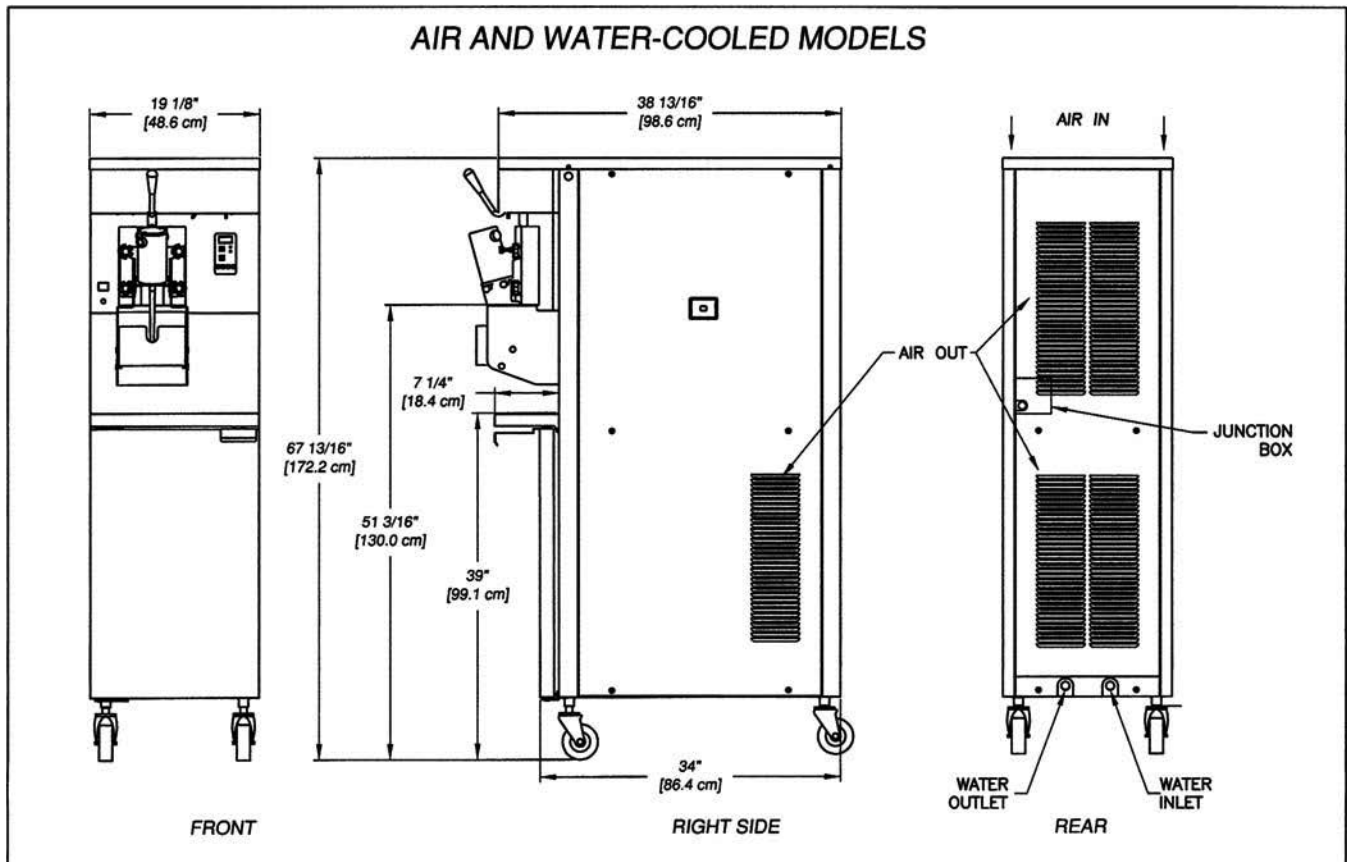


Figure 1-2 Machine Dimensions

1.2 SPECIFICATIONS

Model SU412													
Dimensions	<table style="width: 100%; border: none;"> <tr> <td style="width: 30%;"></td> <td style="text-align: center;">Machine</td> <td style="text-align: center;">with crate</td> </tr> <tr> <td style="padding-left: 20px;">width</td> <td style="text-align: center;">19-1/8" (48,6 cm)</td> <td style="text-align: center;">27" (68,6 cm)</td> </tr> <tr> <td style="padding-left: 20px;">height</td> <td style="text-align: center;">67" (170,2 cm)</td> <td style="text-align: center;">78" (198,1 cm)</td> </tr> <tr> <td style="padding-left: 20px;">depth</td> <td style="text-align: center;">38-3/4" (98,4 cm)</td> <td style="text-align: center;">48" (121,9 cm)</td> </tr> </table>		Machine	with crate	width	19-1/8" (48,6 cm)	27" (68,6 cm)	height	67" (170,2 cm)	78" (198,1 cm)	depth	38-3/4" (98,4 cm)	48" (121,9 cm)
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Weight	<table style="width: 100%; border: none;"> <tr> <td style="width: 30%;"></td> <td style="text-align: center;">450 lbs (204,1 kg)</td> <td style="text-align: center;">650 lbs (294,8 kg)</td> </tr> </table>		450 lbs (204,1 kg)	650 lbs (294,8 kg)									
	450 lbs (204,1 kg)	650 lbs (294,8 kg)											
Electrical	1 Phase, 208-240 VAC, 60Hz												
circuit ampacity	19A minimum												
overcurrent protection device	30A maximum												
Compressor	11,000 Btu/hr Scroll™ Compressor												
Drive Motor	3/4 hp												
Air Flow	Air cooled units require 3" (7,6 cm) air space on both sides, 6" back.												
Plumbing Fittings	Water cooled units require 1/2" N.P.T. water and drain fittings. Maximum water pressure of 130 psi. Minimum water flow rate of 3 GPM. Ideal EWT of 50°-70°F												
Hopper Volume	8 gallons (30,29 liters)												
Freezing Cylinder Volume	2.1 gallon (7,95 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, INC.
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 a 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.

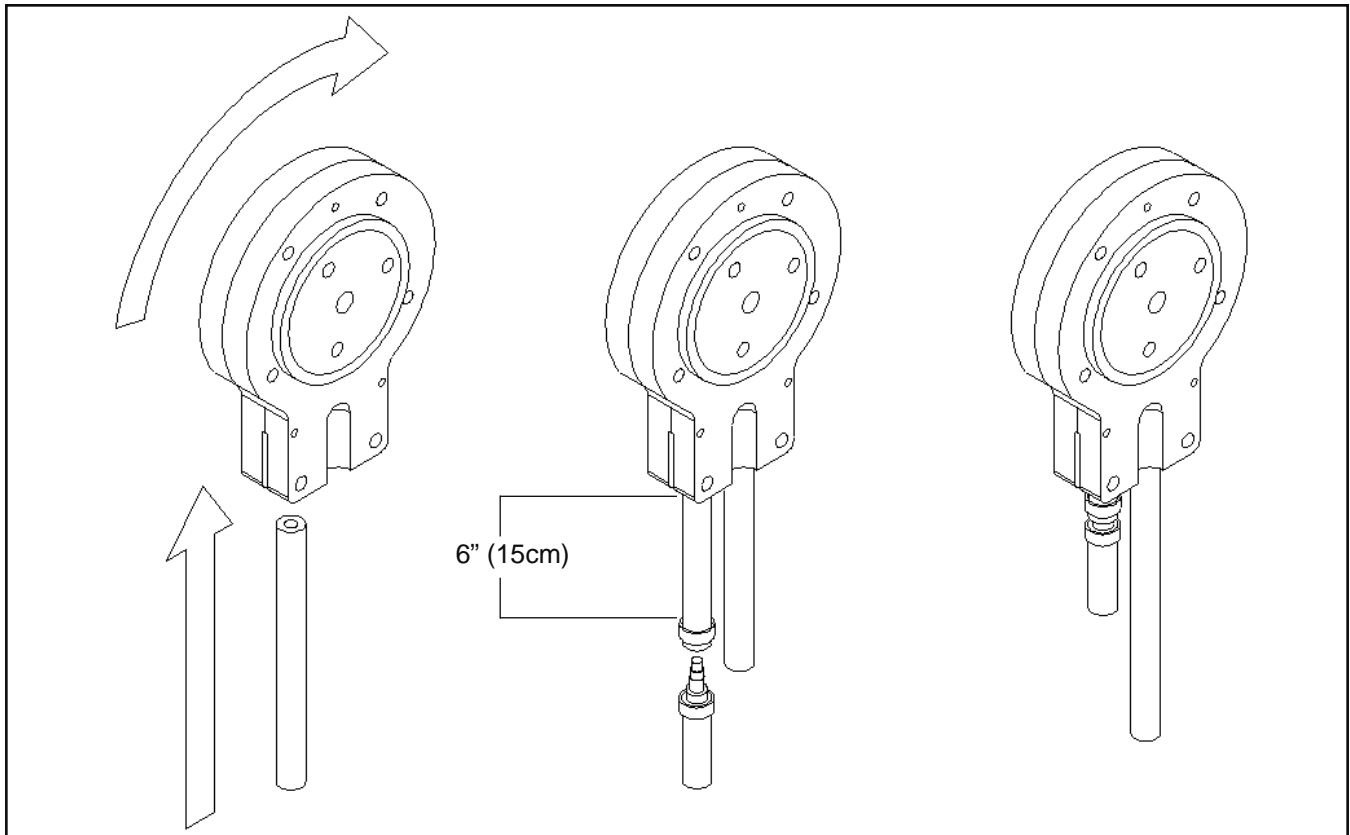


Figure 2-2 Mix Hose Installation

2.5 MIX PUMP

A. MIX PUMP HOSE INSTALLATION

Follow the steps below to install the mix pump hose in the cabinet part of the machine.

1. Turn the mix pump on. The switch is located at the top of the cabinet.
2. Feed one end of the mix pump hose into the entering or pickup hose side (left) of black cover (Fig 2-2).

NOTE

Feed the tube into the clamp so the natural curve of the tube is towards the outside of the black cover. This prevents the hose from looping around the black cover twice.

3. Gently push the hose into the black cover until it begins to feed.
4. Allow the hose to feed itself through the pump until about 6" (15cm) remains on the entering side.
5. Turn the pump off.
6. Connect the mix pump hose to the elbow fitting (located on the left side of the mix line manifold) using a small hose clamp. Be careful not to twist the mix hose.
7. Turn the pump on.

8. Allow the remaining 6" (15cm) of tubing to feed through pump until the hose adapter prevents further feeding.
9. Turn the pump off.

CAUTION

Risk of Product Damage

Air/Mix Tee must remain below the black cover clamp. If the Tee is above the pump, mix may drain into the air compressor resulting in pump damage.

10. Connect the free end of the mix pump hose to the 3-way Tee (Fig. 2-3). When all connections are complete, the 3-way Tee must be lower than the black pump housing.

B. MIX PICKUP HOSE INSTALLATION

The SU412 machine may be connected to the standard mix container or up to three prepacked mix bags. Follow the instructions below that match your configuration.

Standard Connection:

1. Connect a 2" (5cm) length of 3/8" (9,5mm) ID plastic food grade tubing to the mix pickup assembly. Secure with hose clamps. Place the assembly through the hole in the cover and install the retaining clip.

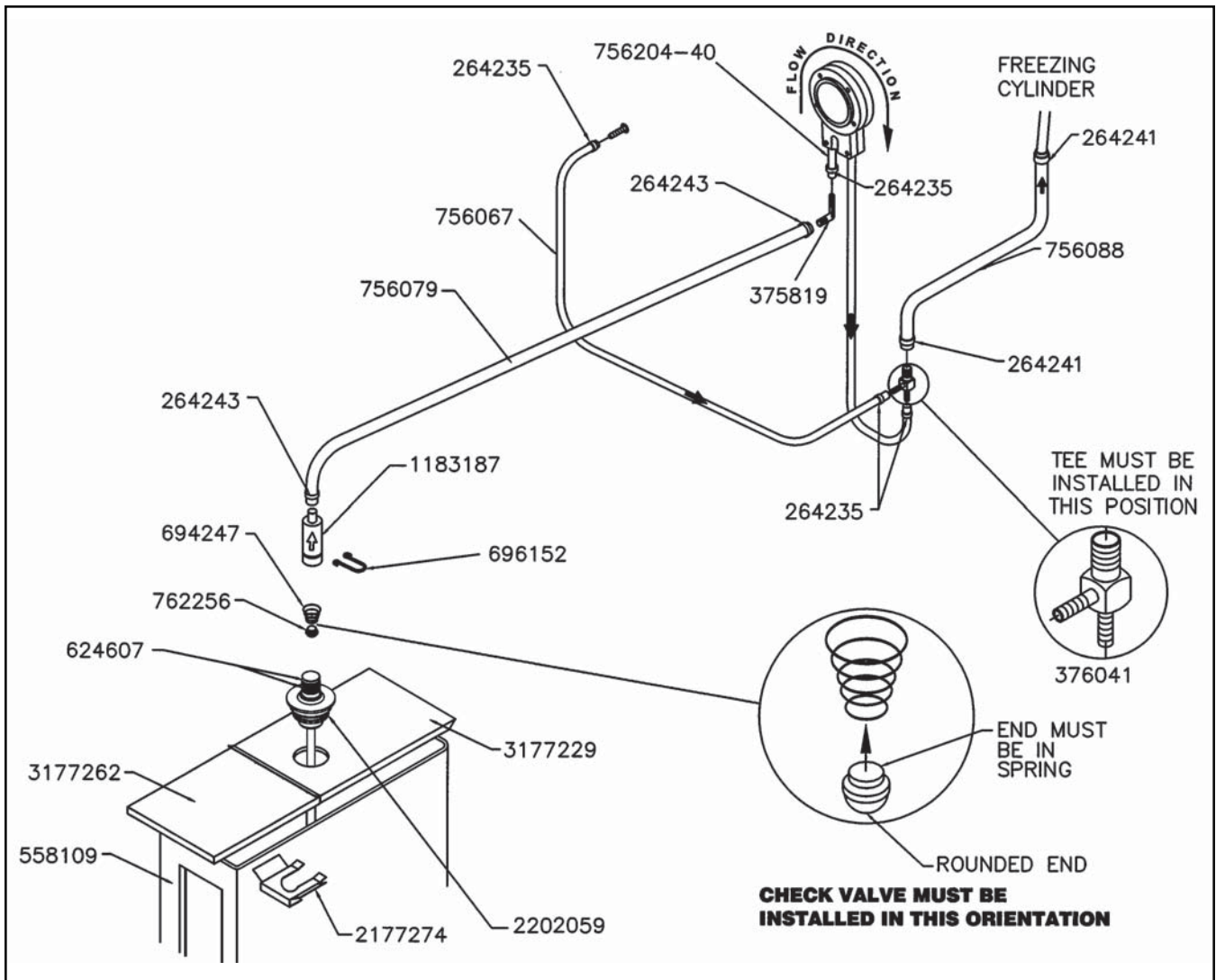


Figure 2-3 Mix Pump Connections for Standard Mix Container

2. Connect the free end of the tubing to the mix check valve. Observe the direction of the check valve flow arrow. Secure with a hose clamp. Connect a 24" (61cm) length of 3/8" (9,5mm) ID plastic food grade tubing to the free end of the check valve and secure with a hose clamp.
3. Connect the elbow fitting to the free end of the tubing. Connect the opposite end of the elbow to 1/4" ID tan tubing on the left side of the pump head. Secure with hose clamps (Fig. 2-3).
2. Slide the hose clip over free end of 3/8" (9,5mm) ID plastic food grade tubing. Attach the free end of the tubing to a manifold adapter. Secure with a large hose clamp or equivalent.
3. Push the manifold adapter with spring and valve into the left port (nearest the manifold outlet) of the mix inlet manifold and secure with a retaining clip. (Fig. 2-5).

