



Model 2211
SERVICE MANUAL
Manual No. 513519 Oct. 1992

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 INTRODUCTION

1.1 DESCRIPTION

The Stoelting® 2211 floor model freezer is gravity fed. The freezer is equipped with fully automatic controls to provide a uniform product. The freezer is designed to operate with "Soft-Serve" mixes.

This manual is designed to assist qualified service personnel in the installation, operation, service and maintenance of the Stoelting Model 2211 gravity freezer.

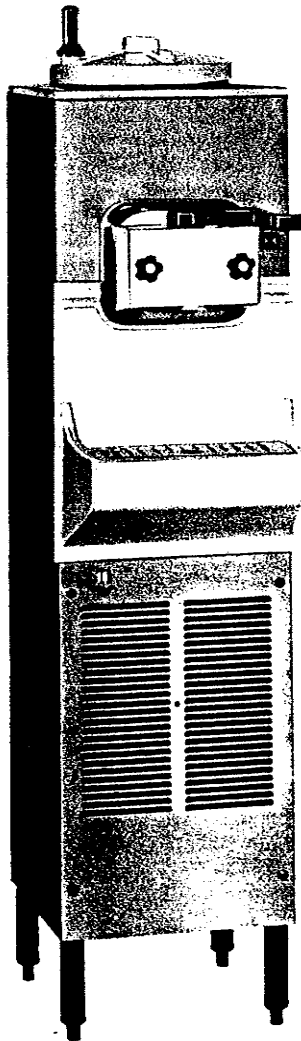
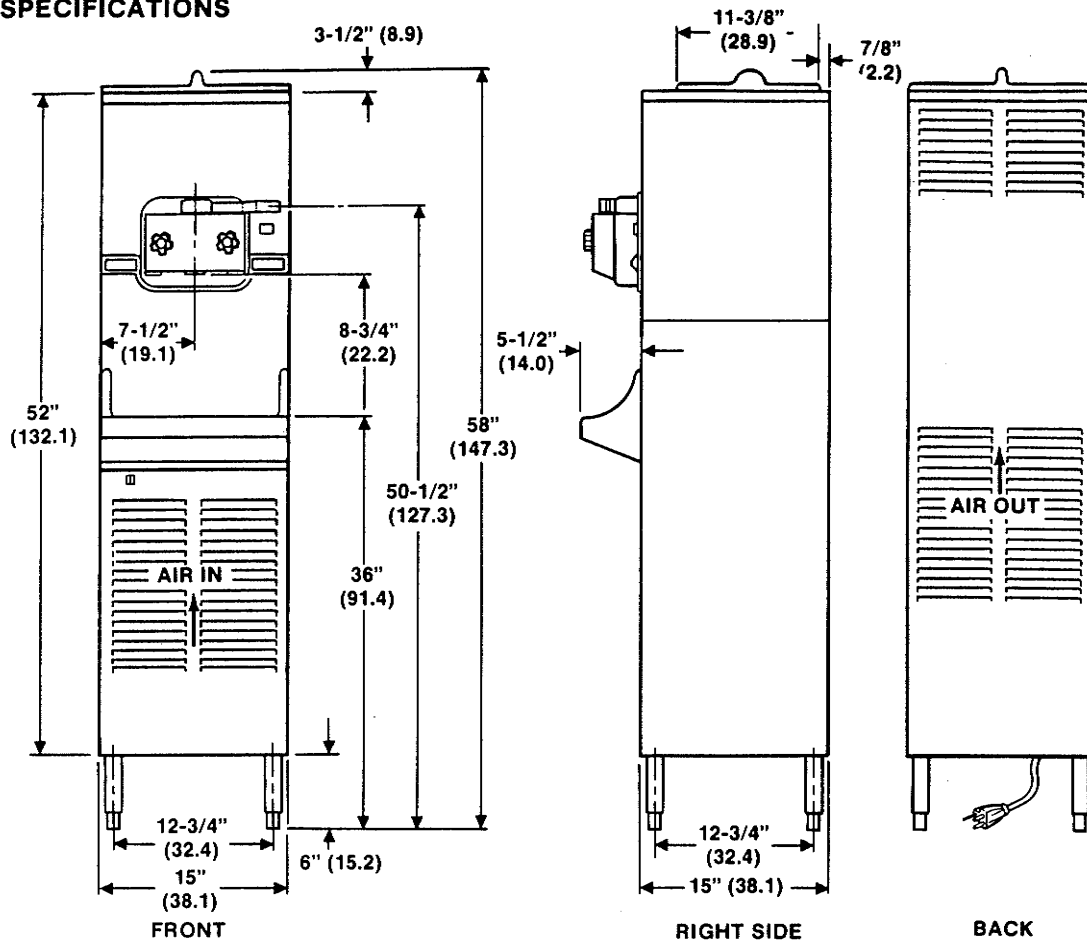


Figure 1. Model 2211 Freezer

1.2 SPECIFICATIONS



Figures in parenthesis are centimeters.

Figure 2. Specifications

MODEL 2211 FLOOR MODEL GRAVITY FREEZER

DIMENSIONS

Freezer: 15" (38.1 cm) wide x 15" (38.1 cm) deep x 58" (147.3 cm) high
Crated: 17" (43.2 cm) wide x 21" (53.3 cm) deep x 70" (177.8 cm) high

WEIGHT

Freezer: 180 lbs. (81.7 kg) Crated: 200 lbs. (90.7 kg)

ELECTRICAL

1 phase, 115 VAC**

3/4 HP Drive Motor; 3600 BTUH* Compressor (frozen product output)

Approximate 14 total Running Amps.

Use 15 Amp HACR circuit breaker or regular circuit breaker.

**A transformer is required for the Model 2211 if voltage is over 125 volts or under 100 volts.

COOLING

Air cooled: Requires minimum 6" (15.2 cm) air clearance in front and behind unit. No clearance needed left or right side. (See Fig. 5.)

HOPPER

3-1/2 gallons (13.25 liters) or 4 #10 cans of recommended mix refrigerated and insulated.

SECTION 2 INSTALLATION INSTRUCTIONS

2.1 SAFETY PRECAUTIONS

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

Take notice of all warning labels on the freezer (Fig. 3). The labels have been put there to help maintain a safe working environment. The labels have been designed to withstand washing and cleaning. All labels must remain legible for the life of the freezer.

Labels should be checked periodically to be sure they can be recognized as warning labels.

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 Highway 67
Kiel, Wisconsin 53042-1600

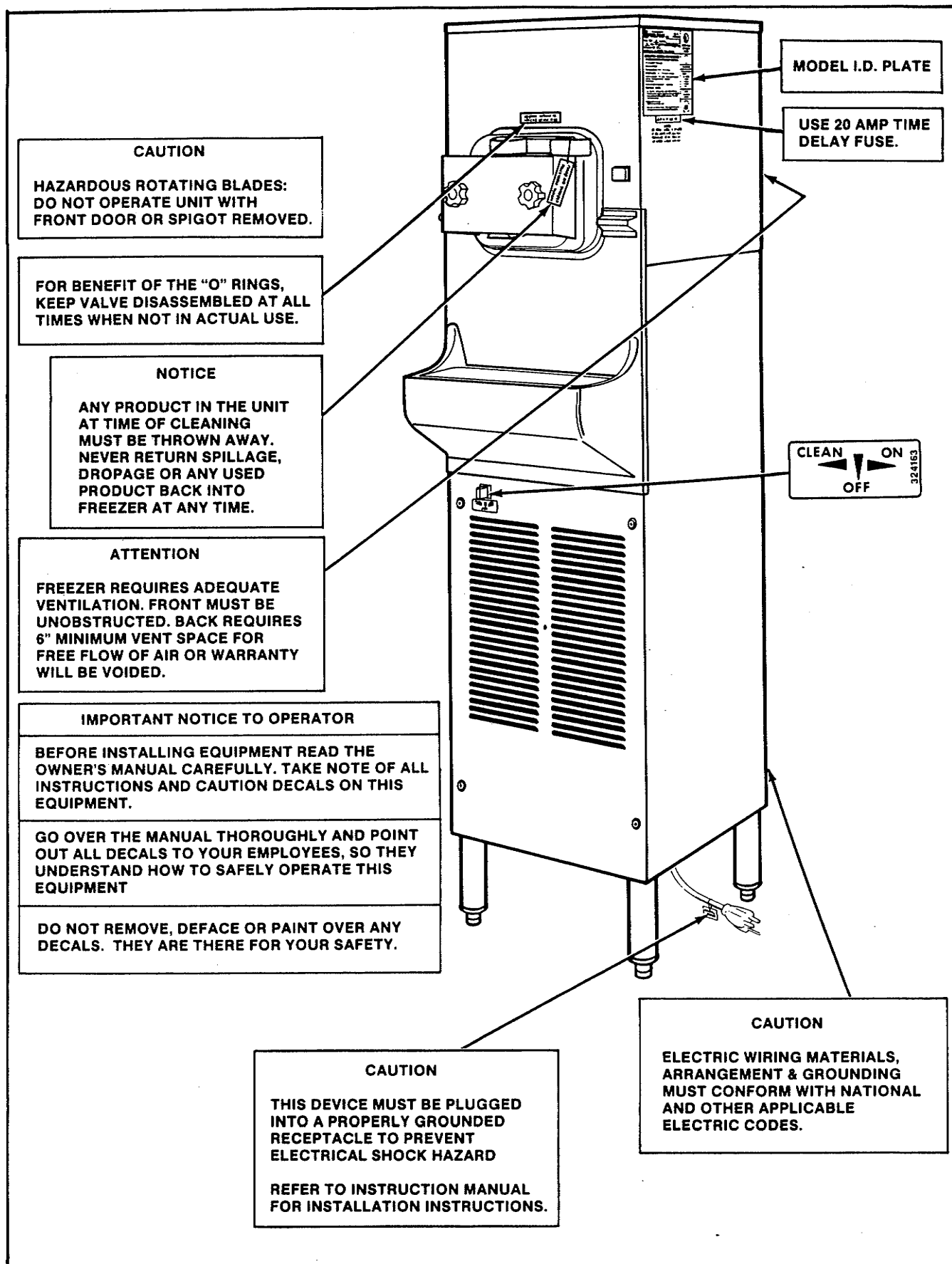


Figure 3. Warning Label Locations

2.2 SHIPMENT AND TRANSIT

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

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

2.3 FREEZER INSTALLATION

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

- A. Uncrate the freezer.
- B. The freezer must be placed in a solid level position. To level the freezer, turn the bottom part of each leg in or out. Place a level on top of the hopper, with the cover removed, to check whether or not the freezer is level.

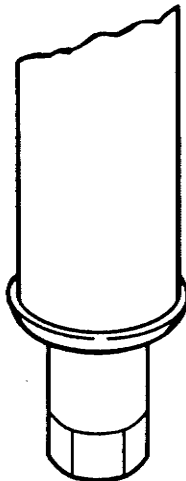


Figure 4. Adjustable Leg

NOTE

Accurate leveling is necessary for correct drainage of freezer barrel and to insure correct over-run.

- C. The freezer is equipped with an air cooled condenser and requires correct ventilation. The front of the freezer is the air intake and **must** have 6" (15.2 cm) clearance. Air discharges out the rear of the unit. **Do not** obstruct the discharge. Allow a 6" (15.2 cm) clearance behind the unit (Fig. 5).



CAUTION

FAILURE TO PROVIDE ADEQUATE VENTILATION WILL VOID WARRANTY!

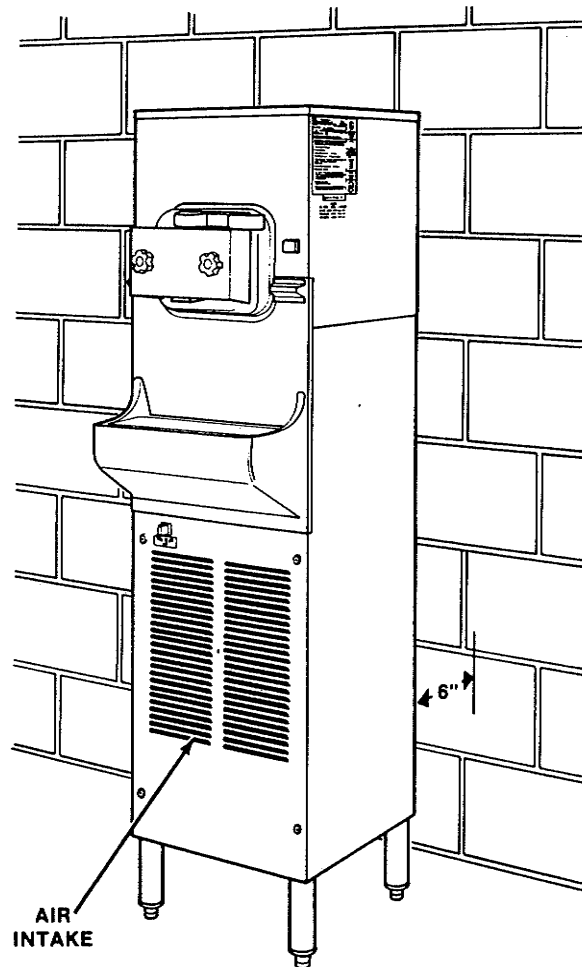


Figure 5. Space and Ventilation Requirements

- D. Place the CLEAN-OFF-ON switch in the OFF position.
- E. Connect the power cord. The plug is designed for 115 volt/20 amp duty. The unit must be connected to a properly grounded receptacle. The electrical cord furnished as part of the freezer has a three prong grounding type plug (Fig. 6). The use of an extension cord is not recommended. If one must be used, use one with a size 12 gauge or heavier with a ground wire. **Do not** use an adaptor to get around grounding requirement.

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

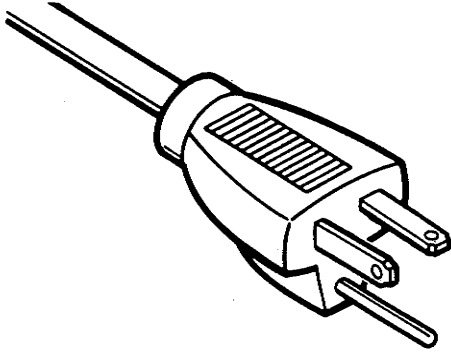


Figure 6. Electrical Plug

F. Install the drip tray, insert and other miscellaneous parts on the freezer (Fig. 7).

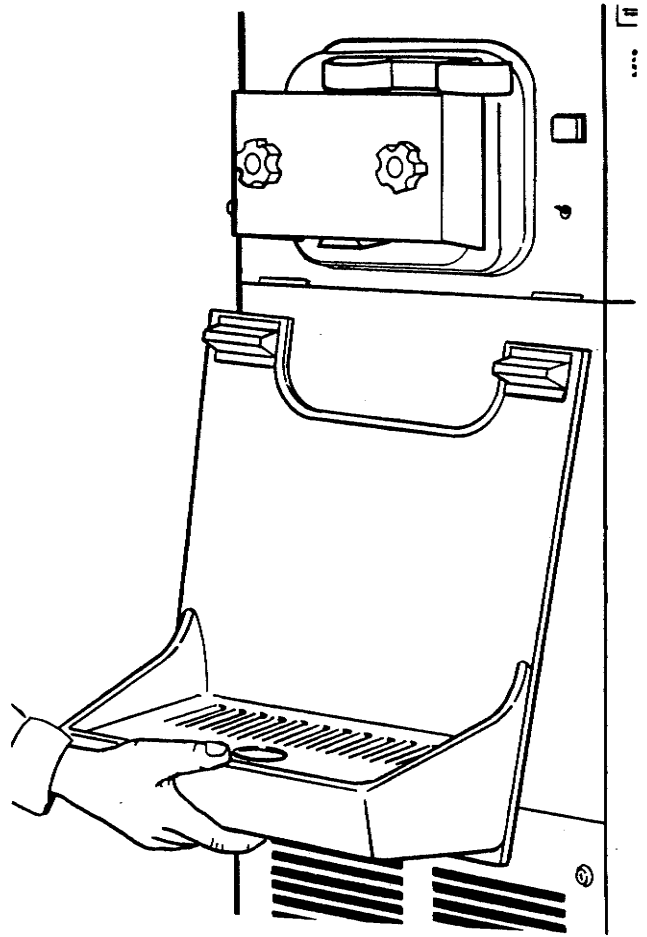


Figure 7. Installing Tray and Insert

SECTION 3 INITIAL SET-UP AND OPERATION

3.1 OPERATOR'S SAFETY PRECAUTIONS

SAFE OPERATION IS NO ACCIDENT; Observe these rules:

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

on the freezer until the main electrical power has been disconnected.

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

3.2 OPERATING CONTROLS AND INDICATORS

Before operating the freezer, it is required that the operator know the function of each operating control. Refer to Figure 8 for the location of the operating controls on the freezer.



WARNING

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

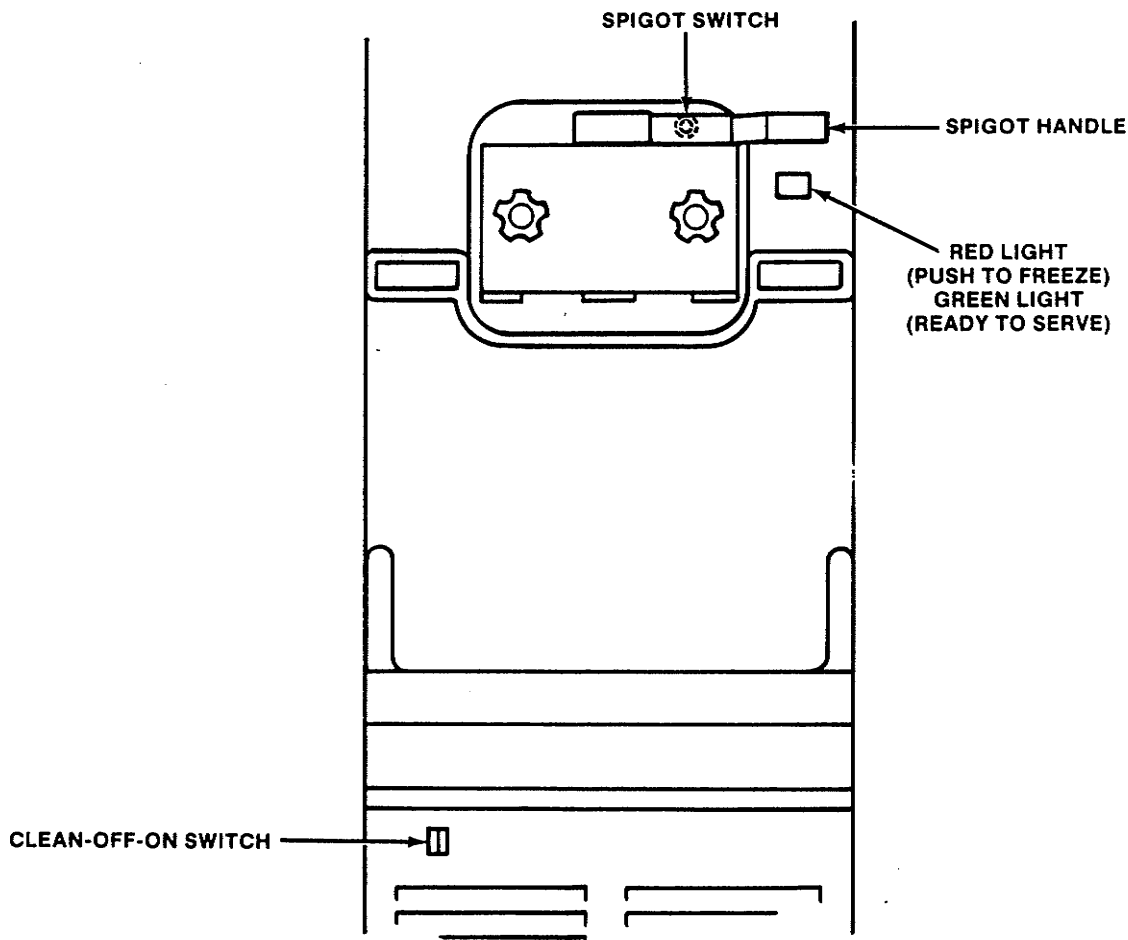


Figure 8. Controls

A. SPIGOT SWITCH

When the spigot handle is opened the SPIGOT switch will start the auger drive and refrigeration systems. When the spigot handle is closed, the drive motor and compressor will remain on until the product in the barrel reaches the proper consistency.

B. CLEAN-OFF-ON SWITCH

The CLEAN-OFF-ON switch is a three position paddle switch used to control the operation of the refrigeration system and auger. When the switch is placed in the CLEAN position, the refrigeration system will be off and the auger **will** rotate for cleaning.

When the switch is placed in the OFF position, the refrigeration system and auger **will not** operate.

When the switch is placed in the ON position, the freezer can be started by pushing the PUSH TO FREEZE switch.

C. PUSH TO FREEZE SWITCH

The PUSH TO FREEZE switch will indicate and start the freezing cycle. To start the initial freeze down, the CLEAN-OFF-ON paddle switch is placed in the ON position. Press the PUSH TO FREEZE switch in until the drive motor starts.

During the product freeze down time, the PUSH TO FREEZE light will remain illuminated red until the freezer shuts off. Then the green PUSH TO FREEZE light will illuminate.

NOTE

When the PUSH TO FREEZE switch flashes on and off, the freezer is in an error condition and will not run. This feature is designed to help protect the freezer from damage resulting from operator error or operational malfunction. When in the error condition there is no refrigeration and the mix could spoil after a period of time.

The green light indicates when the product has reached the correct consistency and can be dispensed from the freezer. The green light will remain illuminated as long as there is servable product in the freezer barrel.

If the green light is not illuminated when the product is to be dispensed, press the PUSH TO FREEZE switch. Wait until the green light is illuminated before dispensing.

NOTE

Failure to fill an empty hopper immediately may result in operational problems.

3.3 SANITIZING

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



WARNING

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

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



CAUTION

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

In general, sanitizing may be conducted as follows:

- A. Push the mix inlet regulator into hopper with air inlet (long) tube toward the front of the freezer (Fig. 9).

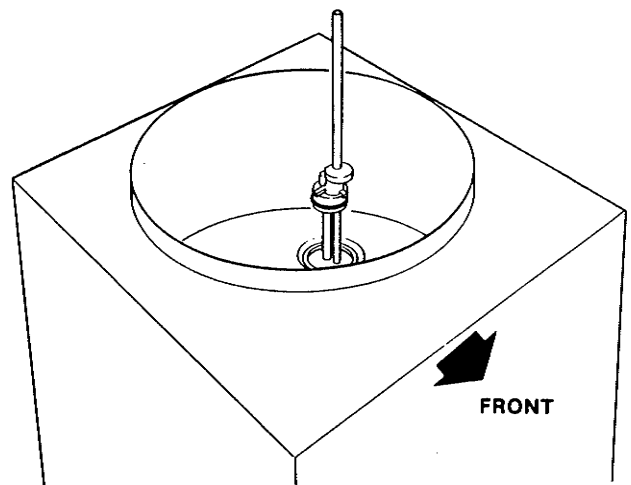


Figure 9. Mix Inlet Regulator

- B. Prepare 2 gallons (7.5 liters) of sanitizing solution following manufacturer's instructions. Pour into hopper with mix inlet regulator in place (Fig. 10).

