

# 1 Introduction

Model 812 is specifically designed to dispense a high quality, smooth-frozen, noncarbonated, water and sugar based drink that is served in a variety of flavors. The product can be a neutral base or a pre-mixed flavor. This model is also designed to dispense a variety of smooth-frozen alcoholic drinks with less than 8% alcohol.

This manual has been prepared to assist you in the proper operation and general maintenance of your Electro Freeze Model 812 Slush and Cocktail Freezer.

Your freezer will not compensate for, or correct, any assembly or priming errors made during the initial start-up. So it is important that you follow the assembly and priming procedures detailed in this manual.

Be sure all personnel responsible for equipment operation completely read and understand this manual before operating the freezer. When properly operated and maintained, your freezer will produce a consistent quality product.

If you require technical assistance, please contact your local authorized Electro Freeze Distributor, as follows:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

or — for factory service assistance — contact H. C. Duke & Son, Inc., Electro Freeze Service Department by phone or FAX:



Phone: (309) 755-4553

FAX: (309) 755-9858

# 2 Note to Installer

**This freezer must be installed and serviced by an “Electro Freeze” Distributor or authorized service technician in accordance with the installation instructions.**

**After installation the warranty registration card must be completed and returned to validate the warranty.**

## 2.1 Uncrating and Inspection

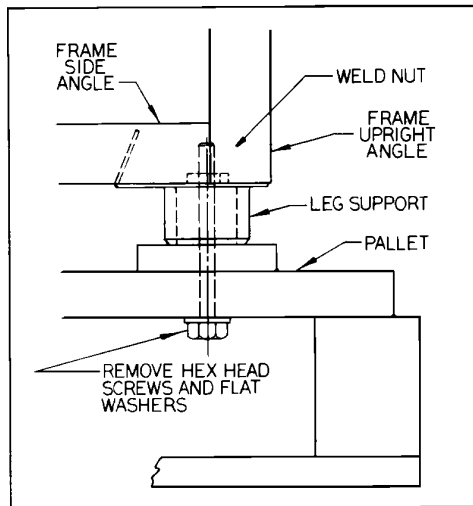


Figure 2-1 Bolted to pallet

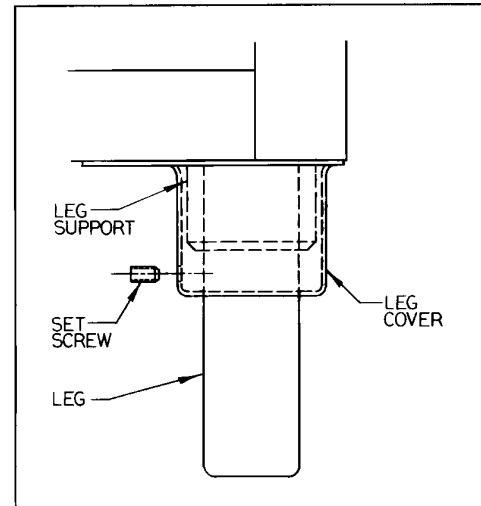


Figure 2-2 Install mounting legs



**CAUTION**  
Be sure to properly support the machine when removing bolts and installing legs or casters.

When the unit is received and while the carrier is still present, inspect the shipping carton for any damage that may have occurred in transit. If the carton is broken, torn, or punctured, note the damage on the carrier's freight bill and notify the carrier's local agent immediately.

1. Remove the carton from the pallet, and move the machine as close as possible to the permanent location.
2. Remove the shipping bolts on the bottom of the freezer (figure 2-1) and install either the legs or casters (figure 2-2).

## 2.2 Installation



**CAUTION**  
All materials and connections must conform to local requirements and be in compliance with the National Electrical Code (NEC).

1. Where codes permit, we recommend that the freezer be installed on casters and have flexible water and electrical connections for easier service and cleaning.

2. **Air cooled** models require a minimum 3-inch (7.6 cm) clearance on either of the side panels and 6-inch (15.2 cm) clearance on the rear panel for adequate ventilation. **Water cooled** models require a minimum of 3-inch (7.6 cm) clearance on all sides.

3. **Water cooled** models require a 3/8-inch MPT water inlet and water waste connection. The connections are found on the bottom, under the compressor mounting area. They are tagged "Water Inlet" and "Water Waste." A manual shut-off valve should be installed in the water inlet line at the time of installation.

4. Place the freezer in its final location and adjust the legs or casters so that it is level side-to-side and the front is approximately 1/4-inch lower than the rear to allow proper drainage of the freezing cylinder.

## 2.3 Electrical Requirements



**CAUTION**  
To prevent accidental electrical shock, a positive earth ground is required.

1. Always verify electrical specifications on the data plate (see figure 3-1) of each individual freezer. Data plate specifications will always supersede the information in this manual.

2. Supply voltage must be within  $\pm 10\%$  of voltage indicated on the nameplate. Also, on three-phase systems, voltage between phases must be balanced within 2%. (More than a 6 volt difference between any two voltage measurements at 208-230 volts indicates a possible imbalance.) Request your local power company to correct any voltage problem.

3. An easily accessible main power disconnect must be provided for all poles of the fixed wiring to the freezer.

## 2.4 Electrical Connections



**CAUTION**  
To prevent accidental electrical shock, a receptacle with a positive earth ground is required.

1. Check the data plate for fuse size, wire ampacity, and electrical specifications.
2. Refer to the wiring diagram provided for proper power connections.

3. Electrical connections are made in the junction box located mid-level behind the lower front panel.

4. Use dual element fuses, rated at 25% over the full load amperage (FLA) rating of the freezer. Refer to the data plate on the rear panel. Use a flexible connection when permissible. All materials and connections must conform to local codes and/or the National Electrical Code (NEC).

### 2.41 Accessory - 115v Lighted Sign

If you purchased the 115v lighted sign accessory with your model 812 freezer, the following instructions are for installing power to the sign.



**CAUTION**  
To avoid electrical shock or contact with moving parts, make sure all switches are in the "OFF" position and that the main power supply is disconnected.

1. The lighted sign requires a separate 115 volt power supply. The service connection box is marked 115 volt and is located next to the 230 volt supply box. The boxes are mid-level, behind the lower front panel of the freezer. All connections are made through the service bracket on the floor of the lower front panel.

2. All materials and connections must conform to local requirements and be in compliance with the National Electric Code (NEC). Supply voltage must be within 10% of voltage indicated on the nameplate. Use copper conductors only with the insulation rated for 115 volt.

3. Adequate strain relief must be provided if cords are used.

# 3 Specifications

## 3.1 Particulars

<b>Width (in/cm)</b>	16/41
<b>Height (in/cm)</b>	58/147
<b>Depth (in/cm)</b>	36/91
<b>Weight (lbs/kg)</b>	525/238
<b>*Voltage</b>	208-230-1-60, 2 wire
<b>Min. Circuit Ampacity</b>	22.5 (air) 21.0 (water)
<b>Compressor</b>	2 HP
<b>Beater Motor</b>	.5 HP

<b>Refrigerant</b>	404a
<b>Charge</b>	3.75 lb/1.70 kg
<b>Cooling</b>	Air or water
<b>Hopper</b>	20 qts/18.9 L
<b>Cylinder</b>	12 qts/11.4 L

\*Contact factory for other voltages.

## 3.2 Data Plate

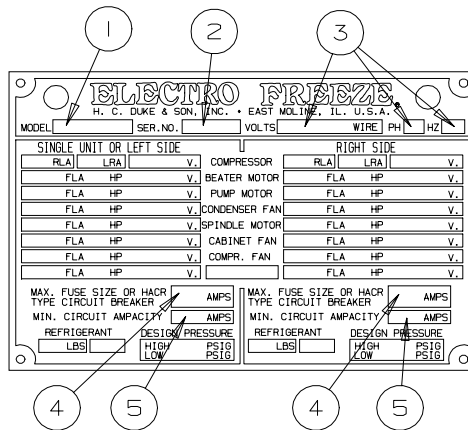


Figure 3-1 Data Plate

The data plate provides important information that the operator should record and have available for parts ordering, warranty inquiries, and service requests.

