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# **ELECTRO FREEZE®**

## **OPERATOR'S MANUAL** with Illustrated Parts List

**COMPACT SERIES  
SOFT SERVE FREEZER  
Model CS4**

184964 - 4/11

**Operator's Manual  
for the  
Electro Freeze Model CS4  
Compact Series  
Soft Serve Freezer**

# ***SAFETY FIRST!***

***Follow these four steps to safety ....***

***1. Recognize Safety Information ....Look for this safety alert symbol throughout this manual.***

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When you see this symbol on your freezer or in this manual, be alert to the potential for personal injury. Follow recommended precautions and safe operating practices.


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***2. Understand Signal Words ....***

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The signal words — DANGER, WARNING and CAUTION — are used with the safety alert symbol (DANGER decals on the freezer may or may not have the safety alert symbol, but the message is the same). Decals with the words DANGER, WARNING or CAUTION appear on the freezer. DANGER identifies the most serious hazard. Decals with the words DANGER or WARNING are typically near specific hazards on the freezer. General precautions are listed on CAUTION safety decals.

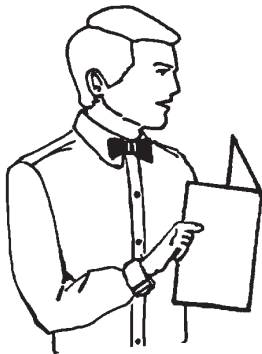
In this manual, CAUTION messages with the safety alert symbol  call attention to safety messages.

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# ***SAFETY FIRST!***

## ***3. Follow Safety Instructions ....***

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Read and understand all safety messages in this manual. Read and understand the decal safety messages on your freezer. Take notice of the location of all decals on the freezer and keep the safety decals in good condition. Check them periodically and replace missing, damaged or illegible safety decals. The safety decals must remain in place and legible for the life of the freezer. If you need new decals, use the information and illustrations on pages iv and v of this manual to identify the decal and order replacement parts.

***DO NOT*** attempt to operate the CS4 freezer until you read and understand all safety messages and the operating instructions in this manual.

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## ***4. Operate Safely ....***

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***DO NOT*** allow untrained personnel to maintain or service this machine. Failure to follow this instruction may result in severe personal injury. ***DO NOT*** operate the freezer unless all service panels and access doors are secured with screws. ***DO NOT*** attempt to maintain or repair the freezer until the main power supply has been disconnected. Contact your local Electro Freeze Distributor for authorized service.

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## Safety Decal Locations

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

Take notice of all warning, caution, instruction and information decals (or labels) on the freezer as shown in the figure on the following page. 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. Check labels periodically to be sure they can be recognized as warning labels.

If it is necessary to replace *any* label, please contact your local authorized Electro Freeze Distributor or H. C. Duke & Son. When ready to order you will need to determine the (1) part number, (2) type of label, (3) location of label, and (4) quantity required, and include a return shipping address.

You may contact your local authorized Electro Freeze Distributor, as follows:

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

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

\_\_\_\_\_

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

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



Phone: 309-755-4553

800-755-4545

FAX: 309-755-9858


E-mail: [service@electrofreeze.com](mailto:service@electrofreeze.com)

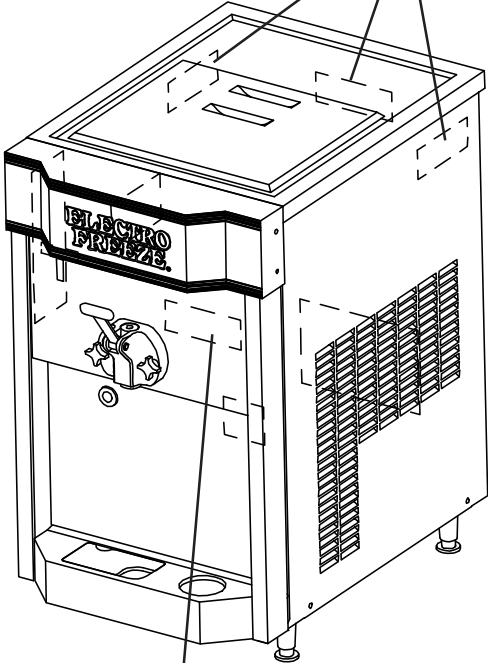
(The decals on the next page are numbered 1 and 2. Those numbers correspond to the numbers in the table below. The table provides the part number, description, and quantity for each decal.)

No.	Part No.	Description (Qty)
1	HC165126	Decal — Panel Removal Warning (3)
2	HC165025	Decal — Beater Warning (1)


# Safety Decal Locations

1 P/N HC165126

	<p><b>▲ WARNING</b></p> <p>Hazardous moving parts. Machine starts automatically. Do not operate with panel removed.</p>
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2 P/N HC165025

	<p><b>▲ WARNING</b></p> <p>Hazardous rotating beater shaft. Do not operate unit with dispense head removed.</p> <p>Before removing dispense head:</p> <ol style="list-style-type: none"><li>1. Turn all control switches to "OFF", and</li><li>2. Disconnect all power supplies. Unit may have more than one power supply.</li></ol>
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**PART II**

**MODEL CS4 REPLACEMENT PARTS WITH ILLUSTRATIONS ..\***

\* Refer to Part II Table of Contents for help with locating part numbers and illustrations.





## 1 Introduction

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The CS4 Freezer is designed to produce soft serve ice cream, ice milk, yogurt, and similar frozen dairy products, with a product serving temperature range of 15° to 25°F (-9° to -4°C). If such products are prepared from powdered concentrate, they should be pre-cooled to 40°F (4°C) prior to introduction to the freezer. Use of other products in this machine is considered misuse (see Warranty).

This manual has been prepared to assist you in the proper operation and general maintenance of the *Electro Freeze* Model CS4 freezer.

Make sure all personnel responsible for equipment operation completely read and understand this manual before operating the freezer. When properly operated and maintained the 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: \_\_\_\_\_

For factory service assistance — contact H.C. Duke & Son, Inc. *Electro Freeze* Service Department as follows.



Phone: 309-755-4553  
800-755-4545  
FAX: 309-755-9858  
E-mail: service@hcduke.com

## 2 Note to Installer

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

Verify the weight of the freezer. Ensure a counter or table of sufficient strength is used to hold this weight and prevent excessive vibration.

Air cooled models require a minimum of 3-inches (7.6 cm) air space on both sides and back of the freezer for adequate ventilation.

If this freezer is to be used in a self-service application, it is recommended that the machine be fitted with a self-service kit. Contact your *Electro Freeze* Distributor or H. C. Duke & Son, Inc. for this kit.

Test the operation of the head safety switch prior to placing the freezer in service. See Section 12, Routine Maintenance, Monthly.

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

## 3 Electrical Requirements



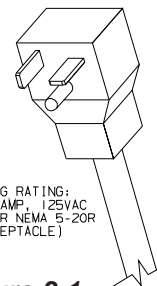
**CAUTION**  
All materials and connections must conform to local requirements and be in compliance with the National Electric Code (NEC).



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

1. Always verify electrical specifications on the data plate (figure 4-1) of each individual freezer. Data plate specifications will always supersede the information in this manual.

2. This freezer requires a protected 20 amp 120 volt circuit. Connect the freezer to a circuit separate from any other electrical equipment. The power cord on this freezer connects to a NEMA 5-20R receptacle. See Figure 3-1.



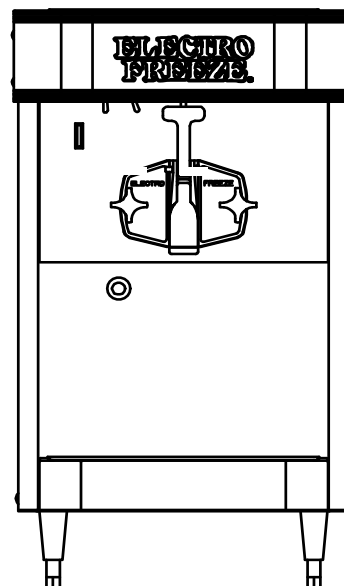
**Figure 3-1**

3. Supply voltage must be within  $\pm 10\%$  of voltage indicated on the nameplate. Request your local power company to correct any voltage problem.

## 4 Specifications

### 4.1 Particulars

<b>Width (in/cm)</b>	16.3/41.4
<b>Height (in/cm)</b>	29.25/75
<b>Depth (in/cm)</b>	23.25/59.1
<b>Weight (lbs/kg)</b>	205/93
<b>Voltage*</b>	115/60/1
<b>Min.Circuit Ampacity</b>	20.0
<b>Compressor</b>	3/4 HP/3600 (BTUH)
	.56 kw (Motor)
	1.1 kw (Cooling)
<b>Beater Motor</b>	3/4 HP/.56 kw
<b>Refrigerant</b>	R-404a
<b>Charge</b>	22.0 oz/.62 kg
<b>Cooling</b>	Air
<b>Hopper</b>	10 qts/9.5 liters
<b>Cylinder</b>	2.7 qts/2.5 liters



\*Contact factory for other voltages.

## 4.2 Data Plate

The diagram shows a data plate for the Electro Freeze Model CS4. At the top, it says "ELECTRO FREEZE" and "H. C. DUKE & SON, INC. • EAST MOLINE, IL. U.S.A.". Below this are fields for "MODEL NO." and "SERIAL NO.". A "RATING" section includes "V.", "PH." (with a tilde symbol), and "HZ". The plate is divided into two columns: "SINGLE UNIT OR LEFT SIDE" and "RIGHT SIDE". Each column has fields for "TOTAL AMPS", "MAX. FUSE SIZE OR HACR TYPE CIRCUIT BREAKER", and "MIN. CIRCUIT AMPACITY". At the bottom of each column are "REFRIGERANT" and "DESIGN PRESSURE" fields, with sub-fields for "HIGH" and "LOW". Callout numbers 1-5 point to: 1 (Model No.), 2 (Serial No.), 3 (Voltage), 4 (Max. Fuse Size), and 5 (Min. Circuit Ampacity).

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

Figure 4-1

M00309

## 4.3 Reference Information

**Write in Reference Information HERE!**



Fill in the following information as soon as you receive the *Electro Freeze* CS4. (The item numbers — encircled, below — correspond with the callout numbers in figure 4-1.)

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

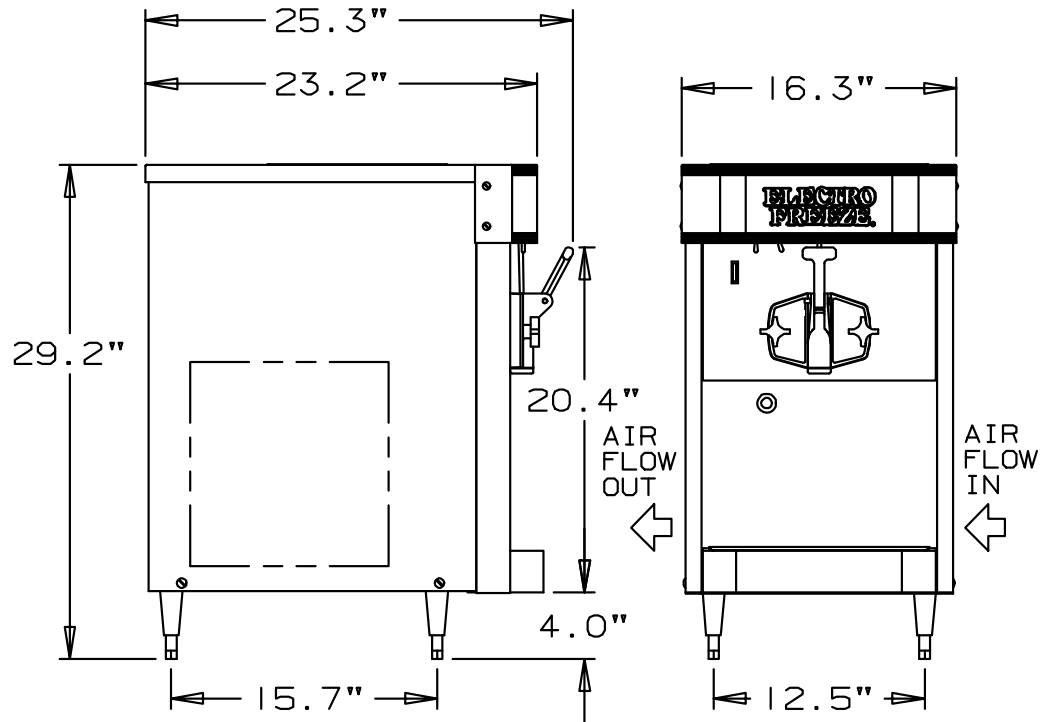
## 4.4 Installation Date

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 CS4 Freezer.

Date of installation: \_\_\_\_\_  
 Installed by: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 \_\_\_\_\_  
 Phone: \_\_\_\_\_

## 4.5 Dimensions

The dimensions of the CS4 Freezer are provided in figure 4-2, below.