When Using Bag Connection System (BCS) with Three Bags (optional kit):

The position of the three bags in the mix container is important. The bag that is connected nearest the outlet of the manifold drains last and should be placed at the back of the mix container. The mix low level indicator relies on proper bag placement.

1. Connect 3/8" (9,5mm) ID plastic food grade tubing to a bag adapter. Secure with hose clamps.

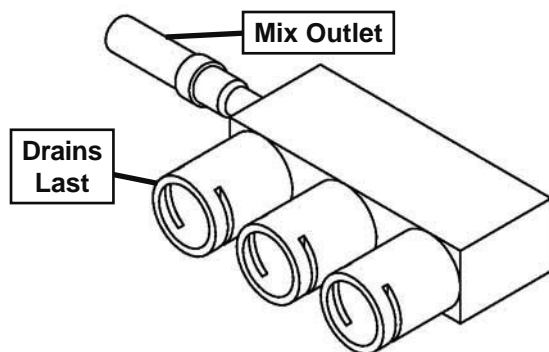


Figure 2-4 BCS Mix Inlet Manifold

4. Repeat steps 1 to 3 for the middle port and for the right port of the mix inlet manifold.
5. Place three mix bags into the mix container.
6. Connect the bag adapter attached to the left side of the manifold (closest to the mix outlet) to the mix bag in the back of the mix container.
7. Connect the bag adapter attached to the middle of the manifold to the mix bag in the middle of the mix container.
8. Connect the bag adapter attached to the right side of the manifold (farthest from the mix outlet) to the mix bag in the front of the mix container.

When Using Bag Connection System (BCS) with One or Two Bags (optional kit):

When connecting one or two bags, the manifold adapters must be installed closest to the manifold outlet and the manifold plug(s) must be placed farthest from the manifold outlet.

1. Connect 3/8" (9,5mm) ID plastic food grade tubing to a bag adapter. Secure with hose clamps.
2. Slide the hose clip over the free end of the tubing. Attach the free end of the tubing to a manifold adapter. Secure with a large hose clamp.
3. Push the manifold adapter with spring and valve into the left port (nearest the manifold outlet) of the mix inlet manifold and secure with retaining clip. (See Figure 2-5).
4. If using two mix bags, repeat steps 1 to 3 for the middle port.
5. Install a manifold plug into each empty inlet and secure with a retaining clip.
6. Place the mix bag(s) into the mix container.
7. Connect the bag adapter attached to the left side of the manifold (closest to the mix outlet) to the mix bag in the back of the mix container.

C. MIX LOW LEVEL INDICATOR ADJUSTMENT

The sensitivity of the "Mix Low" indication that displays on the control panel can be adjusted to operator preference. If more advanced notice of low mix is required, loosen the black adjustment knobs located on the sensor brackets at the back of the machine cabinet and slide the bracket upwards. If the "Mix Low" message appears while there is still sufficient mix in the container, slide the bracket downward. Be sure to tighten the adjustment knobs after properly positioning the sensor.

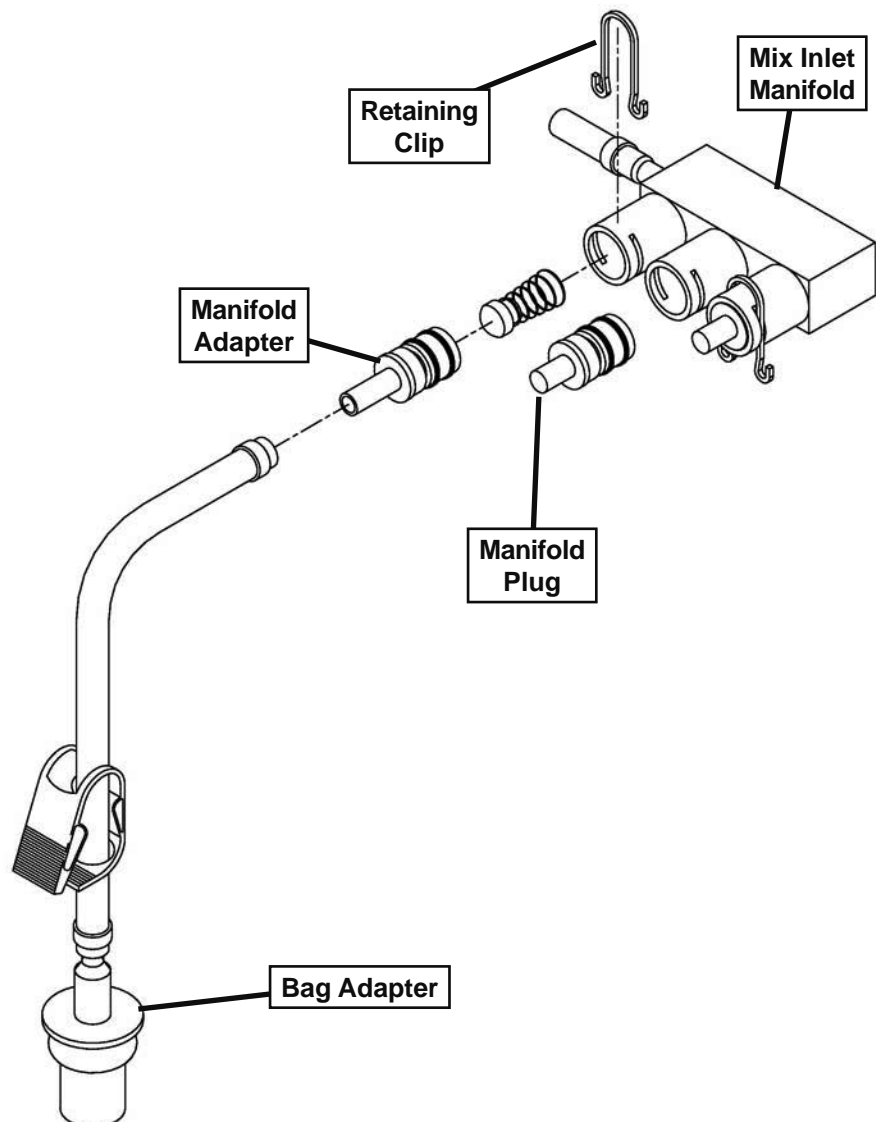


Figure 2-5 Bag Connection System (Optional)

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. MAIN FREEZER POWER SWITCH

The Main Freezer Power switch is a two position rocker switch that supplies power to the IntelliTec™ control, freezing cylinder circuits lower cabinet refrigeration system. When the switch is placed in the ON position, the cabinet refrigeration system will run until the preset temperature is reached; then it will cycle ON and OFF to maintain that temperature. Power to the freezing cylinders can then be controlled with the Freezing Cylinder OFF/ON switch.

B. FREEZING CYLINDER OFF/ON SWITCH

The Freezing Cylinder OFF/ON switch is a two position toggle switch used to supply power to the freezing cylinder control circuit. When the switch is in the OFF position, the freezing cylinder's refrigeration system and auger do not operate. When the switch is in the ON position, the machine is operational.

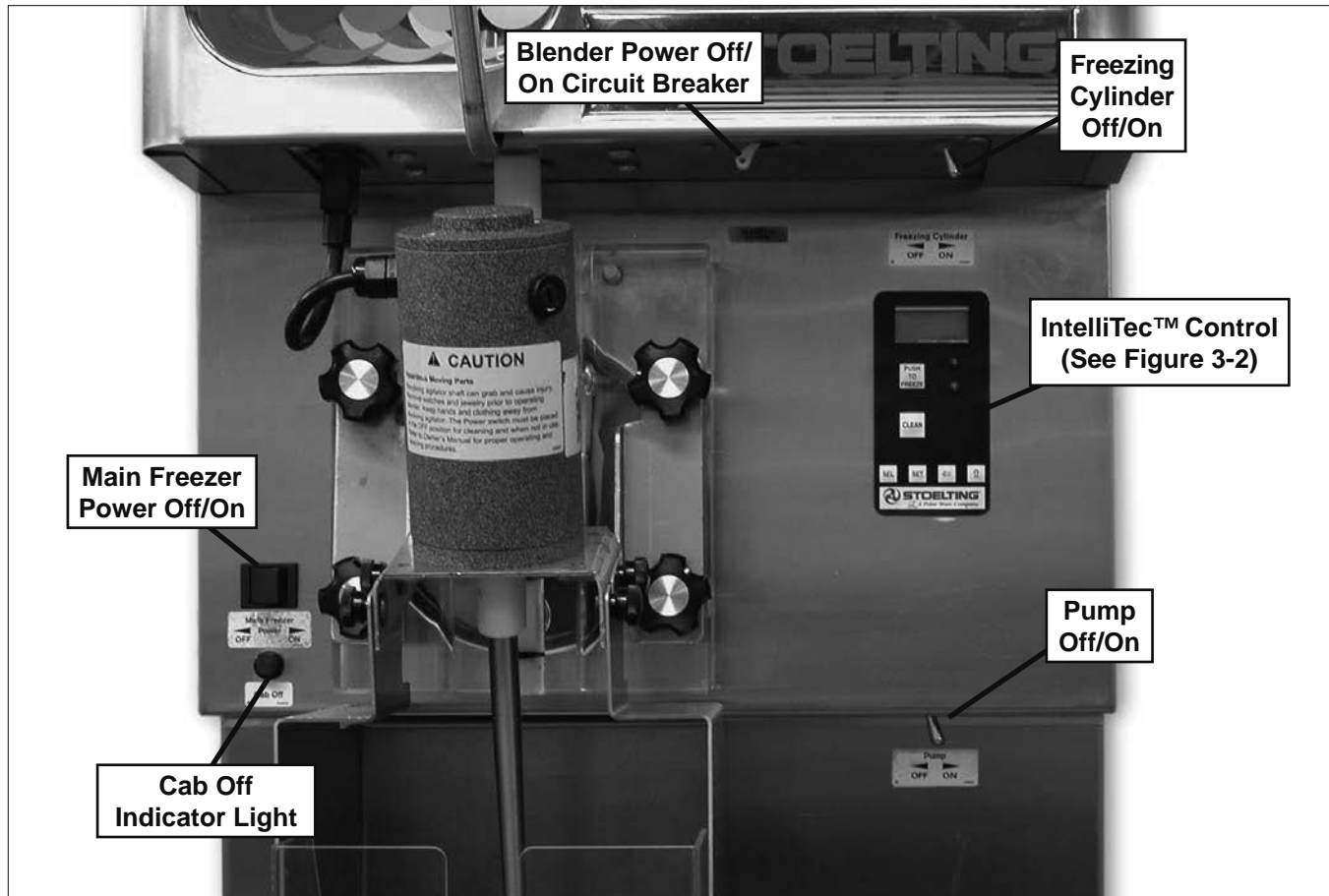


Figure 3-1 Machine Controls

C. 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.

D. BLENDER POWER OFF/ON AND CIRCUIT BREAKER SWITCH

The Blender Power Off/On and Circuit Breaker switch is a two position toggle switch used to supply power to the blender (SU412 models). When the switch is in the OFF position, there is no power to the blender. When the switch is in the ON position, the blender operates when the spigot handle is pushed to the right. This switch also serves as a circuit breaker to interrupt power if the rotation of the blender agitator becomes hindered.

E. CAB OFF INDICATOR LIGHT

A flashing light indicates the Main Freezer Power Switch is in the OFF position; no refrigeration is being supplied to the cab. Place the Main Freezer Power switch in the ON position for cab refrigeration.

F. PUMP SWITCH

The pump motor switch is the toggle switch located on the front of the machine. When the switch is placed in the OFF position, the pump does not run. When the switch is placed in the ON position, the pump runs until the preset pressure is reached. It then cycles on and off as product is drawn to maintain that pressure.

G. PUSH TO FREEZE BUTTON

The PUSH TO FREEZE button is a membrane or snap switch used to initiate “Serve Mode”.