## 3.3 Reference Information

**Write in Reference Information HERE!**



Fill in the following information as soon as you receive your Electro Freeze 812 (The item numbers correspond to the callout numbers in figure 3-1, above.)

- ① Model Number: \_\_\_\_\_
- ② Serial Number: \_\_\_\_\_
- ③ Electrical Spec: Voltage \_\_\_\_\_  
Phase \_\_\_\_\_ Hertz \_\_\_\_\_
- ④ Maximum Fuse Size: \_\_\_\_\_
- ⑤ Minimum Circuit Ampacity: \_\_\_\_\_

### 3.4 Installation Date

Fill in the date of installation, and the name, address, and phone number of the installer in the space provided below. This information will be needed when ordering parts or service for the Model 812 cocktail/slush machine.

Date of installation: \_\_\_\_\_

Installed by: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

### 3.5 Dimensions

Figure 3-2, below, provides the dimensions of the Electro Freeze 812 cocktail/slush machine.

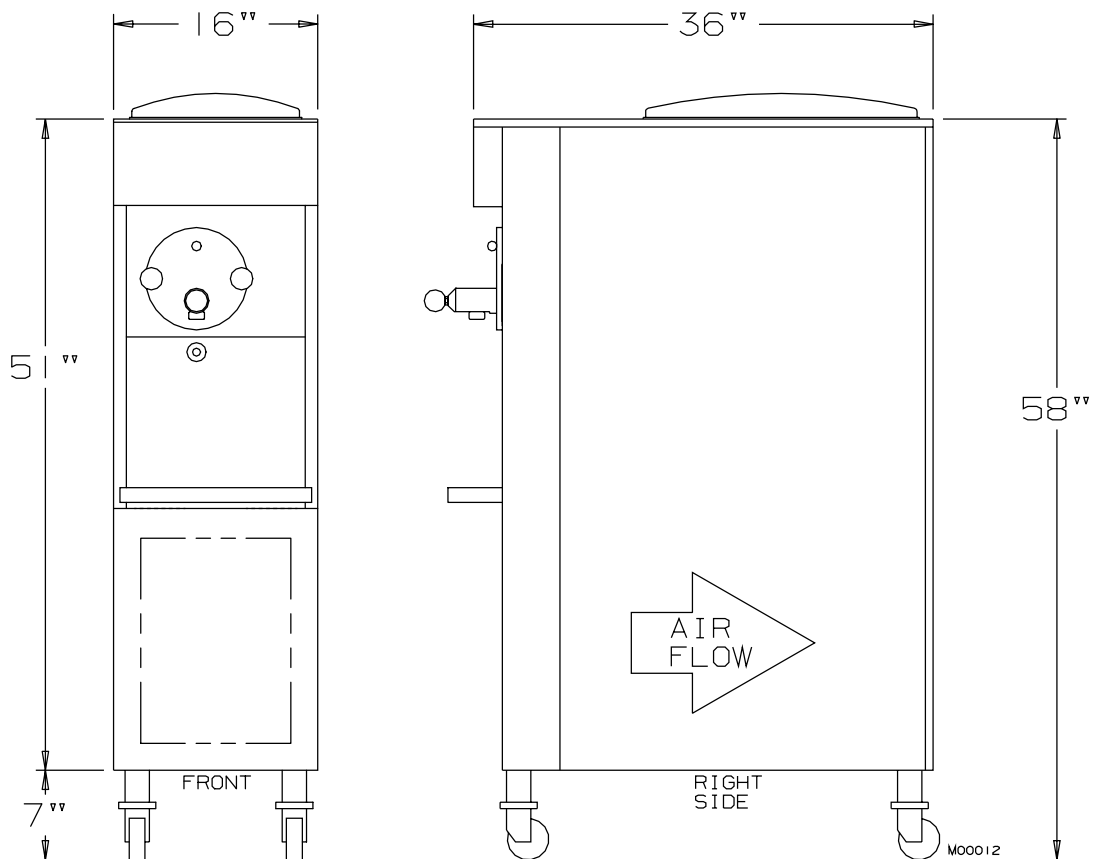
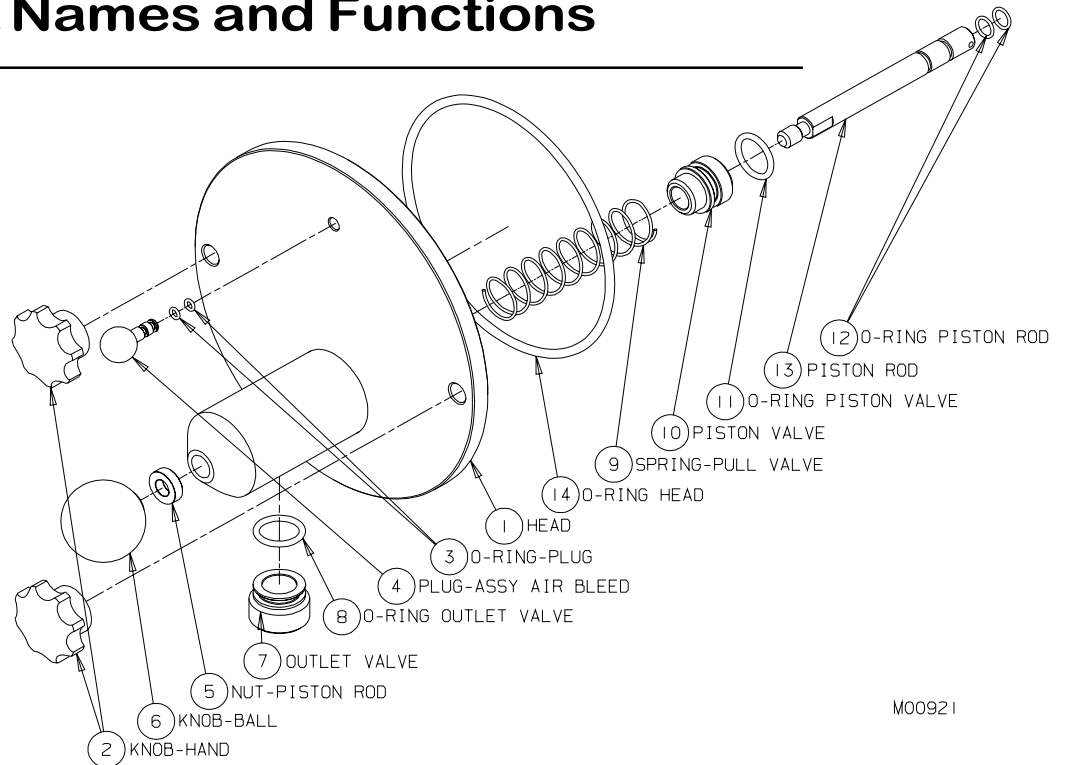