**Figure 4-2** Electro Freeze Model CS4 Dimensions

## 5 Part Names and Functions

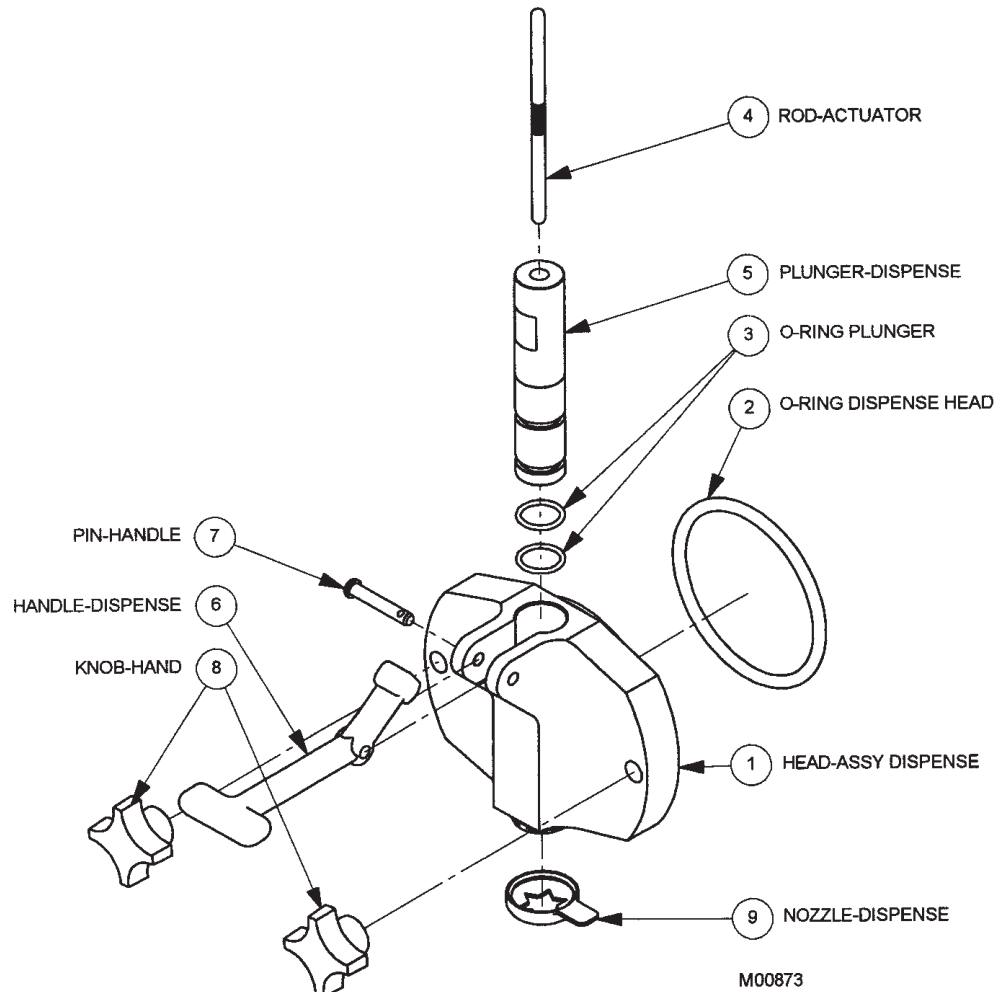


Figure 5-1 Head Assembly

**① HEAD.** Encloses the freezing cylinder and provides an opening for product to be dispensed.

**② O-RING - HEAD.** Seals the head to the freezing cylinder. Must be lubricated.

**③ O-RING - PLUNGER.** Seals the plunger in the head. Must be lubricated to seal and slide freely.

**④ ROD - PLUNGER.** Starts the freezer when dispensing. Must be in place before freezer will operate.

**⑤ PLUNGER.** Seals the product opening in the head when closed. Allows product to flow when open.

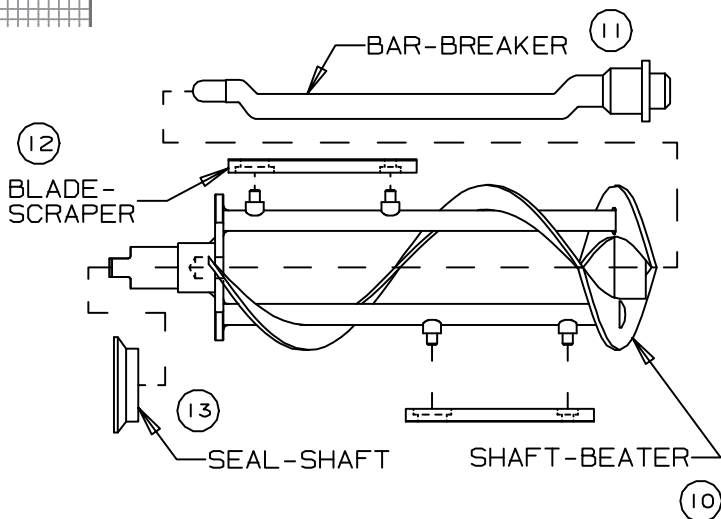
**⑥ HANDLE - DISPENSE.** Opens and closes the plunger to start and stop the flow of product from the freezer.

**⑦ PIN - HANDLE.** Secures handle to the head.

**⑧ KNOB - HAND.** Secures the head to the freezing cylinder.

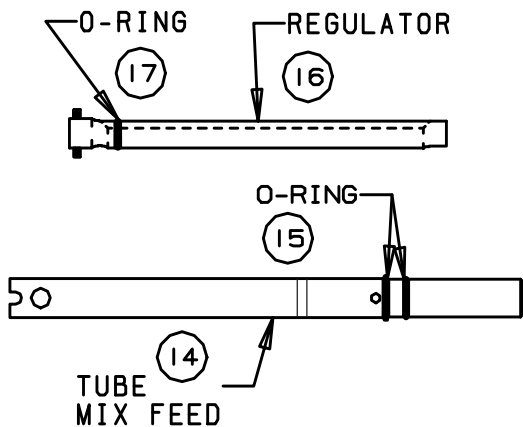
**⑨ NOZZLE.** Shapes the frozen product as it is dispensed.

# 5 Part Names and Functions



- ⑩ **SHAFT-BEATER.** Rotates in the freezing cylinder blending air and mix and ejecting product.
- ⑪ **BAR-BREAKER.** Keeps product blended in the center of the beater shaft.
- ⑫ **BLADE-SCRAPER** Scrapes frozen product from cylinder walls.
- ⑬ **SEAL-SHAFT.** Seals the opening between the freezing cylinder and the beater shaft.

Figure 5-2 Beater Shaft Assembly



- ⑭ **TUBE-MIXFEED.** Meters the correct amount of mix and air into the freezing cylinder from the hopper.
- ⑮ **O-RING-TUBE.** Seals the opening between the hopper and mix feed tube. (O-rings do not need lubrication.)
- ⑯ **REGULATOR.** Provides a positive shut off of mix flow to the freezing cylinder.
- ⑰ **O-RING-REGULATOR.** Holds the regulator in place in the mix tube. Must be lubricated.


Figure 5-3 Mix Feed Tube Assembly

## 6 Operator Controls

The following paragraphs describe the operator controls and indicators. Refer to figure 6-1 for location of these controls and indicators on the Model CS4 freezer.

**NOTE:** The plunger rod must be in place before the freezer will operate in “DAY”, “NIGHT”, or “CLEAN” position.

**CAUTION**


**Test operation of the head switch prior to placing the freezer in service. See Section 12, Routine Maintenance, Monthly.**

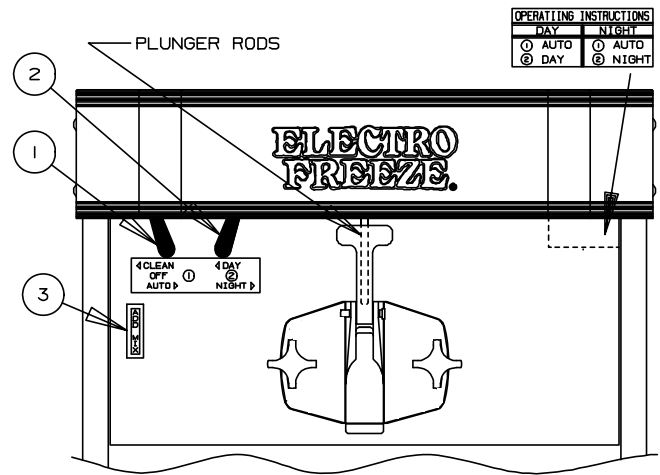


Figure 6-1

### 6.1 Selector Switch ①

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

a. “**CLEAN**” (left) — This position operates the beater only (no refrigeration). Always use this mode when performing cleaning and sanitizing operations.

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

**Important:**

**Do not use the automatic position with water or sanitizer in the cylinder or hopper — the freezer will be damaged.**

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

### 6.2 Day– Night Switch ②

a. “**DAY**” (left) — The low temperature thermostat controls the system refrigeration to maintain the product serving temperature between 18°–21°F (-8 to -6°C). This is the normal operating position.

b. “**NIGHT**” (right) — This energy saving mode will reduce product agitation. The freezer will automatically cycle to maintain temperatures below 41°F (5° C). Use this position when the freezer will not be in use for periods of more than an hour.

### 6.3 “ADD MIX” Indicator Light ③

When lit, this light indicates the mix in the hopper is at a low level and should be refilled as soon as possible. Always maintain *at least* 2 inches (5 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 Operator Controls – continued

## 6.4 Mix Float

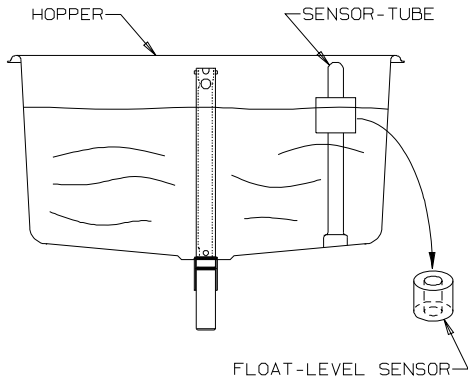


Figure 6-2

The float must be installed on the sensor tube for the “ADD MIX” indicator light to work.

## 6.5 Mix Feed Tube & Regulator

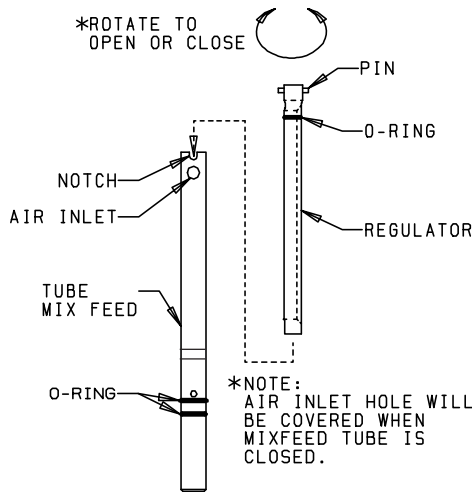


Figure 6-3

This two-position regulating device (figure 6-3) meters the correct amount of mix and air into the freezing cylinder.

a. “OPEN” - Always use this position when dispensing product. (See figure 6-4. When OPEN you can see clear through the hole in the top of mix feed tube.)

**Important:**

**If product is dispensed when the regulator is in the “CLOSED” position, a freeze-up will occur and may damage the freezer.**

b. “CLOSED” - Use this position when the freezer is in the “NIGHT” mode, and when product will not be dispensed for a long period of time. (See figure 6-4. When CLOSED you cannot see through the hole in the top of the mix feed tube — the white plastic regulator tube inside will block the hole.)

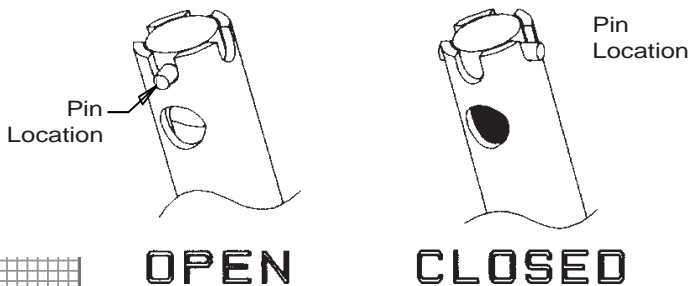


Figure 6-4



7

# Disassembly and Cleaning

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. The freezer should be disassembled, cleaned, reassembled, lubricated and sanitized daily to ensure the best possible product and freezer operation.

Persons assembling, cleaning or sanitizing the freezer must wash and sanitize hands and forearms with an approved sanitizer.

## 7.1 Cleaning Accessories

The following are accessories necessary for cleaning, sanitizing and disassembly/assembly.

① BRUSH & HANDLE, Cylinder. 4-inch diameter with handle, used for cleaning the cylinder.

② BRUSH, Double end. 1-1/8 inch diameter and 7/16-inch diameter, used for cleaning the drain tube, mix inlet tube and mix feed tube.

③ BRUSH, Mix feed assembly. 1/4-inch diameter with 18-1/2 inch handle used for cleaning the mix feed tube and regulator.

④ BRUSH, General parts cleaning. 1-inch diameter with 12-inch handle, used for cleaning the head.

⑤ LUBRICANT, Lubri-Film Plus. Approved lubricant for moving parts and O-rings. See assembly instructions for lubricating points.

⑥ KIT, O-ring. This kit contains all O-rings and seal needing replacement on a regular basis. (not shown)

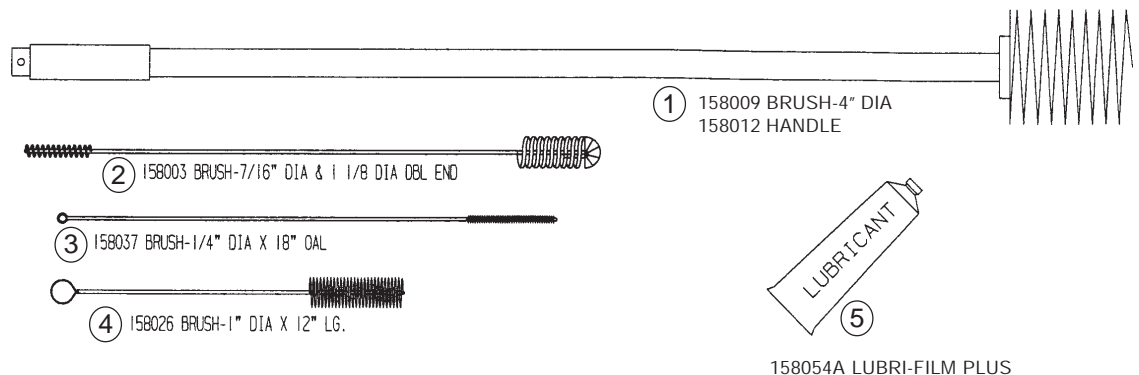
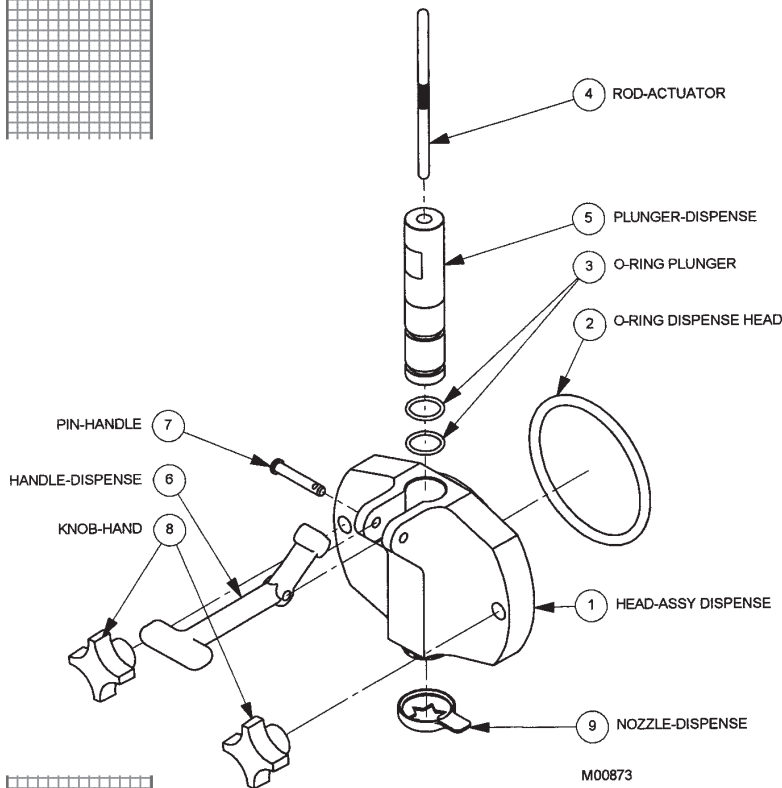
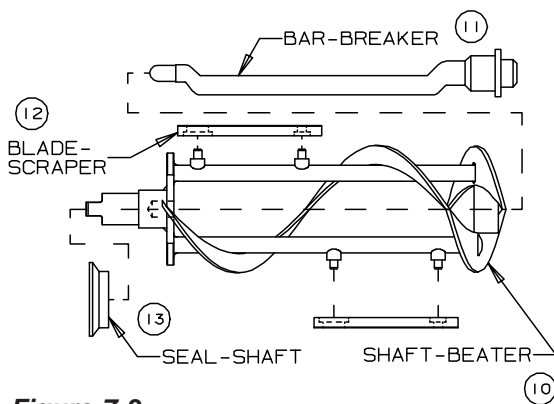