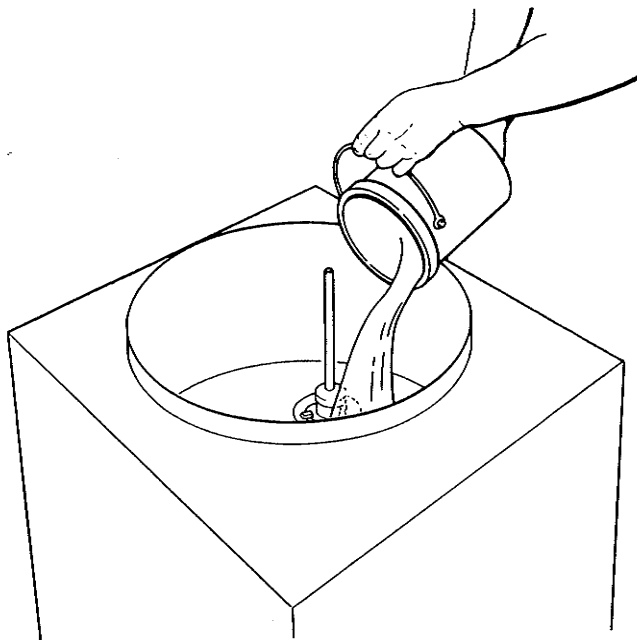


Figure 10. Sanitizing Procedure

- C. Place the CLEAN-OFF-ON paddle switch in the CLEAN position. Check for leaks around the front door seal (Fig. 11).

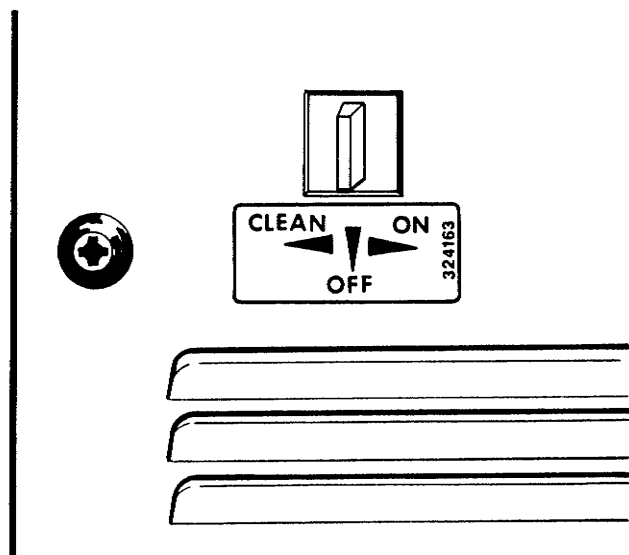


Figure 11. Clean-Off-On Switch

- D. Clean side walls of hopper, mix inlet regulator and underside of hopper cover using a sanitized soft bristle brush dipped in the sanitizing solution (Fig. 12).

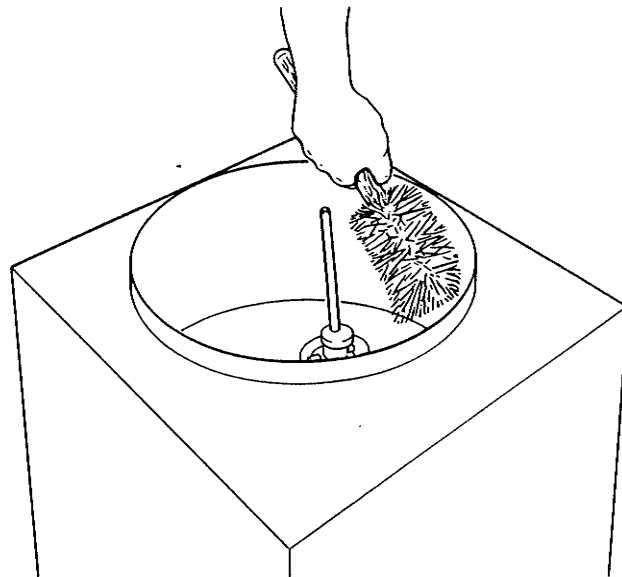


Figure 12. Sanitizing Hopper

- E. After five minutes, place a bucket under the spigot and open spigot to drain sanitizing solution. When solution has drained, place the CLEAN-OFF-ON switch in the OFF position. Allow the freezer barrel to drain completely (Fig. 13).

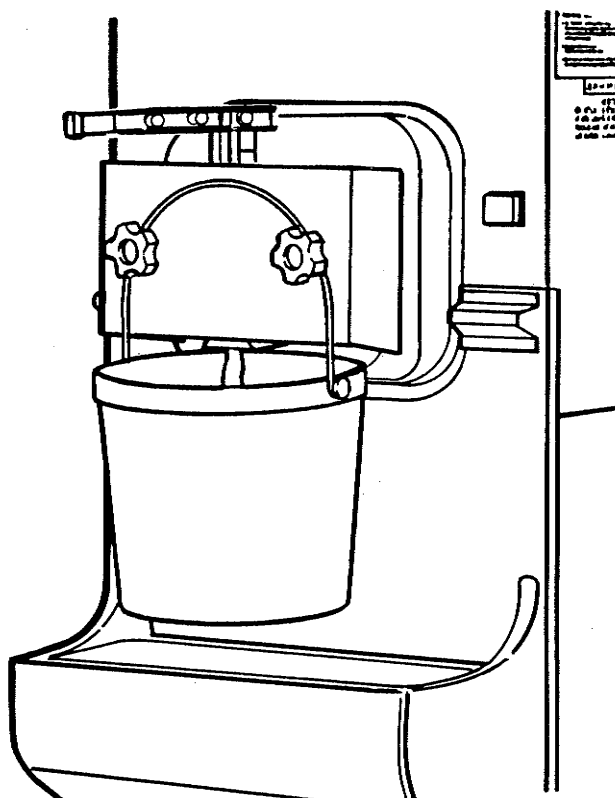


Figure 13. Spigot Opened and Solution Draining

3.4 FREEZE DOWN AND OPERATION

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

- A. Sanitize just prior to use.
- B. Place the CLEAN-OFF-ON switch in the OFF position.
- C. With spigot open, pour approximately 1 gallon (3.8 liters) of mix into the hopper. Allow the mix to flush out about 8 ounces (0.23 liters) of sanitizing solution and liquid mix. Close the spigot (Fig. 14).

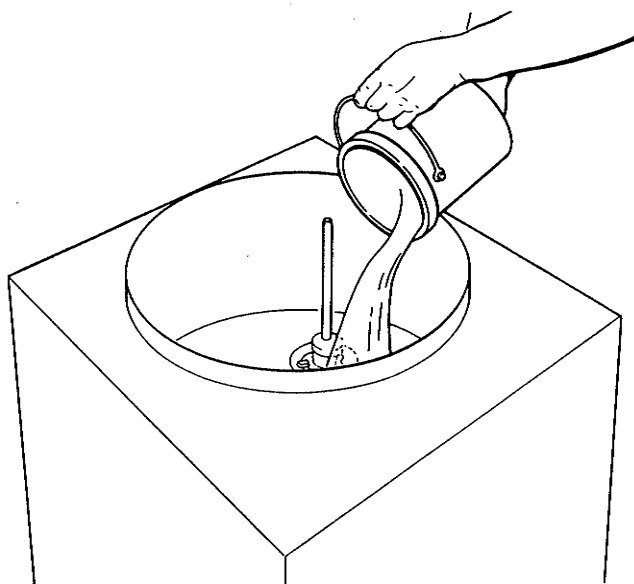


Figure 14. Pouring the Mix

- D. Fill hopper with approximately 3 gallons (11.4 liters) of pre-chilled (40°F or 4°C) mix.



CAUTION

DO NOT OVERFILL THE HOPPER. MIX LEVEL MUST NOT BE HIGHER THAN 2 INCHES (5 CM) FROM THE TOP OF THE AIR INLET TUBE ON THE MIX INLET REGULATOR.

- E. The freezer barrel will automatically fill until it is about 1/2 full (approximately 3 minutes). If freezer barrel does not fill, check for obstruction in the mix inlet regulator. If freezer barrel fills over 1/2 full, check for leaks at the mix inlet regulator "O" Ring or check if the mix inlet regulator was installed correctly or that the freezer is level.

- F. Place the CLEAN-OFF-ON paddle switch in the ON position, then press the PUSH TO FREEZE switch and the drive motor and compressor will come ON.

NOTE

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

- G. After about 6 to 10 minutes the freezer will shut OFF and the green lens will illuminate. The product is ready to serve.
- H. For normal dispensing, move the spigot handle open 60° (Fig. 15).

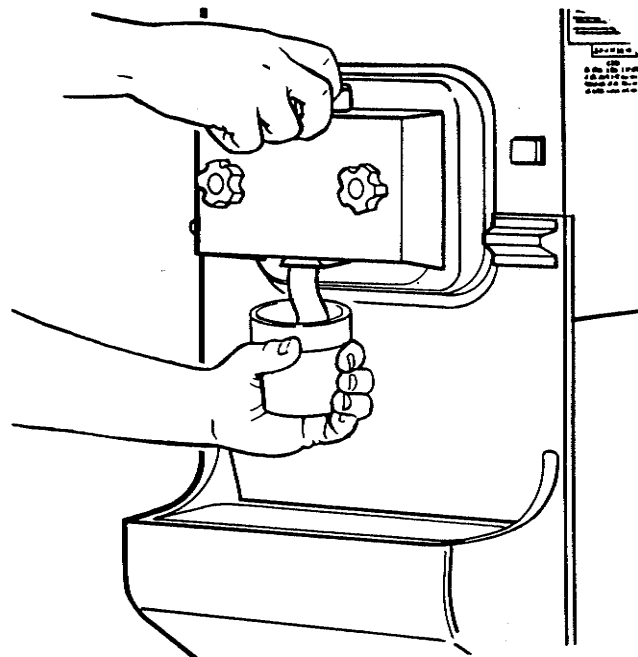


Figure 15. Dispensing Product



CAUTION

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

- I. The freezer is designed to dispense the product at a reasonable draw rate. If the freezer is over-drawn, the result is a soft product or a product that will not dispense at all. If this should occur, allow the freezer to run for approximately 30 seconds before dispensing additional product. After a while the operator will sense or feel when the freezer is beginning to fall behind, and will slow up on the rate of draw so as not to exceed the capacity.

- J. If the freezer will not start when the spigot is opened and the red PUSH TO FREEZE switch is flashing, the freezer has shut off on its error control system. This means the spigot handle may have been left open, or there is no mix in the freezer, or there may be a mechanical problem. To restart the freezer, turn the CLEAN-OFF-ON switch to the OFF position and back to ON again. Press the PUSH TO FREEZE switch and the freezer should start and run.

3.5 MIX INFORMATION

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

Proper product serving temperature varies from one manufacturer's mix to another. Mixes should provide a satisfactory product in the 18° to 20° F (-7° to -6° C) range.

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

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

Some products tend to foam more than others. If excess foam should occur, skim off with a sanitized utensil and discard (Fig. 16). Periodically, stir the mix in the hopper with a sanitized utensil.

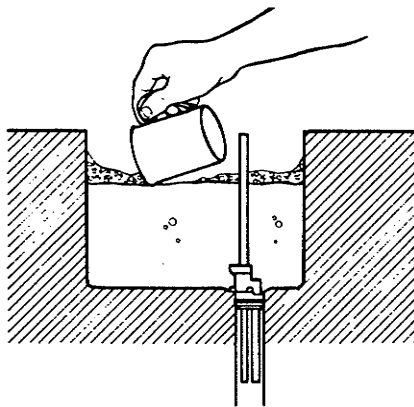


Figure 16. Skimming the Foam

3.6 REMOVING MIX FROM FREEZER

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

- A. Remove the mix inlet regulator from the hopper by pulling straight up (Fig. 17).

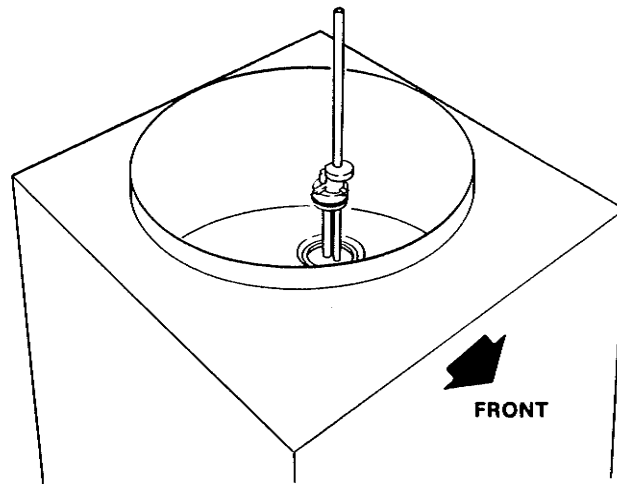


Figure 17. Removing Mix Inlet Regulator

- B. Place the CLEAN-OFF-ON paddle switch in the CLEAN position. Allow the mix to agitate in freezer barrel until the mix has become a liquid.
- C. Drain the liquid mix by opening the spigot. A bucket or container should be placed under the spigot to catch the liquid mix (Fig. 18).

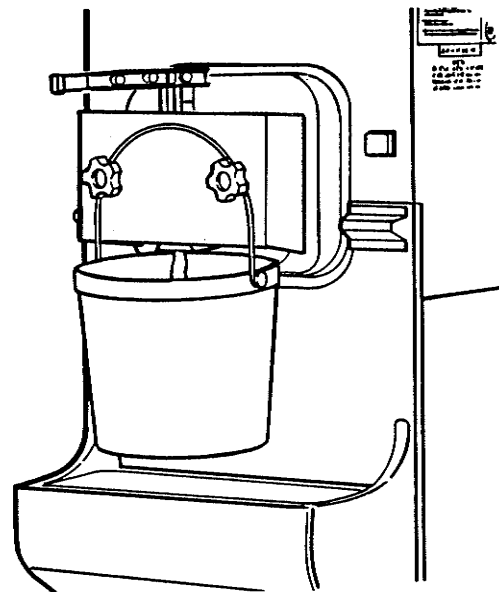


Figure 18. Draining Mix

- D. Place the CLEAN-OFF-ON switch in the OFF position.

3.7 CLEANING THE FREEZER

NOTE

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

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

- A. Close the spigot and fill the hopper with 2 gallons (7.5 liters) of cold tap water.
- B. Place the CLEAN-OFF-ON switch in the CLEAN position.
- C. Allow the water to agitate for approximately five minutes.
- D. Open the spigot to drain the water. Remember to place a bucket or container under the spigot to catch the water. When the water has drained, turn the CLEAN-OFF-ON switch to the OFF position. Allow the freezer barrel to drain completely.
- E. Repeat steps A through D using a mild detergent solution.

3.8 DISASSEMBLY OF FREEZER PARTS



CAUTION

PLACE THE CLEAN-OFF-ON PADDLE SWITCH IN THE OFF POSITION BEFORE DISASSEMBLING FOR CLEANING OR SERVICING.

Inspection for worn or broken parts should be made at every disassembly of the freezer for cleaning or other purposes. All worn or broken parts should be replaced to ensure safety to both the operator and the customer and to maintain good freezer performance and a quality product. Two normal wear areas are the auger flights and front auger support bushing (Fig. 19). Frequency of cleaning must comply with the local health regulations.

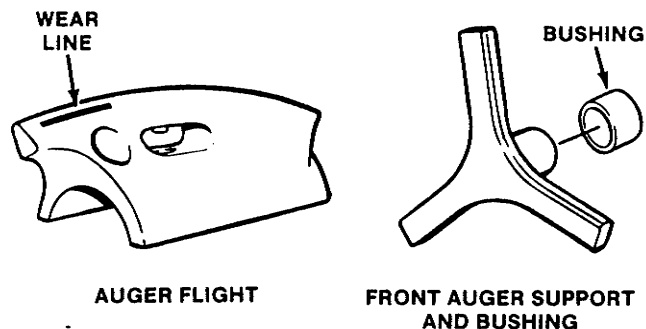


Figure 19. Auger Flight Wear and Front Auger Support Bushing Wear

To disassemble the freezer, refer to the following steps:

- A. Remove the mix inlet regulator from the hopper by pulling straight up.
- B. Remove the front door by turning off the circular knobs and then pulling the front door off the studs (Fig. 20).

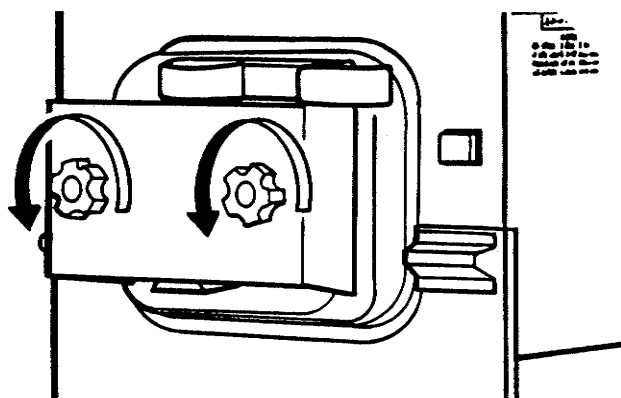


Figure 20. Removing Front Door

- C. Remove the spigot body and spring from the front door by pulling the clevis pin out of the spigot handle. Push the spigot body thru the bottom of the front door (Fig. 21).

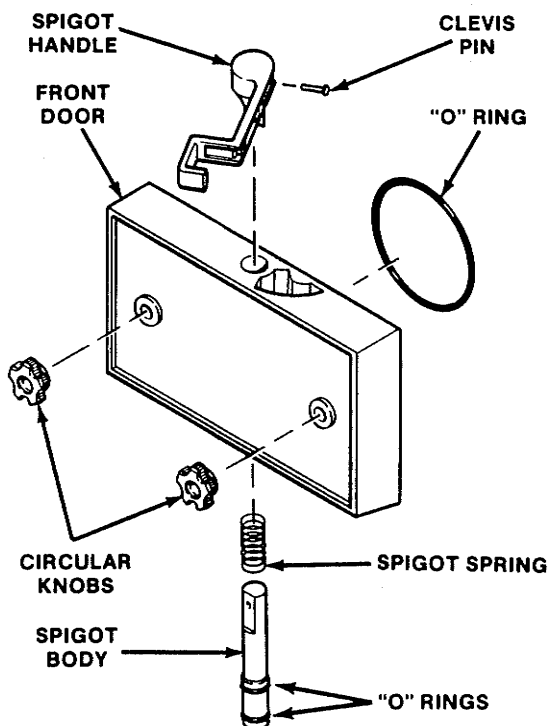


Figure 21. Removing Spigot

- D. Remove the front auger support, bushing and gray gasket (Fig. 22).

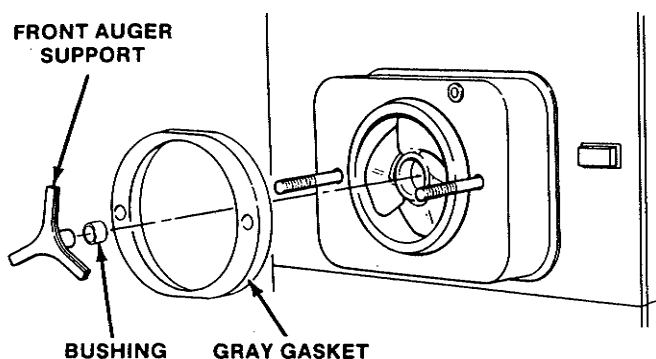


Figure 22. Removing Auger Support

- E. Remove the auger assembly from the freezer (Fig. 23). Pull the auger out of the freezer barrel slowly. As the auger is being pulled out, carefully remove each of the plastic flights with springs.
- F. Keep the rear of the auger shaft tipped up once it is clear of the freezer barrel to avoid dropping rear seal (Fig. 23).

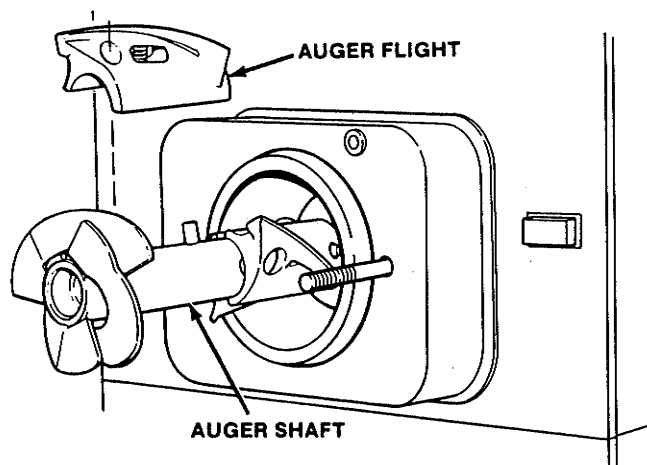


Figure 23. Auger Shaft

- G. Remove the rear seal.
- H. Wipe socket lubricant from the drive end (rear) of the auger with a cloth or paper towel.
- I. Remove all "O" Rings from parts by first wiping off the lubricant using a clean paper towel. Then squeeze the "O" Ring upward (Fig. 24). When a loop is formed, roll out of the "O" Ring groove.



WARNING

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



Figure 24. Removing "O" Ring

3.9 CLEANING THE FREEZER PARTS

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

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



CAUTION

DO NOT DAMAGE PARTS BY DROPPING OR ROUGH HANDLING.

- B. Wash the hopper and freezer barrel with warm detergent water and brushes provided (Fig. 25).

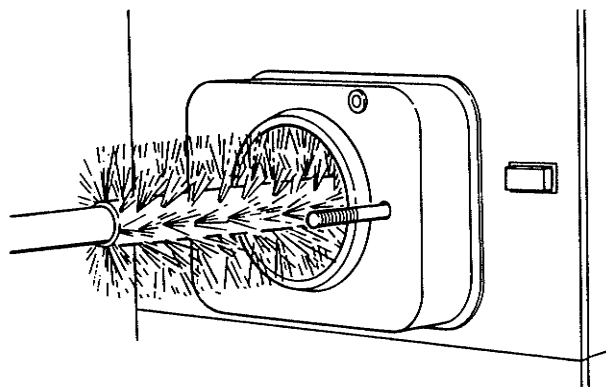


Figure 25. Cleaning Freezer Barrel

- C. Clean the rear seal and drive surfaces from the inside of the freezer barrel with warm detergent water.
- D. Clean the drip tray and insert with a soap solution. Rinse with clean hot water.

3.10 SANITIZE FREEZER AND FREEZER PARTS

- A. Use a sanitizer mixed according to manufacturer's instructions to provide a 100 parts per million strength solution. Mix sanitizer in quantities of no less than 2 gallons (7.5 liters) of 120° F water. Allow the sanitizer to contact the surfaces to be sanitized for 5 minutes. Any sanitizer must be used only in accordance with the manufacturer's instructions.
- B. Place all parts in the sanitizing solution, then remove and let air dry.
- C. Using this sanitizing solution and the large barrel brush provided, sanitize the rear of the barrel and drive area by dipping the brush in the sanitizing solution and brushing the rear of the barrel.