Figure 3-2

## 4 Part Names and Functions



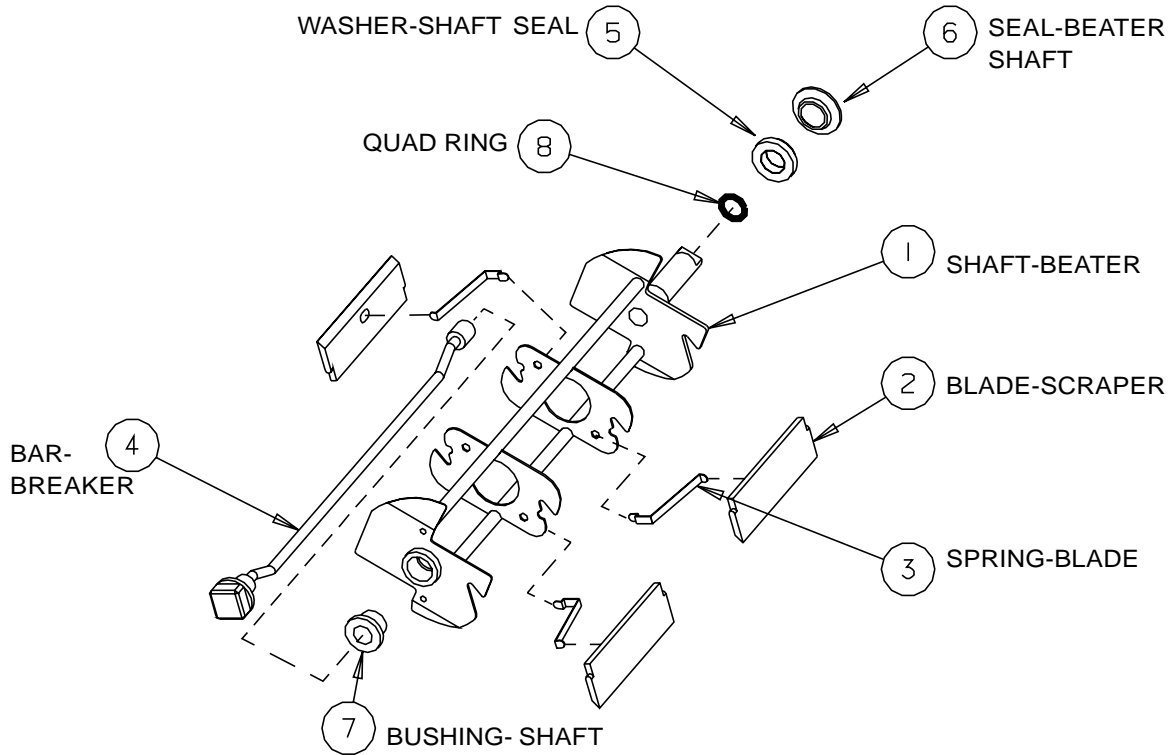
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**Figure 4-1**

The following numbered paragraphs (1 through 14) refer to figure 4-1, above.

- |  |   |
|--|---|
| <p>① <b>HEAD</b> Encloses the freezing cylinder and provides an opening for product to be dispensed.</p> <p>② <b>KNOB - HAND</b> Secures the head to the freezing cylinder.</p> <p>③ <b>O-RING - PLUG</b> Seals the air bleed plug in the head. Must be lubricated.</p> <p>④ <b>PLUG - ASSY. AIR BLEED</b> Seals the air bleed opening in the head when closed. Allows air to be removed from the cylinder in the filling process.</p> <p>⑤ <b>NUT - PISTON ROD</b> Keeps piston assembly from going into the cylinder if the ball knob is removed.</p> <p>⑥ <b>KNOB - BALL</b> Used to open and close the piston to start and stop the flow of product from the freezer.</p> <p>⑦ <b>OUTLET - VALVE</b> Shapes the frozen product when dispensed.</p> | <p>⑧ <b>O-RING - OUTLET</b> Seals the nozzle in the head. Must be lubricated.</p> <p>⑨ <b>SPRING - PULL VALVE</b> Enables the piston to self close after dispensing.</p> <p>⑩ <b>PISTON - VALVE</b> Seals the product opening in the head when closed. Allows product to flow when open.</p> <p>⑪ <b>O-RING - PISTON</b> Seals the piston in the head. Must be lubricated to seal and glide properly.</p> <p>⑫ <b>O-RING - ROD</b> Holds the piston in place on the rod. Must be lubricated.</p> <p>⑬ <b>ROD - PISTON</b> Attaches piston to the knob ball for dispensing.</p> <p>⑭ <b>O-RING - HEAD</b> Seals the head to the freezing cylinder. Must be lubricated.</p> |
|--|---|

## 4 Part Names and Functions (continued)

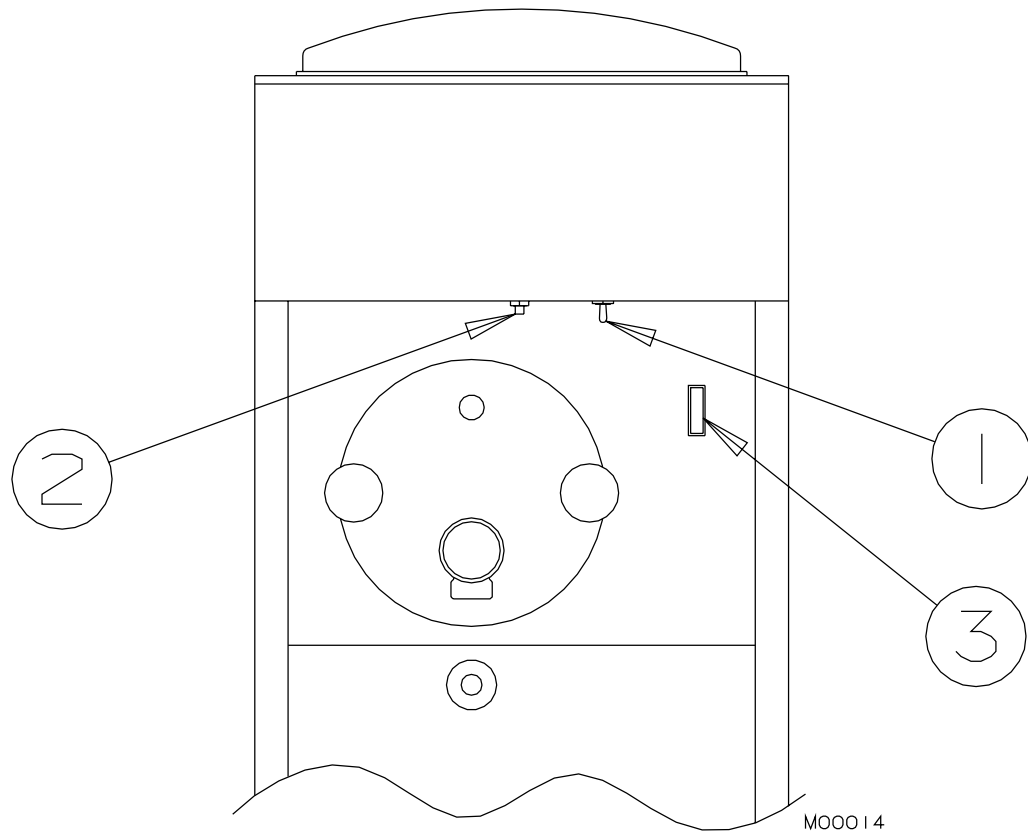


The following numbered paragraphs (1 through 8) refer to figure 4-2, above.

- |   |  |
|---|--|
| <p>① <b>SHAFT - BEATER</b> Rotates in the freezing cylinder to keep product blended.</p>    | <p>⑤ <b>WASHER - SHAFT SEAL</b> Holds the cup portion of the shaft seal to the beater shaft. Must be lubricated.</p>               |
| <p>② <b>BLADE - SCRAPER</b> Scrapes the frozen product from the freezing cylinder wall.</p> | <p>⑥ <b>SEAL - BEATER SHAFT</b> Seals the opening between the freezing cylinder and the beater shaft. <b>Do not lubricate.</b></p> |
| <p>③ <b>SPRING - BLADE</b> Holds the blade against the cylinder wall.</p>                   | <p>⑦ <b>BUSHING - SHAFT</b> Holds breaker bar in beater shaft.</p>   |
| <p>④ <b>BAR - BREAKER</b> Keeps product blended in the center of the beater shaft.</p>      | <p>⑧ <b>QUAD RING</b> Separates beater shaft and washer shaft seal.</p>  |



## 5 Operator Controls and Indicators



**Figure 5-1**

The following paragraphs describe the operator controls and indicators. Refer to figure 5-1 for location of these controls and indicators on the freezer.