Figure 7-1 Accessories

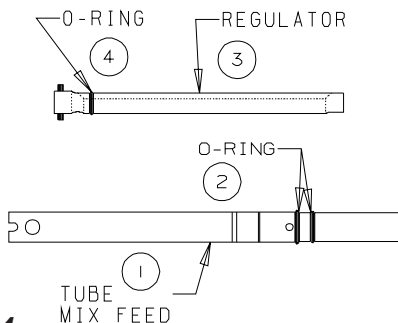
## 7.2 Disassembly Instructions



**Figure 7-2**



**Figure 7-3**



**Figure 7-4**



### 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.

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

**NOTE:** If there is product in the freezer, refer to Section 10, Closing Procedures, 10.1 Draining Product.

1. Remove plunger rod (4, figure 7-2), hand knobs (8) and pull dispensing head (1) straight out.
2. Remove the handle pin (7), plunger (5) and nozzle (9) from head (1).
3. Remove the beater shaft (10, figure 7-3) and scraper blades from the cylinder. Then remove breaker bar (11) and shaft seal assembly (13) from the beater shaft.
4. Remove hopper cover, drip tray and insert.
5. Remove the mix feed tube (figure 7-4) and mix float from the hopper. Remove regulator (3) from mix feed tube.



### CAUTION

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

6. Remove O-rings (2,4) from mix feed tube (1). Remove O-ring (4) from regulator (3).
7. Remove O-ring (figure 7-2, #2) from head (1). Remove O-rings (3) from plunger (5). Remove the shaft cup seal (figure 7-3, #13, and 7-7) from the washer on the shaft seal assembly.

—continued

## 7.3 Cleaning Instructions

The cleaning instructions explained in this section are procedures to remove bacteria and maintain a clean sanitary freezer. The soft serve freezer must be disassembled, washed and sanitized according to the instructions in this manual before start-up to ensure the best possible cleanliness.



### CAUTION

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



### CAUTION

To prevent bacteria growth, use only approved sanitizers to sanitize 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.

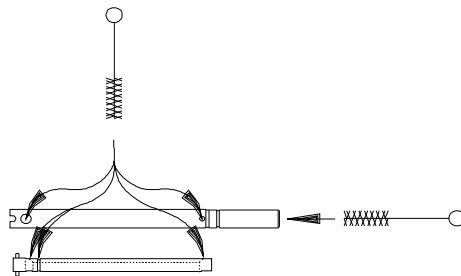


Figure 7-5 Clean the mix feed tube

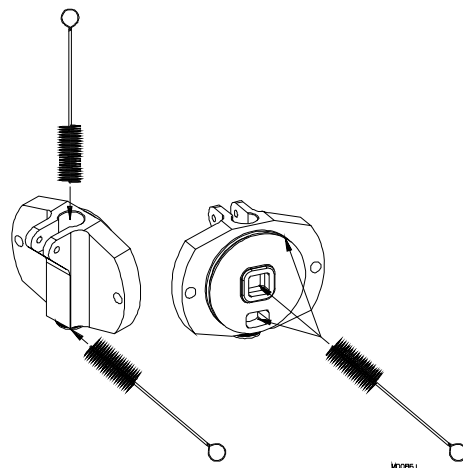


Figure 7-6 Clean the head ports

**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. Prepare a three-compartment sink in accordance with local health regulations. The sink will be used to wash, rinse, and sanitize the freezer components which will be removed later. Also, prepare a clean surface to air-dry all parts.

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

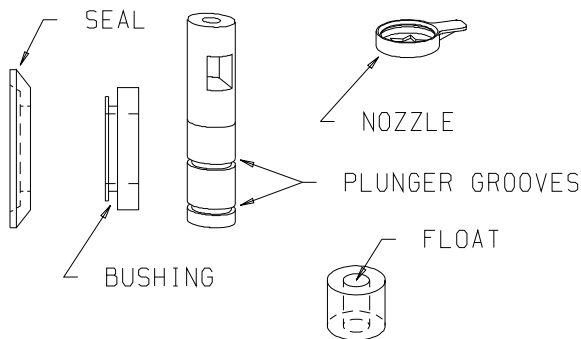
**Important:**  
Do not leave parts in sanitizer for more than 15 minutes.

2. Wash all parts removed from the freezer thoroughly with dish detergent. Clean the following parts with the appropriate brush provided:

- a. the mix feed tube and regulator main bore and cross holes (figure 7-5)

— continued

## 7.3 Cleaning Instructions - continued



**Figure 7-7** Clean shaft seal, bushing, plunger, nozzle and float

b. the head plunger openings, center plunger ports, breaker bar cavities, O-ring grooves, dispense nozzle mounting rings and mix ports (figure 7-6).

c. the shaft seal, washer, plunger O-ring grooves, nozzle and float (figure 7-7)

d. the beater shaft inside the front collar and the hole on the rear flange (figure 7-8)

e. the scraper blade mounting holes.

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

4. Use the sanitizing solution to wipe down the freezer and brush out inside of hopper and around the mix level sensor tube.

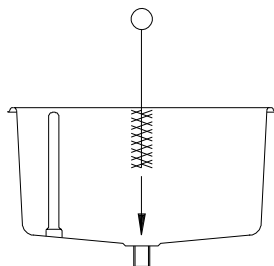
5. Thoroughly brush the hopper and mix feed port to the cylinder with sanitizing solution (figure 7-9).

6. Brush the inside of the cylinder, with sanitizing solution making certain to clean back wall of cylinder.

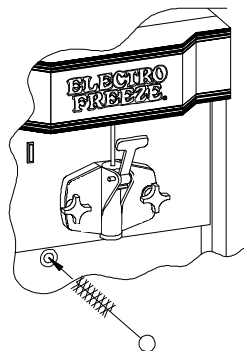
7. Brush the inside of the drain tube with sanitizing solution. (figure 7-10).

8. Use the sanitizing solution to wipe down all exterior surfaces of the freezer. Let air dry.

**Figure 7-8** Clean beater shaft



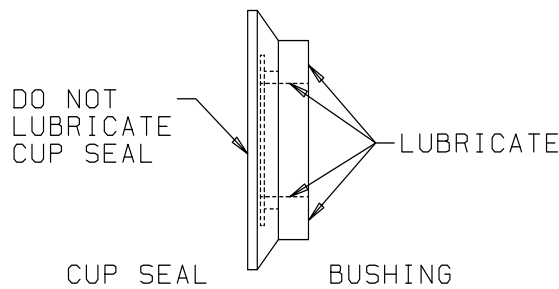
**Figure 7-9** Clean hopper and mix feed port



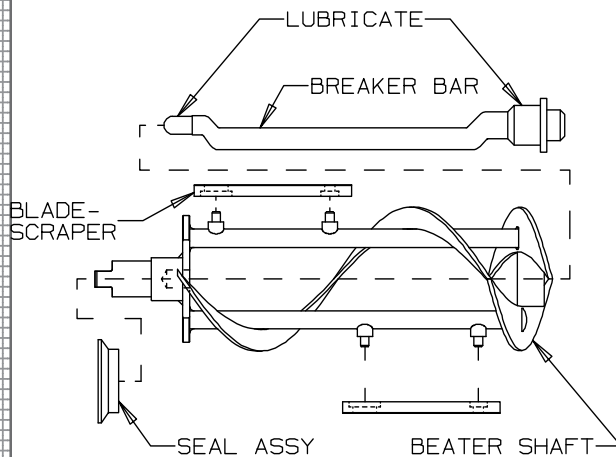
**Figure 7-10** Clean Drain Tube

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

## 8 Assembly



**Figure 8-1 Lubricate shaft seal**



**Figure 8-2 Assemble beater shaft assembly**

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 Plus). 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 beater shaft seal on the washer to complete the beater shaft seal assembly. Apply a moderate amount of approved sanitary lubricant (such as Lubri-Film Plus or equivalent) to the internal surface of the plastic washer. Do not allow any lubricant to come in contact with the bell-shaped rubber portion of the seals (figure 8-1).

2. 12. Install the shaft seal assembly over the rear of the beater shaft with the bell-shaped portion facing the rear (figure 8-2). Wipe any excess lubricant from the beater shaft.

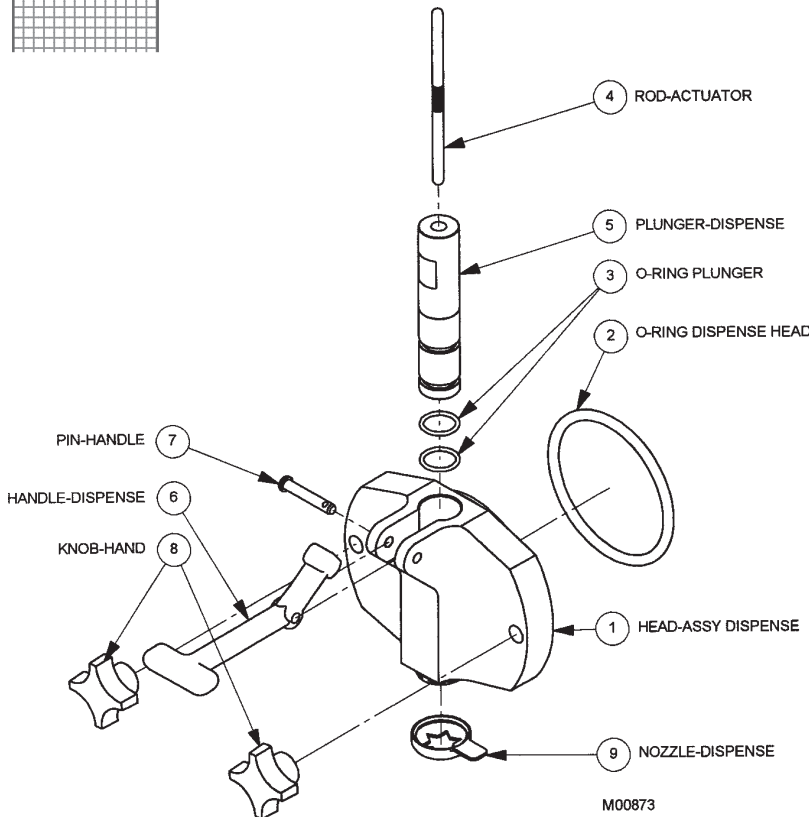
3. Apply lubricant to the bearing areas of the breaker bar and bushing.

4. Slide the breaker bar into the center of the beater shaft so the bar fits into the hole in the rear beater shaft disc. Place the scraper blades on the beater shaft, as shown in figure 8-2,

5. Insert the assembled beater into the cylinder by sliding the rear blade along the bottom of the cylinder. This will center the beater shaft and allow alignment with the drive shaft. Rotate and push the beater assembly until the shank has engaged the drive shaft.

—continued

# 8 Assembly - continued



**Figure 8-3 Assemble the head assembly**

6. Install and lubricate the O-rings (see O-ring chart) on the dispensing plunger and insert into the head (figure 8-3).

7. Install and lubricate the 4-inch head O-ring.

8. Position the handle in the head assembly and lock in place with the handle pin.

9. Snap the nozzle on the mix outlet at the bottom of the head.

**Important:**  
**Do not overtighten the hand knobs. Excessive force will damage the head. Tighten the hand knobs finger-tight only.**

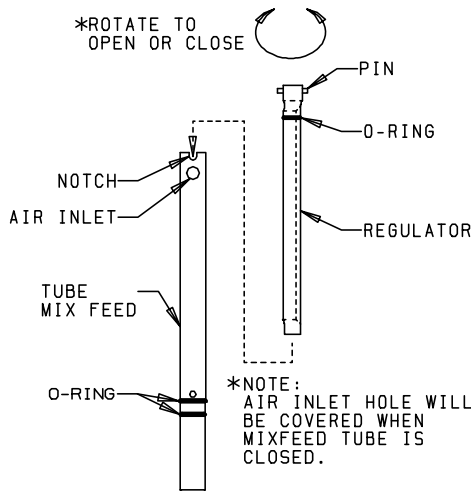
10. Install the dispensing head onto the freezer by sliding the head over the threaded studs and aligning the square end of the breaker bar with the square in the dispensing head. Slide the head into the cylinder and install the hand knobs, being careful to tighten evenly and finger tight only.

**NOTE:** The plunger rod must be in place for the freezer to operate in the "CLEAN" or "AUTO" Mode.

11. Install the plunger rod.

12. Install the O-rings on the mix feed tube and regulator as shown in figure 8-4.

13. Lubricate the O-ring on the regulator and install into the mix feed tube. (No lubrication is required on the mix feed tube O-rings.)



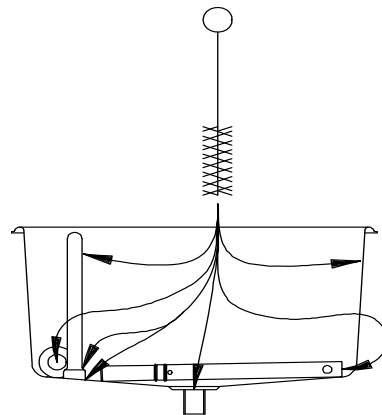
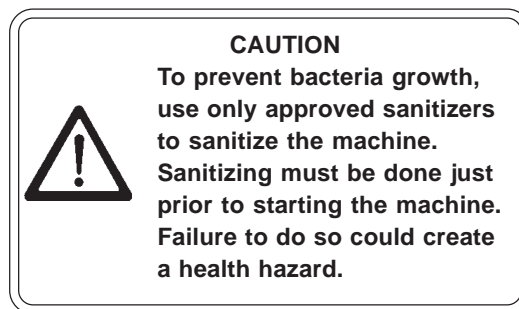
**Figure 8-4 Assemble the mix feed tube**



## 9 Start-up Instructions

### 9.1 Sanitizing

The sanitizing instructions explained in this manual are important procedures to remove bacteria and maintain a clean, sanitary freezer. The soft serve freezer *must* be disassembled, washed and sanitized according to the instructions in this manual to ensure the best possible cleanliness. Always sanitize just before start-up.



