

# **ELECTRO FREEZE®**

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

**COMPACT SERIES  
SOFT SERVE FREEZER  
Model CS8**

184965-17 EXPORT - 3/04

**Operator's Manual  
for the  
Electro Freeze Model CS8  
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.***




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.

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



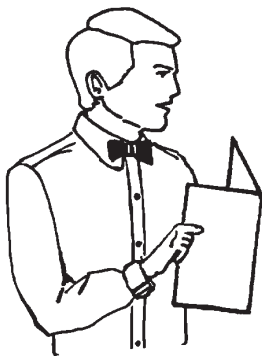
The signal words — DANGER, WARNING and CAUTION — are used with the safety alert symbol (DANGER decals on the freezer may or may not have the safety alert symbol, but the message is the same). Decals with the words DANGER, WARNING or CAUTION appear on the freezer. DANGER identifies the most serious hazard.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

# ***SAFETY FIRST!***

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

---



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 call or write to H.C. Duke & Son, Inc.

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

---

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

---



***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.

---

# 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 to the right. 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, Inc. 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, Inc. *Electro Freeze* Service Department by phone or FAX:

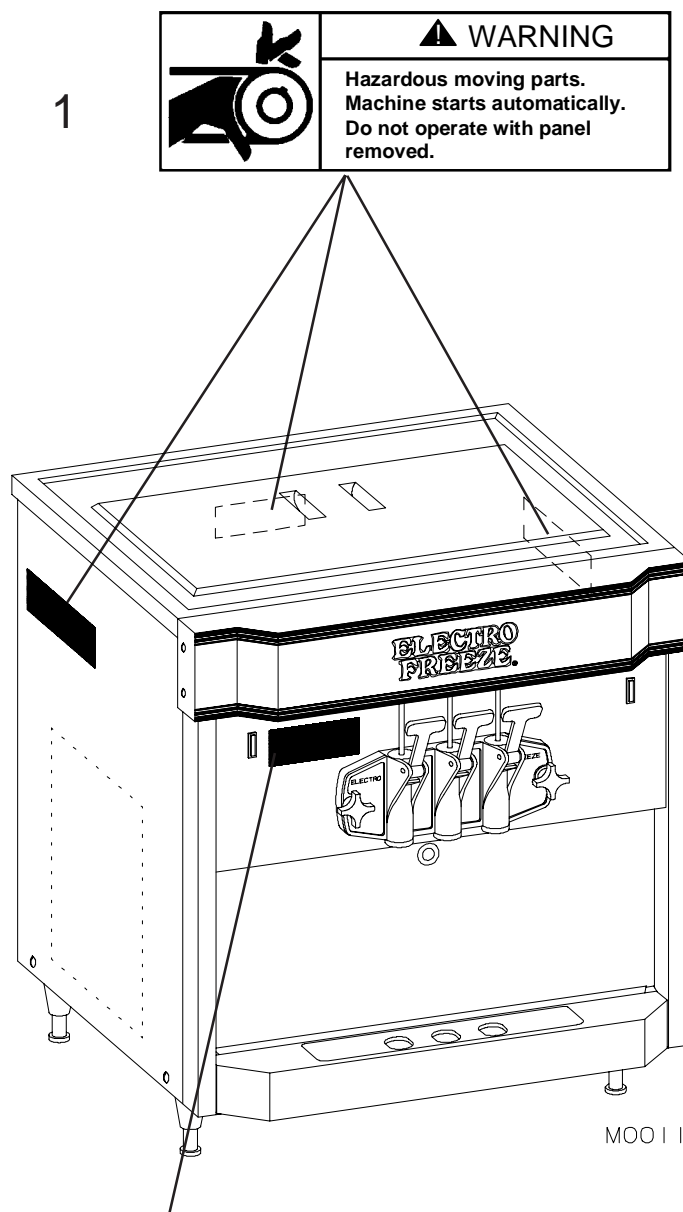


Phone: (309) 755-4553  
FAX: (309) 755-9858

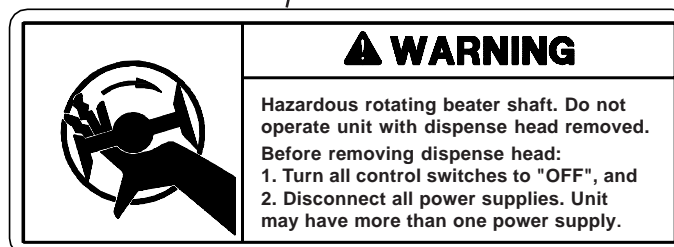
(The decals on the next page are numbered 1 and 2. Those numbers correspond to the numbers in the table below. The table provides the part number, description, and quantity for each decal.)