NOTE

After the PUSH TO FREEZE button is pressed, the drive motor starts. After a 3-second delay, the compressor starts.

H. LEDS

The membrane switch (touchpad) features two lights: a green LED and an amber LED. The green LED is lit during “Serve Mode”. During freeze down, it is not lit. When product consistency approaches 90% in the freezing cylinder, the green LED flashes. The amber LED is on during all other modes. Both LEDs alternatively flash if an error occurs or if the freezing cylinder is off.

I. CLEAN BUTTON

The CLEAN button is a membrane, or snap switch. When the button is pressed, the freezing cycle stops and the drive motor starts. A CLEAN message will display on the LCD screen along with a 5-minute countdown timer. If the button is pressed again, the timer resets. To exit the CLEAN mode, turn the Freezing Cylinder OFF/ON switch to the OFF position. If the machine is left in CLEAN for more than 20 minutes, an error code (E4) is shown on the display panel. Place the Freezing Cylinder OFF/ON switch in the OFF position and back in the ON position to clear this error.

J. DRIVE MOTOR OVERLOAD

The internal drive motor overload trips if the drive motor is overloaded. It resets after approximately 10-12 minutes. If the drive motor continues to trip, refer to Troubleshooting in Section 5.

K. MIX LOW LIGHT INDICATOR

A MIX LOW message appears on the LCD display to alert the operator of a low mix condition. The message is displayed when there is approximately one gallon of mix left in the mix container or when one bag of the Bag Connection System (BCS) is empty. When the MIX LOW message is displayed, refill the container or replace a bag immediately.

L. MENU NAVIGATION BUTTONS

The Menu Navigation Buttons allow the user to display information regarding the machine’s status of operation as well as adjust product consistency (Fig. 3-2).

Selection Button (SEL) The SEL button is used in combination with the left arrow button to enter into the settings of the IntelliTec™ control. This button is also used to navigate through the control settings menu.

Set Button (SET) The SET button is used to save a change made to the product consistency setting. It is also used to save changes when modifying control settings.

Left Arrow Button (←) If the left arrow button is pressed for 5 seconds, the display remains lit. To turn the light off, press the left arrow button for 5 seconds. The left arrow button is used primarily to navigate through the control settings.

Up Arrow Button (↑) After pressing the SET button, the up arrow button changes the value of the product consistency setting. This button is used primarily to navigate through the control settings.



Figure 3-2 IntelliTec™ Control

3.3 EMPTYING THE FREEZING CYLINDER

If the machine is empty, go to Section 3.4

- A. Unplug the blender.
- B. Remove the blender agitator and splash shield.
 - 1. Hold the blender shaft and turn the agitator counterclockwise.
 - 2. Loosen knobs holding the blender splash shield assembly in place and remove the assembly (Fig. 3-3).



Figure 3-3 Removing Splash Shield Bracket

- C. Make sure the Main Freezer Power switch and the pump switch are on.
- D. Press the Clean button.
- E. In the cab, remove the mix pickup assembly from the mix container by pulling the retaining clip from the container cover. Place the mix pickup assembly in an empty bucket.
- F. Remove the mix container and container covers.

NOTE

The mix container must be cleaned on a regular basis. Refer to State and local codes for frequency of cleaning.

- G. When the product in the freezing cylinder has melted (after about 5 minutes), open the spigot to drain.
- H. Fill the bucket in the cab with cool tap water.
- I. Press the air bleed valve on the front door to release pressure in the cylinder. Repeat 2-3 times at 30 second intervals until water has filled the freezing cylinder.
- J. Press the Clean button and let the augers rotate for at least 30 seconds.
- K. Open the spigots to drain the water. If it is not clear, allow the cylinder to refill with water and drain it again.

- L. Press the Clean button to stop the auger rotating. Turn the pump off.
- M. Optional: Fill the bucket in the cab with about 2 gallons of detergent solution (Palmolive or equivalent). Turn the pump on and follow steps I through L above.

NOTE

Running the detergent solution through the machine will make cleaning parts easier after disassembly.

- N. Remove the bucket from the cab and turn on the pump to clear the remaining liquid in the hoses. Open the spigot to empty the freezing cylinder.
- O. Turn the Main Freezer Power switch and pump switch off.

3.4 DISASSEMBLY OF MACHINE PARTS

WARNING

Moving machinery can grab, mangle and dismember. Place the Main Freezer Power Off/On switch in the OFF position before disassembling for cleaning or servicing.

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.

To disassemble the machine, refer to the following steps:

A. REMOVE BLENDER

- 1. Unplug the blender.
- 2. Remove the blender agitator and splash shield if it is installed.
 - a. Hold the blender shaft and turn the agitator counterclockwise.
 - b. Loosen knobs holding the blender splash shield assembly in place and remove the assembly
- 3. Remove the knobs on the front door. Remove the blender assembly and set aside.

NOTE

Support the blender with one hand while removing the knobs on the door to prevent the blender from dropping.

B. REMOVE FRONT DOOR

1. Make sure the Main Freezer Power switch and pump switch are off
2. Remove the front door by pulling it off the studs.
3. Remove the air bleed valve by unscrewing the knob while holding the valve stem from behind. Remove the compression spring and push the air bleed valve through the rear of the front door.
4. Remove the spigot through the bottom of the front door.
5. Remove all o-rings from parts by first wiping off the lubricant using a clean towel. Then squeeze the o-ring upward to form a loop. Roll the o-ring out of the groove.

C. REMOVE AUGER

1. Remove the front auger bushing.
2. Remove the auger assembly from the machine. Pull the auger out of the freezing cylinder 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. 3-4).
5. Unscrew the springs from the auger flights.

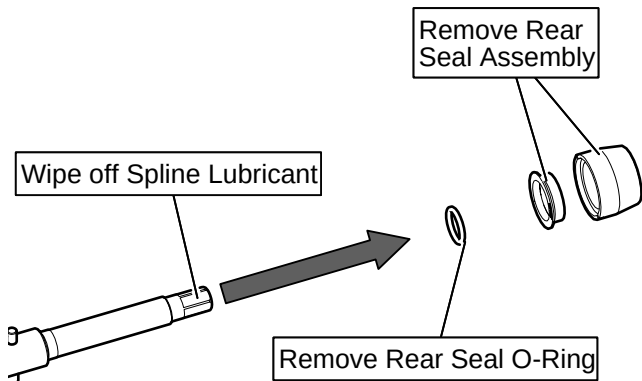


Figure 3-4 Rear Seal Assembly

D. PUMP HOSE DISASSEMBLY

We recommend completely disassembling the pump and disconnecting tubing every 14 days. Refer to Section 3.13 for cleaning instruction. Follow the steps below for normal cleaning procedure.

1. Disassemble the check valve by removing the lock clip. Remove the check valve and spring.
2. Remove the o-rings from the assembly.

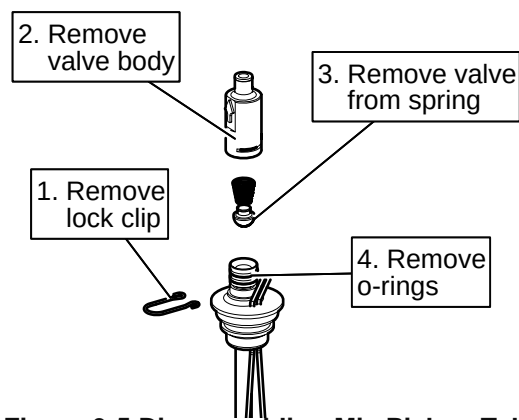


Figure 3-5 Disassembling Mix Pickup Tube

3. Follow the steps in Section 3.13 if the pump hoses need to be cleaned.

3.5 CLEANING DISASSEMBLED PARTS

Disassembled machine parts require complete cleaning, sanitizing and air drying before assembling. Local and state health codes 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. Disassemble all parts. (Refer to Section 3.4 for the disassembly of machine parts.)
- B. Place all parts in 90° to 110°F (32°C to 43°C) mild detergent water and wash thoroughly. Use the brushes that shipped with the machine to clean all holes in the front door, flights, mix pickup assembly, etc.

CAUTION

The blender motor can NOT be immersed in water or sanitizer. Wash the motor and mounting bracket with a mild detergent solution taking care not to allow water into the motor bearings or seals.

- C. Rinse all parts with clean 90° to 110°F (32°C to 43°C) water.
- D. Place all parts in a sanitizing solution for at least 1 minute, 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) soapy 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 at the back 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. Wrap the brush in a clean sanitized cloth and thoroughly dry the freezing cylinder.
- C. Remove the rear drip tray from the side 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. Install the rear seal o-ring. Lubricate the outside of the rear seal o-ring with a generous amount of sanitary lubricant.
- B. Install the stainless steel rear seal adapter into the rear seal dry (without lubricant). Lubricate the inside surface of the rear seal adapter and install it onto the auger shaft. DO NOT lubricate the outside of the rear auger seal (Fig. 3-6).
- C. Lubricate the hex drive end of the auger with a small amount of spline lubricant. A small container of lubricant is shipped with the machine.
- D. Screw the springs onto the studs in the plastic flights. The springs must be screwed into the flights completely to provide proper compression.
- E. Install the plastic flights onto the rear of the auger and insert it partway into the freezing cylinder.
- F. Install the remaining plastic flights, push the auger into the freezing cylinder and rotate it slowly until the auger engages the drive shaft.

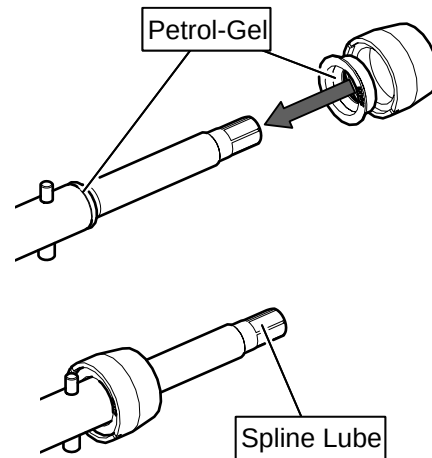


Figure 3-6 Rear Seal Assembly

- G. Assemble the air bleed valve o-ring onto the air bleed valve. Position the o-ring into the groove. Apply a thin film of sanitary lubricant to the o-ring.
- H. Insert the air bleed valve into the back of the front door. Install the compression spring onto the air bleed valve then screw the knob on finger tight.
- I. Install the o-rings onto the spigot body and apply a thin layer of sanitary lubricant to the o-rings. Install the spigot body through the bottom of the front door.
- J. Fit the front door o-ring into the groove on the rear of the front door.
- K. Apply a thin film of sanitary lubricant to the inside and outside of the front auger support bushing, then place it into the front door.
- L. Place the front door assembly on the mounting studs and the push front door against the machine carefully.
- M. Place the blender assembly onto the front door studs.
- N. Secure the front door and the blender assembly to the machine by placing the knobs on the studs and alternately tightening opposite corners until finger tight. Do not overtighten. Proper o-ring seal can be observed through the transparent front door.



Figure 3-7 Blender Shroud Pin Alignment

- N. Attach the blender shroud to the blender assembly. The blender shroud has a pin that needs to be properly aligned with the machine safety switch (Fig. 3-7).
- O. Assemble the mix pickup assembly:
 1. Install the rubber check valve into the spring and insert (spring first) into the check valve body.
 2. Install the o-rings onto the mix pickup tube and apply a thin layer of sanitary lubricant to the o-rings.
 3. Insert the mix pickup tube into the check valve body and secure it with a lock clip.

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.

CAUTION

Risk of Product Damage

Avoid prolonged contact of sanitizer with machine parts. Sanitizer may cause corrosion of stainless steel parts if there is prolonged contact.

- A. Prepare 2 gallons of sanitizing solution following the manufacturer's instructions.
- B. Pour the sanitizing solution into the mix container and put the mix pick-up tube into the mix container.
- C. Turn the Main Power switch and pump switch on.
- D. Press the air bleed valve on the front door to release pressure in the freezing cylinder. Repeat 2-3 times at 30 second intervals until the sanitizer has filled the freezing cylinder.
- E. Press the CLEAN button.
- F. Check for leaks when the freezing cylinder is first pressurized with sanitizing solution.
 1. Check for leaks at the front door seals.
 2. Check the drain tray located in the side panel for leaks coming from the rear of the rear auger seal.
 3. Check the inside of the cab unit for leaks at the hose connections.
- G. While the cylinders are being sanitized, complete the following:
 1. Use a sanitized soft bristle brush dipped in sanitizing solution to clean the mix containers.
 2. Empty the sanitizer from the containers.
 3. Install the mix pickup assembly into the cover using the retaining clip.
 4. Install the agitator onto the agitator shaft and sanitize the agitator and shaft in a cup of sanitizing solution.
- G. After the five minute timer expires, open the spigot to drain the sanitizing solution.
- H. When the solution has drained, press the clean button to stop the auger and place the Main Power switch off. Allow the freezing cylinder to drain completely.

The machine is now sanitized and ready for adding mix.

3.9 INITIAL FREEZE DOWN AND OPERATION

Every Stoelting soft serve machine needs to be set on site. The following adjustment will provide optimal product consistency while prolonging product life.

NOTE

The machine is designed for correct operation in ambient temperatures between 50°F and 110°F. Temperatures out of that range may cause refrigeration problems and product quality issues.

A. ADDING MIX

1. Sanitize the machine immediately before use.
2. Make sure the Freezing Cylinder OFF/ON switch is in the OFF position.
3. Fill the mix container in the cab with at least 2.5 gallons of mix.
4. Attach the mix inlet probe to the container and place the container in the refrigerated cab.
5. The mix pump switch is located at the front of the machine. Place it in the ON position.
6. 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. Close the spigot.
7. Open the air bleed valve on the front door by pressing and holding. Hold the valve open until the mix level in the freezing cylinder is 1/2" from the air bleed valve.