**Figure 9-1** Sanitize hopper and its components

**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 and conform to the local, state, and federal laws concerning the frequency of cleaning and sanitizing the freezer.

1. Wash and sanitize your hands and forearms.
2. Prepare 2 gallons (7.6 liters) of sanitizing solution in a container. The sanitizing solution must be mixed according to manufacturer's instructions to yield 100 PPM (parts per million) available chlorine solution (example: Stera-Sheen Green Label). Use warm water (100°-110°F or 37-43°C) to wash, rinse, and sanitize.

**Important:**

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

**Important:**

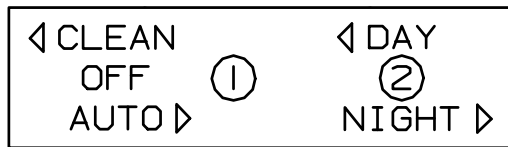
**Do not insert any tools or objects into the mix feed port or head dispensing hole while the freezer is running.**

3. Place the mix feed tube assembly and mix float in the bottom of the hopper. Pour sanitizing solution into the hopper. Using a clean brush, scrub the hopper walls, mix level sensor, the mix feed port from the hopper to the cylinder, the inside of the mix feed tube and the mix float as shown in Figure 9-1.

4. Install the mix float on the mix level sensor and wash down the inside of the hopper cover with sanitizing solution.

– continued

## 9.1 Sanitizing - continued



**Figure 9-2** Selector (Toggle) Switch Positions

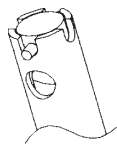
5. . When the cylinder has filled with sanitizing solution, reconnect the main power supply to the freezer. Turn the selector switch to the “CLEAN” position (figure 9-2). Allow the beater to run for 5 minutes. During this time period also check for leaks around the head, plunger and drain tube.

**Important:**

**Do not use the “AUTO” position with sanitizer in the cylinder. The freezer will be damaged.**

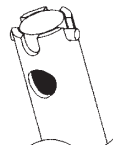
6. Turn the selector switch to the “OFF” position. Place an empty container under the dispensing head and drain the solution by opening the plunger to allow cylinder and hopper to empty. Open and close the plunger at least 10 times during draining to sanitize the port area of dispense head.

## 9.2 Priming



**OPEN**

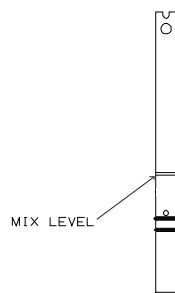
Look through top hole in tube — you should see clear through.



**CLOSED**

Look through top hole in tube — you should see the inner white plastic tube (regulator) blocking the opening.

**Figure 9-3** Mix Feed Tube Positions



**Figure 9-4** Mix level line

Priming the freezer removes all excess air and sanitizer from the freezing cylinder and sets the proper overrun for the first cylinder of product. Always have clean, sanitized hands when handling mix feed assembly. Handle only the top 1”.

1. Wash and sanitize your hands and forearms.
2. Install the mix feed tube and regulator assembly into the hopper in the “CLOSED” position, as shown in figure 9-3. Push the mix tube assembly all the way down and check to make sure the regulator is in the “CLOSED” position.

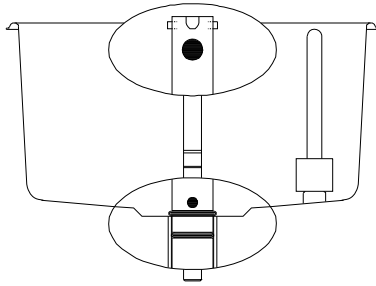
3. Fill the hopper with mix to the mix level line (figure 9-4) on the mix tube assembly (approximately 3 pints).

4. Place an empty container under the dispense head. While holding the plunger open, remove the mix feed tube allowing the mix to force any remaining sanitizing solution from the cylinder. When pure mix appears, close the plunger.

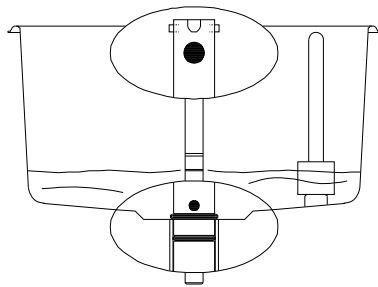
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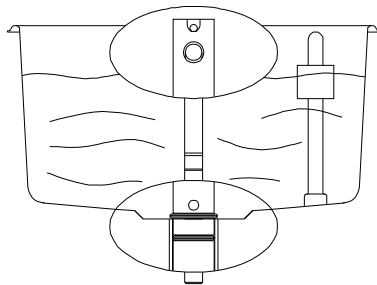
## 9.2 Priming - continued



**Figure 9-5 Closed — empty hopper**



**Figure 9-5 Closed — first level mix**



**Figure 9-6 Open — full hopper**

5. Allow the remaining mix in the hopper to follow into the cylinder.

6. Reinstall the mix feed tube assembly in the hopper and push all the way down. Make sure the regulator is in the “CLOSED” position as shown in figure 9-3.

**Important:**

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

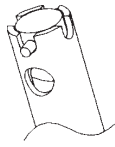
7. Turn selector switch to “AUTO” to begin the freezing process. Fill the hopper with mix to full operating level and install hopper cover.

8. Keep the regulator in the “CLOSED” position until you are ready to dispense the first serving. When ready, move regulator to the “OPEN” position as shown in figure 9-3.

9. During long idle periods, the regulator should be closed — **but remember — when dispensing product, ensure that the mix feed regulator is OPEN at all times.** If not open, the flow of mix will be restricted causing the product to freeze solid. Hard, frozen product could cause damage to the freezer. Do not allow lubricant to block the hole in the tube, as this would have the same result.

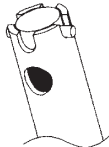
# 10 Closing Procedures

## 10.1 Night Switch Operation



**OPEN**

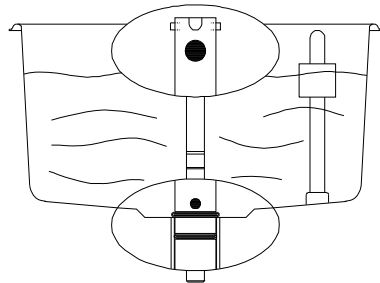
*Look through top hole in tube — you should see clear through.*



**CLOSED**

*Look through top hole in tube — you should see the inner white plastic tube (regulator) blocking the opening.*

**Figure 10-1 Mix Feed Tube Positions**



**Figure 10-2 Closed — night operation**

1. In areas where state and local health codes allow, the freezer may be switched to the energy saving “NIGHT” mode operation. This will allow the freezer to cycle less at night, but still maintain approximately 41°F (5°C), or lower, product in the cylinder and hopper.

2. To switch the freezer to the “NIGHT” mode, leave the Selector Switch in the “AUTO” position and place the Day/Night Switch in the “NIGHT” position.

3. The plunger rod must be in place for the unit to operate in the “NIGHT” mode.

4. Remove nozzle, and clean all soiled surfaces with soap and water.

5. Using the small brush supplied in the spare parts kit, brush the nozzle and bottom of the plunger, and then wash with sanitizer solution.

6. Turn the mix feed regulator to the “CLOSED” position as shown in figure 10-1.

7. Check mix level in hopper to ensure that there is enough mix to keep the indicator light off, add mix if necessary. **Do not dispense product when the mix feed regulator is in the “CLOSED” position.**

8. To start the machine after using the “NIGHT” mode, place back to “DAY” mode and replace the sanitized nozzle.

9. “OPEN” the mix feed regulator and fill the hopper with mix (figure 10-1).

## 10.2 Draining Product from Freezer

**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.

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

1. Place the selector switch in the "CLEAN" position.
2. Remove the mix feed tube from the hopper.
3. Let the beater run for 5 minutes. This will allow the product in the cylinder to soften.
4. Place a clean, sanitized container under the dispensing nozzle.
5. Dispense the semi-frozen product until it quits dispensing. If local health codes permit, cover the rerun product container and place it in the cooler. (See Section 11, SOFT SERVE INFORMATION)

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

6. Close plunger and pour two gallons (7.6 Liters) of cold water into the hopper.

7. Dispense the cold water and follow with 2 gallons of warm water. Repeat until the water coming out is clear.

8. Drain the remainder of the warm water from the cylinder. Place the selector switch in the "OFF" position.

9. Prepare 2 gallons (7.6 liters) of sanitizing solution. Sanitizing solution must be mixed according to manufacturer's instructions to yield 100 PPM available chlorine solution (example: Stera-Sheen Green Label). Use warm water (100-110°F or 37-43°C) to wash, rinse, and sanitize.

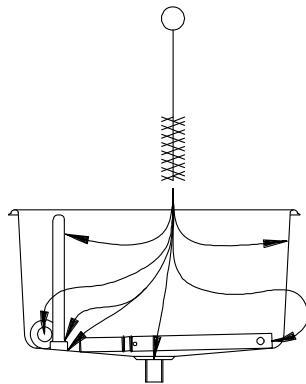
10. Pour sanitizing solution into the hopper pan. Using a clean brush, scrub the hopper walls, mix level sensor, the mix feed port from the hopper to the cylinder, the inside of the mix feed tube and the mix float as shown in figure 10-3.

**Important:**  
*Do not use the "AUTO" position with sanitizer in the cylinder. The freezer will be damaged.*

11. When the cylinder has filled with sanitizing solution, turn the selector switch to the "CLEAN" position and allow the beater to run for 10 minutes. During this time period, check for leaks around the head, plunger and drain tube.

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

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



**Figure 10-3 Sanitize hopper**

# 11 Soft Serve Information

## 11.1 Overrun

As mix is frozen in the freezing cylinder, air is incorporated into the mix to increase its volume, as well as enhance the taste and texture of the finished product. The increase in volume is called *overrun*. Fifty percent overrun translates to a volume increase of 50 percent — 10 gallons of liquid mix has become 15 gallons of finished product.

Controlled overrun is important to maintain consistency in product quality. Too much overrun (air) results in a light, fluffy product lacking the cold refreshing appeal of a quality product. Too little overrun results in a wet, heavy product.

To correctly measure the overrun perform the following steps:

1. Place an empty pint container on the scale\* and adjust your scale to zero.
2. Remove container from scale and fill the container with liquid product to the top. Weigh container and record.

3. Replace liquid product with frozen product, being sure to leave no voids or air spaces in the container.

4. Strike off the excess product so it is even with the top of the container and measure the weight.

5. Use the following formula to figure overrun percentage:

“Weight of liquid mix minus weight of frozen product/divided by the frozen weight. Multiply by 100.” See example.

**Example:**

Weight of 1 pint of mix = 18 oz.

Weight of 1 pint frozen product = 12 oz.

Difference = 6 oz.

6 oz. divided by 12 oz. = .5

.5 x 100 = 50% overrun

\*Your *Electro Freeze* Distributor can provide a scale (P/N HC158049) that is graduated in overrun percentage.

## 10.2 Rerun

If local health codes permit the use of rerun make sure to follow these procedures:

1. Store rerun mix in a clean, sanitized container.
2. Store in a cooler with a temperature below 40°F (4.4°C).
3. DO NOT prime the machine with rerun. Always skim off and discard foam. Then combine the rerun with fresh mix in a ratio of 50/50 and add to the hopper during operation.
4. Once a week run the mix as low as possible and discard after closing. This will break the rerun cycle and reduce the possibility of high bacteria and coliform counts.

**NOTE: Rerun product is unable to accept the same amount of air as fresh product. As a result, the quality will be affected and product may appear grainy and icy.**

For further information contact your local Electro Freeze distributor or the Service Department of H. C. Duke & Son, LLC, phone (309) 755-4553 or (800) 755-4545, e-mail: [service@electrofreeze.com](mailto:service@electrofreeze.com).




# 12 Routine Maintenance

*Electro Freeze* recommends the following schedule to help maintain your Model CS4 freezer 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!

## DAILY

1. Disassemble, wash, rinse, sanitize, air-dry, reassemble and sanitize all parts which come into contact with the 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, cylinder inlet tubes and drain tube with the appropriate brushes.

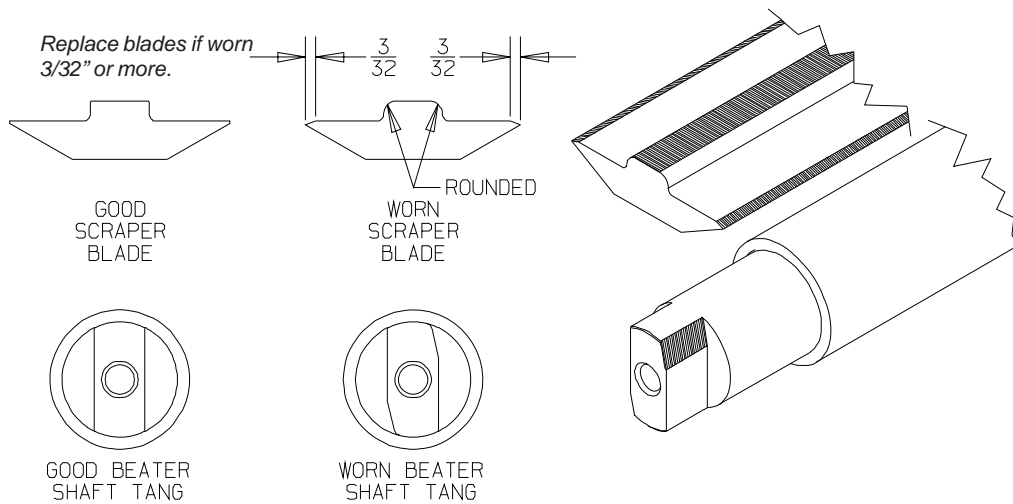
3. When cleaning, inspect all seals and O-rings. Replace any O-ring or seal that is worn, torn, or loose-fitting.