No.	Part No.	Description (Qty)
1	P/N 165126	Decal — Panel Removal Warning (3)
2	P/N 165025	Decal — Beater Warning (1)

## Safety Decal Locations



2



## Table of Contents

<u>SECTION</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
	<b>SAFETY .....</b>	<b>ii</b>
	<b><i>PART I</i></b>	
<b>1.</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>2.</b>	<b>NOTE TO INSTALLER .....</b>	<b>1</b>
<b>3.</b>	<b>ELECTRICAL REQUIREMENTS .....</b>	<b>2</b>
<b>4.</b>	<b>SPECIFICATIONS .....</b>	<b>2</b>
	4.1 Particulars. ....	2
	4.2 Data Plate .....	3
	4.3 Reference Information .....	3
	4.4 Installation Date .....	3
	4.5 Dimensions. ....	4
<b>5.</b>	<b>PART NAMES AND FUNCTIONS .....</b>	<b>5</b>
<b>6.</b>	<b>OPERATOR CONTROLS &amp; INDICATORS .....</b>	<b>7</b>
	6.1 Selector Switch .....	7
	6.2 Day-Night Switch .....	8
	6.3 "ADD MIX" Indicator Light .....	8
	6.4 Mix Float .....	8
	6.5 Mix Feed Tube & Regulator .....	9
<b>7.</b>	<b>DISASSEMBLY AND CLEANING .....</b>	<b>10</b>
	7.1 Cleaning Accessories .....	10
	7.2 Disassembly Instructions .....	11
	7.3 Cleaning Instructions .....	13
<b>8.</b>	<b>ASSEMBLY .....</b>	<b>15</b>
<b>9.</b>	<b>START-UP INSTRUCTIONS .....</b>	<b>17</b>
	9.1 Sanitizing .....	17
	9.2 Priming .....	18

## Table of Contents (continued)

<u>SECTION</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
<b>10.</b>	<b>CLOSING PROCEDURES .....</b>	<b>20</b>
	10.1 Night Switch Operation .....	20
	10.2 Draining Product From Freezer .....	21
<b>11.</b>	<b>SOFT SERVE INFORMATION .....</b>	<b>22</b>
	11.1 Overrun .....	22
	11.2 Rerun .....	22
<b>12.</b>	<b>ROUTINE MAINTENANCE .....</b>	<b>23</b>

---

## ***PART II***

### **MODEL CS8 REPLACEMENT PARTS WITH ILLUSTRATIONS . \***

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

---

## 1 Introduction

The CS8 freezer is designed to produce soft serve ice cream, ice milk, yogurt, and similar frozen dairy products, with a product serving temperature range of -9 to -4°C. If such products are prepared from powdered concentrate, they should be pre-cooled to 4°C prior to introduction to the freezer. Use of other products in this machine is considered misuse.

This manual has been prepared to assist you in the proper operation and general maintenance of the Electro Freeze Model CS8 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

FAX: (309) 755-9858

## 2 Note to Installer

This freezer must be installed and serviced by an Electro Freeze Distributor in accordance with the installation instructions.

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 15.2 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 switch prior to placing the freezer in service. See Section 12, Routine Maintenance, Monthly.

### 3 Electrical Requirements



**CAUTION**  
All materials and connections must conform to local requirements and be in compliance with all governmental electrical codes.



**CAUTION**  
To prevent accidental electrical shock, 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 should be connected to a circuit separate from any other electrical equipment. Refer to the wiring schematic for proper electrical connections. It is located on the electrical box cover.

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

4. 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

Width (cm)	67	Beater Motor (2)	.56 kw
Height (cm)	75	Refrigerant	R-404a
Depth (cm)	65	Charge (ea. side)	.57 kg
Weight (kg)	159	Cooling	Air
Voltage*	220-240-1-50	Hopper (2)	9.5 liters
Circuit Ampacity	20.0	Cylinder (2)	2.4 liter
Compressor (2)	3600(BTUH)		
	.56 kw (Motor)		
	1.1 kw (Cooling)		

\*Contact factory for other voltages.