B. PREPARING THE INTELLITEC™ CONTROL

8. On the IntelliTec™ control, press and hold the SEL button for 8 seconds. While still holding the SEL button, press the up arrow (↑) button. The LCD will read "DISPLAY".
9. Press the left arrow (←) button once. The display will read "BASIC".
10. Press the up arrow (↑) button once. The display will read "CutOut amps".
11. Press the SET button. A cursor will start blinking under the far right digit.
12. Change the value to 8.0. Press the left arrow (←) button to move the cursor. Press the up arrow (↑) button to increase the digit. When a digit reaches 9, pressing the up arrow (↑) button again will change the value to 0.
13. After entering 8.0, press SET to save this value. The LCD will read "CutOut Set -- OK".
14. Press the SEL button. The LCD will read "CutOut amps 8.0".
15. Press the SEL button twice. The LCD will read "DISPLAY".
16. Press the up arrow (↑) button to navigate to the "°F" and "amps" readings.

C. INITIAL FREEZE DOWN

17. Place the Freezing Cylinder OFF/ON switch in the ON position.
18. Press the PUSH TO FREEZE button.

NOTE

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

19. As the product freezes, the "amps" value on the display will increase. When it reaches 2.8A, open the spigot, take a 6-8 ounce sample and measure the temperature. For most shake mixes, the desired temperature is between 23.5°F and 24.0°F.

CAUTION

Do not exceed 3.5 amps with a 3/4 hp motor.

20. Draw samples at every increase of 0.2A until reaching the desired consistency and temperature.

NOTE

Show the sample to the customer and make sure it meets their required consistency and temperature.

21. Record the "amps" value.
22. Place the Freezing Cylinder OFF/ON switch in the OFF position.

D. ADJUSTING THE INTELLITEC™ CONTROL

23. Press the SEL button. The display will read "DISPLAY".
24. Press the left arrow (←) button once. The display will read "BASIC".
25. Press the up arrow (↑) button once. The display will read "CutOut amps".
26. Change the value to the recorded value by pressing the SET button. A cursor will start blinking under the far right digit.
27. Press the left arrow (←) button to move the cursor. Press the up arrow (↑) button to increase the digit. When a digit reaches 9, pressing the up arrow (↑) button again will change the value to 0.
28. Press the SET button to save the value. The LCD will read "CutOut Set -- OK".
29. Press the SEL button. The LCD will read "CutOut amps" along with the programmed value from the previous step.
30. Press the SEL button three times. The LCD will read "EXITMENU".
31. Press the up arrow (↑) button to exit the menu.
32. Adjustment to the control is completed.

E. SERVING PRODUCT

33. Place the Freezing Cylinder OFF/ON switch in the ON position.
34. Press the PUSH TO FREEZE button.
35. When the product is at 75% consistency, the display will read "SERVE".
36. For normal dispensing, move the spigot handle fully open.
37. 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.
38. 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 (7.2°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 NORMAL FREEZE DOWN AND OPERATION

The following section contains the recommended operating procedures for the safe operation of the machine.

- A. Sanitize immediately before use.
- B. Make sure the Freezing Cylinder Off/On switch is in the OFF position.
- C. Fill the storage containers in the cab with at least 2.5 gallons of mix.
- D. Attach the mix inlet probes to the container and place the containers in the refrigerated cab.
- E. Place the mix pump switch in the ON position.
- F. 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. Close the spigot.
- G. Open the air bleed valve on the front door by pressing and holding. Hold the valve open until the mix level in the freezing cylinder is 1/2" from the air bleed valve.

- H. Place the Freezing Cylinder OFF/ON switch in the ON position. Make sure the blender power plug is connected to the machine and place the Blender Power Off/On switch in the ON position.



WARNING

Hazardous Moving Parts

Blender shaft and agitator can grab and cause injury. Do not operate blender without protective shield or swing splash shield.

- I. Press the PUSH TO FREEZE button.

NOTE

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

- J. When the product is at 75% consistency, the display will read "SERVE".
- K. For normal dispensing, move the spigot handle fully open (Fig. 3-9).
- L. On SU412 model, push the spigot handle to the right to activate the blender. The blender will operate during or after dispensing product.
- M. Do not operate the machine when the MIX LOW message is displayed. Refill the mix container immediately.



Figure 3-9 Dispensing Product

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 45°F (7.2°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).

3.12 OPERATION OF MIX PUMP

The mix pump switch is located at the front of the machine. When a pump switch is placed in the ON position, the mix pump motor will start pumping mix into the freezing cylinder. When the set pressure is reached, the mix pump will shut off automatically. When the switch is placed in the OFF position, the mix pump will not operate.

NOTE

The mix pump motor is equipped with an internal overload that will "trip", disabling the pump when the motor is overloaded. Consult the trouble shooting section for corrective information. The internal overload will automatically reset after cooling. If the condition continues, contact a qualified service person.

- A. **Mix Operation:** The peristaltic mix pump contains one continuous mix pump hose. When looking at the face of the peristaltic mix pump, the left side of the hose is the mix intake or pickup. The right side of the hose is the mix discharge. Mix is drawn up the pickup side of the hose and transferred through the discharge side to the machine (Fig. 3-10).
- B. **Air Operation:** The air compressor operates whenever the peristaltic mix pump is running. Air enters through a check valve on the piston downstroke. The air is discharged through a second check valve, on the piston upstroke. The air and mix join at the tee and then travel to the machine.
- C. The overrun adjustment is preset at the factory. If an adjustment becomes necessary, refer to Section 4.

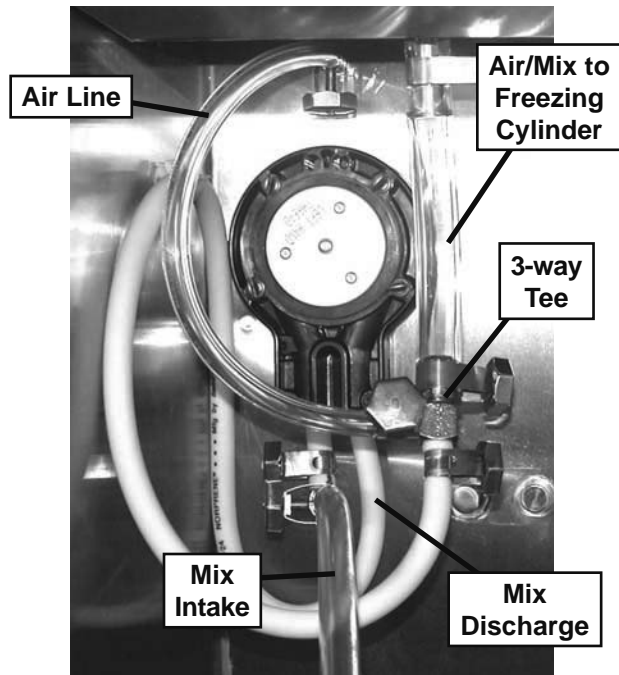


Figure 3-10 Mix Pump Hose Routing

3.13 MIX PUMP CLEANING

NOTICE

Any cleaning procedure must always be followed by sanitizing before filling machine with mix. (Refer to section 3.3)

The mix pump is approved for CIP (clean in place). It is thoroughly cleaned when the detergent solution is pumped through the machine. We recommend completely disassembling the pump and disconnecting tubing every 14 days for inspection of parts to confirm the CIP has been properly performed. If any residue is detected, clean or replace those parts as outlined below.

- A. Place the Main Power OFF/ON and Freezing Cylinder OFF/ON switches in the ON position and press the CLEAN button. Allow the auger to agitate for 5 to 10 minutes.
- B. Remove the suction tube from the mix container. Open the spigot to remove the mix remaining in the freezing cylinder.
- C. Pump 2 gallons (7.5 liters) of potable water through machine until the water coming out of the spigot is clear.
- D. Pump 2 gallons (7.5 liters) of 90° to 110°F (32°C to 43°C) detergent solution through the machine. The use of soft water is recommended, along with dishwashing detergents such as "Joy," "Dawn," or equivalent.
- E. Place the mix pump switch in the OFF position. Open the spigot to relieve the remaining pressure.
- F. Press the CLEAN button to stop the auger and place the Main Power OFF/ON and Freezing Cylinder OFF/ON switches in the OFF position.

3.14 DISASSEMBLY AND INSPECTION OF REMOVABLE PARTS

Inspection of removable parts should be made whenever maintenance is performed or when the pump requires disassembly.

NOTE

If the mix line or air line is difficult to remove, soften the tubing with a rag soaked in hot water. Hose connections may be sprayed with Haynes Sanitary Lubricant for ease of removal.

WARNING

Hazardous Moving Parts

Revolving pump head can grab, mangle, and cause serious crushing injury. The Main Power Off/On switch must be placed in the OFF position for cleaning and power must be disconnected when disassembling or servicing.

CAUTION

System Under Pressure

Never disconnect hoses from the machine or the pump without first opening the spigot to relieve pressure.

- A. Loosen the clamp and remove the air hose from the pump compressor.
- B. Loosen the clamp and disconnect the mix pump hose. Remove the pickup hose, the mix check valve and the pickup hose adapter (and bag adapter if applicable) as an assembly from the mix container.
- C. Completely disassemble the hose assembly and the check valve (Fig. 3-11). Place hoses, tee, check valve assembly, and pickup hose adapter in 90° to 110°F (32°C to 43°C) mild detergent water and wash thoroughly. Use soft bristle brushes to clean inside of fittings. Rinse all parts in clean 90° to 110°F (32°C to 43°C) water.
- D. Carefully inspect each part for wear or damage. Replace worn or damaged parts.
- E. Wash the feed tube and the air tube in the cabinet with 90° to 110°F detergent water and brushes provided. Rinse with clean, 90° to 110°F water.

- F. Prepare two gallons (7.5 liters) of sanitizing solution using a USDA certified grade sanitizing solution. Sanitize all removed parts. Allow them to air dry.
- G. Check the Hose Service Record decal to determine if a hose reposition or a hose replacement is required.
- H. Reassemble both hose assemblies per the diagram located on the inside of the cab door. Reconnect the assemblies to the pump hose and the discharge hose, using the clamps. (Refer to Section 2.5 Mix Pump).
- I. Sanitize assembled machine as per instructions outlined in Section 3.9.



Figure 3-11 Mix Pump Removable Parts

SECTION 4 MAINTENANCE AND ADJUSTMENTS

4.1 FREEZER ADJUSTMENT

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

4.2 PRODUCT CONSISTENCY ADJUSTMENT

The operator can adjust product consistency by modifying the Fine Adjustment setting on the membrane switch. This is the only adjustment that can be made by the operator without using a pass code key sequence. Product consistency fine adjustment allows a 0.4 amp maximum adjustment to the drive motor amp draw cutout. Increasing this setting will increase the drive motor amperage cutout and increase product consistency. Follow the instructions below to make fine adjustments to product consistency.

- A. Place the Main Freezer Power switch in the ON position.
- B. Press the SET button on the Control Panel once. Fine Adj will appear on the LCD screen.
- C. Press the up arrow button (↑) until the desired consistency setting is displayed. The higher the number, the firmer the product consistency. The control may be set from 1 to 9. The value increases by 1 each time the up arrow button is pressed. After the value reaches 9, numbering restarts at 0. The 0 setting cannot be set.
- D. Press the SET button once to save the setting and return to the current mode display.

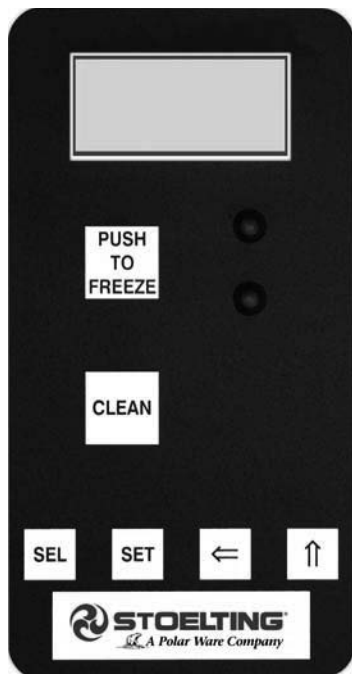


Figure 4-1 Membrane Switch

4.3 LOCKING THE CONTROL PANEL

The IntelliTec™ control has a tamper proof mode to prevent unauthorized use. When set, all buttons on the control panel are disabled. Follow the instructions below to lock the control panel

- A. Press and hold the PUSH TO FREEZE button for at least 5 seconds.
- B. While still holding the PUSH TO FREEZE button, press the CLEAN button once.
- C. Release both buttons. An asterisk (*) will appear on the bottom line of the display, indicating that the control is in the lock out mode.

NOTE:

Repeat steps A, B, and C to unlock the control panel.

4.4 OBTAINING READINGS AND MODIFYING SETTINGS (SERVICE PERSONNEL ONLY)

Readings and settings on the IntelliTec™ control are accessed through the IntelliTec™ control menu settings. Locating freezer readings and system function settings are done using the up arrow (↑) and left arrow (←) buttons on the membrane switch. A printed IntelliTec™ Menu Settings sheet is located in the information pouch behind the header panel.

IntelliTec™ Control Readings

To obtain freezer readings, locate the value on the freezer's menu settings sheet and follow the steps below.

- A. Press and hold the SEL button for 8 seconds. While still holding the SEL button, press the up arrow button (↑). The LCD screen will read DISPLAY.
- B. Release both buttons.
- C. Press the up arrow button (↑) to navigate to the correct reading under DISPLAY or press the left arrow (←) button to navigate to the ERRCODES menu.
- D. Press the up arrow (↑) and left arrow (←) buttons to navigate through the rest of the readings as needed.
- E. When all readings have been obtained, press the up arrow button (↑) from ExitMenu to return to the current mode display.

Modifying Control Settings

To change the value of a system function, locate the function on the IntelliTec™ Settings Menu and follow the steps below.

IMPORTANT:

Before making changes to any settings, record the original values. If the setting changes do not achieve desired results, return settings to their original values.