**NOTE:** The head must be in place for the beater to operate.



**CAUTION**  
Test operation of the head switch prior to placing the freezer in service. See Section 11, Routine Maintenance, Monthly.

## 5 Operator Controls and Indicators (continued)

### 5.1 Selector Switch ①

This three-position (toggle) switch selects the mode of operation of the freezer.

a. “**CLEAN**” (left)— This position operates the beater only (no refrigeration). This position must be used in all cleaning and sanitizing operations.

b. “**OFF**” (center) — In this position the beater motor and refrigeration system will not operate.

**Important:**  
*Do not use the “FREEZE” position with water or sanitizer in the cylinder or hopper—freezer will be damaged.*

c. “**FREEZE**” (right) — This position activates both the beater motor and refrigeration unit. This is the normal operating position.

### 5.2 Overload – Reset ②

This control protects the beater motor against failure from an overload condition by automatically shutting down the freezer. To restart properly, turn the selector switch to “OFF”, wait 2-3 minutes, then depress the reset button and turn the selector switch back to the “FREEZE” or “CLEAN” position.

**Important:**  
*If the overload trips frequently, your freezer should be checked for proper product consistency and voltage. Contact your Electro Freeze Distributor.*

### 5.3 Indicator Light –“ADD MIX” (Optional) ③

When blinking, this light indicates the mix in the hopper is low and should be refilled as soon as possible. Always maintain at least 2 inches (5.1 cm) of mix in the hopper. For best operating results, *keep hopper full.*

**Important:**  
*If proper mix level is not maintained, a freeze-up may occur and damage the freezer.*

## 6 Disassembly and Cleaning



### CAUTION

To avoid electrical shock or contact with moving parts, make sure all switches are in the "OFF" position and that the main power source is disconnected.

*It is important that the freezer be disassembled, washed, lubricated and sanitized before operation.*

The cleaning and sanitizing instructions explained in this manual are required to maintain a clean, sanitary freezer. Your freezer should be disassembled,

cleaned, reassembled, lubricated and sanitized to ensure the best possible product and freezer operation. Persons assembling, cleaning or sanitizing the freezer must first wash and sanitize their hands and forearms with an approved sanitizer.

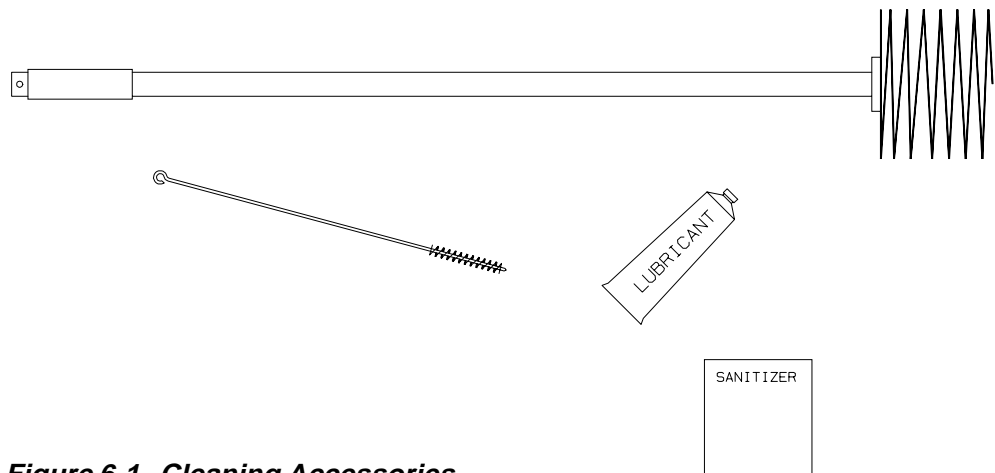
### 6.1 Cleaning Accessories

The following accessories are shipped with your freezer and are used when cleaning and sanitizing your freezer.

- a. BRUSH, Cylinder. 6-inch diameter with a 36-inch handle.
- b. BRUSH, General parts cleaning. 1-inch diameter with 12-inch handle.

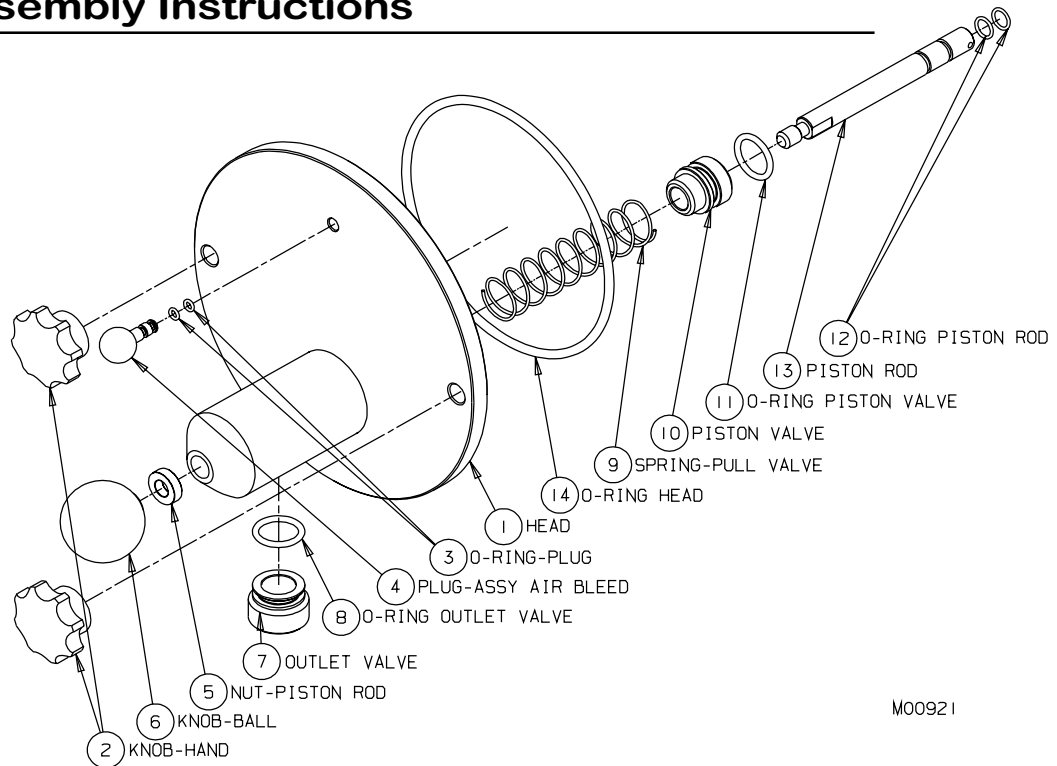
c. LUBRICANT, Lubri-Film, Approved lubricant for moving parts and O-rings. See Assembly, Section 7 for lubricating points.

d. SANITIZER, Sample, 2 oz. Approved sanitizer, Stera-Sheen, also available in 4 lb. jars.



**Figure 6-1** Cleaning Accessories

## 6.2 Disassembly Instructions



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**Figure 6-2 Head Assembly**



**CAUTION**

To avoid electrical shock or contact with moving parts, make sure all switches are in the "OFF" position and that the main power supply is disconnected.



**CAUTION**

To prevent bacteria growth, remove ALL O-rings when disassembling for cleaning. Failure to do so could create a health hazard.

**NOTE:** If there is product in the freezer, refer to Closing Procedures, Draining Product, paragraph 9-1.

1. Remove the two hand knobs (figure 6-2, item 2) and pull the dispensing head (1) straight out.
2. Remove the ball knob (6), nut (5), air bleed plug (4) and outlet valve (7) from the head (1).

3. Remove the piston assembly (10, 11, 12, 13) and spring (9) by pushing the piston rod (13) through the back of the head (1).

4. Remove the o-rings (11, 12) from the piston assembly. Remove the o-ring (8) from the outlet valve (7). Remove two o-rings (3) from the air bleed plug (4).