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

5. Check overrun and temperature of the product.

## WEEKLY

1. Carefully inspect all parts for wear, including scraper blades and beater shaft. Replace as required.



## 12 Routine Maintenance - continued

### MONTHLY

#### 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.

### QUARTERLY

1. Have air condenser fins cleaned by an authorized service technician.

**Important:**

**Never use a screwdriver or sharp object to clean between fins.**

2. Have a refrigeration technician check the refrigeration system and make the necessary adjustments.

### ANNUALLY



**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. Have drive belts replaced by qualified service technician.
2. Have the inside of the freezer cleaned, including base, side panels, condenser, etc.
3. Have the drive shaft and bearing assemblies inspected by a service technician.



## **12 Routine Maintenance - continued**

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### **WINTER STORAGE**

To protect the unit during seasonal shutdown, it is important to store the freezer properly. Use the following procedures:

1. Disconnect all power to the freezer.
2. Disassemble and wash all parts that come into contact with the mix using a warm, mild detergent solution. Rinse in clear water and dry all parts thoroughly. Clean drain tube and all exterior panels.
3. Store the loose parts, such as 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 condenser fins cleaned by a qualified service technician.

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

If you have any questions on items that are not included in this schedule or problems that require service assistance, please call your local distributor or H.C. Duke & Son, LLC, *Electro Freeze*, Service Department for factory service assistance.

Phone: (309) 755-4553 or (800) 755-4545

FAX: (309) 755-9858

E-mail: [service@electrofreeze.com](mailto:service@electrofreeze.com)

## 13 Troubleshooting Table



**THIS SAFETY ALERT SYMBOL IDENTIFIES IMPORTANT PERSONAL SAFETY MESSAGES IN THIS MANUAL. WHEN YOU SEE THIS SYMBOL, BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY. DO NOT ATTEMPT TO CONTINUE UNTIL THE SAFETY PRECAUTIONS ARE THOROUGHLY UNDERSTOOD.**



**Caution**

**All maintenance adjustments must be done by an Electro Freeze Distributor or authorized service technician.**



**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.**

**Important:**

**Some refrigerants are hazardous to the earth's atmosphere. To protect our environment, use a refrigerant recovery/recycling unit when removing refrigerant from the system.**







## 13 Troubleshooting Table - continued

PROBLEM	PROBABLE CAUSE	REMEDY
Unit does not operate.	1. Freezer unplugged.	1. Plug in freezer.
	2. Plunger rod not installed.	2. Install plunger rod.
	3. Fuse or breaker blown at main disconnect.	3. Make sure your freezer is connected to a separate circuit independent from any other electrical equipment. Have service technician check fuse or breaker size; check for low voltage; if not within 10% of nameplate rating call power company.
	4. Component failure.	4. Contact your Electro Freeze distributor for service.
Unit does not operate in "AUTO" mode. Beater motor runs in "CLEAN" mode.	1. Restricted air flow. Tripped high pressure control.	1. Set required air space to a minimum of 6-inches (15.2 cm) on all sides of unit. Louvered areas must be clean and unrestricted .
	2. Dirty condenser. Tripped high pressure control.	2. Have condenser cleaned by your Electro Freeze distributor.
	3. Component failure.	3. Contact your Electro Freeze distributor for service.
Compressor does not operate or operates improperly.	1. Component failure.	1. Contact your Electro Freeze Distributor for service.

# 13 Troubleshooting Table - continued

PROBLEM	PROBABLE CAUSE	REMEDY
Beater motor stops or squeals belt.	1. Motor cuts out on internal overload.	1. Turn the selector switch to "OFF", wait 10 minutes and then turn to "AUTO". If motor continues to cut out on overload, proceed to steps 1.a, 1.b, 1.c, 1.d.
	1.a. Overrun too low.	1.a. Check priming procedure (see Start-up Instructions).
	1.b. Product temperature set too cold -- below 18°F.	1.b. Check product temperature. Contact your Electro Freeze Distributor for service.
	1.c. Line voltage low (should be + or - 10% of nameplate requirement).	1.c. Call power company. Voltage must be + or - 10% of nameplate requirement.
	1.d. Component failure	1.d. Contact your Electro Freeze Distributor for service.
Dispensed product too hard.	1. Cylinder thermostat erratic or set too cold.	1. Contact your Electro Freeze Distributor for service.
	2. Component failure or refrigeration problem.	2. Contact your Electro Freeze Distributor for service.
Leakage of mix or water from drain tube to drip tray. 	1. Damaged beater shaft seal.	1. Replace shaft seal.
2. Beater shaft end play not set properly.	2. Contact your Electro Freeze Distributor for service.	
Mix leaking at dispensing head. 	1. Faulty head o-ring.	1. Replace head o-ring.
2. Head not properly installed..	2. Install head properly.	
Mix sours in hopper.	1. Unsanitary cleaning practices, outdated mix, or rerun with excessive foam.	1. Clean, sanitize and start with fresh mix.
	2. Hopper thermostat set too warm.	2. Contact your Electro Freeze Distributor for service.
	3. Component failure.	3. Contact your Electro Freeze Distributor for service.

## 13 Troubleshooting Table - continued

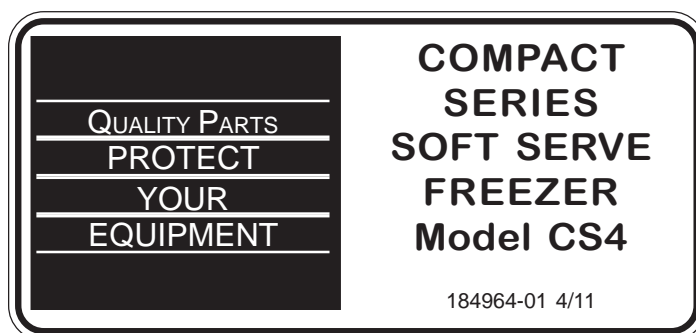
PROBLEM	PROBABLE CAUSE	REMEDY
Mix freezes in hopper.	1. Frozen product loaded in the hopper.	1. Remove frozen product. Always thaw properly before loading.
	2. Hopper thermostat set too cold.	2. Contact your Electro Freeze Distributor for service.
	3. Component failure.	3. Contact your Electro Freeze Distributor for service.
Machine runs continuously and product gets too cold.	1. Plunger switch rod engaged.	1. Close plunger completely.
	2. Component failure or refrigeration problem.	2. Contact your Electro Freeze Distributor for service.
	3. Thermostat set too cold.	3. Contact your Electro Freeze Distributor for service.
Poor or slow product recovery.	1. Dirty or blocked condenser, restricted air flow -- high room temperature.	1. Have air condenser cleaned by your Electro Freeze Distributor; lower room temperature.
	2. Mix feed tube missing (low overrun).	2. Insert tube, close regulator, draw off 12 ounces of product. When the freezer cycles off, open regulator.
	3. Dispensing too much product too fast.	3. Check freezer capacity rating.
	4. Component failure.	4. Contact your Electro Freeze Distributor for service.
Unit runs continuously. Product does not reach 18-21° temperature.	1. Component failure or refrigeration problem.	1. Contact your Electro Freeze Distributor for service.
	2. Dirty air condenser.	2. Have condenser cleaned by your Electro Freeze Distributor.
	3. Ambient air too hot.	3. Give louvered area more air space.

## 13 Troubleshooting Table - continued

PROBLEM	PROBABLE CAUSE	REMEDY
Night Mode. Mix sours overnight in cylinder and hopper.	1. Selector switch in "OFF" position.	1. Place selector switch in "AUTO" position.
	2. Component failure.	2. Contact your Electro Freeze Distributor for service.
Unit runs continually in night mode and freezes up.	1. Component failure.	1. Contact your Electro Freeze distributor for service.

# ELECTRO FREEZE®

## REPLACEMENT PARTS MANUAL with ILLUSTRATIONS



**KEEP YOUR FREEZER IN EXCELLENT CONDITION. ALWAYS CONTACT  
YOUR ELECTRO FREEZE DISTRIBUTOR FOR REPLACEMENT PARTS.**

# Replacement Parts Orders

You must have the serial number of your freezer when ordering parts — parts may differ with a particular serial number of the same model.

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

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

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

Parts are listed using terminology that best fits the function of the part. The illustrations in this section will help you to find the correct part number and description. The alphabetized parts list can be used to verify part numbers pertaining to the serial number of your unit.

If you require any further assistance contact:  
H.C. Duke & Son, LLC., *Electro Freeze* as follows:

Place your parts order through your local authorized Electro Freeze distributor.



Phone: (309) 755-4553

(800) 755-4545

FAX: (309) 755-9858

E-mail: [service@electrofreeze.com](mailto:service@electrofreeze.com)

## ***PART II***

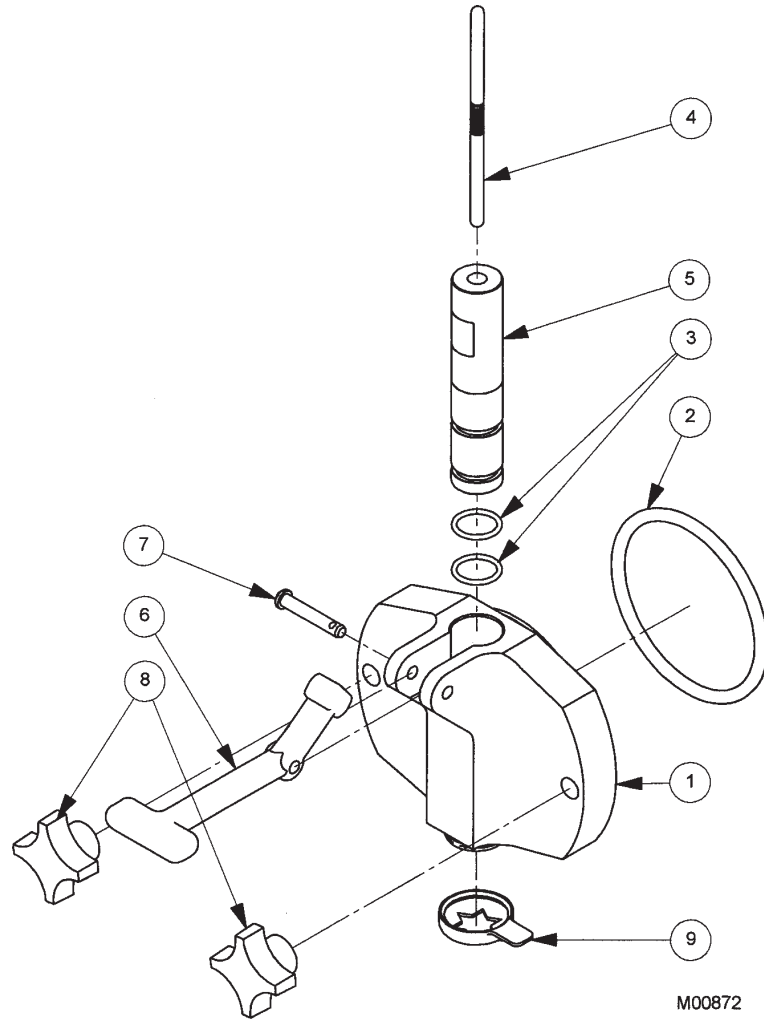
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**Figure 1 Head Assembly**

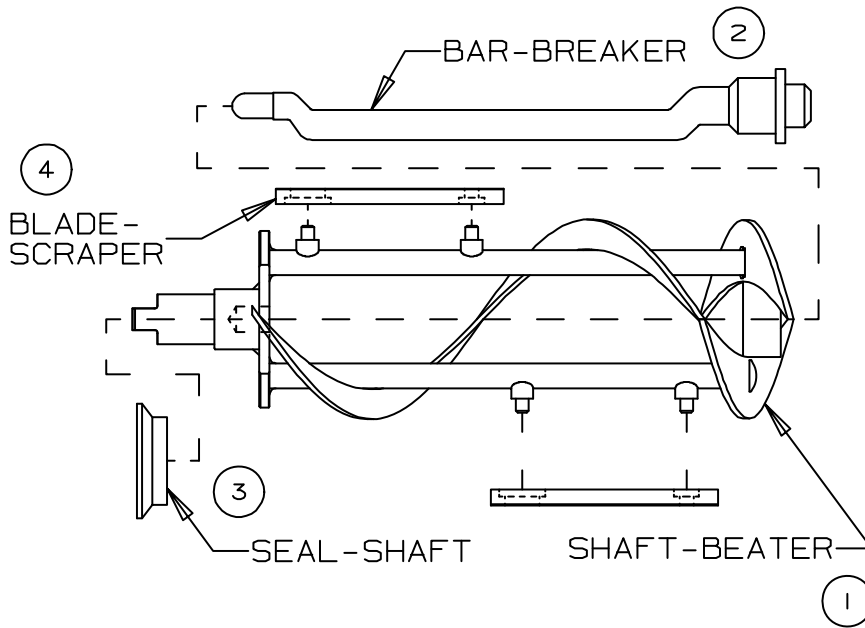
Item	Part No.	Description
*	HC119198	Head-Assy. Dispense (Complete )
1	HC119162	Head-Assy. Dispense (Head Only)
2	HC160623	O-Ring (Head)
3	HC160624	O-Ring (Plunger)
4	HC137763	Rod-Actuator
5	HC137807	Plunger-Dispense
6	HC196166	Handle-Dispense
7	HC160265	Pin-Handle
8	HC162625	Knob-Hand
8A	HC114341-06	Stud-Assy. Cylinder 2-1/16" (not shown)
9	HC196167	Nozzle-Dispense

\* Includes above items except #4, #8 and #8A.