3.11 ASSEMBLY OF FREEZER

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

NOTE

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

NOTE

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

- A. Assemble all "O" Rings onto parts dry, **without lubrication**. Then apply a thin film of sanitary lubrication to exposed surfaces of the "O" Rings. Apply a thin film of sanitary lubricant to metal part of rear seal. Also apply a thin film of sanitary lubricant inside the hole on the front of the auger.
- B. Assemble the rear seal onto the auger with the large end to the rear. Be sure the "O" Ring is in place before installing the rear seal.
- C. Lubricate the inside of the auger drive socket (rear) with a small amount of white socket lubricant. A small container of socket lubricant is shipped with the freezer.
- D. Screw the springs onto the studs in plastic flights. **Springs must be screwed into the flights completely** to provide proper tension (Fig. 26).

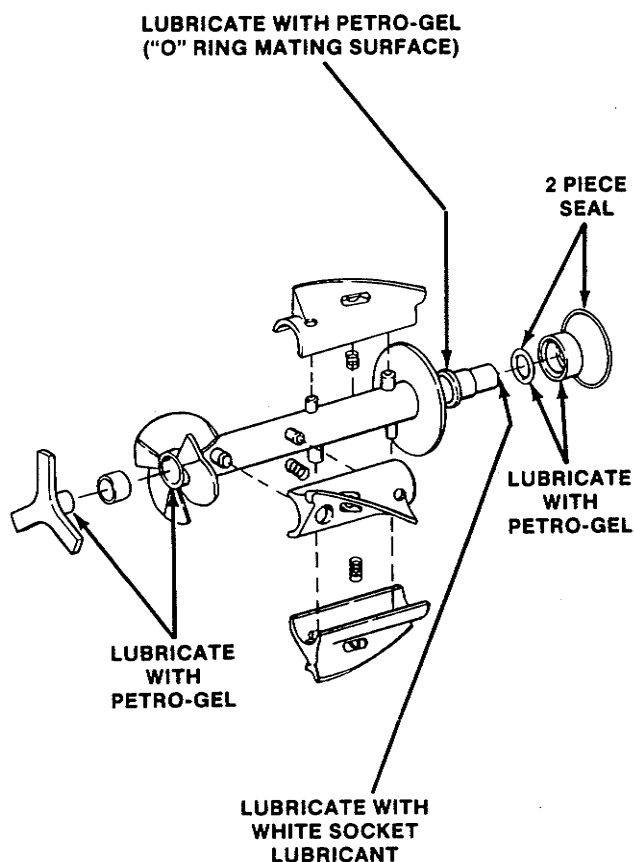


Figure 26. Exploded View of Auger



CAUTION

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

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

NOTE

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

- H. Install the spigot body with "O" Rings and spring into the front door from the bottom (Fig. 27). Push straight up until the spigot is in place. Place the spigot handle on top of the spigot and insert clevis pin.

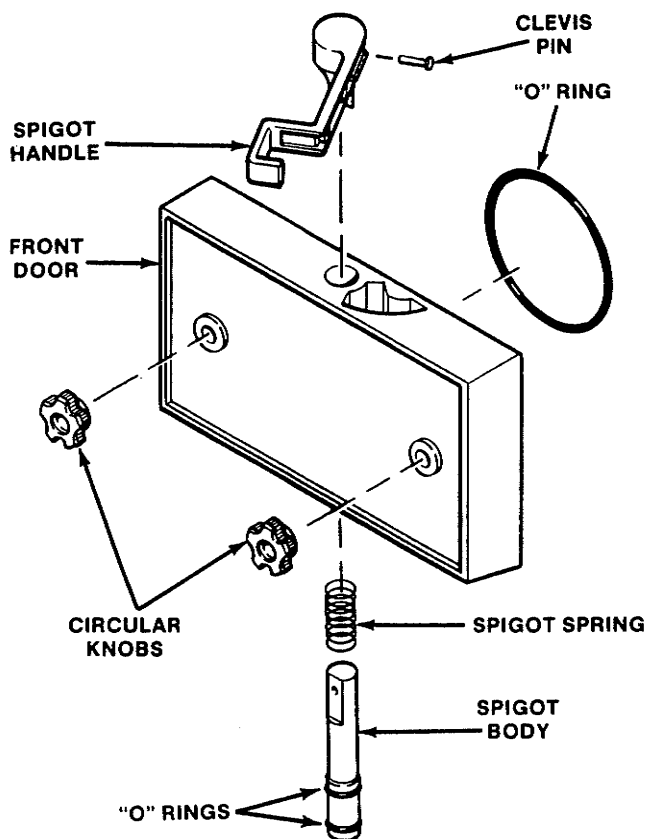


Figure 27. Exploded View of Front Door

NOTE

The spigot handle can only be installed one way.

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

CAUTION

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

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

- K. Install the mix inlet regulator into the hopper with the air inlet (long) tube toward the front of the freezer (Fig. 28).

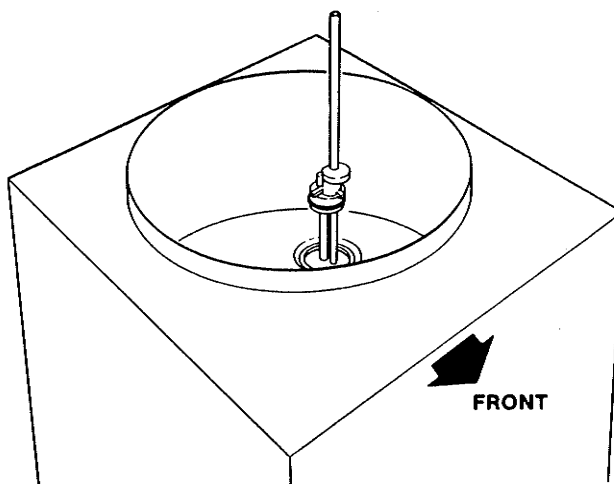


Figure 28. Installing Mix Inlet Regulator

3.12 ROUTINE CLEANING

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

3.13 PREVENTIVE MAINTENANCE

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

WARNING

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

A. DAILY

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

CAUTION

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

2. Run a sanitized brush down the mix inlet regulator tubes (Fig. 29).

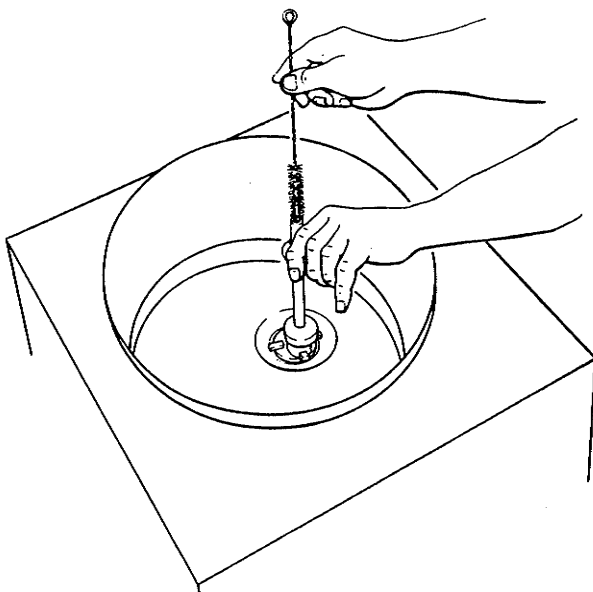


Figure 29. Sanitizing Mix Inlet Regulator

B. WEEKLY

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

C. MONTHLY

⚠ CAUTION

THE FREEZER HAS AN AIR COOLED CONDENSER AND MUST HAVE PROPER AIR CIRCULATION. DO NOT PLACE REAR OF FREEZER ANY CLOSER THAN 6 INCHES (15.2 CM) FROM THE WALL. FAILURE TO CLEAN THE CONDENSER ON A REGULAR BASIS MAY RESULT IN SERIOUS FREEZER DAMAGE AND COULD VOID FREEZER WARRANTY.

Remove louvered front panel by removing four retaining screws, and pulling panel down and out. Clean condenser using a vacuum cleaner or blowing out with compressed air or CO₂ tank.

3.14 EXTENDED STORAGE

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

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

NOTE

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

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

SECTION 4 WARNING DECALS

4.1 HOW TO ORDER WARNING DECALS

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

- A. Model number of equipment.
- B. Serial number of model, stamped on nameplate.
- C. Part number, decal description and quantity needed. Common warning decal names and numbers are listed below.

Part Number	Decal Description
324106	Decal - Applicable Electrical Code
324141	Decal - Caution - Rotating Blade
324163	Decal - Clean-Off-On
324213	Decal - Adequate Ventilation
723529	Decal - Caution

Refer to Figure 3 for location of decals.

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SECTION 5 REFRIGERATION COMPONENTS AND ADJUSTMENTS

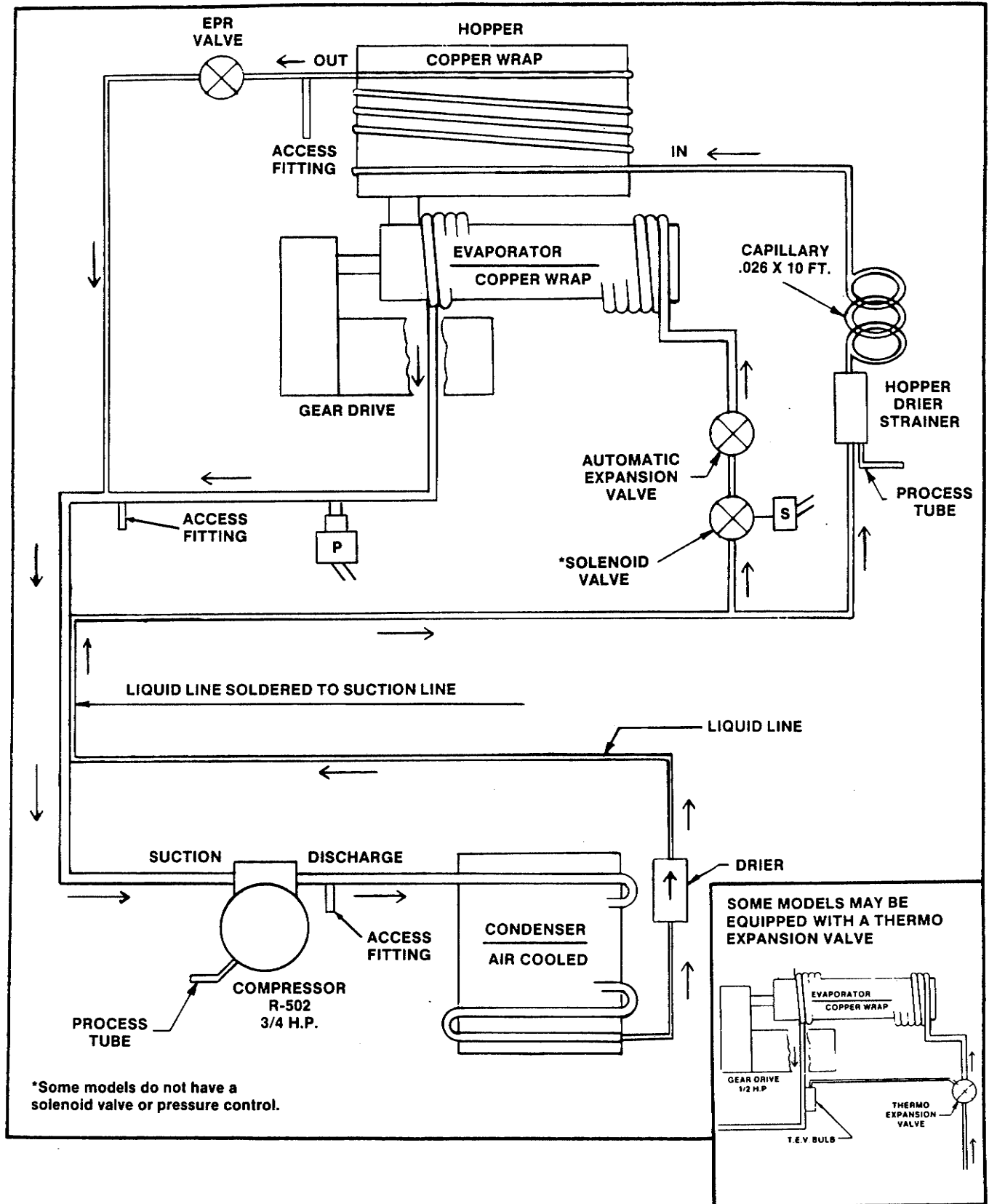


Figure 30. Refrigeration System

5.1 REFRIGERATION SYSTEM

The refrigeration system (Fig. 30) is a dual purpose system.

The system is designed to operate both the hopper and evaporator simultaneously at different temperatures. The system is designed for efficient use with R-502 as the refrigerant.

5.2 COMPRESSOR

The 3/4 horsepower compressor is designed specifically for use with R-502.

A. WINDING TEST

To test the compressor motor windings for possible problems, perform the following steps:



WARNING

DISCONNECT FREEZER FROM ELECTRICAL SUPPLY SOURCE BEFORE SERVICING.

1. Remove the drip tray and insert by gently pushing up to disengage from the support pins and pulling out and down. (Fig. 31).

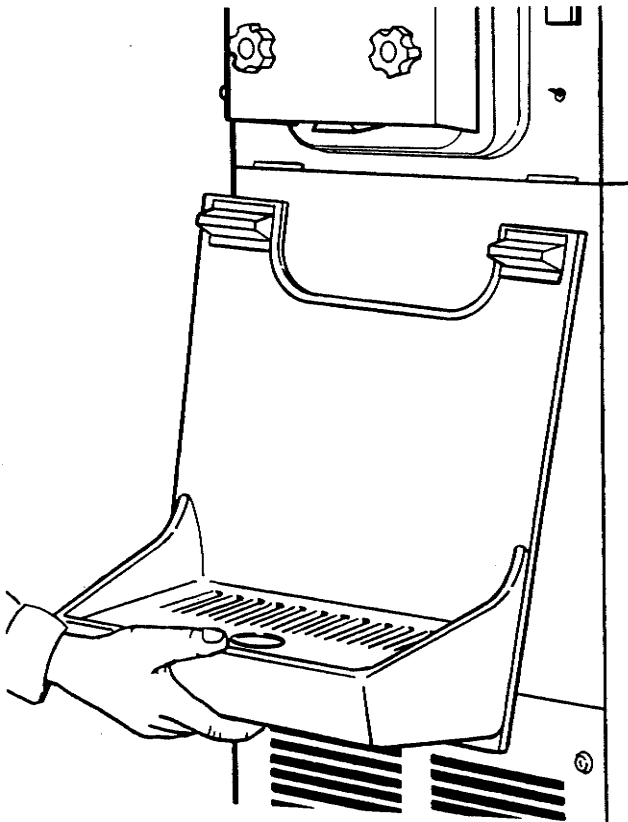


Figure 31. Removing Drip Tray and Insert

2. Remove the six phillips head screws from the rear panel and slide the rear panel down and out.

3. Remove the four phillips head screws from the right side panel and slide the side panel down and out.
4. Remove the compressor terminal cover by inserting a standard screwdriver under the terminal cover retaining clip from the right side of the freezer and gently prying off (Fig. 32).

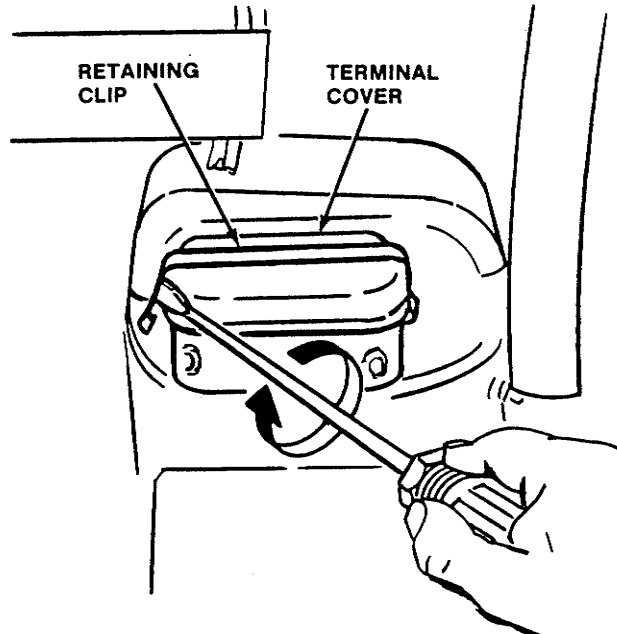


Figure 32. Compressor Terminal Cover

5. Remove retaining clip and cover.
6. Remove wires C, R and S at compressor. Refer to Fig. 33 for compressor connections.

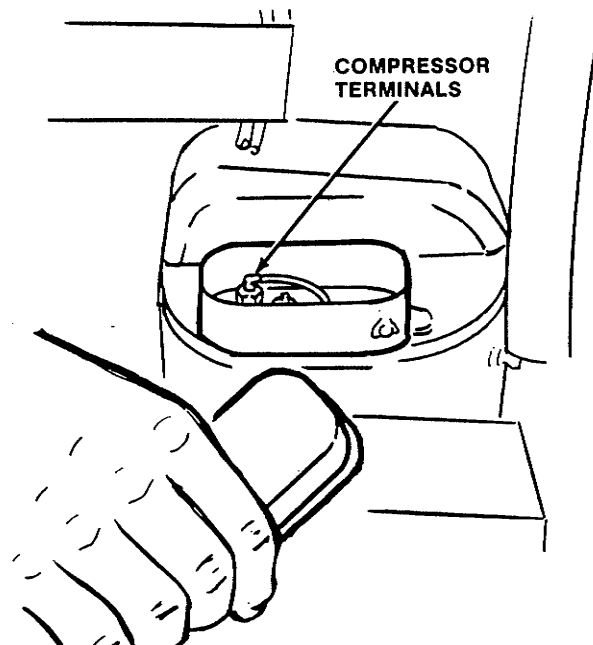


Figure 33. Compressor Connections

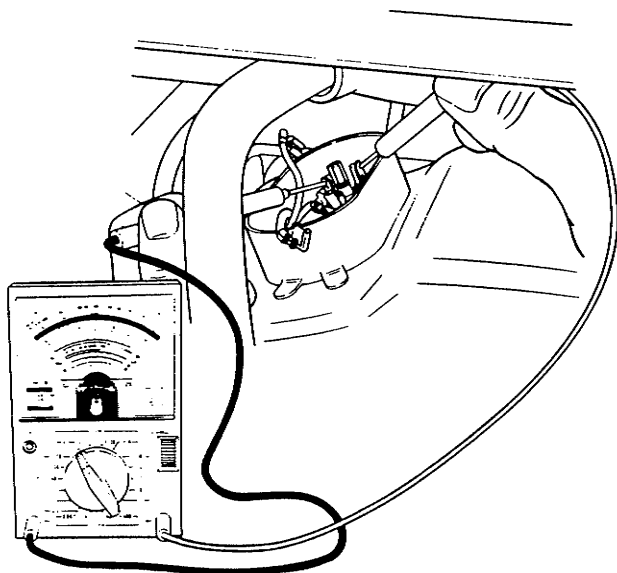


Figure 34. Ohmmeter and Connections

7. Connect ohmmeter to terminals C and R. Resistance through the run windings should be 0.5 ohms with ohmmeter set at X1 (Fig. 34).
8. Connect ohmmeter to terminals C and S. Resistance through the start windings should be 2.2 ohms with ohmmeter set at X1.
9. To check if windings are shorted to ground, connect one ohmmeter lead to a bare metal part on the compressor, such as any copper line leading to or from the compressor and checking terminals C, R and S.

NOTE

The compressor is equipped with an internal overload protector. If the compressor is warm and ohmmeter readings indicate an open winding, allow up to one hour for overload to reset.

5.3 CONDENSER

The condenser is an air cooled, copper tube and aluminum fin type. Condensing is totally dependent upon air flow. A plugged condenser or restrictions in the louvered grill will restrict air flow. This will lower the capacity of the system and damage the compressor.

The condenser must be kept clean of dirt and grease. The freezer **MUST** have a minimum of 6" (15.2 cm) of ventilation in front and 6" (15.2 cm) of clearance behind the unit for free flow of air (Fig. 35). The air circulating through the condenser should not exceed 100°F (37°C) air from other equipment in the area.

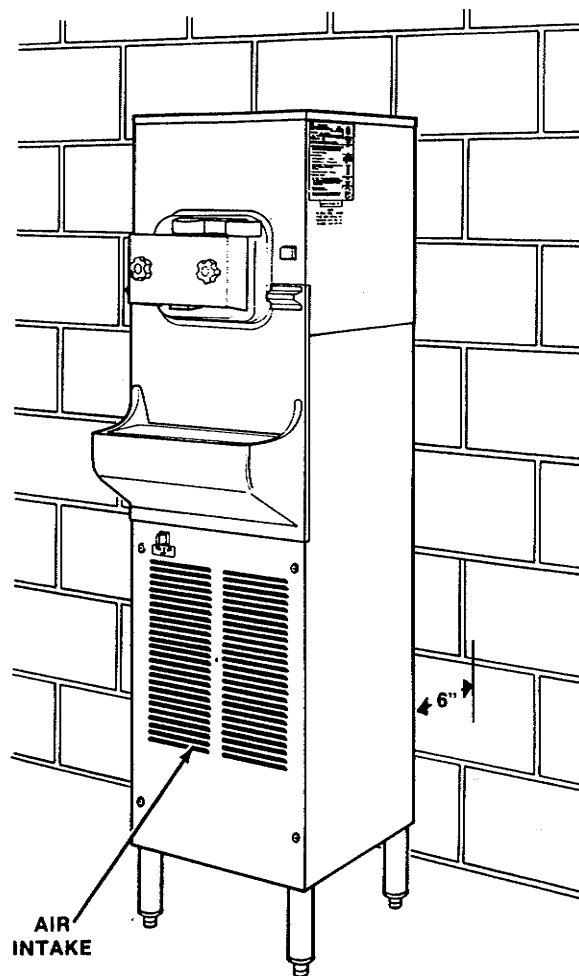


Figure 35. Space and Ventilation Requirements

The condenser filter and condenser require periodic cleaning. To clean, refer to the following procedures:



WARNING

DISCONNECT FREEZER FROM ELECTRICAL SUPPLY SOURCE BEFORE SERVICING.

1. Remove the drip tray and insert.
2. Remove the four phillips head screws from the front panel and remove the panel.
3. Remove the condenser filter and visually inspect for dirt. If the filter is dirty, shake or brush excess dirt off the filter and wash in warm soapy water. Once the filter is clean, rinse thoroughly in warm, clear water and squeeze dry, taking care not to damage the filter in any way.
4. Remove the six phillips head screws from the back panel and slide the back panel down and out.

5. Visually inspect the condenser for dirt by shining a light through the coil from the back (inside) of the condenser (Fig. 36).