5. Remove the head o-ring (14) from the head (1).

6. Remove the beater shaft (figure 6-3, item 1) from the cylinder.

7. Remove scraper blades (2), springs (3), seal (5 and 6), quad ring (8), breaker bar (4), and bushing (7) from the beater shaft (1).

8. Remove the cup seal from the plastic washer on the shaft seal assembly as shown in figure 6-4.

9. Remove hopper cover, drip tray and insert. (See Replacement Parts Section - Panels)

## 6.2 Disassembly Instructions (continued)

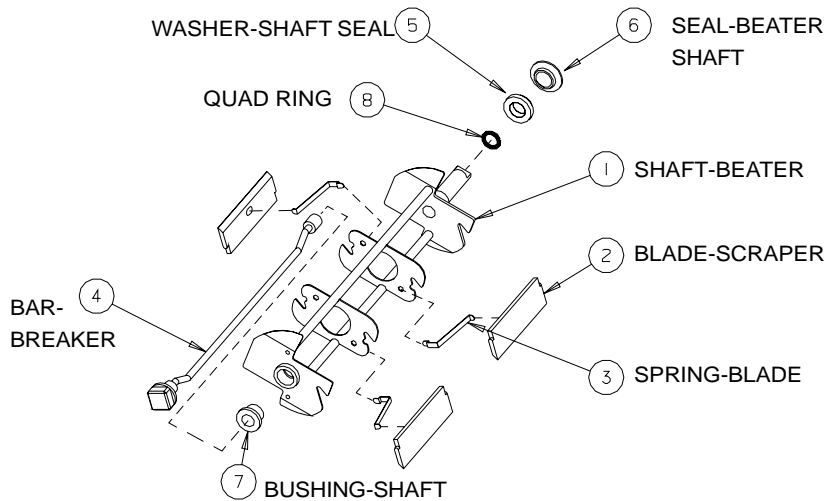


Figure 6-3 Beater Shaft

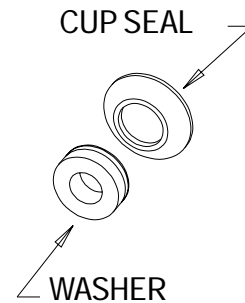


Figure 6-4 Shaft Seal Assembly

## 6.3 Cleaning Instructions

**NOTE:** It is your responsibility to be aware of the requirements for meeting federal, state and local laws concerning the frequency of cleaning and sanitizing your freezer.



**CAUTION**

To prevent bacteria growth, remove ALL O-rings when cleaning. Failure to do so could create a health hazard.



**CAUTION**

Electric shock hazard. Do not splash water on switches or allow water to flow onto electrical components inside the machine.

1. Prepare a three-compartment sink for cleaning parts removed from the freezer, per applicable health codes. Also, prepare a clean surface to air-dry all parts.

**IMPORTANT:**

**Do not use unapproved sanitizer or laundry bleach. These materials may contain high concentrations of chlorine and will chemically attack freezer components.**

**NOTE:** The sanitizer should be mixed according to the manufacturer's instructions to yield 100 PPM strength chlorine solution. (example: Stera-Sheen Green Label.) Use warm water (100° to 110°F or 38° to 43°C) to wash, rinse, and sanitize.

2. Wash all parts removed from the freezer thoroughly with dish detergent

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## 6.3 Cleaning Instructions (continued)

soap. Clean the following parts with the appropriate supplied brush:

- a. The dispense head piston opening, breaker bar cavity, air bleed hole, dispense outlet valve opening, and the head mounting holes, as shown in figure 6-5.
- b. The shaft cup seal, washer, outlet valve, piston, and rod as shown in figure 6-6.
- c. The beater shaft inside spring mounting holes and the scraper blade mounting indentations as shown in figure 6-7.

**Important:**

**Do not leave parts in sanitizer for more than 15 minutes.**

3. After ALL parts are washed, rinse and place in the sanitizing solution. For proper sanitizing, the parts must remain fully immersed in the sanitizer for 5 minutes. Allow parts to air-dry after sanitizing.

4. Remove the hopper cover and the bottle rack, take to the sink area to wash with the dish detergent solution. Rinse with clean water.

5. With the dish detergent solution thoroughly brush the inside of the hopper, the mix feed port to the cylinder, the drain tube, and the inside of the cylinder making certain to clean the back wall of the cylinder. Rinse with clean water.

6. Wipe down the freezer with the dish detergent solution and rinse with clean water.

**Replace worn brushes. Use only Electro Freeze original or authorized replacement parts. See Accessories Parts list in Part II of this manual to order new brushes.**

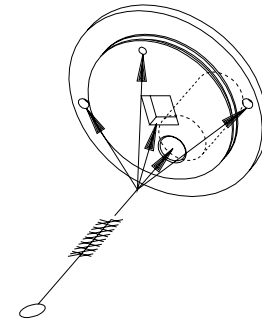


Figure 6-5

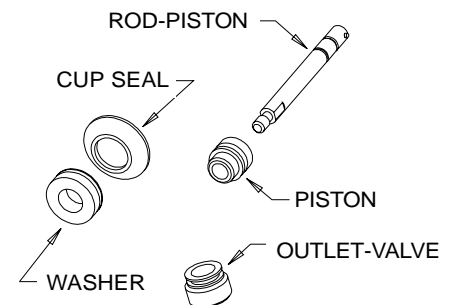


Figure 6-6

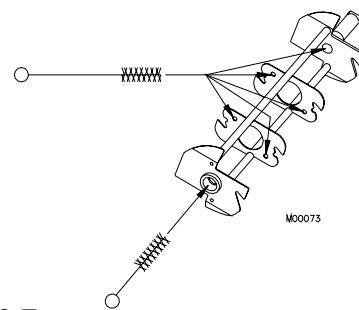


Figure 6-7

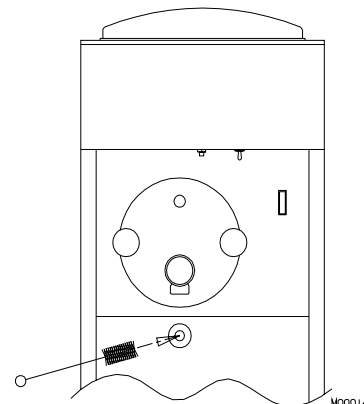
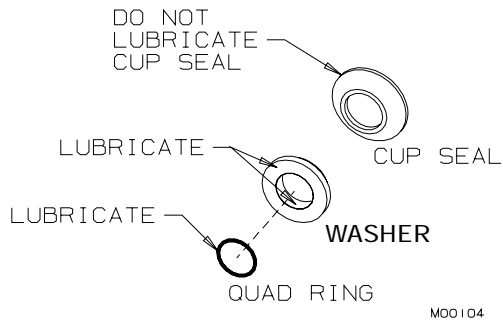
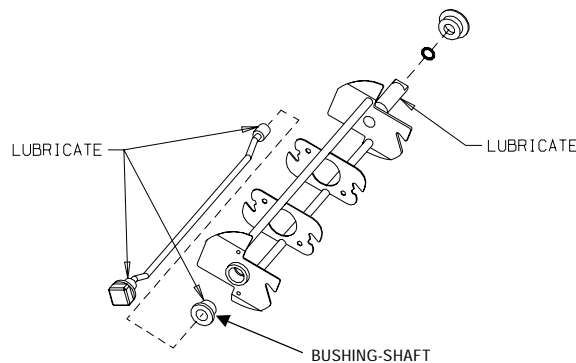


Figure 6-8

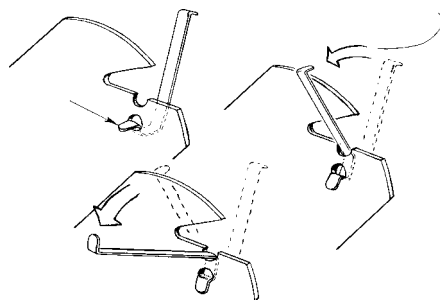
## 7 Assembly



**Figure 7-1** Shaft Seal assembly



**Figure 7-2** Install shaft seal assembly on beater shaft



**Figure 7-3** Install blade springs

Correct assembly of the freezer is essential to prevent leakage of product and damage to the freezer. To assemble the freezer you will need an approved lubricant (such as Lubri-Film). Make sure all parts of the assemblies have been washed and sanitized before assembling. Persons assembling the

freezer must first wash and sanitize their hands and forearms with an approved sanitizer.