- A. Press and hold the SEL button for 8 seconds. While still holding the SEL button, press the up arrow button (↑). The LCD Screen will read DISPLAY.
- B. Release both buttons.
- C. Press the left arrow button (←) to get to the correct menu (Basic, Advanced, or Storage).
- D. Press the up arrow button (↑) to navigate to the value that needs to be changed.
- E. Press the SET button to enter the edit mode.
- F. Press the up arrow button (↑) to change the setting.
- G. Press the SET button to save the setting and exit the edit mode.
- H. Press the up arrow (↑) and the left arrow (←) buttons to navigate through the rest of the settings as needed.
- I. When all changes have been completed, press the up arrow button (↑) from ExitMenu to return to the current mode display.

4.5 READINGS (SERVICE PERSONNEL ONLY)

The IntelliTec™ control continuously monitors and records temperatures, voltages, amps, and error code details. Each reading is beneficial to service personnel when troubleshooting.

DISPLAY READINGS

Following are the readings available under the DISPLAY menu:

Cabinet

The temperature of the cab is constantly monitored by the IntelliTec™ control.

Cycles (count)

This reading counts down the number of cycles in the current "Serve Mode". The starting value is dependent upon the Cycles setting on the IntelliTec™ control.

°F and amps

Suction line temperature on the freezing cylinder and drive motor amps are available on the same screen to assist with setup and troubleshooting.

Aux. Temp (°F)

This reading provides the ambient temperature around the IntelliTec™ control board.

Supply V (VAC)

A calculated input voltage is recorded.

ERROR CODE READINGS

The following details are recorded under the ERRCODES menu for each of the last 25 error codes received:

Err1 (hours)

A numerical count of the last 25 error codes is recorded. When the 26th error has occurred, the earliest error code is erased. A timer also begins when an error occurs. The timer records the number of hours since the error occurred. If power to the freezer is interrupted, the timer will stop until power has been restored.

°F and amps

The suction gas temperature on the freezing cylinder and the drive motor amps are recorded at the time of the error.

Aux. Temp (°F)

Ambient temperature of the IntelliTec™ control board is recorded at the time of the error.

Str (°F)

The storage temperature is recorded at the time of the error.

VAC and Mode

A calculated input voltage and mode at which the error occurred are recorded. Following are descriptions of each mode:

Mode	Description
0	Start of freezing cycle
1	Compressor and drive motor on
2	Stir Cycle
3	Compressor off
4	"Standby Mode"
5	"Sleep 1 Mode"
6	"Sleep 2 Mode"
7	"Clean Mode"
8	Startup
9	Storage only refrigeration
10	Freezing cycle is shut down
11	Door safety switch triggered
12	High pressure cutout

Up Time (hours)

This value is a record of the total time the freezer has been in service. If power is interrupted, the timer will stop until power is restored. This timer does not reset.

RUN STATISTICS

In addition to dynamic readings and recorded error code details, the IntelliTec™ control records rolling averages of run statistics. Following are the readings available under the RUNSTATS menu:

On Times (sec)

The control records the time of each freezing cycle and provides a rolling average.

Off Times (sec)

The control records the time between freezing cycles and provides a rolling average.

Brl. Min (°F)

The lowest average barrel temperature is recorded.

Brl. Max (°F)

The highest average barrel temperature is recorded.

Stor Min (°F)

The lowest average cabinet temperature is recorded.

Stor Max (°F)

The highest average cabinet temperature is recorded.

Power On (hrs)

This value is a record of the time the freezer has been in service. If power is interrupted, the timer will reset.

4.6 ADJUSTMENTS (SERVICE PERSONNEL ONLY)

The following adjustments directly affect product consistency and length of time in “Serve Mode”. The default settings have been created using a 5% milkfat soft serve mix and provide optimal product consistency while prolonging product life.

CutOut (amps)

It is recommended to set the CutOut value at initial startup and when changing mix types. Adjustments to this setting directly affect the length of the freezing cycle which changes product consistency. To properly set the CutOut value, refer to section 3-10.

Cut In T (°F)

After the consistency value has been determined, the Cut In T value can be adjusted. The Cut In T is the temperature of the refrigerant gas in the evaporator at the front of the freezing cylinder. Changing this setting changes the temperature at which the freezing cycle starts. This value along with the CutOut value determines the range of temperatures (or “temperature window”) of the product. Decreasing the temperature decreases the temperature window and, under normal use, increases the amount of freezing cycles. This creates a greater chance of product breakdown by stirring the product often. Increasing the Cut In T increases the temperature window, which decreases freezing cycles and increases the chance of heat shock within the product.

Cycles (count)

This setting determines the number of freezing cycles during “Serve Mode”. Increasing the value will increase the total time in “Serve Mode”. Factory default is 20 cycles, which results in “Serve Mode” lasting about 2-1/2 hours without the PUSH TO FREEZE button being pressed or a spigot handle being pulled. If the PUSH TO FREEZE button is pressed or the spigot handle is pulled at any time during “Serve Mode”, the Cycles count will reset.

4.7 OTHER SETTINGS (SERVICE PERSONNEL ONLY)

Changing any setting on the IntelliTec™ control will alter freezer operation and affect the product temperature, consistency, or life. Refer to the IntelliTec™ Control System Settings sheet located in the information pouch behind the header panel of the freezer. If any of the following settings on the IntelliTec™ control differ from the System Settings sheet, it is recommended to return those settings to factory defaults.

Stir On (sec)

Adjustments to this setting affect the amount of time the auger rotates in the stir cycle. The stir cycle occurs in “Serve Mode”, “Standby Mode”, and “Sleep 2 Mode”.

Stir Off (sec)

Adjustments to this setting affect the time between stir cycles. The stir cycle occurs in “Serve Mode”, “Standby Mode”, and “Sleep 2 Mode”.

On Time (sec)

Increasing this value will increase the length of the freezing cycle during “Standby Mode”.

Off Time (sec)

Increasing this value will increase the time between freezing cycles in “Standby Mode” and result in an increase of product temperature in the barrel.

Stb Time (sec)

This setting determines the total amount of time in “Standby Mode”.

SI1DrvOn (sec)

Adjustments to this setting affect the amount of time the auger rotates in the stir cycle. This stir cycle only occurs in “Sleep 1 Mode”.

SI1DrOff (sec)

Adjustments to this setting affect the time between stir cycles. The stir cycle only occurs in “Sleep 1 Mode”.

SI2CutIn (°F)

Changing this setting affects the temperature at which the freezing cycle starts in “Sleep 2 Mode”.

SI2CtOut (°F)

Changing this setting affects the temperature at which the freezing cycle stops in “Sleep 2 Mode”.

DftOffTm (sec)

In “Serve Mode”, this value determines the maximum time without a freezing cycle. If this value is met, a freezing cycle will start. In the event of a freezing cylinder temperature sensor failure, this value affects the amount of time between freezing cycles during “Serve Mode”.

Refriger

This setting changes how the control handles the storage refrigeration cycle. The setting for the SU412 is Cabinet.

CabCutIn (°F)

If the Refriger value is set to Cabinet, this setting determines the temperature at which the refrigeration cycle starts. If None, 1 Hopper, or 2 Hopper is selected for the Refriger setting, CabCutIn will not be shown on the IntelliTec™ menu.

CabCtOut (°F)

If the Refriger value is set to Cabinet, this setting determines the temperature at which the refrigeration cycle stops. If None, 1 Hopper, or 2 Hopper is selected for the Refriger setting, CabCtOut will not be shown on the IntelliTec™

menu.

Cab Off

If the Refriger value is set to Cabinet and the temperature sensor in the cabinet fails, this setting determines the time between refrigeration cycles. If None, 1 Hopper, or 2 Hopper is selected for the Refriger setting, Cab Off will not be shown on the IntelliTec™ menu.

Cab On

If the Refriger value is set to Cabinet and the temperature sensor in the cabinet fails, this setting determines the length of the refrigeration cycle. If None, 1 Hopper, or 2 Hopper is selected for the Refriger setting, Cab On will not be shown on the IntelliTec™ menu.

4.8 OVERRUN ADJUSTMENT

The product, when served, is a combination of air and mix. Overrun is a measure of the amount of air blended into the mix.

Overrun can be expressed in terms of the amount of weight loss for a given volume. For example, if a pint of liquid mix weighs 18 ounces and a pint of frozen product with air added weighs 12 ounces, the overrun is said to be 50 percent: $18 \text{ oz.} - 12 \text{ oz.} = 6 \text{ oz.}$, $(6/12) \times 100 = 50\%$

The overrun can be checked by placing a one pint container on an ice cream scale and zeroing out the scale. Then fill a one pint container with frozen product. The container should be filled over the top and leveled with a straightedge. The product should not contain any air pockets. When weighed on an ice cream scale, one pint of product should weigh 12 to 13 ounces.

The mix pump has been preset at the factory to produce a product with approximately 40% overrun. Because of differences in mix formulation, temperatures and barometric pressure, this figure may vary. It will be necessary for approximately 2 gallons of mix to be pumped through the freezer before overrun changes in the product are noticeable.

Overrun is controlled by the length of the air compressor piston stroke within the piston cylinder. Lengthening the stroke within the cylinder will increase overrun. Conversely, shortening the stroke will decrease overrun. To perform

**WARNING****Hazardous voltage**

The Main Freezer Power switch must be placed in the OFF position when disassembling for servicing. The freezer must be disconnected from electrical supply before removing any access panel. Failure to disconnect power before servicing could result in death or serious injury.

an overrun adjustment, refer to the following procedure:

- A. Turn the mix pump switch to the OFF position. Disconnect power sources/circuit breakers.
- B. Remove the back panel from the freezer.
- C. On the air compressor side of the pump, locate the long/slender piston rocking arm. The rocking arm downward travel is limited by a stationary cam. On the face of the cam there is an overrun setting indicator plate numbered 3 through 8 and an adjustment knob (Fig. 4-2).

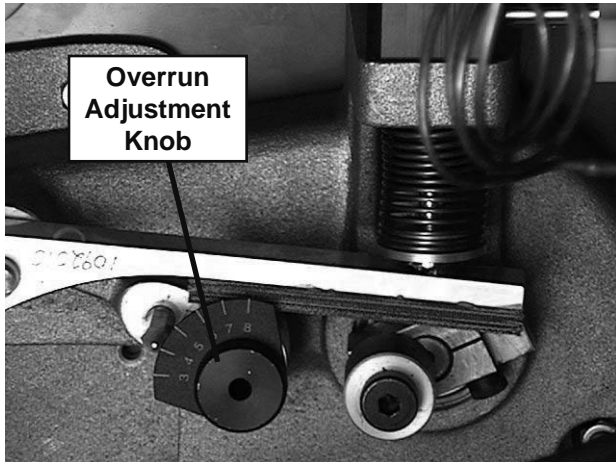


Figure 4-2 Overrun Adjustment

- D. The overrun setting is indicated by a pin.
- E. To adjust overrun, loosen the allen-head screw (located within the center of the adjustment knob) with the 5/32" allen wrench provided. Rotate the adjustment knob counterclockwise to a higher number for higher overrun, or clockwise to a lower number for lower overrun. Each number multiplied by 10 represents the overrun percentage (i.e. setting 4 = 40% overrun).
- F. Tighten the allen screw, then place the wrench back in its clip. Replace the lower back panel and secure with the four screws. Turn the mix pump power switch to the ON position.

4.9 MIX PUMP HOSE REPOSITION

Mix pump hose must be repositioned every 800 gallons of mix pumped or every 2 weeks. Failure to reposition the hose will result in reduced mix pump liquid capacity, dispense stoppage, popping, and possible mix pump hose leakage. Follow the steps below to reposition the hose:

- A. Run cleaning solution through pump.
- B. Turn the pump off and relieve any pressure by opening the spigot.
- C. Grasp the pickup hose end of the mix pump hose with one hand and turn the pump on. Pull down on the pickup hose end until 12 to 14 inches of tubing has fed through the pump then turn the

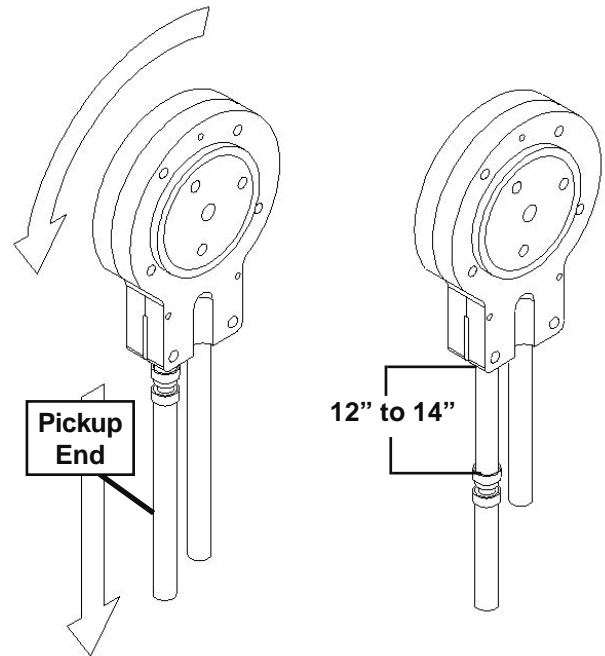


Figure 4-3 Pump Hose Reposition

pump off (Fig. 4-3).

- D. Loosen the small clamp at the pick-up hose adapter and disconnect the mix pump hose.
- E. Cut 7-1/2 inches off the end of the mix pump hose.
- F. Reconnect the mix pump hose to the adapter.
- G. Continue normal operation. Mix hose will automatically reposition itself with the adapter near the black cover.

NOTE

Each hose is long enough for 3 repositions before replacement is required.