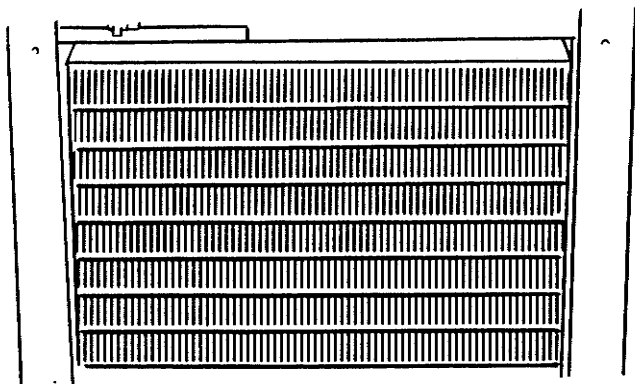


Figure 36. Condenser

6. If the condenser is dirty, place a wet towel over the front (outside) of the condenser.
7. Using compressed air or CO₂ tank, blow out the dirt from the back (inside) of the condenser. Most of the dirt will cling to the wet towel.

NOTE

This procedure will result in a very loud noise.

8. An alternative method of cleaning the condenser is to use a condenser brush and vacuum.

NOTE

If the condenser is not kept clean, loss of refrigeration efficiency will result, causing extended run time or soft product consistency.

5.4 EVAPORATOR

An A.X.V. (automatic expansion valve) (Fig. 37) is used to meter the refrigerant to the evaporator. The self-regulating A.X.V. is preset at the factory to 18 P.S.I.G. at 75°F (23.9°C) ambient temperature.

NOTE

Some units may be equipped with a T.E.V. (thermostatic expansion valve) instead of an A.X.V. The T.E.V. is operated by temperature, while the A.X.V. is operated by pressure.

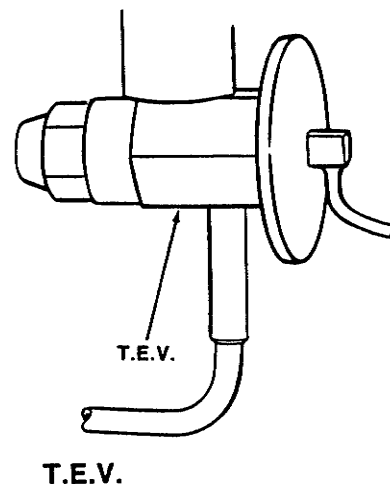
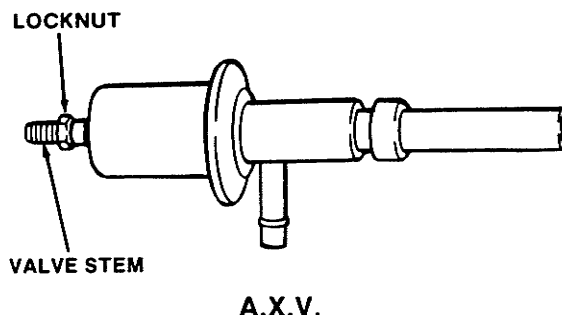


Figure 37. A.X.V. and T.E.V.

A. A.X.V. ADJUSTMENT

To determine whether or not the A.X.V. is in need of adjustment, perform the following procedures:



WARNING

DISCONNECT FREEZER FROM ELECTRICAL SUPPLY SOURCE BEFORE SERVICING.

1. Remove drip tray and insert.
2. Remove the six phillips head screws from the rear panel and slide the rear panel down and out.
3. Remove the four phillips head screws from the left side panel and slide the side panel down and out.
4. Remove the cap from the low side Schrader valve and install a 0 to 100 P.S.I.G. gauge.

5. Plug the freezer in, start the refrigeration cycle and read the pressure.
6. The proper gauge reading should be 18 P.S.I.G at 75°F (23.9°C) ambient temperature. If the readings are not within these parameters, continue following these steps:

NOTE

Before performing the following procedures be absolutely certain it is necessary to adjust the A.X.V.

7. Loosen the locknut on the A.X.V. and, using a small screwdriver, turn the valve stem 1/4 (90°) turn counterclockwise to decrease refrigeration flow (for more cooling) or clockwise to increase refrigeration flow (for less cooling).
8. Should the reading still not reach 18 P.S.I.G., repeat step 7 until the correct reading is obtained.
9. Once the 18 P.S.I.G. reading is obtained, tighten the locknut snugly, remove the pressure gauge and replace the low side Schrader valve cap.

B. A.X.V. OR T.E.V. REMOVAL



CAUTION

IF THE A.X.V. OR T.E.V. IS EVER REPLACED, A HEAT SINK (WET CLOTH) MUST BE USED TO PREVENT DAMAGE TO THE VALVE.



WARNING

DISCONNECT FREEZER FROM ELECTRICAL SUPPLY SOURCE BEFORE SERVICING.

1. Assuming the left side panel is removed, perform the following procedures for removing the A.X.V. or T.E.V.:
2. Blow refrigerant charge and leave a port open to prevent pressure build-up during removal.
3. Remove any insulation from the A.X.V. or T.E.V. and immediately surrounding lines.
4. Remove or push back any foam insulation from surrounding lines.
5. Apply a heat sink (wet cloth) to the valve dome (Fig. 38).

6. Unsweat the suction line and liquid line from A.X.V. or T.E.V. and remove A.X.V. or T.E.V. with heat sink.

NOTE

In units using a T.E.V., remove the bulb from the suction line exiting from the evaporator.

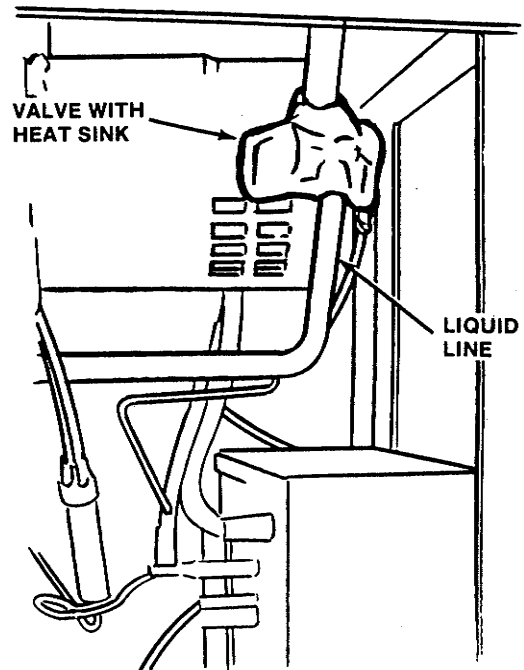


Figure 38. Removal of A.X.V. or T.E.V.

C. A.X.V. OR T.E.V. REPLACEMENT

To replace the A.X.V. or T.E.V., perform the following procedures:



CAUTION

WHEN REPLACING THE A.X.V. or T.E.V., A HEAT SINK (WET CLOTH) MUST BE USED TO PREVENT DAMAGE TO THE VALVE.

1. Position the A.X.V. or T.E.V., with heat sink, so the liquid line and suction line correspond with the proper valve ports.
2. Braze the liquid line and suction line to the A.X.V. or T.E.V. using the appropriate brazing material.

NOTE

When replacing a T.E.V., the T.E.V. bulb should ALWAYS be mounted on a vertical line, with the capillary end facing the flow of refrigerant. Good contact between the bulb and the suction line is necessary for proper operation of the valve.

3. Remove the heat sink from the A.X.V. or T.E.V.
4. Replace any foam insulation to the surrounding lines.
5. Replace any insulation to the A.X.V. or T.E.V. and immediately surrounding areas.

NOTE

The liquid line from the condenser is welded to the suction line to provide a heat exchange to help protect the compressor from liquid slugging. This also assures that sub-cooled liquid is being supplied to the expansion devices.

6. Once the A.X.V. or T.E.V. is installed, the refrigeration system must be purged and evacuated to 50 microns of mercury for approximately 30 minutes.
7. Break the vacuum to 0 P.S.I.G. with R-502 and, with an open port, replace filter drier using the appropriate brazing material (Fig. 39).
8. Once the filter drier has been replaced, repeat the evacuation and recharging procedures.

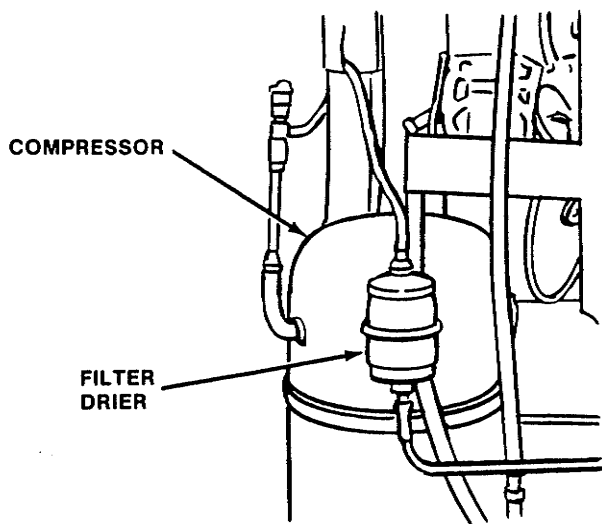


Figure 39. Filter Drier

5.5 HOPPER

A parallel refrigeration circuit feeds the hopper. A capillary tube is used to meter the refrigerant to the hopper. An E.P.R. (evaporator pressure regulating) valve is used to control the refrigerant flow at the outlet. The E.P.R. valve controls the hopper pressures so, during heavy dispensing periods, hopper temperatures will not drop and freeze the mix in the hopper. The adjustable E.P.R. valve is preset at the factory. If the hopper temperature is too cold or too warm, an E.P.R. valve adjustment may be necessary.

A. E.P.R. VALVE ADJUSTMENT

To adjust the E.P.R. valve, refer to the following procedures:

1. Remove the six phillips head screws from the rear panel and slide the rear panel down and out.
2. Remove the cap from the E.P.R. Schrader valve (Fig. 40).

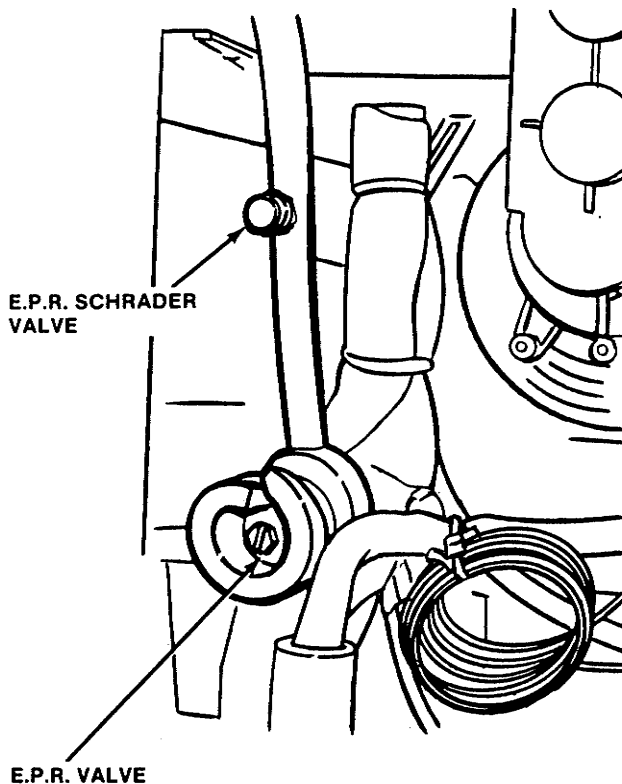


Figure 40. Schrader Valve Location

3. Install a 0-100 P.S.I.G. gauge into the E.P.R. Schrader valve.
4. Start the refrigeration cycle and read the pressure.

NOTE

The ideal E.P.R. valve setting (60-62 P.S.I.G.) will not allow mix to freeze to the walls of the hopper.

5. If the pressure gauge reading does not fall between 60-62 P.S.I.G., proceed with the following steps:
6. Loosen the locknut on the E.P.R. valve and, using a small screwdriver, turn the valve stem $1/4$ (90°) turn counterclockwise for more cooling or clockwise for less cooling (Fig. 41).

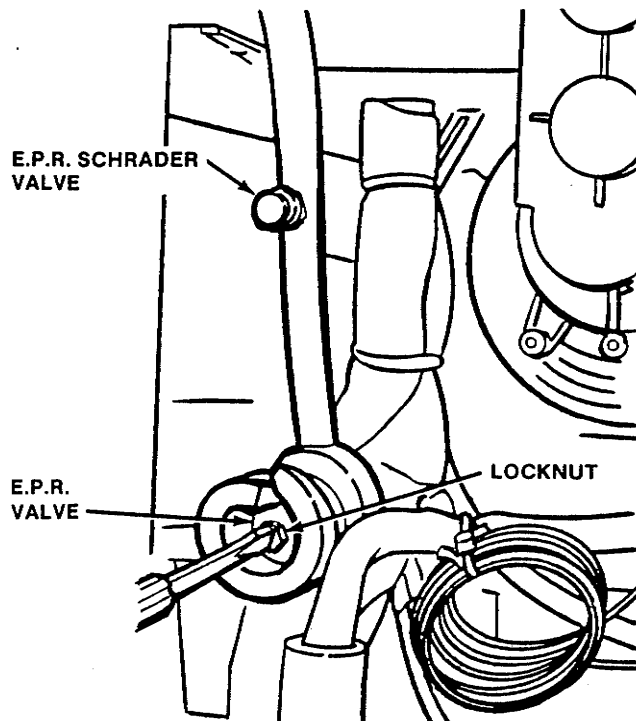


Figure 41. E.P.R. Valve Adjustment

7. Allow the system to level out for three to five minutes before taking another pressure reading.
8. Should the reading still not fall between 60-62 P.S.I.G., repeat steps 6 and 7 until the correct reading is obtained.
9. Once the 60-62 P.S.I.G. reading is obtained, tighten the locknut snugly, remove the pressure gauge and replace the E.P.R. Schrader valve cap.
10. Replace the side panel, drip tray and insert.

NOTE

The compressor ON and OFF times can also affect the temperature of the hopper. Procedures for adjusting compressor ON and OFF times will be discussed in Section 6.

B. E.P.R. VALVE REMOVAL

⚠ CAUTION

IF THE E.P.R. VALVE IS EVER REPLACED, A HEAT SINK (WET CLOTH) MUST BE USED TO PREVENT DAMAGE TO THE VALVE.

1. Assuming the rear panel is removed for adjusting the E.P.R. valve, perform the following procedures for removing the E.P.R. valve.

⚠ WARNING

DISCONNECT FREEZER FROM ELECTRICAL SUPPLY SOURCE BEFORE SERVICING.

2. Remove the four phillips head screws from the right side panel and slide the side panel down and out.
3. Blow refrigerant charge and leave a port open to prevent pressure build-up during E.P.R. valve removal.
4. Remove foam insulation from surrounding lines.
5. Apply a heat sink (wet cloth) to the E.P.R. valve.
6. Unsweat the hopper evaporator outlet line and the line leading to the low side of the main system from the E.P.R. valve.
7. Remove the E.P.R. valve with the heat sink.

C. E.P.R. VALVE REPLACEMENT

To replace the E.P.R. valve, perform the following procedures:

⚠ CAUTION

WHEN REPLACING THE E.P.R. VALVE, A HEAT SINK (WET CLOTH) MUST BE USED TO PREVENT DAMAGE TO THE VALVE.

1. Position the E.P.R. valve, with heat sink, so the hopper evaporator outlet line and the line leading to the low side of the main system correspond with the proper valve ports (Fig. 42).

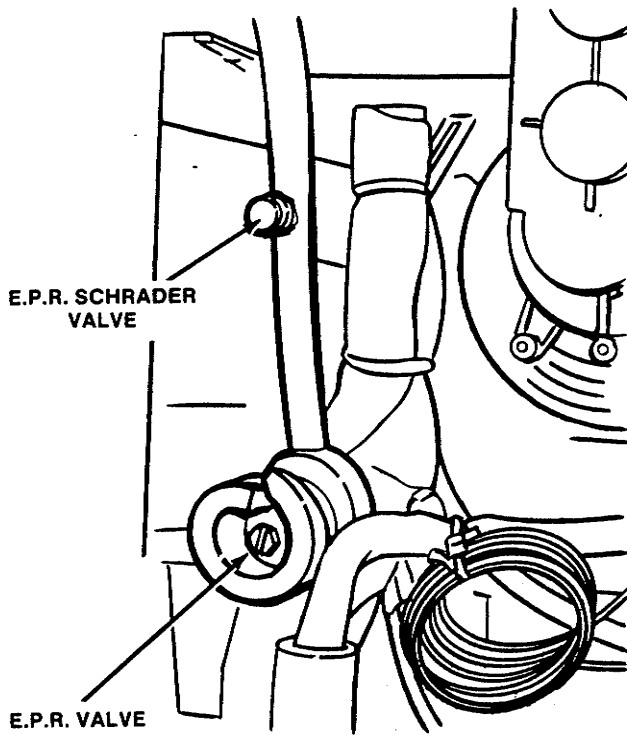


Figure 42. E.P.R. Valve and Lines

2. Braze the lines to the E.P.R. valve using the appropriate brazing material.
3. Remove the heat sink from the E.P.R. valve.
4. Replace any foam insulation to the surrounding lines.
5. Once the E.P.R. valve is installed, the refrigeration system must be purged and evacuated to 50 microns of mercury for approximately 30 minutes.
6. Break the vacuum to 0 P.S.I.G. with R-502 and, with an open port, replace filter drier using the appropriate brazing material (Fig. 43).
7. Once the filter drier has been replaced, repeat the evacuation and recharging procedures (steps 5 and 6).

5.6 CAPILLARY TUBE

Capillary tube replacement may be necessary if the correct pressure reading of the E.P.R. valve (60-62 P.S.I.G.) cannot be obtained. A low pressure reading of the E.P.R. valve may indicate a blockage in the capillary tube drier assembly. If a blockage occurs, the E.P.R. pressure reading will be very close to the pressure reading of the low side of the compressor.

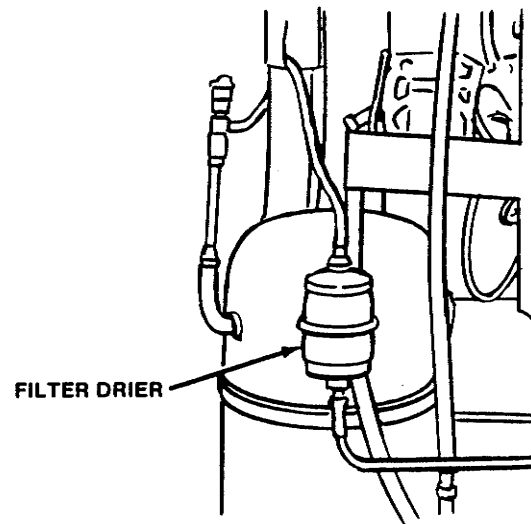


Figure 43. Filter Drier

A. CAPILLARY TUBE REMOVAL



WARNING

DISCONNECT FREEZER FROM ELECTRICAL SUPPLY SOURCE BEFORE SERVICING.

1. Remove the six phillips head screws from the rear panel and pull the rear panel down and out.
2. Blow refrigerant charge and leave a port open to prevent pressure build-up during capillary tube drier assembly removal.
3. Unsweat capillary tube drier assembly at the tee just above the control box and at the hopper inlet located on the left rear side of the hopper.

NOTE

Before unsweating the capillary tube at the hopper inlet, it will be necessary to remove the foam insulation from the capillary tube at that connection.

4. Remove the capillary tube drier assembly.

B. CAPILLARY TUBE REPLACEMENT

1. Position the capillary tube drier assembly so the larger diameter tube is in position to be brazed to the tee just above the control box.
2. Braze the large diameter tube to the tee using the appropriate brazing material.

3. Position the smaller diameter tube at the back of the hopper and braze the tube to the hopper inlet using the appropriate brazing material (Fig. 44).
4. Replace the foam insulation to the hopper inlet connection.
5. Once the capillary tube drier assembly is installed, the refrigeration system must be purged and evacuated to 50 microns of mercury for approximately 30 minutes.
6. Break the vacuum (0 P.S.I.G.) with R-502 and, with an open port, replace filter drier using the appropriate brazing material (Fig. 43).
7. Once the filter drier has been replaced, repeat the evacuation and recharging procedures (steps 5 and 6).

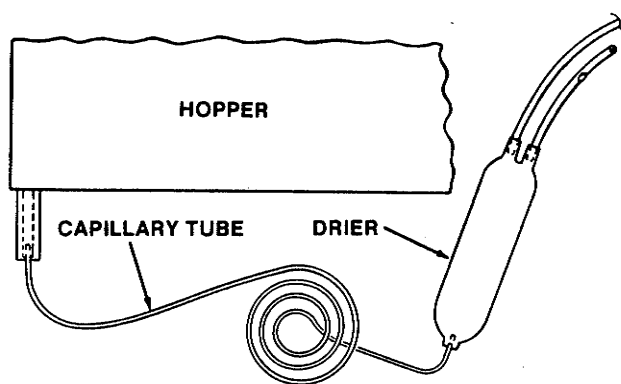


Figure 44. Capillary Tube and Drier Assembly

5.7 SOLENOID VALVE

Some models have a liquid line solenoid. The liquid line solenoid prevents freon migration during idle time. To check the solenoid, remove left-hand side panel, disconnect one of the two wires from the solenoid coil, protect the end of the wire with a piece of electrical tape, and attach a pressure gauge to the low side of the refrigeration system.



WARNING

DISCONNECT FREEZER FROM ELECTRICAL SUPPLY SOURCE BEFORE SERVICING.

NOTE

Freezer must not have frozen product in the barrel.

Then replace the side panel and start the freezer. The gauge should show approximately 9" of vacuum after about one minute. If the gauge does not reach 1" of vacuum in one minute, and hold, you may have to replace the solenoid or check the compressor for leaking valves.

A. SOLENOID VALVE REMOVAL



WARNING

DISCONNECT FREEZER FROM ELECTRICAL SUPPLY SOURCE BEFORE SERVICING.

1. Remove drip tray and insert by gently pushing up and out.
2. Remove the two screws from the bottom of the left side panel and pull the panel down and out.
3. Blow refrigerant charge and leave a port open to prevent pressure build-up during capillary tube drier assembly removal.
4. Disconnect the two wires from the solenoid coil.
5. Remove the screw holding the coil to the solenoid body and remove the coil.
6. Apply a heat sink (wet cloth) to the valve body and unsweat the two joints. Remove the valve body.

B. SOLENOID VALVE REPLACEMENT

1. Position the new valve with the arrow pointing toward the direction of flow or expansion valve.
2. Apply a heat sink (wet cloth) to the valve body.
3. Braze the two joints using the appropriate brazing materials.
4. Once the valve is installed, the refrigeration system must be purged and evacuated to 50 microns of mercury for approximately 30 minutes.
5. Break the vacuum (0 P.S.I.G.) with 502. With an open port, replace the filter drier using the appropriate brazing material.
6. Once the filter drier has been replaced, repeat the evacuating and recharging procedures.