### CAUTION

To avoid electrical shock or contact with moving parts, make sure all switches are in the "OFF" position and that the main power supply is disconnected.

1. Assemble the cup seal on the plastic washer to complete the beater shaft seal (see figure 7-1). Apply a moderate amount of approved sanitary lubricant, such as Lubri-Film, to the internal surface and the face of the plastic washer opposite the bell shaped portion of the seal.

**NOTE:** Do not allow any lubricant to come into contact with the bell-shaped rubber portion of the seal.

2. Place the quad ring over the rear of the beater shaft and lubricate. Install the beater shaft seal (figure 7-2) over the rear of the beater shaft, with the bell-shaped portion facing the rear and the washer portion against the quad ring.

3. Apply lubricant to the bearing areas of the breaker bar and bushing (figure 7-2).

**Important:**  
**The beater shaft bushing (shown in figure 7-2) must be installed or the freezer will be damaged.**

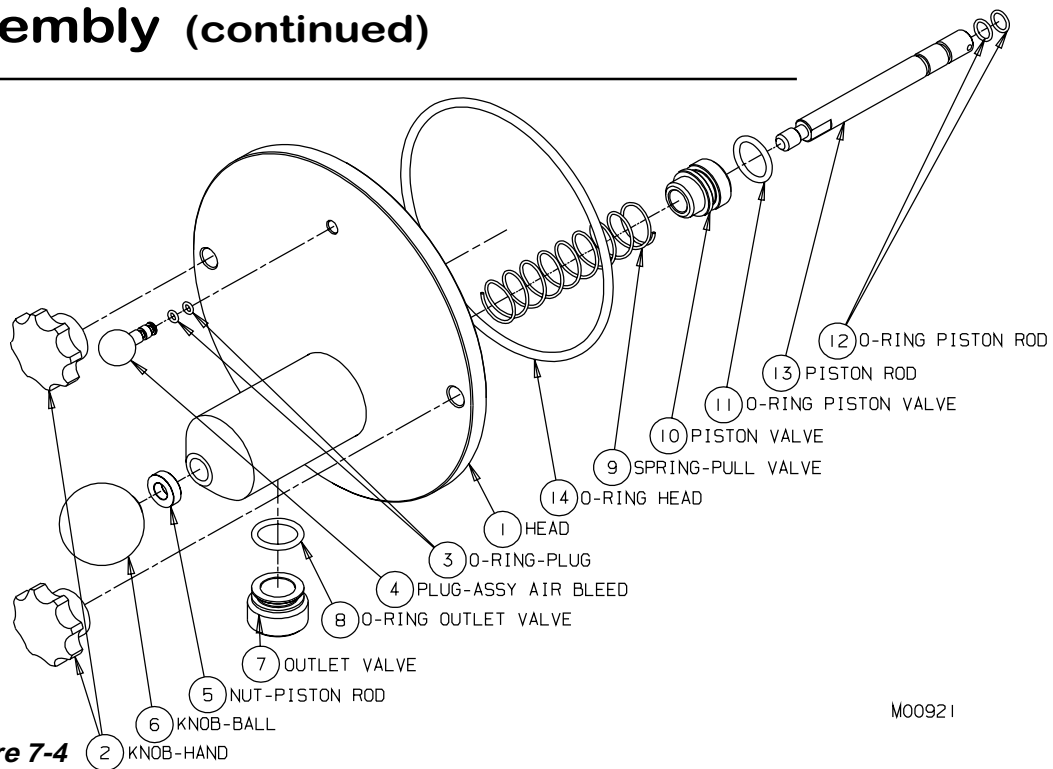
4. Slide bushing into breaker bar and insert this assembly into center of beater shaft, making sure the bar fits into the hole in rear beater shaft disc (figure 7-2).

5. Attach the blade springs to the beater plates as shown in figure 7-3.

6. Insert scraper blades into proper beater plate slots so that end of the spring rests in groove on the bottom side of blade.

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## 7 Assembly (continued)



**Figure 7-4** 2 KNOB-HAND

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7. Insert assembled beater into cylinder by placing rear blade on bottom of cylinder and depressing front blade and spring. This will center the beater shaft and allow alignment with drive shaft. Rotate beater assembly while pushing, until shank has fully engaged the drive shaft.

8. Slide beater toward you about ½-inch. (This is necessary to align and install head properly.)

9. Assemble piston assembly (figure 7-4, items 10, 11, 12, 13) by installing the first rod o-ring (12) in groove farthest from the threads on piston rod (13). Then slide piston (10) over o-ring, large diameter end first. Now install the second (holding) rod o-ring (12) on rod (13) in groove closest to the threads. Install and lubricate piston o-ring (11).

10. Insert spring (9) into back side of head piston body.

11. Insert the piston assembly, threaded end first, through the center of the spring in piston body until the piston is flush with the back of the head.

12. Thread nut (5) on piston rod until

it is off threaded portion, then screw the ball knob (6) down finger tight.

13. Install and lubricate the outlet valve o-ring (8) then insert outlet valve (7) into piston body.

14. Install and lubricate the two air bleed plug o-rings (3) then insert plug (4) into the head.

15. Lubricate head o-ring (14) and install into groove on back of head.

**NOTE:** If the head does not slide easily into place, recheck engagement of beater with the drive shaft.

**Important:**

**DO NOT use excessive force when tightening the hand knobs. Excessive force will damage the head. Tighten finger-tight only.**

16. Install dispensing head on freezer by sliding head over threaded studs and aligning square end of breaker bar with square in dispensing head. Slide head into cylinder and install hand knobs, being careful to tighten simultaneously and finger tight only.



## 8 Start-up Instructions

### 8.1 Sanitizing

The washing and sanitizing instructions explained in this manual are important procedures designed to remove bacteria and maintain a clean, sanitary freezer. The slush/cocktail freezer must be disassembled and cleaned according to the instructions in the manual before assembly and sanitizing to ensure the best possible cleanliness.



#### CAUTION

To prevent bacteria growth, use only approved sanitizers to sanitize the machine. Sanitizing must be done just prior to starting the machine. Failure to do so could create a health hazard.

#### Important:

**Do not use unapproved sanitizers or laundry bleach. These materials may contain high concentrations of chlorine and will chemically attack freezer components.**

**NOTE:** It is your responsibility to be aware of the requirements for meeting federal, state and local laws concerning the frequency of cleaning and sanitizing the freezer.

1. Wash and sanitize your hands and forearms.

2. Prepare 4 gallons (15.2 liters) of sanitizing solution (example: Stera-Sheen Green Label) in a container. Sanitizing solution must be mixed according to manufacturer's instructions to yield 100 PPM strength chlorine solution.

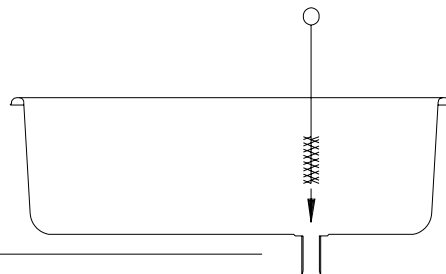


Figure 8-1

#### Important:

**Never let the sanitizer remain in the freezer for more than 15 minutes.**

#### Important:

**Do not insert any tools or objects into the port from the hopper to the cylinder or the head dispensing hole while the freezer is running.**

3. Pour sanitizing solution into the hopper pan. Using a clean brush, wash down the hopper walls and the mix feed tube from the hopper to the cylinder, as shown in figure 8-1. Wipe the hopper cover with the sanitizing solution.