**Not Shown Optional Stainless Steel Handles:**

HC119199	Head-Assy. Complete w/Stainless Steel Handles
HC116323	Handle-Assy. Dispense Stainless Steel
HC162627	Knob-Oval Taper

**Use only original or authorized replacement parts with this freezer.  
Use of unapproved parts will void warranty.**

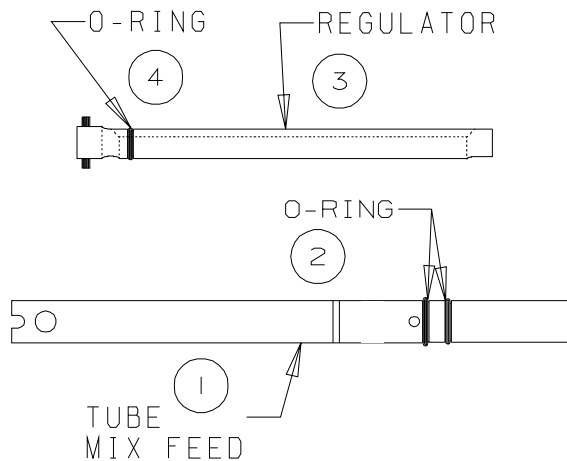


**Figure 2 Beater Shaft Assembly**

Item	Part No.	Description
1 .....	HC115677 .....	Shaft-Assy. Beater
2 .....	HC138202 .....	Bar-Breaker 11.45 in
3 .....	HC113824 .....	Seal-Assy. Shaft
	HC160557 .....	Seal-Beater Shaft
	HC136025 .....	Washer-Shaft Seal
4 .....	HC137934 .....	Blade-Scraper

**Use only original or authorized replacement parts with this freezer.  
Use of unapproved parts will void warranty.**





**Figure 3 Mix Feed Tube Assembly**

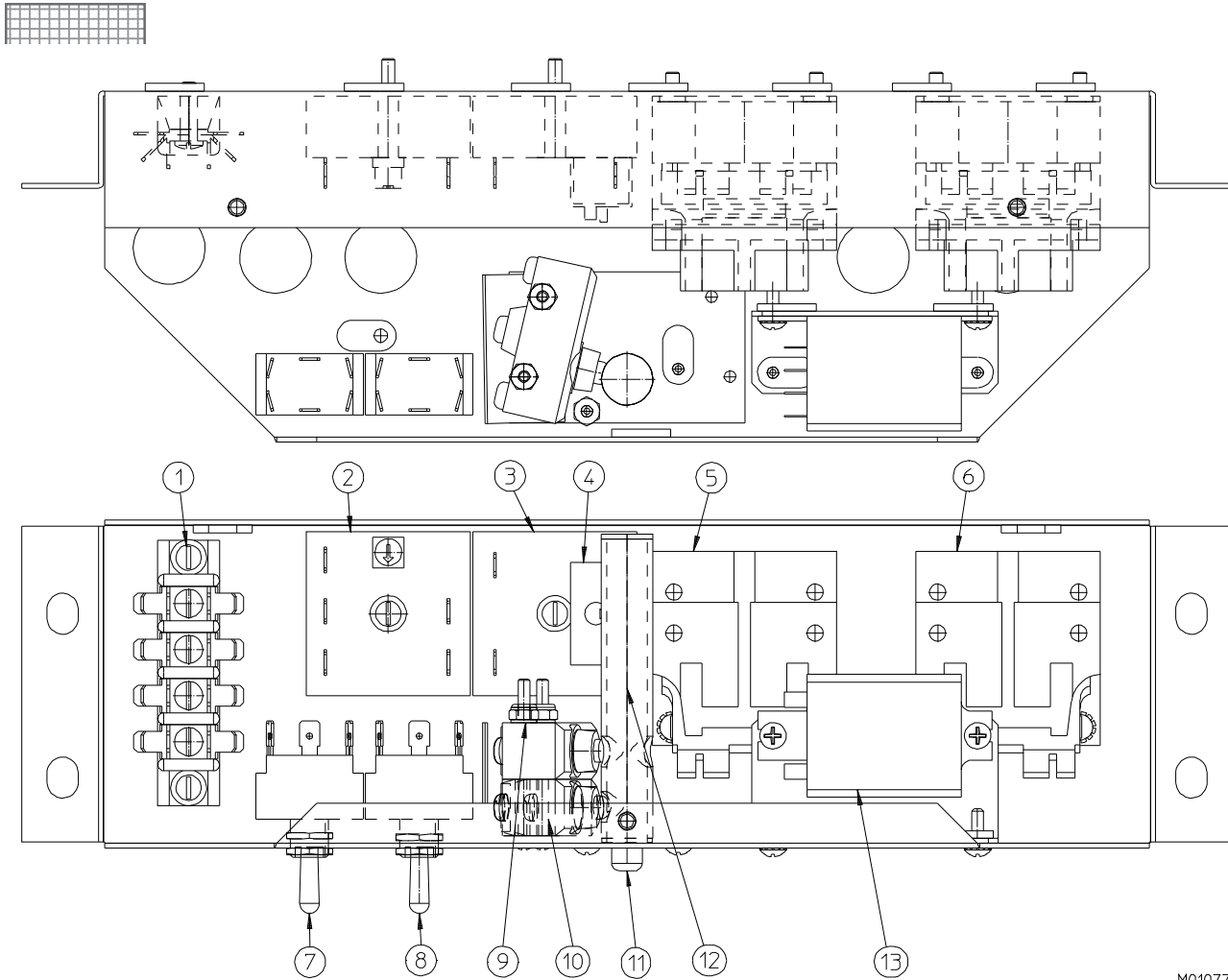
Item	Part No.	Description
*	HC116021	Tube-Assy. Mix Feed (Complete)
**	HC117091	Tube-Assy. Mix Feed Special (Complete - Two Hole) (Shake) (Not Shown)
1	HC138129	Tube-Mix Feed
1A	HC138884	Tube-Mix Feed Special (Two Hole)(Shake)(Not Shown)
2	HC160626	O-ring (Mix Feed Tube )
3	HC116005	Insert-Assy. Mix Feed
4	HC160610	O-ring (Regulator)

\* Includes all items above except #1A.

\*\*Includes all items above except #1.

**Use only original or authorized replacement parts with this freezer.  
Use of unapproved parts will void warranty.**

# ELECTRO FREEZE Model CS4



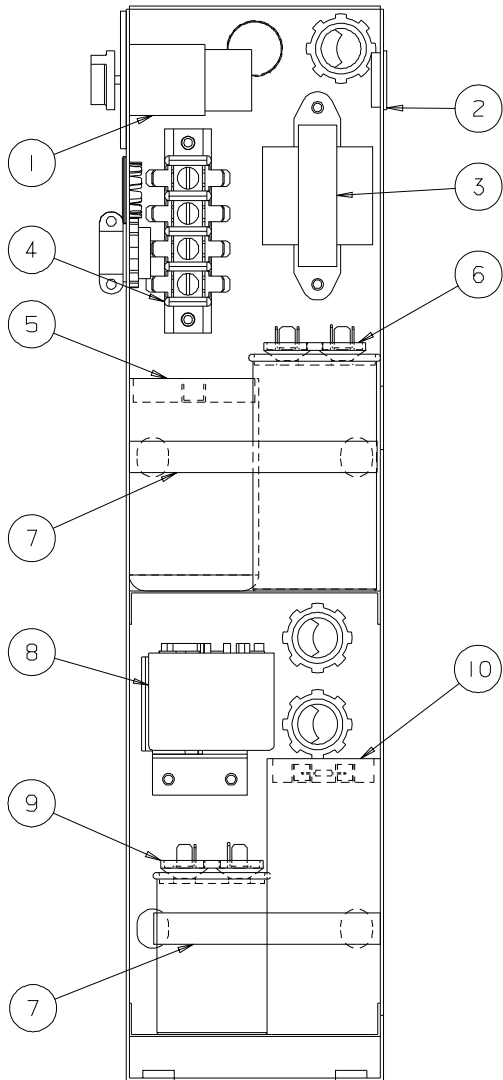
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## Figure 4 Switch Box

Item	Part No.	Description
1	HC150795	Strip-Terminal
2	HC150252-02	Timer-.5-45 Sec DOB 115v
3	HC150204	Timer-DOM .5-3 Seconds 115v
4	HC150257	Module-Plug on Vari Time
5	HC150339	Contactor-2 Pole 120v (Beater Motor)
6	HC150339	Contactor-2 Pole 120v (Compressor)
7	HC150463	Switch-Toggle DPDT Center Off (AUTO/OFF/CLEAN)
8	HC150461	Switch-Toggle DPDT (DAY/NIGHT)
9	HC150456	Switch-Snap Button (2LS-Plunger Switch )
10	HC150456	Switch-Snap Button (1LS-Head Switch)
11	HC137760	Rod-Plunger Switch-(Actuator Button)
12	HC116613	Switch-Assy Plunger
	HC115684	Guide-Assy. Push Rod
	HC162303	Spring-Plunger Rod
	HC150456	Switch-Snap Button (1LS)
	HC150456	Switch-Snap Button (2LS)
13	HC150376	Relay-Flange Base w/cover (115v)

**Use only original or authorized replacement parts with this freezer.  
Use of unapproved parts will void warranty.**

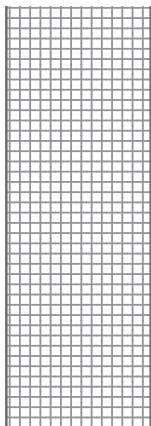
**Figure 5 Capacitor/Relay Box**



Item	Part No.	Description
1.....	HC161202 .....	Thermostat-5° Fixed Diff. (Hopper)
2.....	HC150778 .....	Bushing-Insulator
3.....	HC150286 .....	Transformer-60 120PRI/24V
4.....	HC150795 .....	Strip-Terminal
5.....	HC150294 .....	Capacitor-Start (Beater Motor)
6.....	HC150293 .....	Capacitor-Run (Beater Motor)
7.....	HC160743 .....	Clamp-Hose 3-1/4 to 4
8.....	HC151451 .....	Relay-Compressor Start
9.....	HC151421 .....	Capacitor-Run (Compressor)
10.....	HC151450 .....	Capacitor-Start w/Bleed (Compressor)

*Not Shown:*  
 HC115797 .....

Cover-Assy. Capacitor/Relay Box

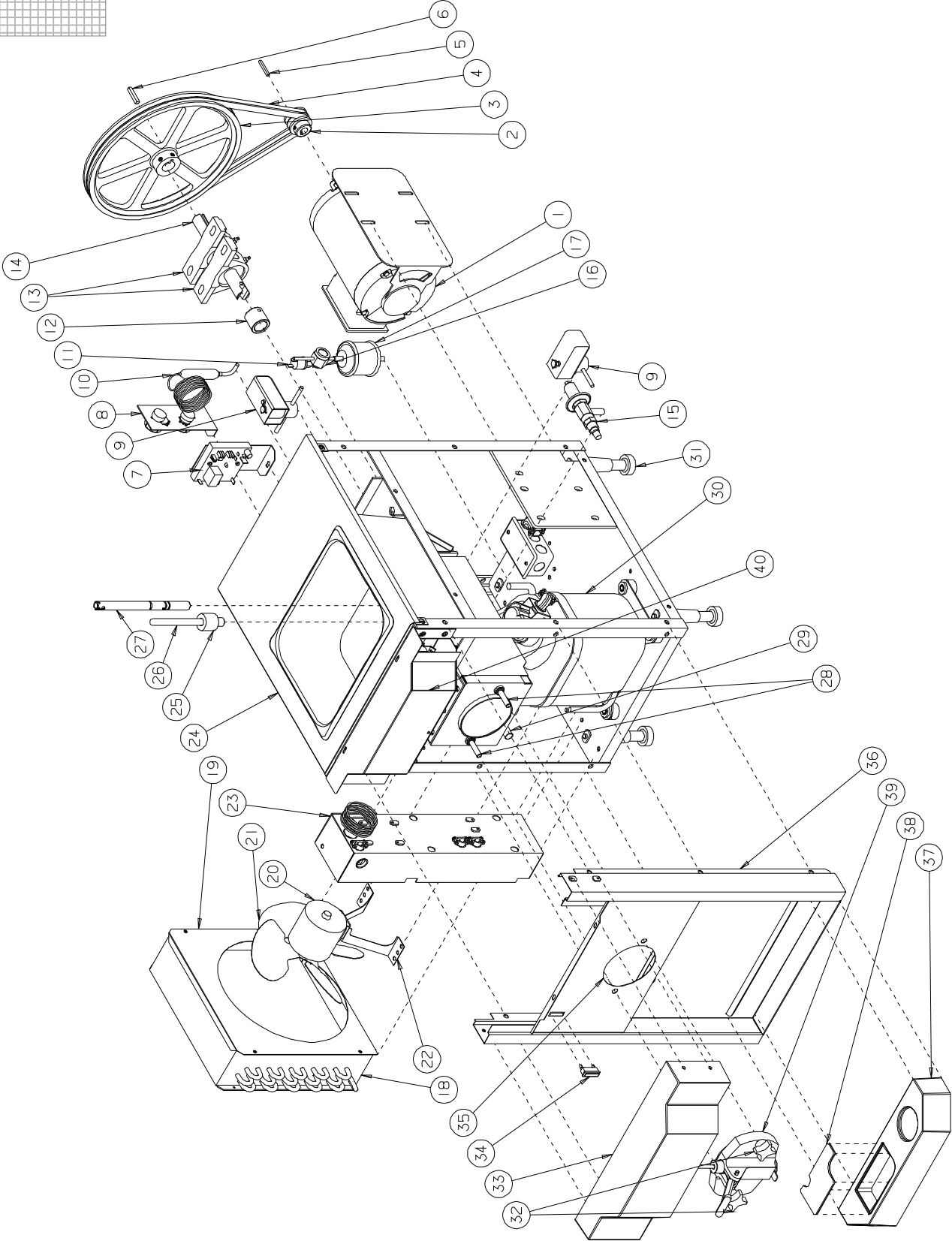


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**Use only original or authorized replacement parts with this freezer.  
 Use of unapproved parts will void warranty.**

# ELECTRO FREEZE Model CS4

## Figure 6 Model CS4 – Assembly (Sheet 1 of 2)



**Use only original or authorized replacement parts with this freezer.  
Use of unapproved parts will void warranty.**

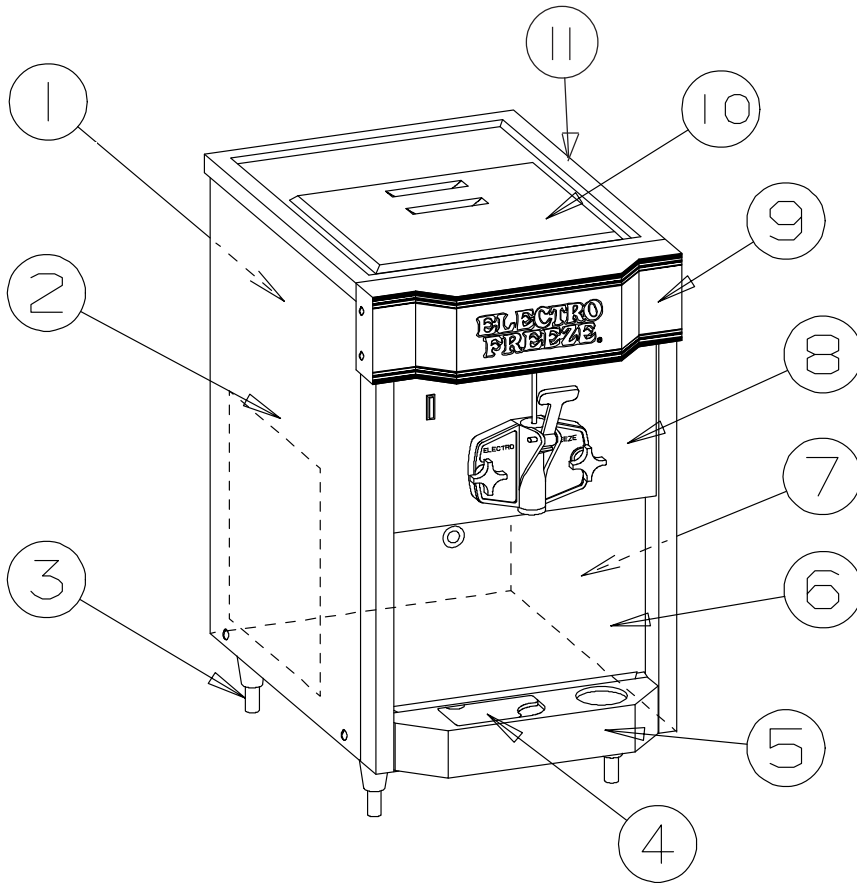
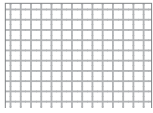
Figure 6 Model CS4 – Assembly (Sheet 2 of 2)