5.8 LIQUID LINE SOLENOID PRESSURE SWITCH

The liquid line solenoid valve is controlled by a pressure switch and/or power board relay. When product is drawn, the drive and compressor are activated. As the suction pressure drops below the set point, the solenoid opens allowing the evaporator to refrigerate. When the drive and compressor stop, the suction pressure will rise above the set point, and the solenoid will close. If the freezer is allowed to idle 24 consecutive cycles, the solenoid relay on the power board will activate holding the solenoid open. To replace the liquid line solenoid pressure switch, use standard electrical and refrigeration practices.

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SECTION 6

ELECTRICAL SYSTEM OPERATION AND ADJUSTMENTS

6.1 CONTROL SYSTEM

The control system is the "brain" of the freezer. To understand how to service the freezer, it is essential to understand how the control system operates. There are two different types of control systems in the 205 freezers. The Type 1 control system has five L.E.D. indicator lights on the program module and herein will always be referred to as the Type 1 control system. The Type 2 control system has six L.E.D. indicator lights on the program module. Another difference between the Type 1 and Type 2 control systems is the Type 1 control system utilizes a triac package, while the Type 2 control system uses contactors to replace the triac package. The basic components of the control system are the power board, program module, triacs (contactors) and drive motor.

Both the Type 1 and Type 2 control systems monitor the consistency (firmness) of the product (mix) in the freezer evaporator. As the product freezes, the drive motor develops a higher torque (resistance) because of the freezing of the product in the evaporator. The energy used to operate the drive motor is in direct proportion to the torque. As the drive motor torque increases, so does the energy required to operate the motor. The program module senses the energy usage and shuts off the drive motor when the pre-programmed energy value is reached.

When servicing the freezer, keep in mind the control systems monitor product consistency. To minimize the beating of the product in the evaporator, the program module will switch to the IDLE mode after the preset number of cycles are completed. In the IDLE mode, only the compressor and condenser fan runs to keep the product in the hopper and evaporator refrigerated. In this IDLE mode, a servable consistency will not be held.

NOTE

Excessive agitation will beat over-run out of the product, causing a grainy, unservable texture.

To gain complete access to the control box and its components, perform the following procedures:

1. Remove the drip tray and insert.
2. Remove the four phillips head screws from the front panel and pull the front panel down and out.
3. Remove the two hex head screws from the control box cover and remove the cover, allowing the entire control box to be exposed (Fig. 45).

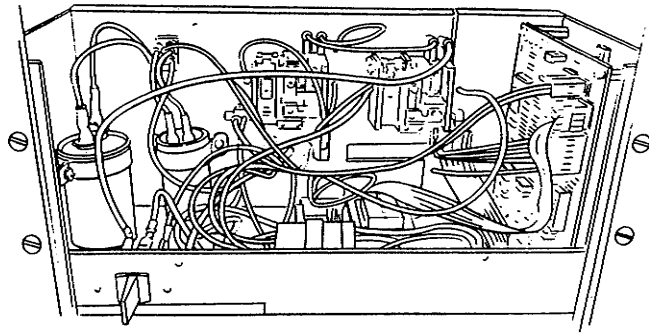


Figure 45. Control Box Exposed

The control box and its components are now completely accessible and any necessary testing and adjusting can now be done.

NOTE

Sub-sections 6.2 through 6.6 will deal specifically with the Type 1 control system utilized in the 205 freezers.

6.2 POWER BOARD

The power board is where the actual sensing of the drive motor energy usage occurs (Fig. 46).

The power board also supplies energy to the program module and sends electronic signals associated with the drive motor sensing. The 115/12 transformer and associated circuitry is used to supply 12 volts DC to operate the program module. The toroid senses the amount of energy being used by the drive motor.

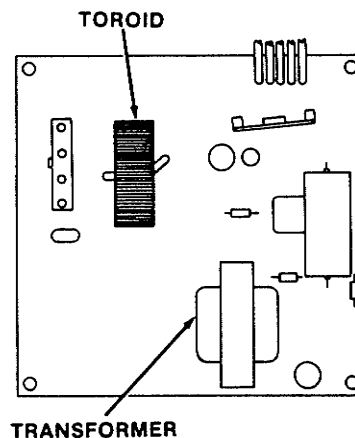
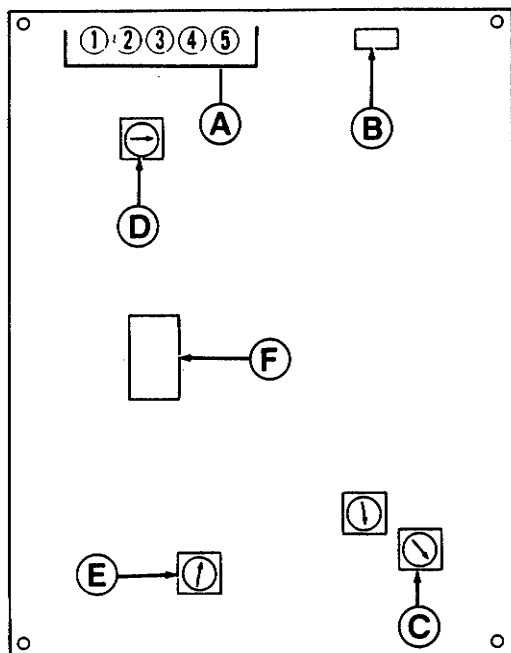


Figure 46. Power Board (Type 1)

6.3 PROGRAM MODULE

The program module receives electronic signals from the power board. The electronic signals are used to control the operation of the drive motor, compressor and indicator lights on the freezer. Refer to Fig. 47 for a description of each indicator light and adjustable control on the program module.



- A. Indicator Lights
1. Power On
2. Drive Motor
3. Compressor
4. Consistency
5. Error
- B. Fine Consistency Adjust Control
C. Coarse Consistency Adjust Control
D. Freezer OFF Time Adjust Control
E. Compressor ON Time Adjust Control
F. Fast Clock Plug In

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Figure 47. Program Module (Type 1)

A. INDICATOR LIGHTS

The program module has five L.E.D. indicator lights (Item A, Fig. 47) to aid in rapid troubleshooting and adjusting of the freezer. A description of each indicator light is given below.

1. The **POWER ON** indicator light, when illuminated, indicates that the program module is receiving 12 volts DC from the power board.
2. The **DRIVE MOTOR** indicator light, when illuminated, indicates that power is supplied to the drive motor triac.

3. The **COMPRESSOR** indicator light, when illuminated, indicates that power is supplied to the compressor triac.
4. The **CONSISTENCY** indicator light, when illuminated, indicates the consistency of the product in the evaporator has not reached the consistency setting. The indicator light will begin to flash as the consistency setting is being reached. When the **CONSISTENCY** indicator light is off, the consistency setting has been reached. This indicator light can be used as an aid when making adjustments to the consistency adjustable potentiometer.

NOTE

The consistency light is always on EXCEPT when the consistency is being or has been reached, then will go off momentarily and come back on.

5. The **ERROR** indicator light, when illuminated, indicates that a malfunction condition exists. Two error conditions can illuminate the indicator light. The first condition is a high torque error. If the drive motor is allowed to develop excessive torque for 15 seconds, the freezer will shut off and the **ERROR** indicator light will illuminate. The second condition is a low torque error. If the drive motor fails to develop minimum torque in 15 minutes, the freezer will shut off and the **ERROR** indicator light will illuminate. The high and low torque error is used to protect the system from damaging components if something is wrong or being misused. When the **ERROR** indicator light is illuminated, the error condition can be reset by placing the **CLEAN-OFF-ON** switch in the OFF position. Then place the switch in the ON position and press the **PUSH TO FREEZE** button.

- B. The **FINE CONSISTENCY** adjust control (Item B, Fig. 47) is used to make fine adjustments to the product consistency. This adjustment is made via an adjustable potentiometer.
- C. The **COARSE CONSISTENCY** adjust control (Item C, Fig. 47) is used to make rough adjustments to the product consistency. This adjustment is made via an adjustable potentiometer.

1. For most field adjustments, only the **FINE** consistency potentiometer will need to be adjusted. To make the product firmer, turn the **FINE** adjust control 1/8 (45°) of a turn clockwise. To make the product softer, turn the **FINE** adjust control 1/8 (45°) of a turn counterclockwise.

⚠ CAUTION

NEVER TURN THE ADJUST CONTROL MORE THAN 1/8 (45°) OF A TURN AT A TIME.

2. Dispense approximately 16 ounces (.47 liters) of the product and check the consistency. If the consistency of the product is still not correct, repeat step 1 until the correct product consistency is obtained.
3. If the FINE CONSISTENCY adjust control is turned as far as possible and more adjustment is needed, turn the FINE adjust control back to the middle position.
4. Turn the COARSE adjust control 1/30 (12°) of a turn clockwise for a firmer product or 1/30 (12°) of a turn counterclockwise for a softer product.

NOTE

A very small adjustment to the COARSE CONSISTENCY adjust control will make a big difference in the product consistency. Therefore NEVER turn the COARSE adjust control more than 1/30 (12°) of a turn at a time.

5. Use the FINE CONSISTENCY adjust control to reach the desired product consistency after one adjustment of the COARSE CONSISTENCY has been completed and product has been tested.

- D. The FREEZER OFF TIME adjust control (Item D, Fig. 47) is used to set the freezer OFF time. To change the freezer OFF time, turn the adjust control 1/30 (12°) of a turn clockwise to increase the OFF time or 1/30 (12°) of a turn counterclockwise to decrease the OFF time. The OFF time is ambient compensated to allow the freezer to run uniformly at different ambient temperatures. The program module will sense the ambient temperature and automatically increase the OFF time as the room temperature decreases or decrease the OFF time as the room temperature increases.
- E. The COMPRESSOR ON TIME adjust control (Item E, Fig. 47) is used to set the refrigeration ON (run) time. To change the refrigeration ON time, turn the ON time adjust control 1/30 (12°) of a turn clockwise to increase ON time or 1/30 (12°) of a turn counterclockwise to decrease ON time.
- F. The FAST CLOCK PLUG (Item F, Fig. 47) is used for connecting the optional Fast Clock. The Fast Clock is a troubleshooting and adjusting aid that can be purchased from Stoelting, Inc. When the Fast Clock is plugged into the system, all control functions can be checked and adjusted at ten

times the normal speed. Detailed instructions are provided with the Fast Clock option when purchased.

6.4 TRIACS

The triac package (Fig. 48) is located on the outside rear of the electrical control box. A triac is simply a solid state contactor. The package contains two triacs, one to start the drive motor and one to start the compressor and condenser fan. The triac package is protected by four small external fuses that, if blown, will have a small brown ring around them. If a fuse is blown the complete triac package must be replaced.

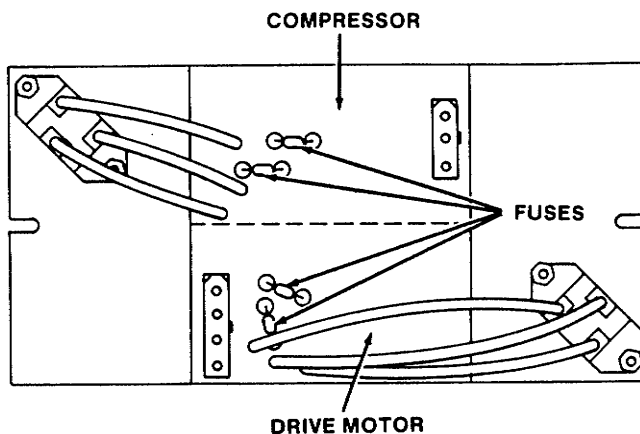


Figure 48. Triac Package (Type 1)

The program module sends an electronic signal to trigger the triacs. The electronic signal tells the triacs when to start the compressor and condenser fan and drive motor. The signals to the triacs are staggered so the drive motor will always start and stop two to three seconds before the compressor and condenser fan. By staggering the starting and stopping of the drive motor, maximum starting torque is available and voltage spikes are reduced. The triacs are electronically isolated from the program module. This feature is very important in case of an electrical short or component failure.

6.5 SEQUENCE OF OPERATION

The freezer sequence of operation can be monitored by observing the five L.E.D. indicator lights on the program module. The following steps describe the sequence of operation:

- A. The freezer must be cleaned, sanitized, and hopper filled with mix as outlined in Section 3.
- B. With the freezer plugged into the power source, place the CLEAN-OFF-ON switch in the ON position.

- C. The first (POWER ON) and fourth (CONSISTENCY) L.E.D. indicator lights should be illuminated.
- D. To start the freezing cycle, press the red PUSH TO FREEZE button on the front of the freezer.
- E. The second (DRIVE MOTOR) L.E.D. indicator light will illuminate and the drive motor will start.
- F. Approximately three seconds later, the third (COMPRESSOR) L.E.D. indicator light will illuminate and the compressor and fan will start.

NOTE

At this time the first four L.E.D. indicator lights will be illuminated.

- G. As the consistency of the product in the evaporator becomes firmer, the fourth (CONSISTENCY) L.E.D. indicator light will begin to flicker. After a period of time the light will go out. The drive motor will stop and the second (DRIVE MOTOR) L.E.D. indicator light will go out.

NOTE

Keep in mind the program module senses motor torque only when running. It does not sense hopper temperature.

- H. Approximately three seconds later the third (COMPRESSOR) L.E.D. indicator light will go out. Then the compressor and fan motor will stop and the fourth (CONSISTENCY) L.E.D. indicator light will illuminate.
- I. The green lens on the front of the freezer will illuminate. The product is now ready to be dispensed.

NOTE

At this time the freezer is in the STAND-BY mode. The first (POWER ON) and fourth (CONSISTENCY) L.E.D. indicator lights are illuminated.

- J. If the spigot is not opened, the freezer OFF time is controlled by the setting of the OFF timer.
- K. Once the preset OFF time has expired, the freezer will operate the same as during the initial freeze down (steps E through I).

- L. After the freezer has cycled through the preset number of cycles and the spigot has not been opened or the PUSH TO FREEZE button has not been pressed, the freezer will go into the IDLE mode.

NOTE

Consistency is NOT controlled during the IDLE mode.

- M. When the freezer is in the IDLE mode, the PUSH TO FREEZE light on the front of the freezer will illuminate red and the compressor and fan motor will run for the preset time.
- N. When the freezer is in the IDLE mode, the drive motor will operate occasionally for a short time to mix the product and keep the product temperature uniform.
- O. At the end of the ON time setting, the third (COMPRESSOR) L.E.D. indicator light will go out and the compressor and fan motor will stop.
- P. The freezer will continue to cycle in the IDLE mode until the PUSH TO FREEZE button is pressed, or the spigot is opened to draw the product.
- Q. When the spigot is opened to draw the product or the PUSH TO FREEZE button is pressed, the freezer cycles will start over.
- R. If the fifth (ERROR) L.E.D. indicator light illuminates during operation, there is a high or low torque error. When the ERROR indicator light is illuminated, the error condition can be reset by placing the CLEAN-OFF-ON switch in the OFF position. Then place the switch in the ON position and press the PUSH TO FREEZE button.

NOTE

Sub-sections 6.6 through 6.9 will deal specifically with the Type 2 control system utilized in the 205 freezers.

6.6 POWER BOARD

The power board is where the actual sensing of the drive motor energy usage occurs (Fig. 49).

The power board also supplies energy to the program module and sends electronic signals associated with the drive motor sensing. The 115/12 transformer and associated circuitry is used to supply 12 volts DC to operate the program module.

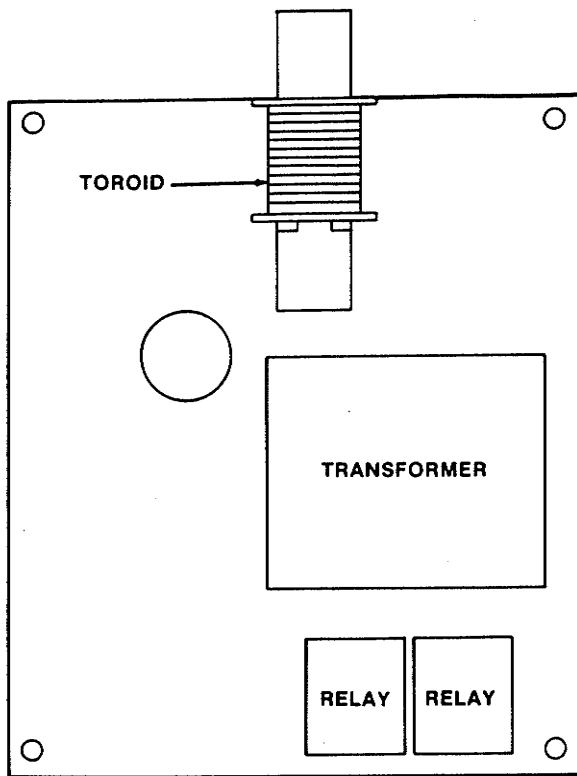


Figure 49. Power Board (Type 2)

6.7 PROGRAM MODULE

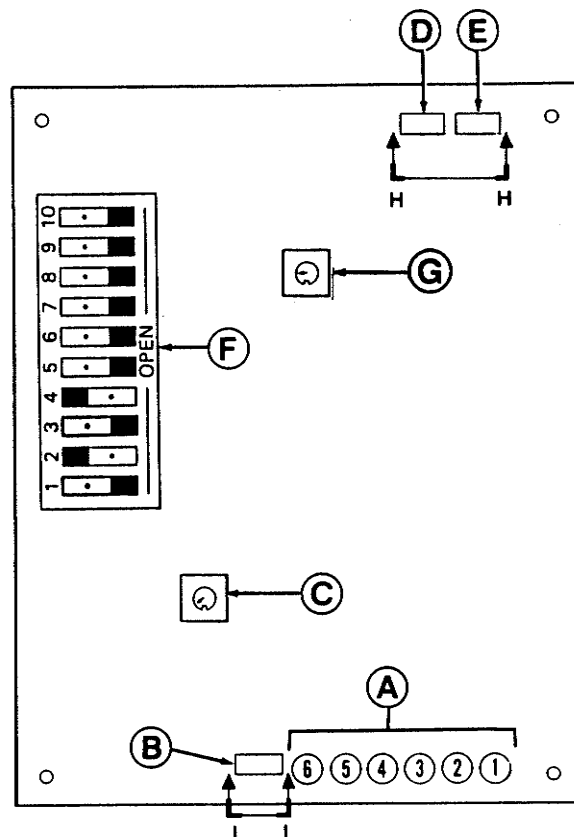
The program module receives DC power and electronic signals from the power board. The electronic signals are used to control the operation of the drive motor, compressor and indicator lights on the freezer. Refer to Fig. 50 for a description of each indicator light and adjustable control on the program module.

A. INDICATOR LIGHTS

The program module has six L.E.D. indicator lights (Item A, Fig. 50) to aid in the rapid troubleshooting and adjusting of the freezer. A description of each indicator light is given below.

1. The POWER ON indicator light, when illuminated, indicates that the program module is receiving 12 volts DC from the power board.
2. The DRIVE MOTOR indicator light, when illuminated, indicates that power is supplied to the drive motor contactors through a relay on the power board.

3. The COMPRESSOR indicator light, when illuminated, indicates that power is supplied to the compressor contactors through a relay on the power board.



VIEW H-H
SCALE = 2:1

VIEW I-I
SCALE = 2:1

- A. Indicator Lights
 1. Power On
 2. Drive Motor
 3. Compressor
 4. Consistency
 5. Error
 6. Test Light
- B. Fine Consistency Adjust Control
- C. Coarse Consistency Adjust Control
- D. Freezer OFF Time Adjust Control
- E. Compressor ON Time Adjust Control
- F. Dip Switch
- G. Motor Adjust Potentiometer (refer to page 58)

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Figure 50. Program Module (Type 2)

4. The CONSISTENCY indicator light, when illuminated, indicates the consistency of the product in the evaporator has not reached the consistency setting. The indicator light will begin to flash as the consistency setting is being reached. When the CONSISTENCY indicator light is off, the consistency setting has been reached. This indicator light can be used as an aid when making adjustments to the consistency adjusting potentiometer.

NOTE

The consistency light is always on EXCEPT when the consistency is being or has been reached, then will go off momentarily and come back on.

5. The ERROR indicator light, when illuminated, indicates that a malfunction condition exists. Two error conditions can illuminate the indicator light. The first condition is a high torque error. If the drive motor is allowed to develop excessive torque for 15 seconds, the freezer will shut off and the ERROR indicator light will illuminate. The second condition is a low torque error. If the drive motor fails to develop minimum torque in 15 minutes, the freezer will shut off and the ERROR indicator light will illuminate. The high and low torque error is used to protect the system from damaging components if something is wrong or being misused. When the ERROR indicator light is illuminated, the error condition can be reset by placing the CLEAN-OFF-ON switch in the OFF position. Then place the switch in the ON position and press the PUSH TO FREEZE switch.

NOTE

The PUSH TO FREEZE switch will flash when in the ERROR condition.

6. The TEST indicator light is controlled by the tenth position on the Dip Switch (Item F, Fig. 50). When this switch is open, the control operates normally. When this switch is closed, the control is in the TEST mode. The TEST mode is used for calibration of ON and OFF times starting in the OFF cycles of the IDLE mode. During this mode, all power outputs are off. An L.E.D. associated with the TEST mode illuminates to indicate the time the compressor is on. This ON time is registered in real time, 1 second = 1 second. The amount of time the L.E.D. is off represents 1/10 of the OFF time at an assumed ambient temperature of 90°F (32.2°C).

NOTE

Test mode starts in OFF time (light out). Wait for the light to illuminate for ON time.

- B. The FINE CONSISTENCY adjust control (Item B, Fig. 50) is used to make fine adjustments to the product consistency. This adjustment is made via an adjustable potentiometer.
- C. The COARSE CONSISTENCY adjust control (Item C, Fig. 50) is used to make rough adjustments to the product consistency. This adjustment is made via an adjustable potentiometer.

1. For most field adjustments, only the FINE consistency potentiometer will need to be adjusted. To make the product firmer, turn the FINE adjust control 1/8 (45°) of a turn clockwise. To make the product softer, turn the FINE adjust control 1/8 (45°) of a turn counterclockwise.

NOTE

When making consistency adjustments, the evaporator MUST contain fresh product. If the product has been in the evaporator for more than 30 minutes, dispense approximately two pints of the product immediately prior to checking the consistency.



CAUTION

NEVER TURN THE ADJUST CONTROL MORE THAN 1/8 (45°) OF A TURN AT A TIME.

2. Dispense approximately 16 ounces (.47 liters) of the product and check the consistency. If the consistency of the product is still not correct, repeat step 1 until the correct product consistency is obtained.
3. If the FINE CONSISTENCY adjust control is turned as far as possible and more adjustment is needed, turn the FINE adjust control back to the middle position.
4. Turn the COARSE adjust control 1/30 (12°) of a turn clockwise for a firmer product or 1/30 (12°) of a turn counterclockwise for a softer product.

NOTE

A very small adjustment to the COARSE CONSISTENCY adjust control will make a big difference in the product consistency. Therefore NEVER turn the COARSE adjust control more than 1/30 (12°) of a turn at a time.