4.10 MIX PUMP HOSE REPLACEMENT

Mix pump hose must be replaced when tubing cannot be further repositioned (every four to eight weeks). Failure to comply will result in hose failure and possible pump damage. Follow the steps below to replace the hose:

- A. Run cleaning solution through pump.
- B. Turn the pump off and relieve any pressure by opening the spigot.
- C. Disconnect the mix pump hose at each end.
- D. Grasp the discharge hose end with one hand and turn the pump on. Pull down on the hose until all of the remaining hose is removed from the pump. Turn pump off.
- E. Rotate pump roller assembly so one roller is at the 6:00 position.
- F. Use a brush that fits in the opening and clean the

pump roller assembly, first with detergent water and then clear water.

- G. Connect the new mix pump hose to the pickup hose adapter using the small clamp.
- H. Feed one end of the mix pump hose into the pickup hose side (left) of the black cover.

NOTE

Feed the tube into the clamp so the natural curve of the tube is towards the outside of the black cover. This prevents the hose from looping around the black cover twice.

- I. Gently push the hose into the black cover until it begins to feed.
- J. Allow the hose to feed itself through the pump until about 6" (15cm) remains on the entering side.
- K. Turn pump off.
- L. Connect the mix pump hose to the elbow fitting (located on the left side of the mix line manifold) using a small hose clamp. Be careful not to twist the mix hose.
- M. Turn the pump on.
- N. Allow the remaining 6" (15cm) of tubing to feed through the pump until the hose adapter prevents further feeding.

O. Turn the pump off.
CAUTION
Risk of Product Damage
Air/Mix Tee must remain below the black cover clamp. If the Tee is above the pump, the mix may drain into the air compressor, resulting in pump damage.

- P. Connect the free end of the mix pump hose to the 3-way Tee. When all connections are complete, the 3-way Tee must be lower than the black pump housing.
- Q. The pump is now ready to sanitize.

4.11 CAB TEMPERATURE ADJUSTMENT

Cab temperature is monitored and controlled by two settings on the IntelliTec™ control: CabCutIn and CabCtOut. The cut in value determines the temperature at which the refrigeration cycle starts. The cut out setting determines when the cycle stops. To change the CabCutIn or CabCtOut, follow the steps below:

- A. Press and hold SEL button for 8 seconds. While still holding the SEL button, press the up arrow button (↑). The LCD Screen will read "Display".
- B. Release both buttons.


- C. Press the left arrow button (←) three (3) times to navigate to the Storage menu.
- D. Press the up arrow button (↑) once to navigate to the CabCutIn value. Record this value.

IMPORTANT:

Before making changes to any settings, record the original values. If the setting changes do not achieve desired results, return settings to their original values.

- E. Press SET button to enter edit mode.
- F. Press the up arrow button (↑) to increase the number to the value required. The value increases by 1 each time the up arrow button (↑) is pressed. After the value reaches 9, numbering restarts at 0.
- G. Press SET button to save the setting and exit the edit mode.
- H. Press the up arrow button (↑) once to navigate to the CabCtOut value. Record this value.
- I. Press SET button to enter edit mode.
- J. Press the up arrow button (↑) to increase the number to the value required. The value increases by 1 each time the up arrow button (↑) is pressed. After the value reaches 9, numbering restarts at 0.
- K. Press SET button to save the setting and exit the edit mode.
- L. Press the up arrow (↑) and left arrow (←) buttons to navigate to ExitMenu.
- M. Press the up arrow button (↑) from ExitMenu to return to the Mode Screen.
- N. Locate the Specification Sheet for SU412 Control behind the header panel and record the new values on this sheet.

4.12 DRIVE BELT TENSION ADJUSTMENT

 WARNING
Hazardous voltage
The Main Freezer Power switch must be placed in the OFF position when disassembling for servicing. The freezer must be disconnected from electrical supply before removing any access panel. Failure to disconnect power before servicing could result in death or serious injury.

To check belt tension, follow the steps below:

- A. Remove a side panel and the back panel.
- B. Use a Burroughs Belt Tension Gauge to set the

tension for the drive belt. Set the belt tension to 15 - 25 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.

4.13 CONDENSER CLEANING (AIR-COOLED FREEZERS)

The condenser requires periodic cleaning. To clean the condenser, refer to the following steps:

- A. Lift the condenser filter off of the freezer cover



Figure 4-4 Removing Condenser Filter

panel. Visually inspect the condenser filter for dirt (Fig. 4-4).

- B. If the condenser filter is dirty, vacuum or brush it clean. Rinse it with clean water and allow it to dry before replacing it on the freezer.

NOTE

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

4.14 PREVENTATIVE MAINTENANCE

It is recommended that a preventative maintenance schedule be followed to keep the freezer 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
 1. Check drive belts for wear and tighten belts if necessary. (Refer to section 4.12)
 2. Check the condenser filter for dirt. (Refer to section 4.13).

4.15 EXTENDED STORAGE

Refer to the following steps for winterizing the freezer or for storing the freezer over any long period.

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

NOTE

Do not let cleaning solution stand in freezer barrel or mix pump during the shutdown period.

- B. Remove, disassemble, and clean the front door, auger shaft, and mix pump. Leave disassembled during the shutdown period.
- C. Place the plastic scraper blade in a plastic bag with a moist paper towel. This will prevent the flights from becoming brittle if exposed to dry air over an extended period (over 30 days).
- D. For water-cooled freezers that are left in unheated buildings, or buildings subject to freezing, the water must be shut off and disconnected. Disconnect the fittings at the water inlet and the water outlet lines of the freezer. The fittings are located at the rear of the freezer. Run the compressor for 2 - 3 minutes to open the water valve. Blow out all the water, first through the water inlet, then through the water outlet lines with air or carbon dioxide. Drain the water supply line coming to the freezer.
- E. Place the Pump OFF/ON switch and the Main Freezer Power OFF/ON switch in the OFF position.
- F. Disconnect the freezer from the source of the electrical supply in the building.

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

1	Soft
2	High Torque
3	Extended Run Time
4	Clean
5	Barrel Sensor
6	Hopper Sensor
7	Drive Motor
8	Cab Sensor
9	High Pressure Cutout
10	Auxiliary Sensor
11	Low Temperature

To return the machine to normal operation, any error causing condition must be corrected and the Freezing Cylinder Off-On switch must be placed in the Off position and back in the On position before the affected side of the machine will return to normal operation.

5.2 TROUBLESHOOTING - ERROR CODES

Error Code 1 - Soft Error

The Soft Error (E1) is an internal control board error that is logged for future analysis. The refrigeration is never stopped and the machine will continue to operate normally.

Error Code 2 - High Torque

If the control panel displays a High Torque Error (E2), 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. Place the Main Power OFF/ON switch in the OFF position, wait until the product in the freezing cylinder thaws to a reasonably soft consistency and return the Main Power switch to the ON position. Follow the steps in section 3 to reduce 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 machine's mix container 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 is broken down, clean and sanitize the machine and replace the mix with fresh product.

Ice crystals in the liquid mix container 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 in the mix container through a clean and sanitized sieve or strainer. If ice crystals are in the mix, check the temperature of the walk-in cooler where the mix is stored or the temperature of the machine's cabinet.

Check the condition of the neoprene hose running through the mix pump head. If it shows signs of wear, rotate or replace it as outlined in Section 3.

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 (Error 04). 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". The control will attempt to restart itself after 5 minutes. The display will then flash and read Restart. To immediately clear the Clean Error, place the Main Power Off-On switch in the Off position and back in the On position. After restarting the machine, a refrigeration cycle will begin. This protects the product in case the clean button was pressed by mistake.

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, place the Freezing Cylinder Off-On switch in the Off position and back in the On position. 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 SU412 machine.

Error Code 7 - Drive Motor

If the control panel displays a Drive Motor Error (E7), the control does not sense the drive motor. Place the Freezing Cylinder Off-On switch in the Off position and back in the On position. If the error persists, contact your Authorized Stoelting Distributor for further assistance.

Error Code 8 - Cab Sensor

A Cab Sensor Error (E8) indicates a cabinet temperature sensor failure or. This error will also appear if the sensor is out of range. If the control panel displays an E8, place the Freezing Cylinder Off-On switch in the Off position and back in the On position. If the error persists, contact your Authorized Stoelting Distributor for further assistance.

Error Code 9 - High Pressure Cutout

High Pressure Cutout Errors (E9) are usually caused by a dirty or inefficient condenser.

In air cooled condenser models, check for proper air clearance around the machine.

In water cooled condenser models check for proper water flow.

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. Place the Freezing Cylinder Off-On switch in the Off position and back in the On position. If the error persists, contact your Authorized Stoelting Distributor for further assistance.

Error Code 11 - Low Temperature

The Low Temperature Error (E11) occurs when there is a very low temperature in the freezing cylinder. Although the machine will not shut down, the active freezing cycle will immediately end. This error usually occurs when the machine continues to run in a low mix condition or if the machine runs out of mix. The product towards the front of the freezing cylinder tends to freeze solid. When the temperature on the freezing cylinder lowers to the preset value, the IntelliTec™ control will display an E11.

ALTERNATING FLASHING CONTROL PANEL LIGHTS

The display panel lights will flash in an alternating sequence under any error codes. Clear the error and place the Freezing Cylinder Off-On switch in the Off position and back in the On position.

5.3 TROUBLESHOOTING - MACHINE

PROBLEM	POSSIBLE CAUSE	REMEDY
Drive motor (auger) “kicks-out”, or does not run.	<ol style="list-style-type: none"> 1. Power to machine is off. 2. Low line voltage. 3. Product too hard. 4. Front door not installed securely. 	<ol style="list-style-type: none"> 1. Check power to machine. 2. Check, must be $\pm 10\%$ of nameplate voltage. 3. Raise overrun. (See Section 4) 4. Install front door securely.
Compressor does not operate.	<ol style="list-style-type: none"> 1. Power to machine is off. 2. Low line voltage. 3. Compressor internal overload is cut-out. 4. Front door not installed securely. 	<ol style="list-style-type: none"> 1. Check power to machine. 2. Check, must be $\pm 10\%$ of nameplate voltage. 3. Check condenser (air cooled)(See Sect. 4), or water supply (water cooled). 4. Install front door securely.
Product too soft.	<ol style="list-style-type: none"> 1. CutOut setting is too low 2. Product break down. 	<ol style="list-style-type: none"> 1. Adjust CutOut setting to match product requirements.(See Section 3) 2. Fill with fresh product.
Freeze-up. (Product will not dispense easily.)	<ol style="list-style-type: none"> 1. CutOut setting is too high. 2. Low overrun setting. 3. Low pump pressure. 4. Large air pocket in barrel. 5. Auger turning counter-clockwise. 	<ol style="list-style-type: none"> 1. Adjust CutOut setting to match product requirements.(See Section 3) 2. Raise overrun. (See Section 4) 3. Check pump pressure. 4. Purge air from barrel. 5. Change rotation to clockwise.
Rear auger seal leaks.	<ol style="list-style-type: none"> 1. Seal missing or installed wrong. 2. Rear seal o-ring missing, broken or not lubricated. 3. Worn or scratched shaft. 	<ol style="list-style-type: none"> 1. Install correctly. (See Section 3) 2. Inspect for breakage and lubricate properly (See Section 3) 3. Replace shaft.
Spigot leaks.	<ol style="list-style-type: none"> 1. Spigot parts are not lubricated. 2. Chipped or worn o-rings. 3. O-rings on spigot installed wrong. 4. Nicks or scratched on front door where spigot is located. 	<ol style="list-style-type: none"> 1. Lubricate. (See Section 3) 2. Replace o-rings. 3. Remove spigot and check o-rings. 4. Replace front door.
Drive belts slipping or squealing.	<ol style="list-style-type: none"> 1. Drive belt tension not correct. 2. Worn belt(s). 3. Low overrun. 	<ol style="list-style-type: none"> 1. Adjust belt tension. (See Section 4) 2. Replace belts. 3. Check for air leak.
Mix temperature too warm in cab.	<ol style="list-style-type: none"> 1. Temperature control set too warm. 2. Cab door is open. 	<ol style="list-style-type: none"> 1. Decrease CabCtOut and CabCutIn (See Section 4) 2. Close the cab door.
Mix temperature too cold in cab.	<ol style="list-style-type: none"> 1. Temperature control set too cold. 	<ol style="list-style-type: none"> 1. Increase CabCtOut and CabCutIn (See Section 4)

5.4 TROUBLESHOOTING - MIX PUMP

PROBLEM	POSSIBLE CAUSE	REMEDY
Pump motor does not run.	<ol style="list-style-type: none"> 1. Power to pump is off. 2. Low voltage. 3. Mix pump hose jammed inside black cover/clamp. 4. Pump motor overloaded. 5. Pressure switch on pump is defective. 6. Defective motor/capacitor. 7. Defective toggle switch. 	<ol style="list-style-type: none"> 1. Supply power to pump. 2. Check for low voltage. 3. Disconnect pump from power source. Remove four cover/clamp thumb screws. Separate cover/clamp halves and remove outer half. Remove jammed hose. Clean and re-install cover/clamp and tighten four thumb screws securely. Allow motor thermal overload to reset. 4. Allow internal thermal overload to reset; determine overload cause and repair. 5. Check mechanical operation and continuity of pressure switch. 6. Check motor amperage draw and/or capacitor. Replace motor or capacitor. 7. Check continuity; repair or replace.
Pump operates but cylinder will not fill.	<p>Note 1: A properly working pump will fill an 8 oz. cup with mix in about 9 seconds.</p> <p>Note 2: Immediately after a bag change the pump may be unable to reestablish it's prime with the system at operating pressure. In this case, turn the pump off. Draw 2-3 pints to reduce system pressure to zero. Turn pump on. Purge remaining air in mix bag and pick-up hose.</p> <p>Important: before connecting the pick-up hose to the mix bag, remove as much air from the mix bag as possible.</p>	
	<ol style="list-style-type: none"> 1. Out of Mix. 2. Mix pump hose kinked inside black cover/clamp. 3. Hoses assembled incorrectly. 4. Mix pump hose service life is exceeded. 5. Mix pump hose not connected to machine. 6. Ice crystals in mix. 7. Mix bag drawn against adapter. 8. Foreign objects in mix. 9. Check valve is backwards. 	<ol style="list-style-type: none"> 1. Replenish mix supply. 2. Disconnect pump from power source. Remove four cover/clamp thumb screws. Separate cover/clamp halves and remove outer half. Remove jammed hose. Clean and re-install cover/clamp and tighten four thumb screws securely. Allow motor thermal overload to reset. 3. Refer to diagram for correct hose connections. 4. Reposition/replace mix pump hose. See Section 4.9 5. Connect mix pump hose to machine. 6. Completely thaw mix prior to use. 7. Ensure bag is clear of pick-up tube. 8. Clear blockage. Use fresh mix. 9. Observe flow arrow for proper orientation.
Overrun too low or no overrun.	<ol style="list-style-type: none"> 1. Overrun setting too low. 2. Air leak. 3. Air compressor not pumping air. 4. Air check valve in backwards. 	<ol style="list-style-type: none"> 1. Increase overrun setting. 2. Tighten all hose clamps. 3. Contact local Stoelting Distributor. 4. Check arrow for direction of flow.