**Model CS4 - Assembly**

Item	Part No.	Description	Item	Part No.	Description
1	HC118136	Kit-Motor & Capacitors 3/4 HP (Beater Motor) (See Figure 5 for Capacitor/Relay Box)	24	HC119138-C	Panel-Assy. Hopper & Top
1A	HC150857	Board-Triac 50/60 HZ	25	HC161301	Float-Level Sensor
1B	HC150856	Switch-Start 60 HZ	26	HC161300	Switch-Level Float Sensor
2	HC153637	Sheave-5/8 Bore 1.75 OD (Driver Pulley)	27	HC116021	Tube-Assy. Mix Feed (See Figure 3)
2A	HC160495	Screw-SK Set 1/4-20 x 1/4 BKOX	28	HC114341-06	Stud-Assy. Cylinder 2-1/16"
3	HC153638	Sheave-1 Bore 12.25 OD (Driven Pulley)	29	HC115663	Drain-Assy. Overflow
3A	HC160033	Screw-SK Set 5/16-18 x 3/8 BKOX	30	HC119151	Compressor-Assy. (See Figure 5 for Capacitor/Relay Box)
4	HC153177	Belt-V	HC151421	Capacitor-Run	
5	HC153322	Key-Drive 3/16" Sq. x 1 1/2"	HC151450	Capacitor-Start w/Bleed	
6	HC153323	Key-Drive 1/4" Sq. x 1 1/2"	HC155063	Drier-Filter 3 cu. in.	
7	HC119016	Control-Assy. & Bracket (Thermostat)	HC151451	Relay-Compressor Start	
		HC139920	Bracket-Thermostat		
		HC161218	Control-Electronic Temp.Dual		
8	HC119017	Potentiometer-Assy. & Bracket	30A	HC151432	Sleeve-Compressor Mtg.
		HC150199	Potentiometer-Trimmed		
9	HC155435	Valve-Solenoid HC115V	30B	HC151449	Grommet-Compressor
10	HC155496	Tube-Capillary w/Strainer	31	HC115800	Leg-Assy. (Kit of 4)
11	HC155450	Cut Out-High Pressure 450 PSI	HC162114	Leg-Four Inch Adj.	
12	HC137787	Cap-Coupling	32	HC162625	Knob-Hand
13	HC153030	Bearing-1" Pillow Block	33	HC196203	Trimstrip
14	HC115767	Shaft-Assy. Drive	34	HC150541	Light-Indicator 28v ADD MIX
		HC137787	Cap-Coupling		
		HC160056	Screw-SK Set 1/4-20x1/4 ZN		
15	HC155452	Valve-Auto Expansion Sweat	35	HC137772	Panel-Dispense
16	HC155459	Glass-Sight	36	HC115696-C	Panel-Assy. Front
17	HC155063	Drier-Filter 3 cu. in. Sweat	37	HC196204	Tray-Drip
18	HC155126-01	Condenser-Air Rifled	38	HC196205	Insert-Drip Tray
19	HC137739	Shroud-Fan	39	HC119198	Head-Assy. Dispense w/Plastic Handle (See Figure 1)
20	HC151074-01	Motor-Fan 35W HC115V/60 HZ	or	HC119199	Head-Assy. Dispense w/Stainless steel Handle (not shown)(See Figure 1)
21	HC159018	Blade-Fan 10 in. 32°	40	HC137759	Cover-Electric Box
21A	HC160104	Nut-Hex 1/4-20 ZN (Fan Blade)	<i>Not Shown:</i>		
22	HC162611	Bracket-Fan Motor	HC161216	Sensor-10K Thermistor	
23	HC119020	Box-Assy Capacitor & Componets (See Figure 5)	HC155419	Valve-Access	
			HC155649	Valve-Core (Access)	

Use only original or authorized replacement parts with this freezer.  
Use of unapproved parts will void warranty.

# ELECTRO FREEZE Model CS4



Hardware for Panels		
Panel	Screw	Nut-Speed
Dispense-Top	HC160025	n/a
Dispense-Bottom	HC160076	n/a
Front	HC160048	n/a
Rear	HC160048	n/a
Side	HC159219	n/a
Trimstrip	HC160076	n/a
*N/A - Not Applicable		

**Figure 7 Model CS4 – Panel View**

Item	Part No.	Description
1	HC137768-C	Panel-Rear
2	HC137767-C	Panel-Side LH
3	HC115800	Leg-Assy. (4" Adjustable)
	HC162130	Pad-Foot Anti Slip
4	HC196205	Insert-Drip Tray (Black)
5	HC196204	Tray-Drip (Black)
6	HC115696-C	Panel-Assy. Front
6A	HC159064	Grommet-7/8 OD x 5/8 ID (Drain Tube)(Not Shown)
7	HC137766-C	Panel-Side RH
8	HC137772	Panel-Dispense
9	HC196203	Trimstrip
10	HC196206	Cover-Hopper (Black)
11	HC119138-C	Panel-Assy. Hopper & Top

CS4 Panel Decals & Labels	
Part No.	Description
HC165025	Beater Warning-English
HC169042	Beater Warning French Canadian
HC164031	Blade Installation
HC165234	Cleaning Instructions
HC165093	Clear Overlay
HC164004-03	Operating Instructions
HC165126	Panel Removal-English
HC16254	Panel Removal- French Canadian
HC165145	Label-Trimstrip
HC169052	Ventilation 3 in.

**Use only original or authorized replacement parts with this freezer.  
Use of unapproved parts will void warranty.**

## Accessories

Part No.	Description
HC158003 .....	Brush-7/16 x 1-1/8 Double Handle
HC158009 .....	Brush-4 inch w/o Handle (Handle HC158012)
HC158026 .....	Brush-1 inch Dia. 12 in. long
HC158037 .....	Brush-1/4 inch Dia. 18-1/2 OAL
HC184231 .....	Chart-O-ring (Laminated)
HC158051 .....	Cup-Overrun Measuring 1 Pint (use with P/N HC158049 scale)
HC158012 .....	Handle-Brush Fiberglass (for brush HC158009)
HC119401 .....	Kit-O-ring
HC158054A .....	Lubricant-Lubri-Film 4 oz. tube (per tube)
HC158014 .....	Sanitizer-Stera-Sheen Case/4 Jars
HC158014A .....	Sanitizer-Stera-Sheen 4 lb. jar
HC158049 .....	Scale-Overrun
HC169374 .....	Tool-O-Ring Removal

**Use only original or authorized replacement parts with this freezer.  
Use of unapproved parts will void warranty.**



MODEL CS1, CS4

1B4231

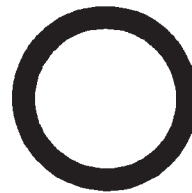
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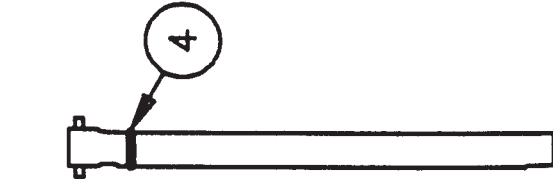
PART NO.  
160623 ①



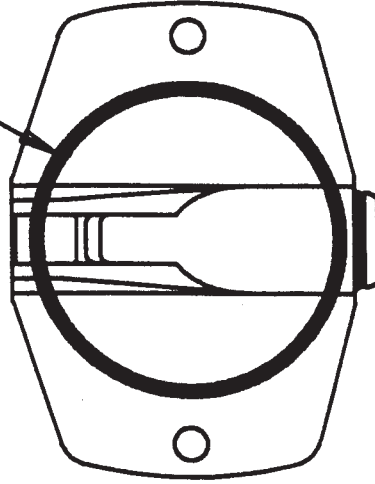
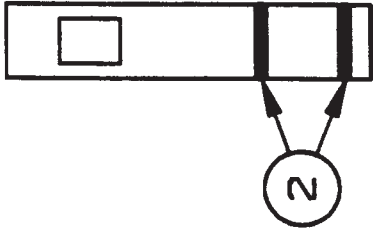
PART NO.  
160626 ③



PART NO.  
160624 ②



DO NOT  
LUBRICATE #3



O-RING CHART

PH. NO. 309-755-4553

H. C. DUKE & SON, INC.

# Alphabetized Parts List for Model CS4

**IMPORTANT:**  
All parts shown are for standard models designed for 115v/60Hz/1phase.

PART DESCRIPTION	PART NUMBER	QTY	SERIAL NUMBER (FROM - TO)
Bar-Alignment Tool .....	HC115776 .....	1 .....	G2H-1721 -
Bar-Breaker .....	HC138202 .....	1 .....	G2H-1721 -
Bearing-1" Pillow Block .....	HC153030 .....	2 .....	G2H-1721 -
Belt-V .....	HC153177 .....	2 .....	G2H-1721 -
Blade-Fan 10" 32° (404A) .....	HC159018 .....	1 .....	G2H-1721 -
Blade-Scraper .....	HC137934 .....	2 .....	G2H-1721 -
Board-Triac (Beater Motor 50/60 HZ) .....	HC150857 .....	1 .....	G2H-1721 -
Bracket-Fan Motor .....	HC162611 .....	1 .....	G2H-1721 -
Brush-1/4"Dia. x 18-1/2" (Mix Feed Assy.) .....	HC158037 .....	1 .....	G2H-1721 -
Brush-4" w/ 36" handle (Cylinder) (NLA use HC158009 & HC158012) .....	HC158004 .....	1 .....	G2H-1721 -
Brush-4" w/o handle (Cylinder) (use w/HC158012) ..	HC158009 .....	1 .....	G2H-1721 -
Brush-7/16" & 1-1/8" Double End .....	HC158003 .....	1 .....	G2H-1721 -
Brush-1" dia. 12" long (Drain Tube) .....	HC158026 .....	1 .....	G2H-1721 -
Bushing-Insulater (Capacitor/Relay Box) .....	HC150778 .....	1 .....	G2H-1721 -
Bushing- Shaft Seal (Washer only) .....	HC136025 .....	1 .....	G2H-1721 -
Capacitor-Run (15MFD 370VAC)(Compressor) .....	HC151421 .....	1 .....	G2H-1721 -
Capacitor-Run (65MFD 370VAC)(Beater Motor) .....	HC150293 .....	1 .....	G2H-1721 -
Capacitor-Start (431-518MFD HC165VAC) (Beater Motor) .....	HC150294 .....	1 .....	G2H-1721 -
Capacitor-Start w/Bleed (270-324MFD HC165VAC) (Compressor) .....	HC151450 .....	1 .....	G2H-1721 -
Chart-O Ring CS1 CS4 .....	HC184231 .....	* .....	G2H-1721 -
Clamp-Hose (Capacitor Box) .....	HC160743 .....	2 .....	G2H-1721 -
Compressor Assy. HC115-1-60 w/Start Components .....	HC119151 .....	1 .....	G2H-1721 -
Capacitor-Run (15MFD 370VAC) .....	HC151421 .....	1 .....	G2H-1721 -
Capacitor-Start(270-324MFD HC165VAC) .....	HC151450 .....	1 .....	G2H-1721 -
Drier-Filter 3 cu. in. Sweat .....	HC155063 .....	1 .....	G2H-1721 -
Relay-Compressor Start (3ARR3A2M6) .....	HC151451 .....	1 .....	G2H-1721 -
* As Required			
** Items Included in O-Ring Kit No. HC119401			
*** LH or RH — Left or right hand is determined as you face the front of the freezer.			
NLA No Longer Available			

**Use only original or authorized replacement parts with this freezer.  
Use of unapproved parts will void warranty.**

# Alphabetized Parts List for Model CS4

**IMPORTANT:**

All parts shown are for standard models designed for 115v/60Hz/1phase.