#### Important:

**DO NOT use the "FREEZE" position with sanitizer in the cylinder. The freezer will be damaged.**

4. When the cylinder has filled with sanitizing solution, reconnect the main power supply to the freezer. Turn the selector switch to the "CLEAN" position and allow the beater to run for 5 minutes.

5. At this time check for leaks around the head, plunger, and drain tube.

#### Important:

**DO NOT hang containers from the dispensing spout. Doing so will damage the head.**

6. Place an empty container under the dispensing head and drain the solution by opening the plunger to allow the cylinder and hopper to empty.

7. When the sanitizing solution has drained from the freezer, turn the selector switch to the "OFF" position.

## 8.2 Product Preparation

**Important:**

**DO NOT use the freezer for purposes other than freezing a “slush” product or cocktail mix, and DO NOT attempt to freeze plain water. This will result in damage to the freezer.**

1. Use a container of sufficient capacity and with gallon measurement markings to accurately mix in quantities required by the product manufacturer’s instructions.
2. Prepare at least 5 gallons (18.9 L) of mix. Follow the directions exactly as shown on product label.

**EXAMPLE:** For powdered neutral base, add contents of package and 5 lbs. (2.3 kg) of sugar with enough

water to make 5 gallons (18.9 L) of neutral base. *Never* add more water than instructions call for.

**NOTE:** The product should register between 12–14° Brix on a refractometer or a hydrometer.

3. It is recommended the slush mix be precooled before filling the freezer. Cool at 36°F (2.2°C). **DO NOT FREEZE.**
4. Always thoroughly stir mix before filling machine. Ingredients can separate over time and change Brix reading.
5. When using a fruit or milk based product the hopper thermostat must be turned to the “ON” position and adjusted for proper hopper temperature of 36–38°F (2.2–3.3°C).

## 8.3 Priming

Priming the freezer removes excess air from the freezing cylinder and sets the proper consistency for the first cylinder of product.

1. While holding the piston open, pour the mix directly into the hopper, allowing the mix to force out the remaining sanitizer (approximately 16 ounces or 500 ml).
2. When *pure* mix appears (all sanitizer is expelled), close the piston.

**Important:**

**Failure to completely remove sanitizer or water from the freezing cylinder before placing in “FREEZE” will damage the freezer.**

3. Remove the air bleed plug and allow the cylinder to completely fill with mix. Replace the air bleed plug when the mix reaches the bottom of the air bleed plug opening.
4. Finish filling the hopper with mix. The freezer will hold 7.25 gallons—9 quarts in the freezer cylinder and 20 quarts in the hopper (27.4 Liters—8.5 L in cylinder and 18.9 L in hopper.)

**NOTE:** If the proper mix level is not maintained, operational problems will occur. Do not allow the level of mix in the hopper to fall below 1/3 full.

5. Turn the selector switch to the “FREEZE” position.
  6. Place the hopper cover over the hopper.
  7. When the mix has been frozen to the proper consistency, the compressor will automatically shut off. It will restart whenever the product consistency changes. The beater will run continually.
- NOTE:** If your slush mix is above 70°F (21°C), it will take approximately 12 minutes to freeze down to the proper consistency.
8. See Slush/Cocktail Mix Information, Section 10, for determining consistency and making adjustments.

## 9 Closing Procedures

**NOTE:** It is your responsibility to be aware of, and conform to, the requirements for meeting local, state, and federal laws concerning the frequency of cleaning and sanitizing the freezer.

1. If the mix is nonperishable (sugar base), place the selector switch in the “OFF” position at the end of the day.

2. To restart the freezer on the following day, place the selector switch in the “FREEZE” position. The mix in the cylinder will remain partially frozen overnight and this will reduce the freezing time to 5–10 minutes.

3. If the mix is perishable (fruit base), leave the selector switch in the “FREEZE” position or drain the product from the freezer.

### 9.1 Draining Product from the Freezer

To remove frozen product from the cylinder, perform the following steps:

1. Place the selector switch in the “CLEAN” position.

2. Place a clean, sanitized container under the dispensing nozzle.

**NOTE:** Follow state and local health codes concerning reuse of mix.

3. Dispense the semi-frozen product until it quits. Cover the product container and place it in the cooler.

***Important:***

***Do not use hot water. Damage to the freezer could occur.***

4. Pour 2 gallons (7.6 L) of cold water into the hopper and dispense.

5. Follow with warm water until the freezer is rinsed.

6. Turn the selector switch to the “OFF” position.

7. Refer to Section 7, Disassembly and Cleaning.

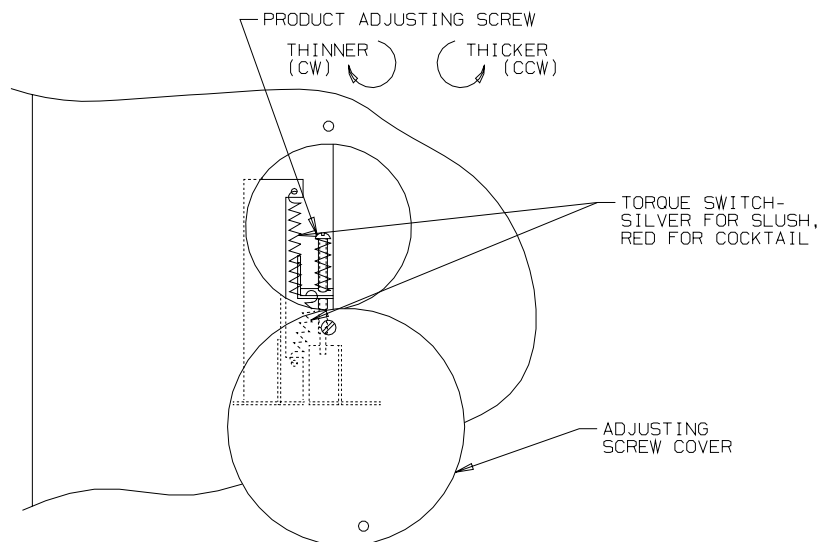


## 10 Slush/Cocktail Mix Information

### 10.1 Determining Product Consistency

1. For slush mix, use a clear, straight-sided glass of any size and draw off a full glass of frozen product (slush flavor bottles work well).
2. Allow the glass to stand for 2 minutes.
3. The product is of proper consistency when the upper  $\frac{3}{4}$  is "slushy snow" and the lower  $\frac{1}{4}$  is liquid.

### 10.2 Adjusting Product Consistency



**Figure 10-1** LEFT SIDE OF FREEZER

Product consistency has been preset at the factory. Further adjustment may be necessary to obtain your desired consistency. Allow the freezer to operate until the compressor shuts off. Draw off sufficient product to check consistency. (Refer to paragraph 10.1, Determining Product Consistency.) For instruction on adjusting product consistency, proceed with the following steps.



**CAUTION**  
To avoid electrical shock or contact with moving parts, make sure all switches are in the "OFF" position and that the main power source is disconnected.

1. Find the small adjustment cover toward the rear in the center of the left side panel.
2. Remove the top screw holding the cover and loosen the bottom, letting the cover swing down from the access hole.
3. Look into the access hole and you will see an arm extending from the drive motor (see figure 10-1.) The arm is held in place by springs on both the top and bottom. At the end of this arm is a nylon adjusting screw. This screw is the only operating adjustment on the freezer.

## 10.2 Adjusting Product Consistency (continued)

### 4. Making the adjustment:

a. If the product is **too thin**, perform the following: 1) make sure the selector switch is in the "OFF" position and the power is disconnected; 2) turn the adjusting screw **counterclockwise** (up) 1/2 turn and, 3) reconnect the power, turn control switch to "FREEZE," and wait until the compressor has cycled off.

b. If the product is **too thick**, perform the following: 1) make sure the selector switch is in the "OFF" position and the power is disconnected; 2) turn the adjusting screw **clockwise** (down) 1/2 turn, and 3) reconnect the power and turn control switch to "FREEZE", and wait until the compressor has cycled off.