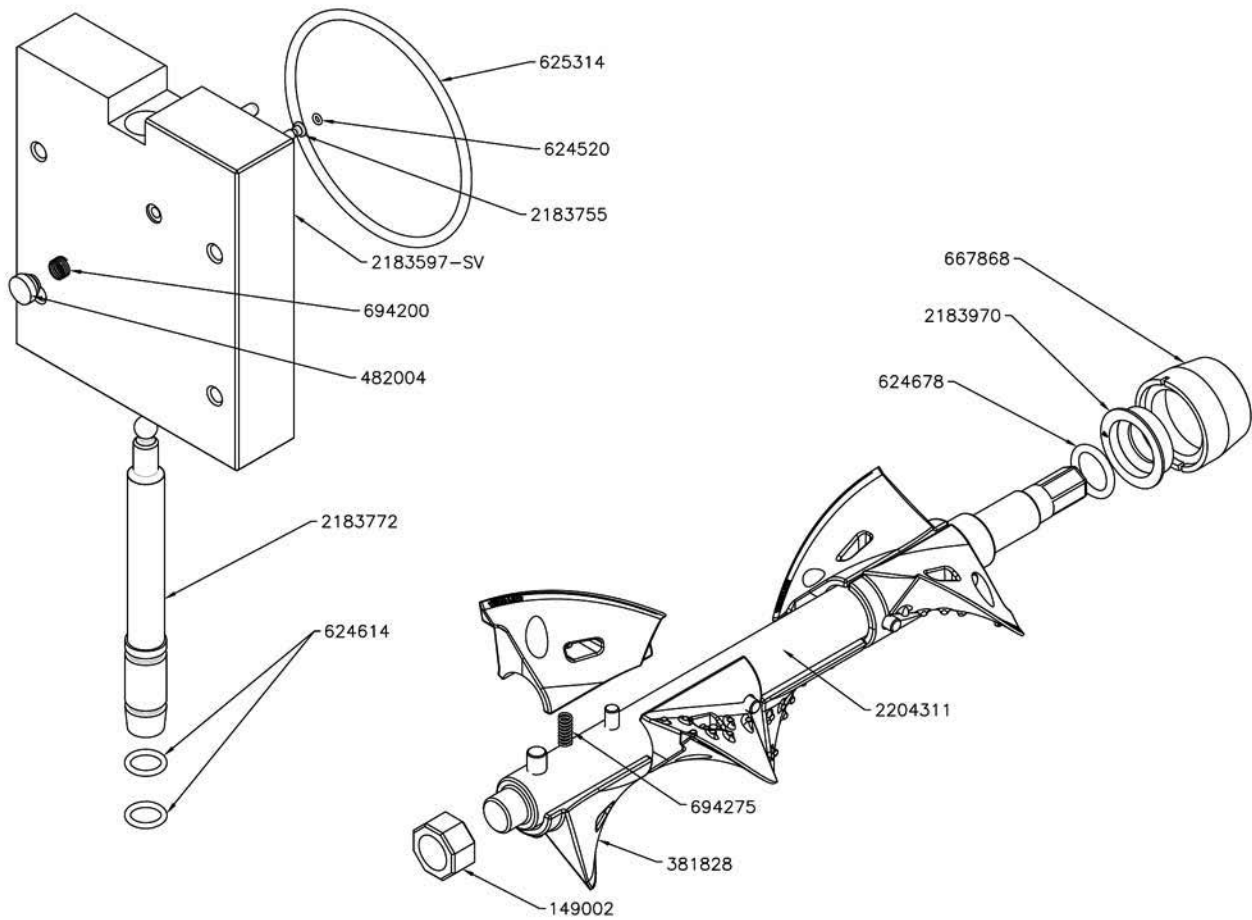
PROBLEM	POSSIBLE CAUSE	REMEDY
Overrun too high.	<ol style="list-style-type: none"> 1. Mix pump hose service life is exceeded. 2. Out of mix. 3. Overrun setting too high. 4. Pick-up leg of mix pump hose is collapsing. 	<ol style="list-style-type: none"> 1. Reposition/replace mix pump hose. 2. Replenish mix supply. 3. Decrease overrun setting. 4. Reposition hose.
Replacement mix pump hose won't feed through pump.	<ol style="list-style-type: none"> 1. Feeding hose into discharge hole of mix pump cover. 2. Hose ends not cut squarely. 3. Force feeding too quickly. 4. Pump motor not running. 	<ol style="list-style-type: none"> 1. Feed hose into suction side of cover. 2. Carefully cut hose end off squarely (no tails). 3. Gently and slowly assist feeding of hose up into pick-up hose side of cover. 4. Turn on motor switch.
Air exiting mix pick-up hose.	<ol style="list-style-type: none"> 1. Pickup tube check valve missing. 	<ol style="list-style-type: none"> 1. Contact local Stoelting Distributor.
Dispensed product air "pops"	<ol style="list-style-type: none"> 1. Overrun setting too high. 2. Mix pump hose service life is exceeded. 3. Overdrawing the machine's capacity. 4. Recent low mix condition. 	<ol style="list-style-type: none"> 1. Decrease overrun setting. 2. Reposition/replace mix pump hose. 3. Reduce dispense rate. 4. Open spigot fully and allow excess air to escape.
Mix leakage from pump.	CAUTION: To prevent mix pump damage from dried mix deposits, immediately disassemble and clean pump.	
	<ol style="list-style-type: none"> 1. Mix pump hose service life is exceeded. 	<ol style="list-style-type: none"> 1. Remove mix pump hose. Disconnect pump from power source. Remove mix pump cover/clamp. Clean the rollers a small amount of soapy water. Clean mix from pump. See Section 4.2 for hose replacement.
Pump is noisy/squeaking.	<p>Note: The action of the air compressor rocking arm creates a repetitive clicking sound during operation. This is normal.</p> <p>Note: The peristaltic mix pump has three squeeze rollers that use self lubricating bearings. If squeaking exists with the mix pump hose in place and stops with the hose removed, the squeeze roller bearings can be lubricated using a silicone based spray. Remove the mix pump hose. Disconnect pump from electrical power. Remove four cover/clamp thumbscrews. Remove entire cover/clamp as one unit. Spray silicone based lubricant on each end of each squeeze roller. Spin rollers to work lubricant into bearings. Repeat as needed.</p> <p>Caution: Do not use cleaning/dissolving type lubricants like wd-40. These lubricants are not bearing friendly and will accelerate bearing wear.</p>	
Mix in air hoses.	<ol style="list-style-type: none"> 1. Air/mix tee above black cover/clamp. 2. Air leak. 3. Mix hose on wrong air/mix tee fitting. 4. Pressure control manifold o-ring leak. 	<ol style="list-style-type: none"> 1. Air/mix tee must be below black cover/clamp. 2. Tighten all hose clamps. 3. Refer to diagram for correct hose connections. 4. Check o-ring and manifold; replace as required.

SECTION 6 REPLACEMENT PARTS

6.1 BRUSHES, DECALS AND LUBRICATION

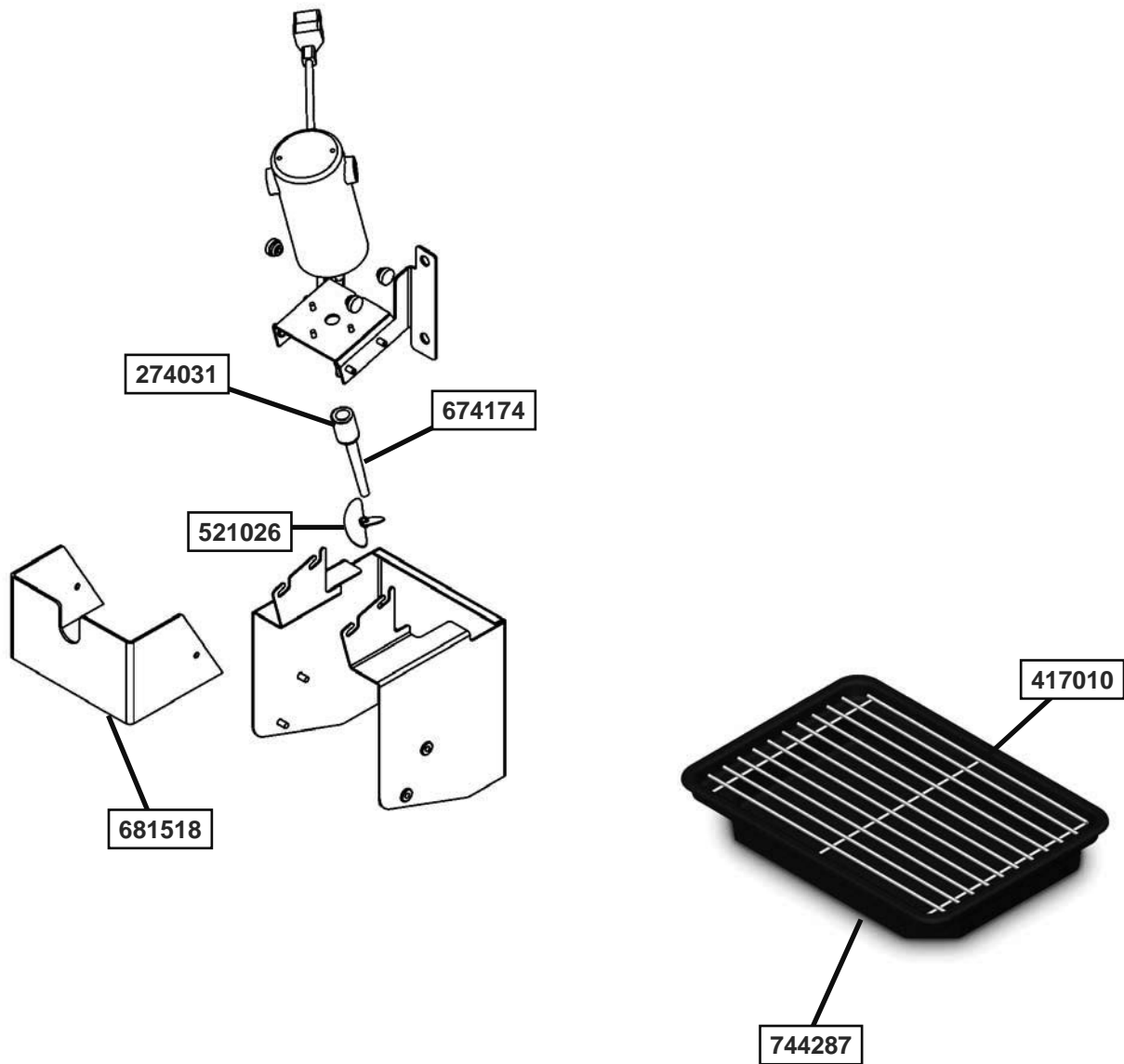
Part Number	Description	Quantity
208135	Brush - 4" X 8" X 16" (Barrel)	1
208380	Brush - 1/4" X 3" X 14"	1
208387	Brush - 1/2" X 5" X 24"	1
208465	Brush - 1" X 3-1/2" X 18"	1
208467	Brush - 3/8" X 1" X 5"	1
324014	Decal - Black Arrow on White Back	1
324065	Decal - Water Inlet	1
324103	Decal - Caution Rotating Shaft	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
324346	Decal - Caution Hazardous Moving Parts	1
324478	Decal - Electrical Box - L.H.	1
324509	Decal - Cleaning Instructions	1
324566	Decal - Wired According To	1
324584	Decal - Adequate Ventilation 3"	1
324686	Decal - Danger Automatic Start	1
324803	Decal - Domed Stoelting Logo (Large) (Header Panel)	1
324804	Decal - Domed Stoelting Swirl (Header Panel)	1
324825	Decal - Main Freezer Power	1
324826	Decal - Cab Off	1
324827	Decal - Freezing Cylinder	1
324835	Decal - Blender Power On / Off	1
324837	Decal - Caution Blender	1
508048	Lubricant - Spline (2 oz Squeeze Tube)	1
508135	Petrol Gel - 4 oz Tube	1
2187209	O-Ring & Bearing Kit (Ser. #0 - #28560)	-
2187979	O-Ring Kit (Ser. #28561 Plus)	-