5. Use the FINE CONSISTENCY adjust control to reach the desired product consistency after one adjustment of the COARSE CONSISTENCY has been completed and product has been tested.
- D. The FREEZER OFF TIME adjust control (Item D, Fig. 50) is used to set the freezer OFF time. To increase the freezer OFF time, turn the adjust control 1/30 (12°) of a turn clockwise. To decrease the OFF time, turn the adjust control 1/30 (12°) of a turn counterclockwise. The OFF time is ambient compensated to allow the freezer to run uniformly at different ambient temperatures. The program module will sense the ambient temperature and automatically increase the OFF time as the room temperature decreases or decrease the OFF time as the room temperature increases.
- E. The COMPRESSOR ON TIME adjust control (Item E, Fig. 50) is used to set the refrigeration ON (run) time. To change the refrigeration ON time, turn the ON time adjust control 1/30 (12°) of a turn clockwise to increase ON time or 1/30 (12°) of a turn counterclockwise to decrease the ON time.
- F. The DIP SWITCH (Item F, Fig. 50) is a ten position, programmable switch. The DIP SWITCH control has the ability to be user programmed to select the sequence and mode of operation for eight consecutive idle cycles after either the PUSH TO FREEZE or spigot switch has been activated. This is accomplished by the first eight of the ten positions. The function of the eight positions is as follows: Each one of the switches (positions) represents one programmed cycle. As an example; switch #1 represents the first programmed cycle, switch #2 represents the second programmed cycle, etc. If the switch is in the closed position, both the auger drive motor and the compressor will switch on and shut off at consistency. If the switch is in the open position, only the compressor will run for the preset ON time. As the control is running through the eight programmed cycles and subsequent idle cycles, intermittent agitation is necessary. Every eighth consecutive idle cycle in which the product has not reached consistency, the drive motor will switch on for 10 to 12 seconds while the compressor is running (Fig. 51).

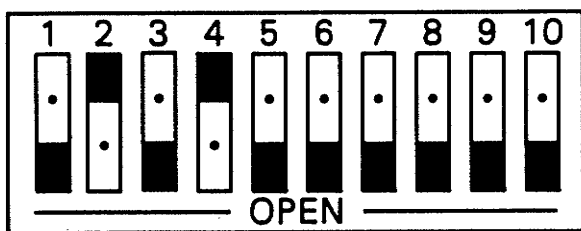


Figure 51. Programmed Idle Cycles

The ninth position on the DIP SWITCH is for the repeat cycle. When this switch is in the open position, the sequence of events is to go through the eight programmed idle cycles once and then to the idle cycles in which only the compressor switches on with intermittent agitation. If the repeat cycle switch is in the closed position, the sequence of events is to go through the eight programmed idle cycles, go back to the first programmed cycle and go through the eight programmed idle cycles again. This sequence will repeat itself indefinitely until interrupted by opening the spigot switch, cutting the power or an error condition (Fig. 52).

NOTE

The green lens will remain illuminated if dip switch number 9 is in the closed position regardless of product consistency.

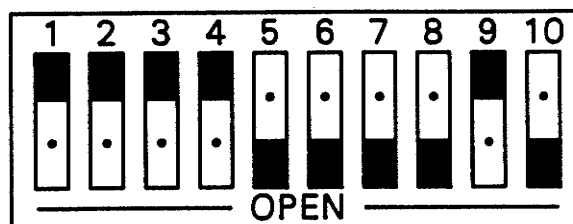


Figure 52. Repeat Cycle

The tenth position on the DIP SWITCH is used for the test mode. When this switch is open, the control operates normally. When this switch is closed, the control is in the test mode. The test mode is used for calibration of ON and OFF time of the corresponding cycles of the idle mode. During this mode all power outputs are off. An L.E.D. associated with the test mode illuminates to indicate the time the compressor is running. This ON time is in real time, 1 second = 1 second. The amount of time the L.E.D. is off represents 1/10 of the OFF time of the compressor at an assumed 90°F (32.2°C) ambient temperature. As an example: The L.E.D. is off for one minute and on for 40 seconds. The actual idle cycle when the control is not in the test mode would be 10 minutes OFF and 40 seconds ON (Fig. 53).

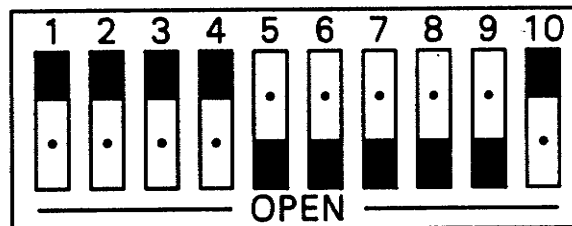


Figure 53. Test Mode

6.8 CONTACTORS

The contactors are mounted in the electrical box. There are two contactors, one to start the drive motor and one to start the compressor and condenser fan.

The program module sends an electronic signal through the power board relays to trigger the contactors. The electronic signal then tells the contactors when to start the compressor and condenser fan and drive motor. The signals to the contactors are staggered so the drive motor will always start and stop two to three seconds before the compressor and condenser fan. By staggering the stopping and starting of the drive motor, maximum starting torque is available and voltage spikes are reduced. The contactors are electronically isolated from the program module. This feature is very important in case of an electrical short or component failure.

6.9 SEQUENCE OF OPERATION

The freezer sequence of operation can be monitored by observing the six L.E.D. indicator lights on the program module. The following steps describe the sequence of operation:

- A. The freezer must be cleaned, sanitized, and hopper filled with mix as outlined in Section 3.
- B. With the freezer plugged into the power source, place the CLEAN-OFF-ON switch in the ON position.
- C. The first (POWER ON) and fourth (CONSISTENCY) L.E.D. indicator lights should be illuminated.
- D. To start the freezing cycle, press the red PUSH TO FREEZE switch on the front of the freezer.
- E. The second (DRIVE MOTOR) L.E.D. indicator light will illuminate and the drive motor will start.
- F. Approximately three seconds later, the third (COMPRESSOR) L.E.D. indicator light will illuminate and the compressor and fan will start.

NOTE

At this time the first four L.E.D. indicator lights will be illuminated.

- G. As the consistency of the product in the evaporator becomes firmer, the fourth (CONSISTENCY) L.E.D. indicator light will begin to flicker. After a period of time the light will go out. The drive motor will stop and the second (DRIVE MOTOR) L.E.D. indicator light will go out.

NOTE

Keep in mind the program module senses motor torque only when running. It does not sense hopper temperature.

- H. Approximately three seconds later the third (COMPRESSOR) L.E.D. indicator light will go out. Then the compressor and fan motor will stop and the fourth (CONSISTENCY) L.E.D. indicator light will illuminate.
- I. The green lens on the front of the freezer will illuminate. The product is now ready to be dispensed.

NOTE

At this time the freezer is in the STAND-BY mode. The first (POWER ON) and fourth (CONSISTENCY) L.E.D. indicator lights are illuminated.

- J. If the spigot is not opened, the freezer OFF time is controlled by the setting of the OFF timer.
- K. Once the preset OFF time has expired, the freezer will operate as programmed by the dip switches.
- L. After the freezer has cycled through the preset cycles and the spigot has not been opened or the PUSH TO FREEZE switch has not been pressed, the freezer will go into the IDLE mode provided the repeat dip switch (number 9) is open.

NOTE

Consistency is NOT controlled during the IDLE mode.

- M. When the freezer is in the IDLE mode, the PUSH TO FREEZE switch on the front of the freezer will illuminate red and the compressor and fan motor will run for the preset time.
- N. When the freezer is in the IDLE mode, the drive motor will operate occasionally for a short time to mix the product and keep the product temperature uniform.
- O. At the end of the ON time setting, the third (COMPRESSOR) L.E.D. indicator light will go out and the compressor and fan motor will stop.
- P. The freezer will continue to cycle in the IDLE mode until the PUSH TO FREEZE switch is pressed, or the spigot is opened to draw the product.
- Q. When the spigot is opened to draw the product or the PUSH TO FREEZE switch is pressed, the freezer cycles will start over.

R. If the fifth (ERROR) L.E.D. indicator light illuminates during operation, there is a high or low torque error. When the ERROR indicator light is illuminated, the error condition can be reset by placing the CLEAN-OFF-ON switch in the OFF position. Then place the switch in the ON position and press the PUSH TO FREEZE switch.

S. The sixth (TEST) L.E.D. is controlled by the tenth position on the Dip Switch. When the switch is in the open position the control operates normally. When the switch is closed, the L.E.D. will illuminate for the amount of time the compressor is running. The amount of time the L.E.D. is off represents 1/10 of the compressor off time.

Example: While in the test mode the L.E.D. is OFF for one minute and ON for 40 seconds. The actual idle cycle when the control is not in the test mode would be ten minutes OFF and 40 seconds ON.

6.10 DRIVE MOTOR

The drive motor is designed specifically for, and is common to all 205 freezers. The drive motor is used to rotate the auger assembly. The start and run capacitors are located in the electrical control box. An internal, normally closed, centrifugal switch starts the drive motor. The drive motor is equipped with a manual reset overload protector. The red overload protector reset is located on the motor endbell and is accessible by removing the front panel. A tripped overload may also illuminate the error indicator light on the program module. If the overload trips, allow the drive motor approximately one hour to cool before resetting.

6.11 SPIGOT SWITCH

The spigot switch, located at the right front of the front panel, is a proximity switch, operated by a magnet in the spigot handle. The switch will operate when the spigot handle comes within 1/2 inch (12.5 mm) of the switch. The switch sends an electronic signal to the control when the spigot handle has been opened, thus activating the freezing cycle.

NOTE

Freezers with a temperature control use a normally closed switch. Freezers with a consistency control use a normally open switch.

A. SPIGOT SWITCH REMOVAL

To remove the spigot switch, perform the following procedures:



WARNING

DISCONNECT FREEZER FROM ELECTRICAL SUPPLY SOURCE BEFORE SERVICING.

1. Remove the drip tray and insert.
2. Remove the four phillips head screws from the front panel and slide the front panel down and out.
3. Remove the four phillips head screws from the right side panel and slide the side panel down and out.
4. Disconnect the spigot switch from the control box at the two pronged Molex connector.
5. Using a special tool, remove the two wires from the Molex connector (Fig. 54).

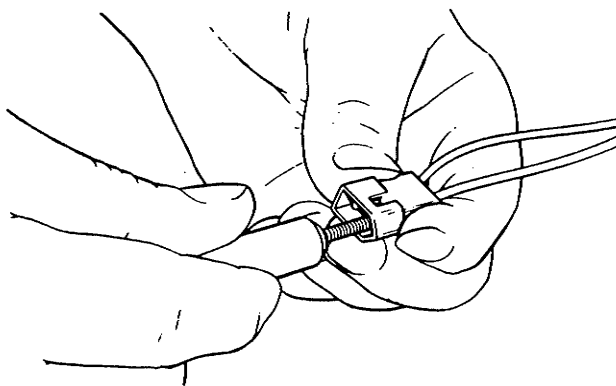


Figure 54. Molex Connector and Special Tool

6. Making sure there is no mix in the freezer barrel, remove the two circular knobs from the front door and slide the door off the mounting studs.
7. Pull the spigot switch and wires through the front of the freezer.

B. SPIGOT SWITCH INSTALLATION

To install a replacement spigot switch perform the following procedures:

1. Insert wires through the hole in the front of the freezer and push spigot switch into place.
2. Pull the two wires through the front and position near the electrical box. Install into the Molex connector.
3. Connect the wires to the proper connector on the control box.
4. Replace the right side panel, front panel, drip tray and insert.

6.12 LIGHT SWITCH REPLACEMENT

The PUSH TO FREEZE light/switch and the ready light both can be replaced if necessary. To replace, perform the following procedures:



WARNING

DISCONNECT FREEZER FROM ELECTRICAL SUPPLY SOURCE BEFORE SERVICING.

Some models use a PUSH TO FREEZE switch that contains two lights. The red light indicates PUSH TO FREEZE and the green light indicates the product is ready to serve.

1. To replace the switch you must first remove the lens by grasping and pulling out.
2. Remove the two lamps by pulling out on the lamp pullers.
3. Use a needle nose pliers to pull out the white lamp holder.
4. Take a common screwdriver and place as shown in Fig. 55, then use the heel of your hand to drive the screwdriver thru the plastic forcing off the retainers. Repeat procedure on opposite side.

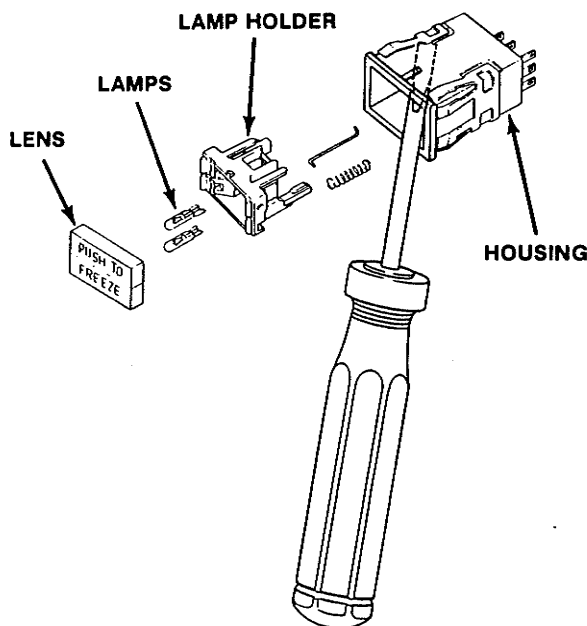


Figure 55. Light Switch Removal

5. You can now remove the switch assembly.
6. Connect the wires to the replacement switch and push into position.

6.13 CLEAN-OFF-ON SWITCH REPLACEMENT

To replace a defective CLEAN-OFF-ON switch, perform the following procedures:



WARNING

DISCONNECT FREEZER FROM ELECTRICAL SUPPLY SOURCE BEFORE SERVICING.

1. Remove drip tray and insert.
2. Remove the four phillips head screws from the front panel and slide the front panel down and out.
3. Remove the two hex head screws from the control box cover and remove the cover.
4. Using a standard screwdriver, remove two screws, lockwashers and flat washers securing the switch to the control box (Fig. 56).

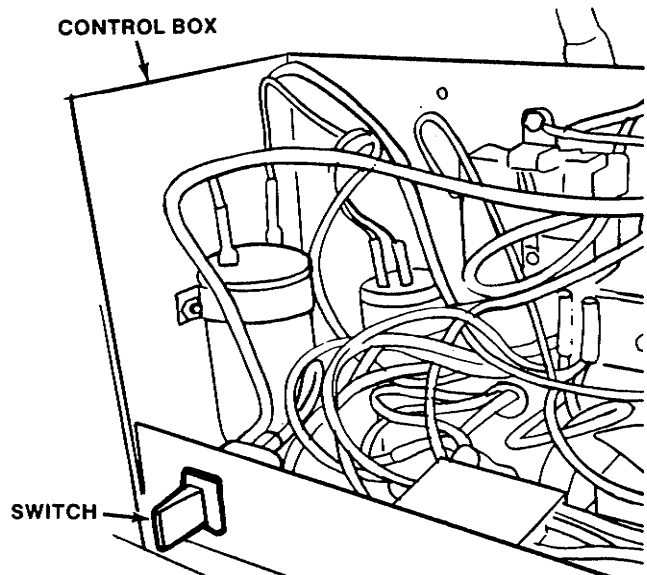


Figure 56. Clean-Off-On Switch Replacement

5. Remove the switch, through the inside of the control box, and remove and identify (mark) the lead wires from the back of the switch.
6. Connect the lead wires to the replacement switch and position the switch through the inside of the control box.
7. Secure the switch by installing the two flat washers, lockwashers and screws through the front of the control box and tighten securely. **Do not** overtighten.
8. Replace the control box cover and front panel.

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SECTION 7

MAJOR COMPONENT REMOVAL AND INSTALLATION

7.1 PREPARATION FOR COMPONENT REMOVAL

To remove any or all of the major components of the freezer, the following steps must be performed first.



WARNING

DISCONNECT FREEZER FROM ELECTRICAL SUPPLY SOURCE BEFORE SERVICING.

1. Remove the drip tray and insert.
2. Remove the six phillips head screws from the rear panel and slide the rear panel down and out.
3. Remove the four phillips head screws from each side panel and remove the side panels by pulling down and out.

7.2 BLOWER FAN REMOVAL

After the ELECTRICAL SUPPLY HAS BEEN DISCONNECTED and the four previous steps have been completed, the blower fan can be removed by performing the following procedures:

1. Remove the two hex head screws from the compressor electrical box cover and remove the cover.
2. Disconnect and identify (mark) the wires leading from the fan to the capacitor in the compressor electrical box. The wires MUST be identified for proper installation of the blower fan later.
3. Remove the four hex nuts (one on each corner) securing the blower fan and motor to the fan support.
4. Tilt the fan forward (down) to allow the fan and motor to clear the fan support.
5. Remove the blower fan through the back of the freezer.

7.3 DRIVE MOTOR REMOVAL

After the ELECTRICAL SUPPLY HAS BEEN DISCONNECTED, and the panels have been removed, the drive motor can be removed by performing the following procedures:

1. Disconnect the drive motor wire assembly at the Molex connector on the electrical control box.
2. Remove the three socket head screws from the back of the drive motor gear box.

3. Firmly grasp the drive motor and remove through right side of freezer.

NOTE

The 3/4 HP drive motor assembly has a flexible coupling joining the motor to the gear box. The motor does not have a replacement oil seal.

7.4 DRIVE MOTOR OIL SEAL REMOVAL (1/2 HP)

After removal of the drive motor assembly, the gear box can be removed and the drive motor disassembled for inspection and/or repair. Perform the following procedures for removal of the gear box from the drive motor and disassembly of the drive motor:

1. Remove the screws attaching the gear box to the drive motor and remove the drive motor. (See Figure 57.)
2. Mark the end bell and motor case for reference when reassembling.

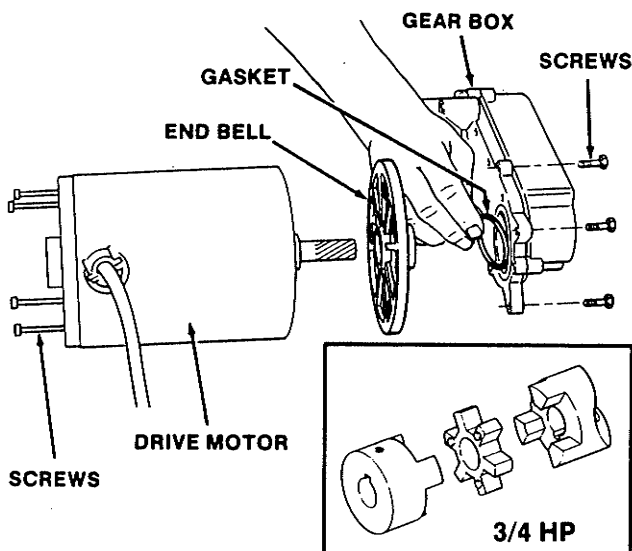


Figure 57. Motor Gear Box Assembly

3. Remove the four retaining bolts and slide off the end bell.
4. Remove the wave washer from end bell seal area.
5. Place the end bell with the inside facing down.
6. Using a common screwdriver and a hammer, tap the old seal out as shown in Figure 58.

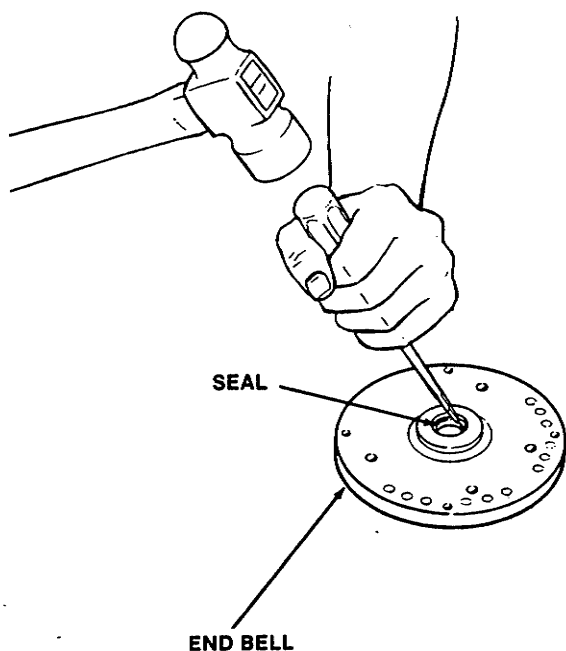


Figure 58. Removing Seal from End Bell

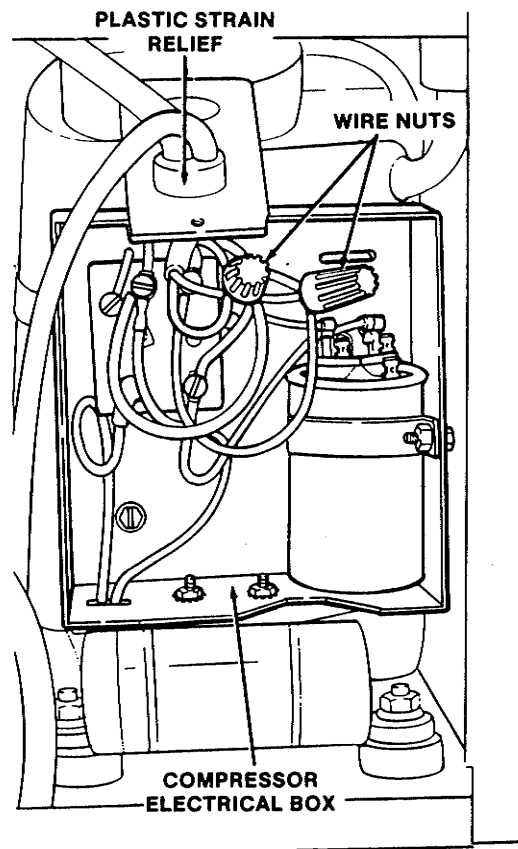


Figure 59. Compressor Electrical Box

7.5 COMPRESSOR REMOVAL

After the ELECTRICAL SUPPLY HAS BEEN DISCONNECTED and the panels have been removed, the compressor can be removed by performing the following procedures:

1. Remove the two hex head screws from the compressor electrical box, located at the rear of the compressor, and remove the electrical box cover.
2. Disconnect the two wire nuts from inside the compressor electrical box and identify (mark) each wire for proper connection later (Fig. 59).
3. Using a common pliers, squeeze the plastic strain relief at the top of the compressor electrical box and pull the wires out through the top.
4. Blow refrigerant charge and leave a port open to prevent pressure build-up during compressor removal.
5. Remove enough insulating tubing from the suction line, going to the compressor, to unsweat the suction line below the filter drier tube.
6. Unsweat the discharge line and access port line from the compressor.

7. Remove the four nuts and four washers from the base of the compressor.
8. Remove the compressor through the rear of the freezer.
9. Remove the four rubber compressor mounts from the old compressor.

NOTE

Rubber mounts are not always furnished with replacement compressors.