5. Recheck the product consistency in 30 minutes. Repeat step 4.a. or 4.b. as necessary to obtain proper consistency.



### CAUTION

To avoid electrical shock or contact with moving parts, make sure all switches are in the "OFF" position and that the main power source is disconnected.

6. Close cover and secure with screw.

## 10.3 Refractometer/Brix Reading

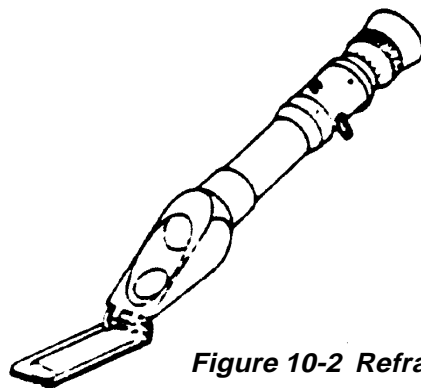


Figure 10-2 Refractometer

A refractometer measures soluble sugar content of mix, expressed in percentage weight. This is normally referred to as a "Brix Reading." The typical refractometer uses a scale from 0% to 32%.

Adjust the refractometer according to the manufacturer's instructions.

**NOTE:** A refractometer is a delicate instrument and must be handled with care. Never immerse the entire refractometer in a cold drink. Cooling the refractometer will cause it to give inaccurate readings. A refractometer cannot be used to read dietetic syrups.

1. Open the hinged side of the refractometer and place a few drops of mix on the slide.

Close the slide and look through the eye piece, holding the refractometer up against the light. A line will appear across a graduated scale which indicates the Brix level.

Acceptable Brix level is 12-14 on a refractometer.

**NOTE:** Never go below 12 on the Brix Reading.

Some experimentation may be necessary before correct Brix and serving temperature will be found. Generally, the higher the Brix reading the lower the serving temperature. Conversely, the lower the Brix reading, the higher the required serving temperature. If the complaint concerns product appearance, (ie. too runny or too stiff) always first take a Brix reading of the mix because variation in sugar content will have a direct bearing on actual freezing point.

# 11 Routine Maintenance

Electro Freeze recommends the following schedule to help maintain your equipment in *like-new* operating condition. Take the time to learn and perform these routine procedures and receive in return many years of valuable service from your freezer. Protect your investment.

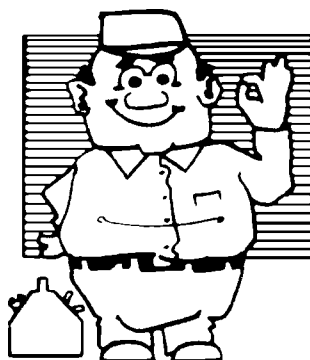


This safety symbol identifies procedures that could cause personal injury. If you are uncertain about a procedure and its safety, or have any questions on the safety precautions, contact your local Electro Freeze Distributor or H. C. Duke & Son, Inc.

## Daily

1. Wipe all exterior surfaces of the freezer to remove any splattered mix.

**NOTE:** It is your responsibility to be aware of, and conform to, the requirements for meeting federal, state and local laws concerning cleaning intervals, cleaning and sanitizing procedures.



## Weekly

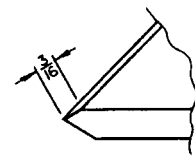
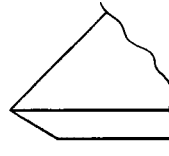
1. Disassemble and thoroughly clean, rinse, sanitize, air dry, reassemble and sanitize all parts from this freezer that come into contact with mix.

### CAUTION



To prevent bacteria growth, remove all O-rings when cleaning. Failure to do so could create a health hazard.

2. Clean the cylinder and drain tube with the appropriate brushes.
3. Upon cleaning, inspect and lubricate all seals and O-rings as described that come into contact with mix. Replace as needed.
4. Carefully inspect all parts for wear, including seals, O-rings, and blades. Replace as required.



Replace blades if worn 3/16" or more.

5. Check the beater shank and drive shaft for wear.



A worn coupling will have a non-parallel shape on the drive opening.

# 11 Routine Maintenance (continued)

## Monthly

### A. Clean Condenser Fins.

Have air-cooled condenser fins cleaned by an authorized service technical to remove all forms of dirt, lint and dust.

### B. Test Head Switch.

The head switch feature is designed to prevent the beater shaft from being accidentally activated. It is essential that the proper operation of this switch be verified on a routine basis. Use the following instructions to test for proper operation:

1. Be sure all switches are in the "OFF" position.
2. Disconnect the main power supply.
3. Remove the dispense head and beater shaft assembly.
4. Connect the main power supply.
5. Turn the selector switch to the "CLEAN" position.



**CAUTION**  
Moving parts. **DO NOT** place hands in the freezing cylinder. Severe personal injury could result.

6. Look inside the freezing cylinder toward the rear. The drive shaft coupling should **NOT** be turning. Turn the switch off and disconnect the main power supply.

7. If the drive shaft coupling is turning, or you are unable to determine whether or not the shaft is turning, turn the switch to the "OFF" position, disconnect the main power supply and contact your Electro Freeze Distributor for service. **DO NOT** place the freezer in service until the problem has been fixed.

### C. Water Condenser.

Check the outlet water temperature of water-cooled condensers at the floor drain. Water temperatures should be about 95°F with a 70°F water inlet temperature.

## Accessory - Lighted Sign Changing Light Bulb



**CAUTION**  
To avoid electrical shock or contact with moving parts, make sure all switches are in the "OFF" position and that the main power supply is disconnected.

1. Remove screws holding top cover of light assembly.
2. Slide out decal and plastic lens to expose light.
3. Rotate light bulb horizontally to remove from sockets.
4. Replace with identical light of same rating and reassemble top cover.

## 11 Routine Maintenance (continued)

### *Annually*

Contact your *Electro Freeze* Distributor to preform the following services:

1. Have qualified refrigeration technician inspect and clean the beater drive motor.
2. Have qualified refrigeration replace drive belt.
3. Have qualified refrigeration clean the inside of the freezer including base, side panels, condenser, etc.
4. Have qualified refrigeration check water-cooled condenser and flush clean if necessary (water-cooled only).
5. Have qualified refrigeration check the refrigeration system and make any necessary adjustments.

**USE ONLY ORIGINAL OR AUTHORIZED REPLACEMENT PARTS WITH THIS FREEZER.**

(See your Illustrated Replacement Parts Manual)

Should you have any questions on items that are not included in this maintenance schedule, or problems where service assistance is needed, please call your local *Electro Freeze* Distributor or H. C. Duke & Son, Inc., *Electro Freeze* Service Department, for factory service at **(309) 755-4553**.

### *Winter Storage*

To protect the unit during seasonal shutdown, it is important to store the cocktail/slush freezer properly. Please use the following procedures:

1. Disconnect all power to the freezer.
2. Disassemble and wash all parts that come into contact with the mix with a warm, mild detergent solution. Rinse in clear water and dry all parts thoroughly.
3. Store the loose parts, such as the parts in the head assembly and beater assembly, in a safe dry place.
4. Do not lay heavy objects on the plastic or rubber parts.
5. Cover the freezer and all loose parts to protect them from dust or other elements that could contaminate them while in storage. Place the freezer in a dry location.
6. Have air-cooled condenser fins cleaned by an authorized service technician to remove all forms of dirt, lint, and dust.

#### ***Important:***

***For water-cooled freezers, failure to purge the freezer of water may result in severe damage to the cooling system.***

7. ***Call an authorized service technician to perform this step.*** For water-cooled freezers, disconnect the water supply. Use compressed air to blow out all remaining water in the condenser.