6.2 AUGER SHAFT AND FRONT DOOR PARTS



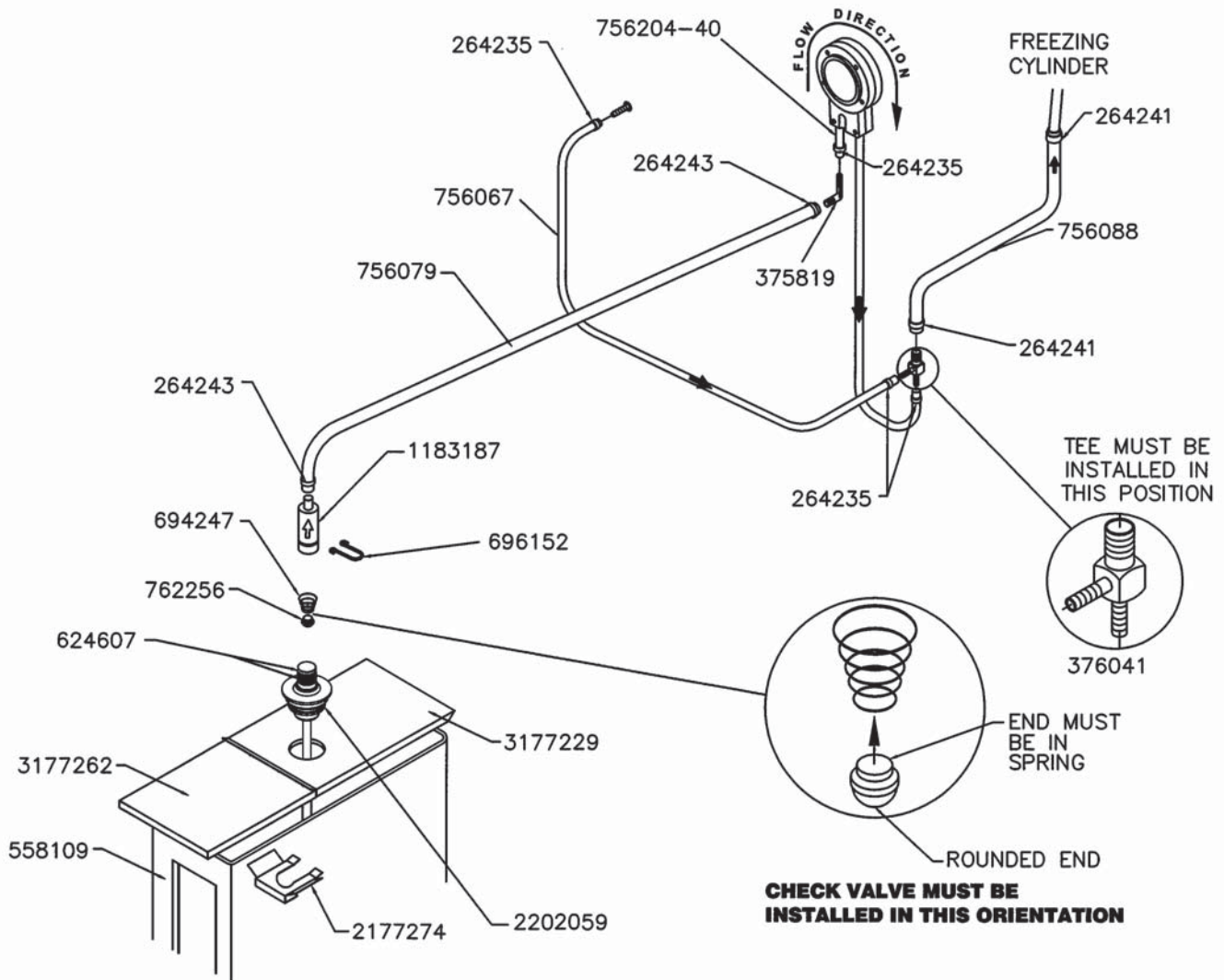
Part Number	Description	Quantity
149002	Bushing - Front Auger Support	1
381828	Auger Flight (6" Barrel)	6
482004	Knob (Air Bleed Valve)	1
482019	Knob - Front Door (Black)	4
624520	O-Ring - Air Bleed Valve - Black	2
624614	O-Ring - Spigot - Black	2
624678	O-Ring - Rear Seal - Black	2
625314	O-Ring - Front Door - Black	1
667868	Seal - Rear Auger (Orange)	1
694200	Spring - Air Bleed Valve	1
694275	Spring - Auger Flight (6" Barrel)	6
2183597-SV	Front Door w/Pins & Air Bleed Valve	1
2183755	Valve - Air Bleed	1
2183772	Spigot Body	1
2183970	Adapter - Rear Seal (Code 4)	1
2204311	Auger Shaft	1

6.3 BLENDER PARTS AND DRIP TRAY



Part Number	Description	Quantity
274031	Blender Agitator Collar (SU412)	1
417010	Grid - Drip Tray (Metal)	1
521026	Blender Agitator (SU412)	1
674147	Blender Shaft (5") (SU412)	1
674174	Blender Shaft (7.6") (SU412)	1
674183	Blender Shaft (6.6") (SU412)	1
681518	Swing Shield (Plastic) (SU412)	1
744252	Drain Tray (Black)	1
744287	Tray - Drip (Black)	1

6.4 CAB TUBING ASSEMBLY



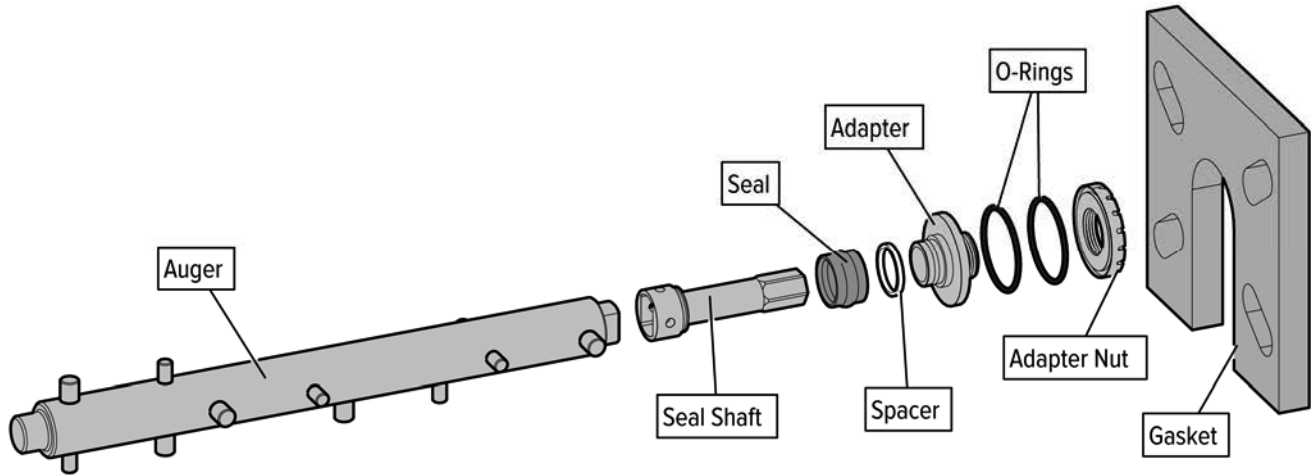
Part Number	Description	Quantity
264235	Clamp - Metal (1/4" ID Tubing) (Cab)	4
264241	Clamp - Metal (1/2" ID Tubing) (Cab)	2
264243	Clamp - Metal (3/8" ID Tubing) (Cab)	2
375819	Elbow - Barbed (3/8"- 1/4") (Cab)	1
376041	Tee Connector - 3-Way (Stainless) (Cab)	1
558109	Mix Container Only (Cab)	1
624607	O-Ring - Check Valve Body - Black (Cab)	2
694247	Spring - Cone (Cab Check Valve)	1
696152	Clip - Lock (Check Valve) (Cab)	3
756067	Tubing - 1/4" ID - Clear - Air Line (25' Increments) (Per Inch)	13"
756079	Tubing - 3/8" ID - Clear - Mix Line (25' Increments) (Per Inch)	24"
756088	Tubing - 1/2" ID - Clear - Mix Line (25' Increments) (Per Inch)	6"
756204	Tubing - 1/4" ID - Pump (50' Box Only) (Per Inch) (Cab)	-
756204-40	Tubing - 1/4" ID - Pump (Pre-Cut 40" Piece) (Cab)	4
762256	Check Valve - Mix Outlet (Cab)	1
1183187	Check Valve - Mix In Line (Outer) (Cab)	1
2177274	Clip - Retaining (Mix Probe To Cover) (Cab)	1
2202059	Pick-Up Tube - Mix (Cab)	1
3177229	Cover - Rear (Mix Container) (Cab)	1
3177262	Cover - Front (Mix Container) (Cab)	1

REAR SEAL INSTALLATION INSTRUCTIONS FOR 2209534 KIT



INTRODUCTION

These instructions are for installing the rear bellows seal to the SU412 machine. The machine must be empty prior to installing the kit. This kit contains the following components:



Tools needed to complete the installation include:

- Sockets – 5/16", 1/2", 9/16"
- Phillips Screwdriver

REMOVE GEARBOX

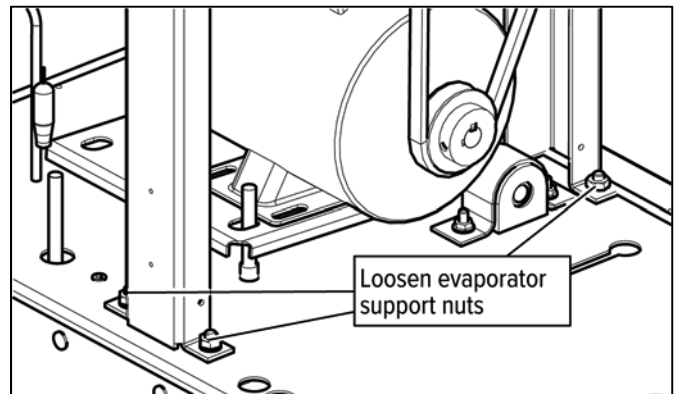
1. Disconnect the machine from electrical supply before servicing.



WARNING

Hazardous Voltage

Disconnect all electric power before servicing. Failure to disconnect power before servicing could result in death or serious injury.



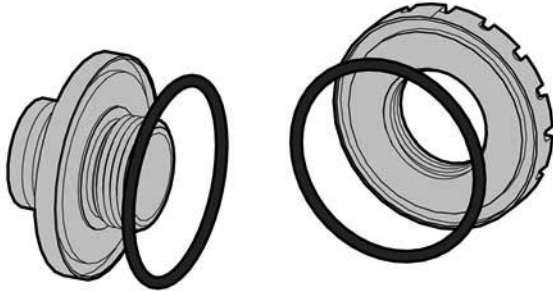
2. Remove the auger from the barrel if installed.
3. Remove both side panels and rear panel.
4. Remove the belt.
5. Use a 1/2" socket to loosen the nuts connecting the evaporator supports to the frame. Do not remove the bolts.
6. Use a 9/16" socket to remove the four bolts connecting the supports and gearbox to the evaporator.
7. Tilt the supports outwards and remove the gearbox.
8. Use a 5/16" socket to remove the rear barrel brace from the back of the evaporator. Discard the barrel brace.
9. Remove and discard the foam attached to the back of the evaporator.

REAR SEAL INSTALLATION INSTRUCTIONS FOR 2209534 KIT

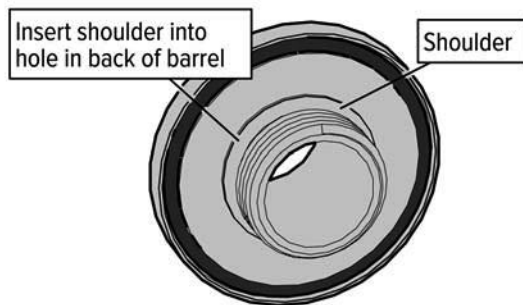


INSTALLING SEAL BELLOWS

1. Install the o-rings into the grooves of the seal adapter and seal adapter nut (the nut has notches).



2. Insert the adapter into the hole in the back of the barrel.
3. Make sure the shoulder of the adapter engages the hole at the back of the barrel. This is critical to center the adapter.



4. Screw the adapter nut onto the adapter with the notches facing out.
5. Tighten the adapter nut by hand.

INSTALL GEARBOX

1. Install the new foam and gearbox to the back of the evaporator. Make sure the cutout on the foam faces downwards.

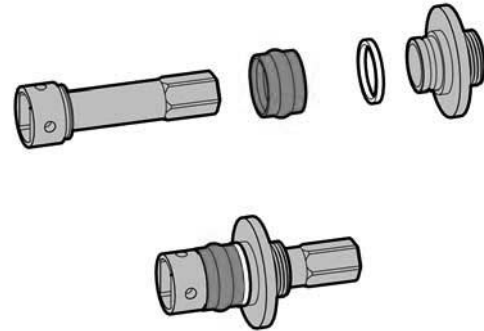
NOTE

The evaporator may need to be propped up to align the bolt holes.

2. Install the gearbox and tighten the evaporator supports to the frame.
3. Install the belt and tension as necessary.
4. Install the side panels and rear panel.

ASSEMBLE AUGER

1. Wash and sanitize the auger shaft, seal shaft, white spacer and green seal. Wash and sanitize the existing auger parts and front door if needed.
2. Install the white spacer and green seal onto the adapter and insert the seal shaft into the adapter.



3. Install the new auger and flights into the machine and install the front door.
4. Fill the machine with sanitizing solution per the sanitizing instructions in the manual. Check for leaks around the newly installed rear seal components.
5. Run the machine in clean mode and check for leaks or unusual noises.
6. If the machine tests okay, continue with normal sanitizing and operation procedures.

During the normal cleaning process, the seal shaft and adapter components remain in the machine. Remove the seal shaft, white spacer and green seal monthly to inspect the components for wear and to clean.



**WARRANTY
FROZEN UNCARBONATED BEVERAGE EQUIPMENT**

1. **Scope:**

PW Stoelting, L.L.C. (“Stoelting”) warrants to the first user (the “Buyer”) that the evaporator assembly, compressors, drive motors, and speed reducers of Stoelting frozen uncarbonated beverage 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, hoses, seals, 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.