10. Unsweat the valve and access fitting line from the compressor.
11. Check the compressor for a burn-out condition using an acid test kit. **If acid is found, clean out the system per the compressor manufacturer's instructions.**
12. Plug all open ports of the old compressor.

NOTE

A compressor returned to the company with any open ports will void the warranty. **ALWAYS** plug any open ports on a compressor that has been removed.

7.6 COMPRESSOR INSTALLATION

After the ELECTRICAL SUPPLY HAS BEEN DISCONNECTED, all panels have been removed, and old compressor has been removed, the replacement compressor can be installed by performing the following procedures:

1. Before the replacement compressor can be installed the entire refrigeration system must be thoroughly purged.



CAUTION

IF ACID HAS BEEN FOUND IN THE SYSTEM, CLEAN OUT PER COMPRESSOR MANUFACTURER'S INSTRUCTIONS.

2. Install the four rubber compressor mounts on the replacement compressor.
3. Remove all plugs from the replacement compressor.
4. Braze the process tube to the replacement compressor.
5. Install the replacement compressor into the freezer, fitting the base over the four studs.
6. Install the four washers and four nuts onto the studs and tighten securely.
7. Leaving a port open to prevent pressure build-up, braze the suction line, discharge line and access port line to the compressor.
8. Using a common pliers, squeeze the plastic strain relief on the compressor wire assembly and insert the wires and strain relief into the access hole at the top of the compressor electrical box.
9. Connect the wires in the compressor electrical box with the two wire nuts.
10. Purge and evacuate the refrigeration system to 50 microns of mercury for approximately 30 minutes.
11. Break the vacuum to 0 P.S.I.G. through the low side Schrader valve with R-502.
12. Remove the old filter drier and install a new filter drier using the appropriate brazing material (Fig. 60).
13. Purge and evacuate the refrigeration system to 50 microns of mercury for approximately 30 minutes.

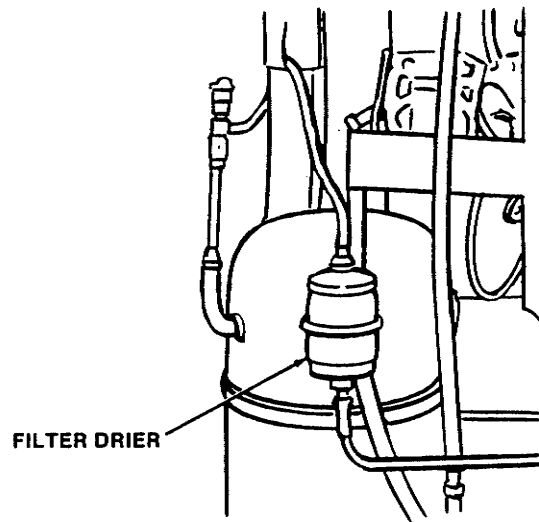


Figure 60. Filter Drier

14. Accurately charge the system with R-502 per the amount indicated on the specifications tag located on the top front of the right side panel.
15. Leak check all fittings and connections.
16. Replace the insulating tubing to the suction line.

7.7 DRIVE MOTOR OIL SEAL INSTALLATION

Should installation of a new oil seal be necessary, perform the following procedures:

NOTE

Gear box must be assembled and installed onto the drive motor before the drive motor is installed into the freezer.

1. Place the end bell on a solid surface inside facing up.
2. Clean the seal area and remove any burrs.
3. Place the new seal in the end bell smooth side up.
4. Use an object that is the same size as a 3/4" socket and a hammer to tap in the new seal. (See Figure 61.)
5. Cover the gear portion of the drive motor shaft with masking tape and lubricate. (See Figure 62.)
6. Carefully slide the end bell over the shaft and line up the reference marks.
7. Install and tighten the four bolts.
8. Remove the masking tape from the drive motor shaft.

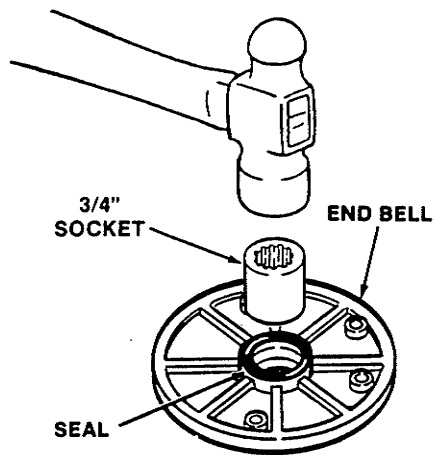


Figure 61. Installing New Seal

9. Position the gear box onto the drive motor by inserting the splined drive shaft into the gear box and installing the four fastening screws. Tighten securely.

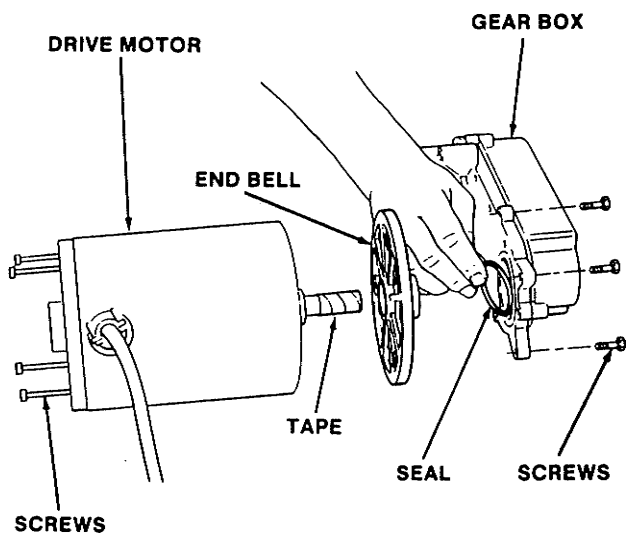


Figure 62. Motor Gear Box Assembly

7.8 DRIVE MOTOR INSTALLATION

After the ELECTRICAL SUPPLY HAS BEEN DISCONNECTED and all panels have been removed, the drive motor can be replaced by performing the following procedures:

1. Position the secondary seal onto the gear box, large end out, where the gear box engages the auger shaft.
2. Position the replacement drive motor into the freezer through the rear so the gear box drive lug fits into the auger shaft protruding from the rear of the evaporator.
3. Install the three socket head screws into the drive motor gear box and tighten securely.
4. Connect the drive motor wire assembly to the electrical control box at the proper Molex connector.

7.9 BLOWER FAN INSTALLATION

After the ELECTRICAL SUPPLY HAS BEEN DISCONNECTED and all panels have been removed, the blower fan can be installed by performing the following procedures:

1. Install the blower fan through the back of the freezer and into position, inside the fan support, allowing the four studs in the fan motor to be positioned through the holes in the support.
2. Install the four nuts onto the studs and tighten securely.
3. Connect the wires from the blower fan to the capacitor inside the compressor electrical box.
4. Replace the compressor electrical box cover and secure with two hex head screws.

7.10 FINAL ASSEMBLY OF FREEZER

Upon completion of the removal and installation of any or all of the major components of the freezer, the panels can be replaced by performing the following procedures:

1. Position the right side panel into place and install the four phillips head screws through the side panel and tighten securely.
2. Position the left side panel into place and install the four phillips head screws through the side panel and tighten securely.
3. Position the back panel into place and install the six phillips head screws through the back panel and tighten securely.
4. Install the drip tray and insert.
5. The freezer electrical supply can now be connected.

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SECTION 8 TROUBLESHOOTING

Troubleshooting can be difficult. The **TROUBLESHOOTING INDEX** on the preceding page gives a list of possible problems. To make a repair to a problem, make reference to the cause and correction on the page indicated.

This list of problems, causes and corrections will only give an indication of where a possible problem can be and what repairs are needed. Normally, more or other repair work is needed beyond the recommendations in the list.

Remember that a problem is not normally caused by only one part, but by the relation of one part with other parts. This list is only a guide and can not give all possible problems and corrections. The technician must find the problem and its source, then make the necessary repairs.

In the event the Troubleshooting Guide does not help to correct the service problem, the factory Service Department should be contacted. Write or call:

STOELTING, INC.
502 Highway 67
KIEL, WISCONSIN 53042-1600

Tele: 414-894-2293
(800-558-5807)
FAX: 414-894-7029

8.1 COMPRESSOR RUN CAPACITOR OPEN, SHORTED OR BLOWN

Cause	Correction
Improper capacitor	Determine correct size and replace.
Excessively high line voltage (110% of rated max.)	Contact your local power company.

8.2 COMPRESSOR RELAY DEFECTIVE OR BURNED OUT

Cause	Correction
Incorrect relay	Check and replace.
Incorrect mounting angle	Remount relay in correct position.
Line voltage too high or too low ($\pm 10\%$)	Contact your local power company.
Excessive short cycling	Determine reason and correct.
Relay being influenced by loose vibrating mounting	Remount rigidly.
Incorrect run capacitor	Replace with proper capacitor.

8.3 COMPRESSOR STARTS AND RUNS, BUT SHORT CYCLES ON OVERLOAD PROTECTOR

Cause	Correction
Low voltage to unit	Determine reason and correct.
Overload protector defective	Replace overload.
Run capacitor defective	Replace run capacitor.
Excessive discharge pressure	Check ventilation, restrictions in cooling medium, restrictions in refrigeration system.
Suction pressure too high	Check for overcharge. Adjust or replace expansion valve.
Compressor too hot - return gas hot	Check refrigerant charge (fix leak), add refrigerant if necessary.
Compressor motor has a winding shorted	Replace compressor.

8.4 UNIT OPERATES LONG OR CONTINUOUSLY

Cause	Correction
Shortage of refrigerant	Fix leak, add refrigerant.
Mix in hopper too warm	Refrigerate mix before adding to hopper.
Restriction in refrigeration system	Determine location and remove.
Filter dirty	Clean or replace filter.
Dirty condenser	Clean condenser.

8.5 UNIT NOISY

Cause	Correction
Loose parts or mountings	Find and tighten.
Tubing rattle	Reform to be free of contact.
Bent fan causing vibration	Replace fan.
Fan motor bearings worn	Replace motor.
Internal compressor spring broken	Replace compressor.

8.6 COMPRESSOR WILL NOT START

Cause	Correction
Line disconnect switch open	Close start or disconnect switch.
Overload protector tripped	Will reset after cooling.
Compressor contactor failure	Replace contactor.
Program module failure	Replace program module.
Wiring improper or loose	Check wiring against diagram.

8.7 COMPRESSOR WILL NOT START - HUMS BUT TRIPS ON OVERLOAD PROTECTOR

Cause	Correction
Improperly wired	Check wiring against diagram.
Low voltage to unit	Determine reason and correct.
Start capacitor defective	Replace start capacitor.
Relay failing to close	Determine reason and correct. Replace relay if necessary.
Compressor motor has a winding open or shorted	Replace compressor.
Internal mechanical trouble in compressor	Replace compressor.

8.8 COMPRESSOR STARTS, BUT DOES NOT SWITCH OFF OF START WINDING

Cause	Correction
Improperly wired	Check wiring against diagram.
Low voltage to unit	Determine reason and correct.
Relay failing to open	Determine reason and correct. Replace relay if necessary.
Run capacitor defective	Determine reason and replace.
Excessively high discharge pressure	Check for restrictions.
Compressor motor has a winding open or shorted	Replace compressor.
Internal mechanical trouble in compressor	Replace compressor.

8.9 COMPRESSOR START CAPACITOR OPEN, SHORTED OR BLOWN

Cause	Correction
Relay failure	Replace relay.
Prolonged operation on start cycle due to low voltage to unit	Determine reason and correct.
Prolonged operation on start cycle due to improper relay	Replace relay.
Excessive short cycling	Determine reason and correct.
Improper capacitor	Determine correct size and replace.
Loose wires	Locate and correct.

8.10 FREEZER WILL NOT START

Cause	Correction
Freezer is unplugged	Plug in freezer.
Blown fuse or tripped circuit breaker in building	Check for blown fuse or tripped circuit breaker in building and replace.
Transformer fuses on power board are blown	Check fuses.
Program module is defective	Replace program module.
CLEAN-OFF-ON switch has a loose wire or is defective	Check, repair or replace switch.

8.11 DRIVE MOTOR WILL NOT RUN, BUT COMPRESSOR RUNS

Cause	Correction
Drive motor overload is tripped	Wait one hour and press drive motor reset button.
Drive motor start or run capacitor is defective	Check and replace capacitor if necessary.
Program module is defective	Replace program module.
Molex connector on wire harness is loose	Check, repair or replace Molex connector.
Drive motor is defective	Replace drive motor.

8.12 DRIVE MOTOR HIGH OR LOW TORQUE ERROR (FREEZER SHUTS DOWN WHEN RUNNING)

Cause	Correction
Spigot handle is not closed completely	Close spigot completely after dispensing.
Mix inlet regulator is plugged	Unplug, using small sanitized brush.
Consistency setting is too firm	Adjust consistency potentiometer on program module.
Refrigerant is low or leaking	Check refrigerant charge. Add if necessary.
Spigot switch has a loose wire or is defective	Check spigot switch and repair or replace.
PUSH TO SERVE switch has a loose wire or is defective	Check switch and repair or replace.
Large voltage changes	Check supply voltage.

8.13 COMPRESSOR WILL NOT RUN, BUT DRIVE MOTOR RUNS

Cause	Correction
Program module is defective	Replace program module.
Compressor problem	Refer to subsections 8.1 through 8.9.

8.14 PRODUCT DISPENSES SLOWLY OR NOT AT ALL

Cause	Correction
No mix or warm mix in hopper	Put pre-chilled mix into hopper.
Mix inlet regulator is plugged	Unplug, using small sanitized brush.
Freezer is being overdrawn	Slow down rate of draw.
Auger flights are worn	Replace auger flights.
Auger flight spring is missing	Replace auger flight spring.
Consistency setting is too soft	Adjust consistency potentiometer.
Refrigerant is low or leaking	Check refrigerant charge. Add if necessary.
ON and OFF timers need to be adjusted	Adjust ON and OFF time potentiometers on program module.

8.15 PRODUCT IS TOO SOFT

Cause	Correction
Warm mix in hopper	Use pre-chilled mix in hopper.
Ambient temperature is above 100° F (37.7° C)	Move or direct hot air away from freezer.
Freezer is being overdrawn	Slow down the rate of draw.
Condenser is dirty	Clean condenser.
Fan is stuck or motor is defective	Check, repair or replace.
Consistency setting is too soft	Adjust consistency potentiometer on program module.
Refrigerant is low or leaking	Check refrigerant charge. Add if necessary.
ON and OFF timers need to be adjusted	Adjust ON or OFF time potentiometer on program module.
Expansion valve is defective	Check, adjust or replace expansion valve.

8.16 HOPPER TEMPERATURE IS TOO COLD OR TOO WARM

Cause	Correction
Warm mix in hopper	Use pre-chilled mix in hopper.
E.P.R. valve needs adjusting	Make appropriate adjustment.
ON and OFF timers need to be adjusted	Adjust ON and OFF timer potentiometers on program module.
Refrigerant low or leaking	Check refrigerant supply. Add if necessary.

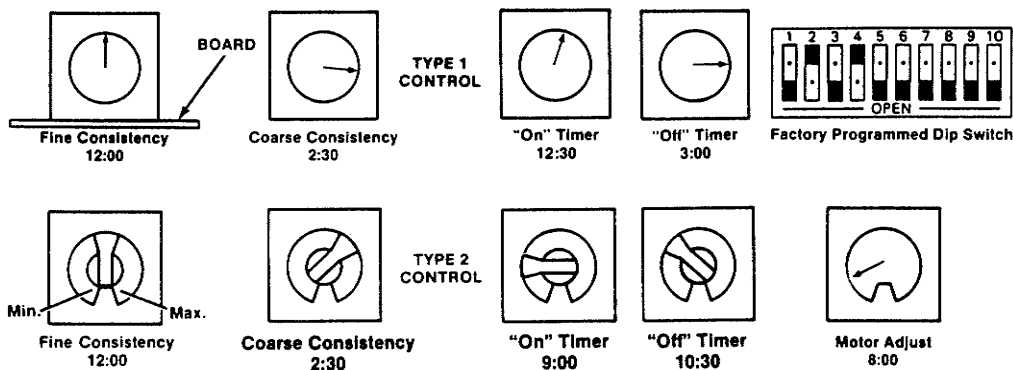
8.17 LOW OVER-RUN

Cause	Correction
Legs are loose or freezer is not level	Check legs, level top of freezer.
Frozen mix in hopper	Do not put frozen mix in hopper.
Mix inlet regulator air tube is plugged	Unplug, using small sanitized brush.
Mix inlet regulator "O" Ring is worn or missing	Check, replace if necessary.
Mix inlet regulator is being removed during freezing	Do not remove mix inlet regulator during freezing.
Little or no usage	Clean freezer, use new mix.
Freezer is being overdrawn	Slow down the rate of draw.
Auger flights are worn	Replace auger flights.
Auger flight spring is missing	Replace auger flight spring.

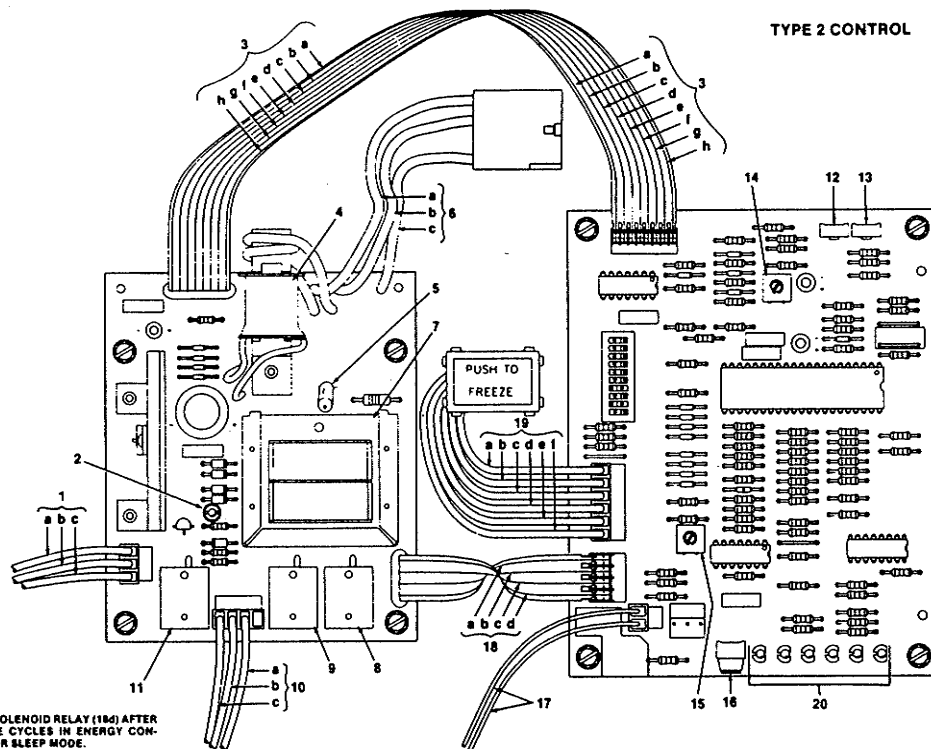
8.18 QUICK REFERENCE SPECIFICATIONS GUIDE

On Time (Type 1 Control)	30 seconds real time or with Fast Clock
On Time (Type 2 Control)	28-32 seconds real time or in test mode E model 23-27 sec.
Off Time (Type 1 Control)	9 minutes real time @ 70°F (21.1°C) ambient temperature 45 seconds with Fast Clock @ 70°F (21.1°C) ambient temperature
Off Time (Type 2 Control)	11 minutes real time @ 70°F (21.1°C) ambient temperature or 58-62 seconds in test mode @ any ambient temperature
Hopper Pressure (E.P.R.)	60-62 P.S.I.G.
Low Side Pressure	18 to 25 P.S.I.G. @ 75°F (23.88°C) ambient temperature
High Side Pressure	245.00 P.S.I.G. @ 75°F (23.88°C) ambient temperature
Voltage	115 VAC*
Amperage	15 Amps

*A transformer is required if voltage is over 125 volts or under 100 volts.



QUICK REFERENCE SPECIFICATIONS GUIDE



* OUTPUT TO SOLENOID RELAY (18d) AFTER 24 COMPLETE CYCLES IN ENERGY CONSERVATION OR SLEEP MODE.

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9.1 HOW TO ORDER PARTS

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

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

9.2 PUSH TO FREEZE LIGHT/SWITCH LAMP REPLACEMENT

To change a lamp in the PUSH TO FREEZE switch/light follow these simple steps:

- A. Grasp the lens with your thumb and forefinger and pull out.
- B. Remove the faulty lamp by pulling out the lamp puller. (See Fig. 63.)
- C. To install the new lamp, line up the lamp end with the receptical and push fully in.
- D. Reinstall the lens by pushing firmly in. When installed "PUSH TO" must be right side up.