PART DESCRIPTION	PART NUMBER	QTY	SERIAL NUMBER (FROM – TO)
Condenser-Air Rifled .....	HC155126-01 ..	1 .....	G2H-1721 -
Contacto-2 Pole 110v (Compressor/Beater) .....	HC150339 .....	2 .....	G2H-1721 -
Control-Assy. and Bracket .....	HC119016 .....	1 .....	G2H-1721 -
Control-Electronic Temperature Dual .....	HC161218 .....	1 .....	G2H-1721 -
Bracket-Thermostat .....	HC139920 .....	1 .....	G2H-1721 -
Cord-Molded w/Plug .....	HC150604 .....	1 .....	G2H-1721 -
Cover-Cap/Relay Box .....	HC115797 .....	1 .....	G2H-1721 -
Cover-Electrical Box 2x4 .....	HC150739 .....	1 .....	G2H-1721 -
Cover-Electrical Switch Box .....	HC137759 .....	1 .....	G2H-1721 -
Cover-Hopper (Black) .....	HC196206 .....	1 .....	G2H-1721 -
Cup-Overrun Measuring 1 Pint .....	HC158051 .....	* .....	G2H-1721 -
Cup-Shaft Seal .....	HC160557 .....	2 .....	G2H-1721 -
Cut Out-High Pressure .....	HC155450 .....	1 .....	G2H-1721 -
Decal-Beater Warning (English) .....	HC165025 .....	1 .....	G2H-1721 -
Decal-Beater Warning (French Canadian) .....	HC169042 .....	1 .....	G2H-1721 -
Decal-Cleaning Instructions .....	HC165234 .....	1 .....	G2H-1721 -
Decal-Clear Overlay .....	HC165093 .....	1 .....	G2H-1721 -
Decal-Electric Box Danger .....	HC165000 .....	1 .....	G2H-1721 -
Decal-Electric Shock .....	HC165186 .....	1 .....	G2H-1721 -
Decal-Operating Instructions .....	164004-03 .....	1 .....	G2H-1721 -
Decal-Clear Overlay .....	HC165093 .....	1 .....	G2H-1721 -
Decal-Panel Removal (English) .....	HC165126 .....	3 .....	G2H-1721 -
Decal-Panel Removal (French Canadian) .....	HC165254 .....	3 .....	G2H-1721 -
Decal-Pulley Removal .....	HC165040 .....	1 .....	G2H-1721 -
Decal-Refrigerant 404A .....	HC165114 .....	1 .....	G2H-1721 -
Decal-Trimstrip (Electro Freeze) .....	HC165145 .....	1 .....	G2H-1721 -
Decal-Trimstrip (Self Service) .....	HC165220 .....	1 .....	Optional
Decal-Ventilation .....	HC169048 .....	1 .....	G2H-1721 - G2I
Decal-Ventilation 3 inch .....	HC169052 .....	1 .....	G2I -

\* As Required  
 \*\* Items Included In O-Ring Kit No. HC119401  
 \*\*\* LH or RH — Left or right hand is determined as you face the front of the freezer.  
 NLA No Longer Available

**Use only original or authorized replacement parts with this freezer.  
 Use of unapproved parts will void warranty.**

# Alphabetized Parts List for Model CS4

**IMPORTANT:**  
All parts shown are for standard models designed for 115v/60Hz/1phase.

PART DESCRIPTION	PART NUMBER	QTY	SERIAL NUMBER (FROM – TO)
Drain-Assy. Overflow .....	HC115663	1	G2H-1721 -
Drier-Filter 3 cu in Sweat .....	HC155063	1	G2H-1721 -
Float-Level Sensor .....	HC161301	1	G2H-1721 -
Glass-Sight .....	HC155459	1	G2H-1721 -
Grommet-7/8 OD x 5/8 ID (Drain Tube) .....	HC159064	1	G2H-1721 -
Guide-Assy. Push Rod (Plunger Rod) .....	HC115684	1	G2H-1721 -
Handle-Dispense Plastic .....	HC196166	1	G2H-1721 -
Handle-Assy. Dispense Complete (Stainless Steel) .....	HC116323	1	Optional
Head-Assy. Dispense .....	HC119198	1	G2H-1721 -
Handle-Dispense (Plastic) .....	HC196166	1	G2H-1721 -
Head-Dispense .....	HC119162	1	G2H-1721 -
Nozzle-Dispense .....	HC196167	1	G2H-1721 -
O-Ring (Head) .....	HC160623	1	G2H-1721 -
O-Ring (Plunger) .....	HC160624	2	G2H-1721 -
Pin-Handle .....	HC160265	1	G2H-1721 -
Plunger-Dispense .....	HC137807	1	G2H-1721 -
Head-Dispense Assy. ....	HC119199	1	G2H-1721 -
Handle-Assy. Dispense (Stainless Steel) .....	HC116323	1	G2H-1721 -
Head-Dispense .....	HC119162	1	G2H-1721 -
Nozzle-Dispense .....	HC196167	1	G2H-1721 -
O-Ring (Head) .....	HC160623	1	G2H-1721 -
O-Ring (Plunger) .....	HC160624	2	G2H-1721 -
Pin-Handle .....	HC160265	1	G2H-1721 -
Plunger-Dispense .....	HC137807	1	G2H-1721 -
Insert-Assy. Mix Feed .....	HC116005	1	G2H-1721 -
Insert-Drip Tray (Black) .....	HC196205	1	G2H-1721 -

\* As Required  
 \*\* Items Included in O-Ring Kit No. HC119401  
 \*\*\* LH or RH — Left or right hand is determined as you face the front of the freezer.  
 NLA No Longer Available

**Use only original or authorized replacement parts with this freezer.  
 Use of unapproved parts will void warranty.**

# Alphabetized Parts List for Model CS4

**IMPORTANT:**

*All parts shown are for standard models designed for 115v/60Hz/1phase.*

PART DESCRIPTION	PART NUMBER	QTY	SERIAL NUMBER (FROM – TO)
Key-Drive 3/16" sq x 1-1/2" (Driver Sheave) .....	HC153322	2	G2H-1721 -
Key-Drive 1/4" sq x 1-1/2" (Driven Sheave) .....	HC153323	2	G2H-1721 -
Kit-O-Ring (**Items included in Kit) .....	HC119401	1	G2H-1721 -
Kit-Solenoid Valve .....	HC155437	*	G2H-1721 -
Knob-Hand (Head) .....	HC162625	2	G2H-1721 -
Knob-Oval Tapered (Stainless Steel Handle) .....	HC162627	1	G2H-1721 -
Label-Trimstrip (Switches) .....	HC165145	1	G2H-1721 -
Leg-Assy. (4" Adjustable) (Optional) .....	HC115800	4	G2H-1721 -
Light-Indicator 28v "Add Mix" .....	HC150541	1	G2H-1721 -
Lubricant-Lubri-Film Plus 4 oz. Tube .....	HC158054A	*	G2H-1721 -
Manual-Operators CS4 (Instruction) .....	HC184964-22	1	G2H-1721 -
Motor-Beater HC115/60/1(Kit-Motor & Capacitors) .	HC118136	1	G2H-1721 -
Capacitor-Run (65MFD 370VAC) .....	HC150293	1	G2H-1721 -
Capacitor-Start (431-518MFD HC165VAC) .....	HC150294	1	G2H-1721 -
Motor-Fan Cond. 35w HC115V 60 HZ .....	HC151074-01	1	G2H-1721 -
Module-Plug on Vari Timer .....	HC150257	1	G2H-1721 -
Module-Plug on Vari Timer (.5-3 Sec.) .....	HC150253	1	G2H-1721 - L2M-4024
Nozzle-Dispense .....	HC196167	1	G2H-1721 -
Nut-HEX 1/4-20 ZN (Fan Blade) .....	HC160104	2	G2H-1721 -
O-Ring (Head) .....	HC160623	1**	G2H-1721 -
O-Ring-Kit (**Items included in Kit) .....	HC119401	1	G2H-1721 -
O-Ring (Plunger) .....	HC160624	2**	G2H-1721 -
O-Ring (Regulator Mix Feed) .....	HC160610	1**	G2H-1721 -
O-Ring (Mix Feed Tube) .....	HC160626	2**	G2H-1721 -
Pad-Foot Anti Slip (Leg Assembly) .....	HC162130	4	G2H-1721 -
Panel-Assy. Front .....	HC115696-C	1	G2H-1721 -

\* As Required  
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# Alphabetized Parts List for Model CS4

**IMPORTANT:**  
*All parts shown are for standard models designed for 115v/60Hz/1phase.*

PART DESCRIPTION	PART NUMBER	QTY	SERIAL NUMBER (FROM – TO)
Panel-Dispense .....	HC137772 .....	1 .....	G2H-1721 -
Panel-Assy. Hopper and Top .....	HC119138-C ...	1 .....	G2H-1721 -
Panel-Rear .....	HC137768-C ...	1 .....	G2H-1721 -
Panel-Side LH*** .....	HC137767-C ...	1 .....	G2H-1721 -
Panel-Side RH*** .....	HC137766-C ...	1 .....	G2H-1721 -
Panel-Switch Box w/EF Decal-Black (Trimstrip) ....	HC196203 .....	1 .....	G2H-1721 -
Pin-Handle .....	HC160265 .....	1 .....	G2H-1721 -
Plunger-Dispense .....	HC137807 .....	1 .....	G2H-1721 -
Potentiometer-Assy. & Bracket .....	HC119017 .....	1 .....	G2H-1721 -
Potentiometer-Trimmed 0-451 OHM			
Pulley .....	See "Sheave"		
Regulator(Insert)-Mix Feed Tube .....	HC116005 .....	1 .....	G2H-1721 -
Relay-Flange Base HC115v .....	HC150376 .....	1 .....	G2H-1721 -
Relay-Start Compressor (3ARR3A2M6) .....	HC151451 .....	1 .....	G2H-1721 -
Rod-Plunger Switch (Actuator Button) .....	HC137760 .....	1 .....	G2H-1721 -
Rod-Actuator (Head Assembly) .....	HC137763 .....	1 .....	G2H-1721 -
Sanitizer-Stera Sheen Sample .....	HC158013 .....	* .....	G2H-1721 -
Sanitizer-Stera Sheen 4 lb. Jar .....	HC158014A ...	* .....	G2H-1721 -
Sanitizer-Stera Sheen Case/4 Jars .....	HC158014 .....	* .....	G2H-1721 -
Screw-SK Set 1/4-20 x 1/4 BKOX (Driver Sheave) .....	HC160495 .....	2 .....	G2H-1721 -
Screw-SK Set 1/4-20 x 1/4 ZN (Drive Shaft) .....	HC160056 .....	2 .....	G2H-1721 -
Screw-SK Set 5/16-18 x 3/8 BKOX (Driven Sheave) .....	HC160033 .....	2 .....	G2H-1721 -
Screw-TRPM #8-32 x 3/8 SST (Top Dispense Panel) .....	HC160025 .....	2 .....	G2H-1721 -
Screw-TRPM #10-24 x 1/2 SST (Bottom Dispense Panel & Trimstrip) .....	HC160076 .....	6 .....	G2H-1721 -
<p>* As Required  ** Items Included in O-Ring Kit No. HC119401  *** LH or RH — Left or right hand is determined as you face the front of the freezer.  NLA No Longer Available</p>			

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# Alphabetized Parts List for Model CS4

**IMPORTANT:**

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PART DESCRIPTION	PART NUMBER	QTY	SERIAL NUMBER (FROM – TO)
Screw-TRPM 1/4-20 x 1/2 SST (Front & Rear Panels) .....	HC160048	8	G2H-1721 -
Screw-TRPM 1/4-20 x 1 SST (Side Panels) .....	HC159219	8	G2H-1721 -
Seal-Assy. Shaft (Beater Shaft) .....	HC113824	1**	G2H-1721 -
Seal-Beater Shaft (Cup) .....	HC160557	1	G2H-1721 -
Washer-Shaft Seal (Bushing) .....	HC136025	1	G2H-1721 -
Sensor-10K Thermistor .....	HC161216	1	G2H-1721 -
Shaft-Assy. Beater (Blade Style) .....	HC115677	1	G2H-1721 -
Shaft-Assy. Drive .....	HC115767	1	G2H-1721 -
Sheave-1" Bore 12.25" OD (Driven Pulley) .....	HC153638	1	G2H-1721 -
Key-Drive 1/4" x 1-1/2" .....	HC153323	1	G2H-1721 -
Screw-SK Set 5/16"-18 x 3/8" .....	HC160033	2	G2H-1721 -
Sheave-5/8" Bore 1.75" OD (Drive Pulley) .....	HC153637	1	G2H-1721 -
Key-Drive 3/16" x 1 1/2" .....	HC153322	1	G2H-1721 -
Screw-SK Set 1/4"-20 x 1/4" .....	HC160495	2	G2H-1721 -
Shroud-Fan .....	HC137739	1	G2H-1721 -
Sight-Glass .....	HC155459	1	G2H-1721 -
Spring-Plunger Rod .....	HC162303	1	G2H-1721 -
Strip-Terminal (Electric and Capacitor Boxes) .....	HC150795	2	G2H-1721 -
Stud-Assy. Cylinder 2-1/16" .....	HC114341-06	2	G2H-1721 -
Switch-Assy. Plunger .....	HC116613	1	G2H-1721 -
Switch-Level Float Sensor .....	HC161300	1	G2H-1721 -
Switch-Snap Button (Head & Plunger) .....	HC150456	2	G2H-1721 -
Switch-Start (Beater Motor) .....	HC150856	1	G2H-1721 -
Switch-Toggle DPDT "AUTO-OFF-CLEAN" .....	HC150463	1	G2H-1721 -
Switch-Toggle DPDT "DAY-NIGHT" .....	HC150461	1	G2H-1721 -
Thermostat-Control-Assy. & Bracket (Cylinder) .....	HC119016	1	G2H-1721 -
Control-Electronic Temperature .....	HC161218	1	G2H-1721 -
Bracket-Thermostat .....	HC139920	1	G2H-1721 -
Thermostat-5° Fixed Dif. (Hopper) .....	HC161202	1	G2H-1721 -

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# Alphabetized Parts List for Model CS4

**IMPORTANT:**  
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PART DESCRIPTION	PART NUMBER	QTY	SERIAL NUMBER (FROM – TO)
Timer-Delay on Make .5-3 Sec. 115v .....	HC150204	1	G2H-1721 -
Timer-Assy. & Module .....	HC116441	1	G2H-1721 - L2M-4024
Timer .5-60 sec. DOB .....	HC150252	1	G2H-1721 - L2M-4024
Module-Plug on Vari-time .....	HC150253	1	G2H-1721 - L2M-4024
Disconnect-Female .....	HC150717	2	G2H-1721 - L2M-4024
Timer-Assy. & Module .....	HC116441-01	1	L2M-4025 -
Timer .5-45 sec. DOB 230v .....	HC150252-01	1	L2M-4025 -
Disconnect-Female .....	HC150717	2	L2M-4025 -
Timer-Delay on Make .....	HC150204	1	G2H-1721 -
Transformer CL2 120/PRI/24SEC .....	HC150286	1	G2H-1721 -
Tray-Drip Black .....	HC196204	1	G2H-1721 -
Trimstrip .....	HC196203	1	G2H-1721 -
Tube-Assembly with Regulator .....	HC116021	1	G2H-1721 -
Insert-Assy. Mix Feed .....	HC116005	1	G2H-1721 -
Tube-Mix Feed .....	HC138129	1	G2H-1721 -
O-Ring .....	HC160610	1	G2H-1721 -
O-Ring .....	HC160626	2	G2H-1721 -
Tube-Assembly with 2 Hole (Shake) .....	HC117091	1	G2H-1721 -
Insert-Assy. Mix Feed .....	HC116005	1	G2H-1721 -
Tube-Mix Feed Special .....	HC138884	1	G2H-1721 -
O-Ring .....	HC160610	1	G2H-1721 -
O-Ring .....	HC160626	2	G2H-1721 -
Tube-Capillary & Strainer (NLA use HC155496) .....	HC139924	1	G2H-1721 - D2L
Tube-Capillary w/Strainer .....	HC155496	1	E2L -
Valve-Access .....	HC155419	1	G2H-1721 -
Valve-Core (Access) .....	HC155649	1	G2H-1721 -
Valve-Auto Expansion Sweat .....	HC155452	1	G2H-1721 -
Valve-Solenoid HC115v .....	HC155435	2	G2H-1721 -
Washer-Shaft Seal .....	HC136025	1	G2H-1721 -

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