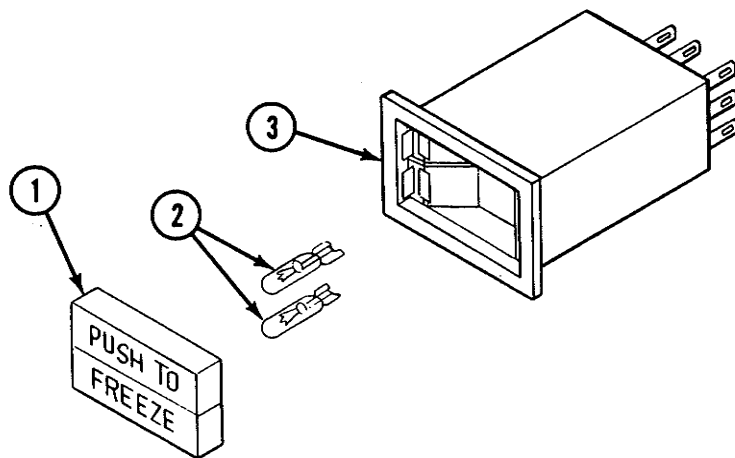


Figure 63. Push To Freeze Light/Switch Assembly

Part Number	Ref. No.	Description	Qty.
490815	1	Lens	1
490125	2	Bulb - Red	2
490126	2	Bulb - Green	2
718830	3	Switch Only	1

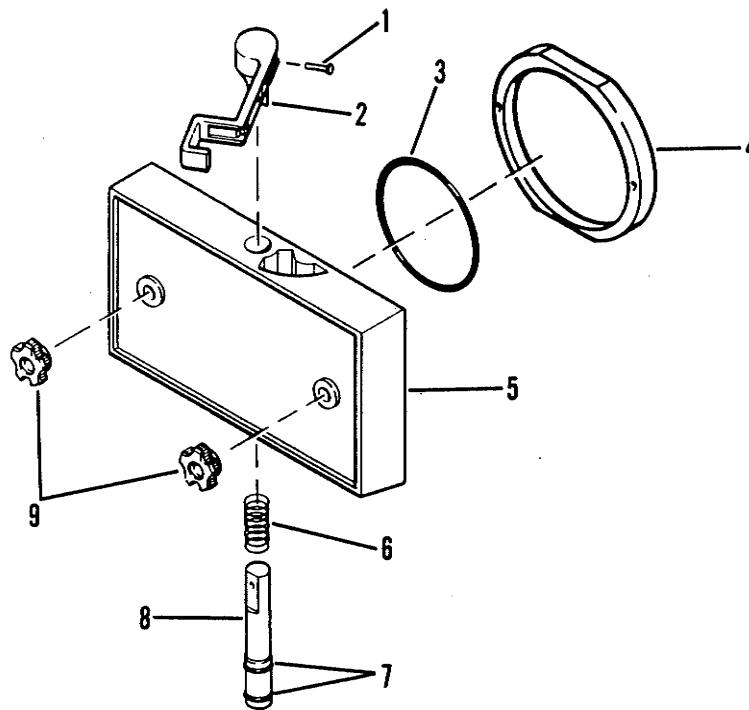


Figure 64. Spigot and Front Door Assembly

9.3 SPIGOT AND FRONT DOOR ASSEMBLY

Part Number	Ref. No.	Description	Qty.
521163	1	Clevis Pin	1
2147885	2	Spigot Handle	1
625133	3	"O" Ring, door - red	1
396164	4	Gasket	1
1144415	5	Front Door w/Decal	1
694311	6	Spigot Spring	1
624600	7	"O" Ring, spigot - red	2
3143817	8	Spigot Body	1
482019	9	Knob, front door	2

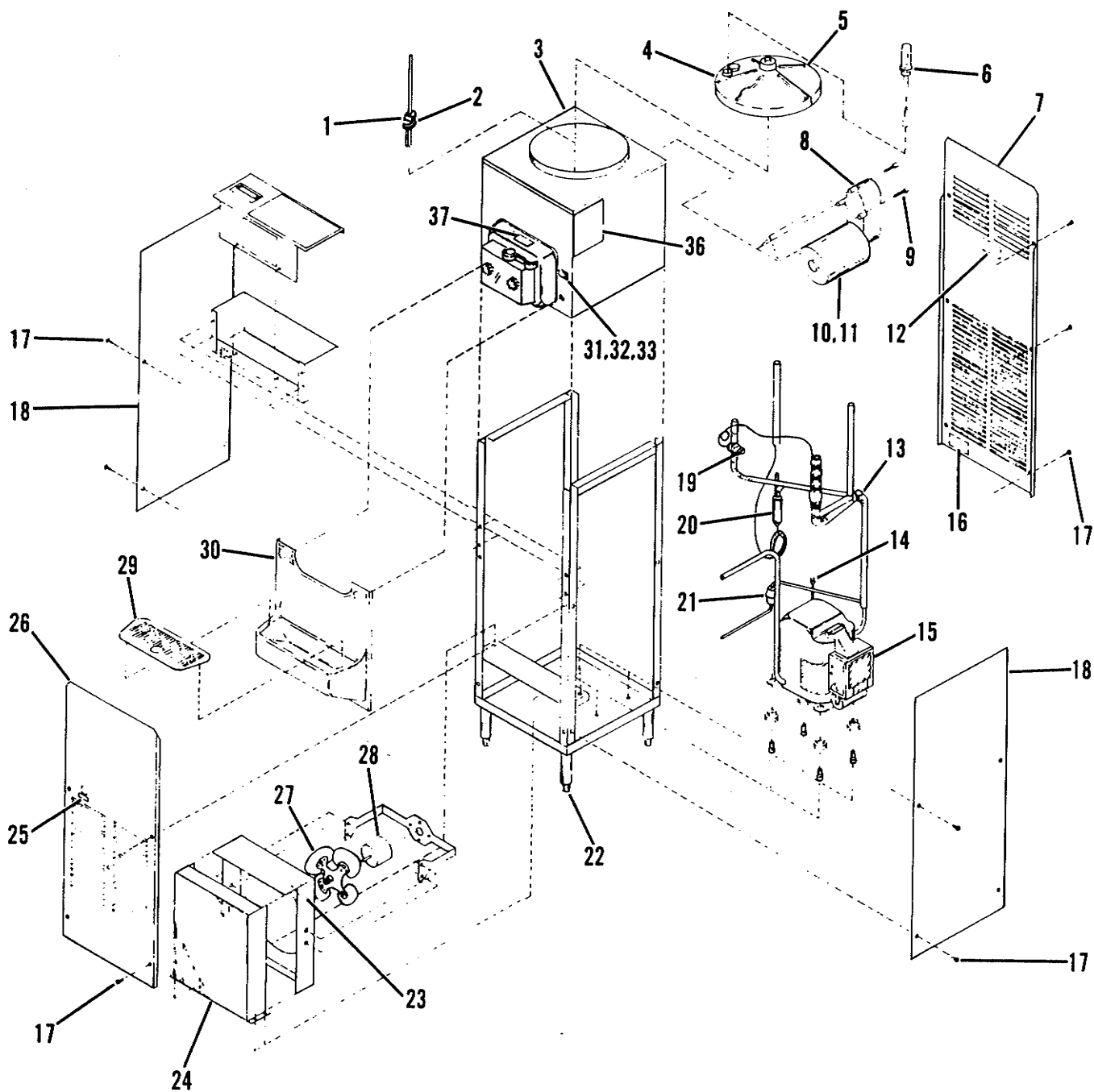


Figure 65. Refrigeration and Electrical Assembly

9.4 REFRIGERATION AND ELECTRICAL ASSEMBLY

Part Number	Ref. No.	Description	Qty.
2149238	1	Mix Inlet Regulator	1
624677	2	"O" Ring, mix inlet regulator	1
4149329	3	Evaporator and Hopper Assembly (Ser. #0 - #7165)	1
4151981		Evaporator and Hopper Assembly (Ser. #7166 plus)	
314218	4	Door, hopper cover	1
314216	5	Hopper Cover	1
2119012	6	Liquid Level Indicator	1
3149011	7	Rear Panel	1
522427	8	Gear Box - Grove (Ser. #0 - #7165)	1
522110-T		Gear Box (Ser. #7166 plus)	
644604	9	Bolt, drive motor mounting (socket head) (Ser. #0 - #7165)	3
2149283	10	Drive Motor Assembly (Ser. #0 - #7165)	1
2151958		Gear Motor Assembly (Ser. #7166 plus)	
522430-01	11	Drive Motor, motor only (for Grove assy.)	1
324136	12	Decal - Adequate Ventilation	1
762956	13	E.P.R. Valve	1
375805	14	Schrader Valve Fitting	1
282280-01	15	Compressor (Ser #0 - #7165) (Tecumseh)	1
282209-01		Compressor (Ser. #7230) (Copeland)	
282284-01		Compressor (Ser. #7231 plus) (Tecumseh)	
324106	16	Decal - Applicable Electric Code	1
649175	17	Screw, panel attaching	18
2132200	18	Side Panel	2
762411	19	A.X.V.	1
2132205	20	Drier and Capillary Tube Assembly	1
342006	21	Filter Drier (Ser. #0 - #7165)	1
342024		Drier (Ser. #7166 plus)	
490701	22	Leveling Leg, plastic	4
324107	23	Decal - Caution	1
284013	24	Condenser	1
324163	25	Decal - CLEAN-OFF-ON	1
3149010	26	Front Panel (Ser. #0 - #7165)	1
3152547		Front Panel (Ser. #7166 plus)	
162070	27	Fan Blade	1
522824	28	Fan Motor	1
744228	29	Insert, drip tray	1
744243	30	Drip Tray	1
718830	31	PUSH TO FREEZE Light Switch	1
490125	32	PUSH TO FREEZE Lamp - Red	1
490126		PUSH TO FREEZE Lamp - Green	
490815	33	PUSH TO FREEZE Split Colar Lens	2
528194	36	Decal - Model Identification	1
324141	37	Decal - Caution - Rotating Blades	1
NOT SHOWN			
208135		Brush, 4" dia. (10 cm)	1
208381		Brush, 3/8" dia. (.95 cm)	1
208467		Brush, 5/16" dia. (.80 cm)	1
430036		Power Cord	1
508135		Petro - Gel Lubricant	1
508044		Gear Box Lubricant - V.W.	1
508045		Gear Box Lubricant - Grove/Patterson/Master Gear	
666789		Secondary Seal, gear box (Ser. #0 - #7165)	1
666793		Secondary Seal, gear box (Ser. #7166 plus)	
1135602		Spigot Switch	1
2132688		Transformer (50 Hz only)	1
778026		Service Allen Wrench, drive motor	1
1106373		Spline Lubricant	1
513507		Installation and Operation Manual	1
513519		Service Manual	1

Note: Electrical component part numbers not listed in parts list can be found on the appropriate wiring diagram.

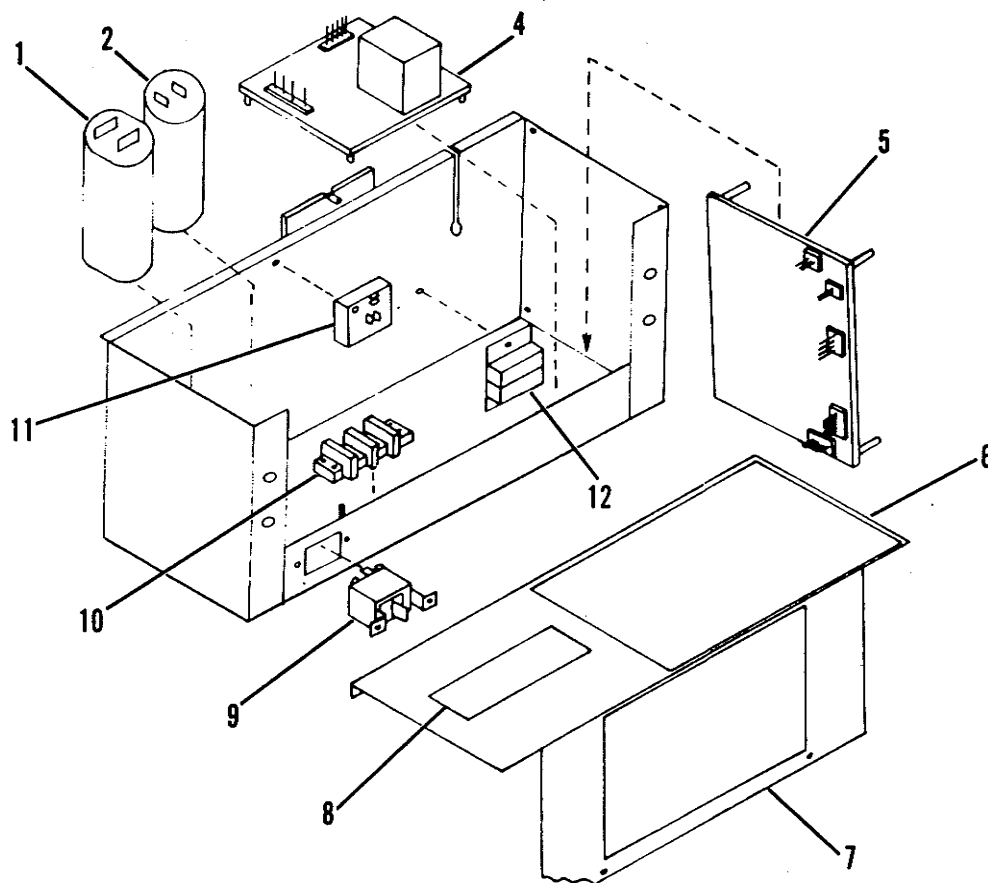


Figure 66. Electrical Control Box

9.5 ELECTRICAL CONTROL BOX

Part Number	Ref. No.	Description	Qty.
231029	1	Run Capacitor (G.E.) (2149283 Gearmotor)	1
231069	1	Run Capacitor (2151958 Gearmotor Ser. #7166 plus)	1
231030	2	Start Capacitor (G.E.) (2149283 Gearmotor)	1
231068	2	Start Capacitor (2151958 Gearmotor Ser #7166 plus)	1
521722	4	Power Board (Ser. #7166 plus)	1
521723	4	Power Board (Ser. #0 - #7165)	1
521719	5	Program Module	1
324247	6	Decal - Consistency Control (Type 2)	1
324105	8	Decal - Electrical Shock Hazard	1
718759	9	CLEAN-OFF-ON Switch	1
731989	10	Terminal Block, power cord	1
765201	11	Varistor (50 Hz only)	1
732005	12	Terminal Block	1
NOT SHOWN			
231033		Compressor Start Capacitor (Ser. #0 - #7165)	1
231029		Compressor Run Capacitor (Ser. #0 - #7165)	1
618028		Compressor Start Relay (Ser. #0 - #7165)	1
231073		Compressor Start Capacitor (Ser. #7166 - #7230)	1
618028		Compressor Relay (Ser. #7166 - #7230)	1
618446		Compressor Overload (Ser. #7166 - #7230)	1
231044		Compressor Run Capacitor (Ser. #7231 plus)	1
231060		Compressor Start Capacitor (Ser. #7231 plus)	1
618141		Compressor Relay (Ser. #7231 plus)	1
741505		Screwdriver - Program Board	1
295019		Contactor - Furnas - Drive and Comp.	2

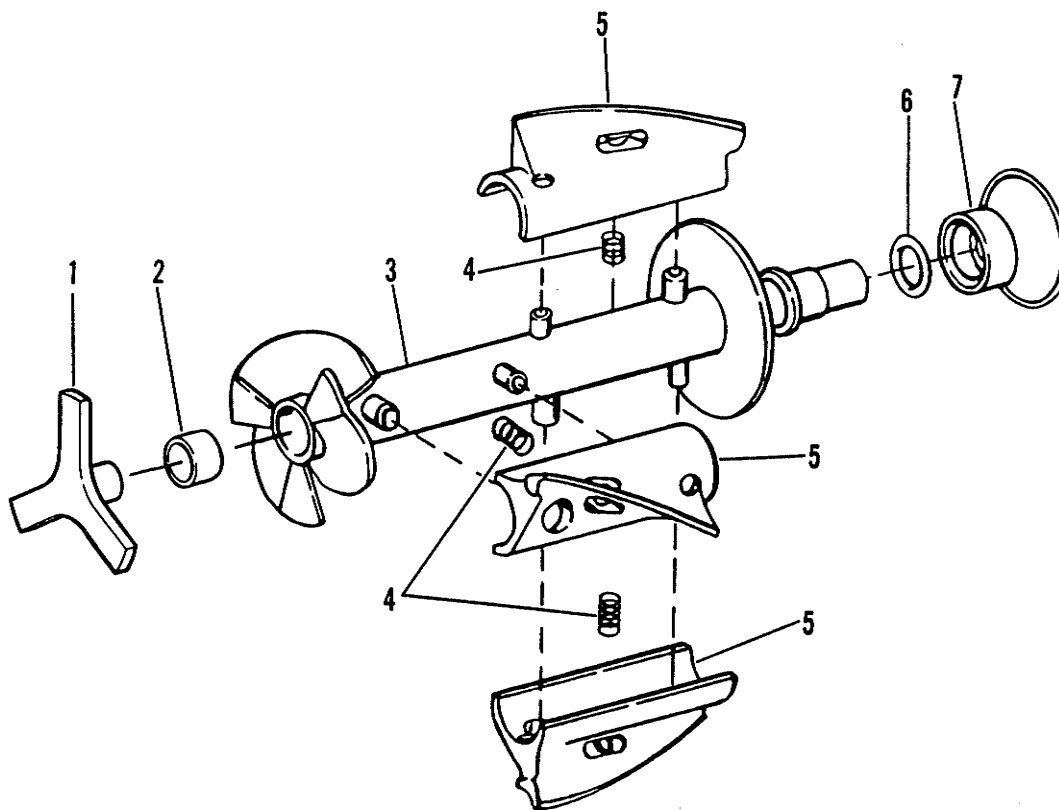


Figure 67. Auger Shaft Assembly

9.6 AUGER SHAFT ASSEMBLY

Part Number	Ref. No.	Description	Qty.
3156529	1	Auger Support	1
149003	2	Auger Bushing	1
3132189	3	Auger (Ser. #0 - #7165)	1
4151828	3	Auger (Ser. #7166 plus)	1
694255	4	Auger Spring	3
381804	5	Auger Flight	3
624678	6	"O" Ring, shaft seal area - Black	1
666786	7	Inner Rear Seal	1

NOTE

For your convenience, a wiring diagram has been affixed to the electrical box, or electrical box cover for your model.

If the wiring decal on your model is missing or has been damaged please contact the Stoelting, Inc. Service Dept for a replacement.

**STOELTING, INC.
502 HIGHWAY 67
KIEL, WISCONSIN 53042-1600**

**Tele: 414-894-2293
(800-558-5807)
FAX: 414-894-7029**

ADDENDUM A

Addendum A covers the disassembly, assembly, configuration and parts list for earlier model front door/spigot assemblies and front auger supports. This is a guide for technicians servicing freezers which, in these aspects, differ from the configurations illustrated previously in this manual.

A. DISASSEMBLY OF FRONT DOOR AND FRONT AUGER SUPPORT



WARNING

PLACE THE CLEAN-OFF-ON PADDLE SWITCH IN THE OFF POSITION AND DISCONNECT FREEZER FROM ELECTRICAL SUPPLY SOURCE BEFORE DISASSEMBLING OR SERVICING.

1. With the freezer completely drained of mix, place the spigot handle in the open position (handle pointing out).
2. Remove the front door by turning off the triangular knobs, removing washers and sliding the front door off the studs.
3. Remove the spigot body from the front door by pulling the clevis pin out of the spigot handle. Push the spigot body through the bottom of the front door.
4. Remove the front auger support and front evaporator gasket.
5. Remove all "O" Rings from parts by first wiping off the lubricant using a clean cloth or paper towel. Then squeeze the "O" Ring upward with a dry cloth (Fig. A-1). When a loop is formed, grasp the loop with the other hand and roll out of the "O" Ring groove toward the top of the spigot body.



WARNING

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

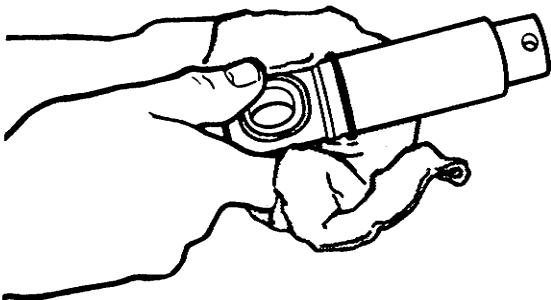
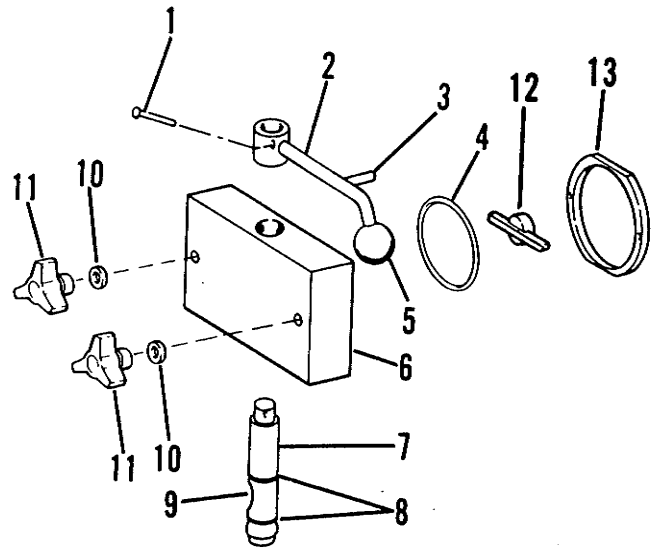


Figure A-1. Removing "O" Ring



1. Clevis Pin (#570967)
2. Spigot Handle, complete (#2132244)
3. Spigot Magnet (#508503)
4. "O" Ring, front door (#625133)
5. Ball Knob, spigot handle (#482023)
6. Front Door (#3132212)
7. Spigot Body (#3132221)
8. "O" Ring (#624677)
9. "O" Ring, white (#624655)
10. Washer (#766470)
11. Knob, triangular (#482035)
12. Auger Support (#716875)
13. Gasket, gray (#396160)

Figure A-2.

B. ASSEMBLY OF FRONT DOOR AND FRONT AUGER SUPPORT

NOTE

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

NOTE

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

1. Apply a small amount of Petro-Gel sanitary lubricant inside the hole on the front of the auger.
2. Install the auger support into the front of the auger in a horizontal position.
3. Assemble all "O" Rings onto spigot, **without lubrication**. Be sure the white "O" Ring is installed around the side port (Fig. A-2). Then apply a thin film of sanitary lubricant to the exposed surfaces of the "O" Rings.
4. Install the spigot body with "O" Rings into the front door from the bottom (Fig. A-2). Push straight up until the spigot is in place. Place the spigot handle on top of the spigot body and insert clevis pin.

NOTE

The spigot handle can only be installed one way.

5. Install front evaporator gasket.
6. Lubricate and install door "O" Ring.
7. Install the front door on the freezer. Shoulder on the rear of the door must be inside the freezer barrel.

NOTE

Place the spigot handle in the open position (handle pointing out).

8. Install the washers and triangular knobs on the freezer stubs.



CAUTION

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

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

ADDENDUM B

The PUSH TO FREEZE light/switch and the ON light both can be replaced if necessary. To replace, perform the following procedures:



WARNING

DISCONNECT FREEZER FROM ELECTRICAL SUPPLY SOURCE BEFORE SERVICING.

1. Insert a small standard screwdriver behind the top of the black plastic frame surrounding the light switch to be removed.
2. Gently pry the light switch out, away from the front of the freezer, using care not to damage the stainless steel front of the freezer.
3. While pulling the light switch out, towards the front of the freezer, apply inward pressure to the clips on the outside of the light switch (Fig. B-1), twist light switch towards the front door and pull through.
4. Disconnect lead wires from the terminal clips on the back of the light switch and identify (mark) them for correct installation.

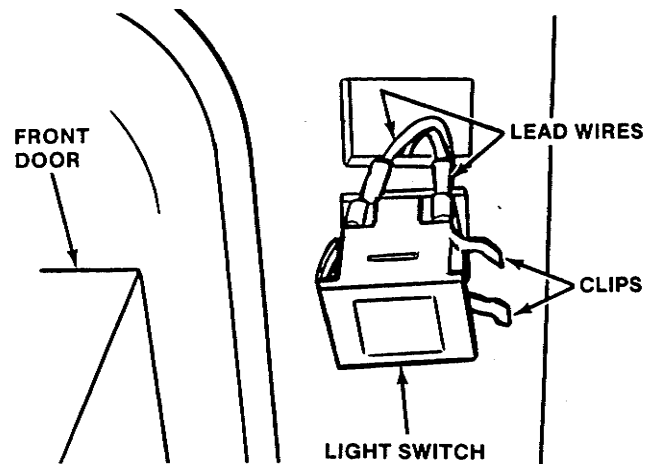


Figure B-1. Light Switch Removal

5. Connect the lead wires to the replacement light switch and push the light switch into position.
6. Be certain all clips on the light switch are snapped shut.

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