## 4.2 Data Plate

**ELECTRO FREEZE**  
H. C. DUKE & SON, INC. • EAST MOLINE, IL. U.S.A.

MODEL NO. \_\_\_\_\_ SERIAL NO. \_\_\_\_\_

RATING: V. \_\_\_\_\_ PH. \_\_\_\_\_ HZ \_\_\_\_\_

**SINGLE UNIT OR LEFT SIDE**

TOTAL AMPS \_\_\_\_\_ A.

MAX. FUSE SIZE OR HACR TYPE CIRCUIT BREAKER \_\_\_\_\_ A.

MIN. CIRCUIT AMPACITY \_\_\_\_\_ A.

REFRIGERANT \_\_\_\_\_ DESIGN PRESSURE \_\_\_\_\_

**RIGHT SIDE**

TOTAL AMPS \_\_\_\_\_ A.

MAX. FUSE SIZE OR HACR TYPE CIRCUIT BREAKER \_\_\_\_\_ A.

MIN. CIRCUIT AMPACITY \_\_\_\_\_ A.

REFRIGERANT \_\_\_\_\_ DESIGN PRESSURE \_\_\_\_\_

HIGH/LOW \_\_\_\_\_

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 CS8. (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 **Total Amps:** \_\_\_\_\_
- ⑤ **Min. 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 CS8 Freezer.

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

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

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

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

4.5 Dimensions

The dimensions of the CS8 freezer are provided in figure 4-2, below.

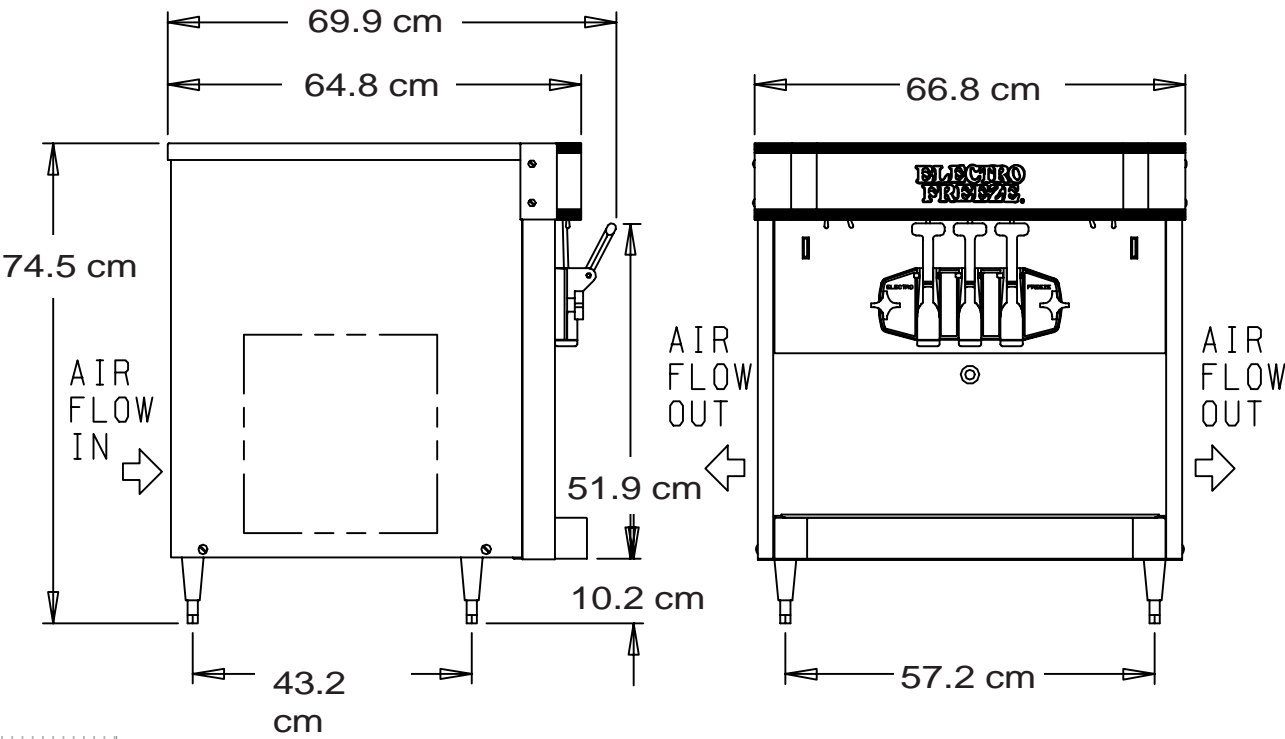
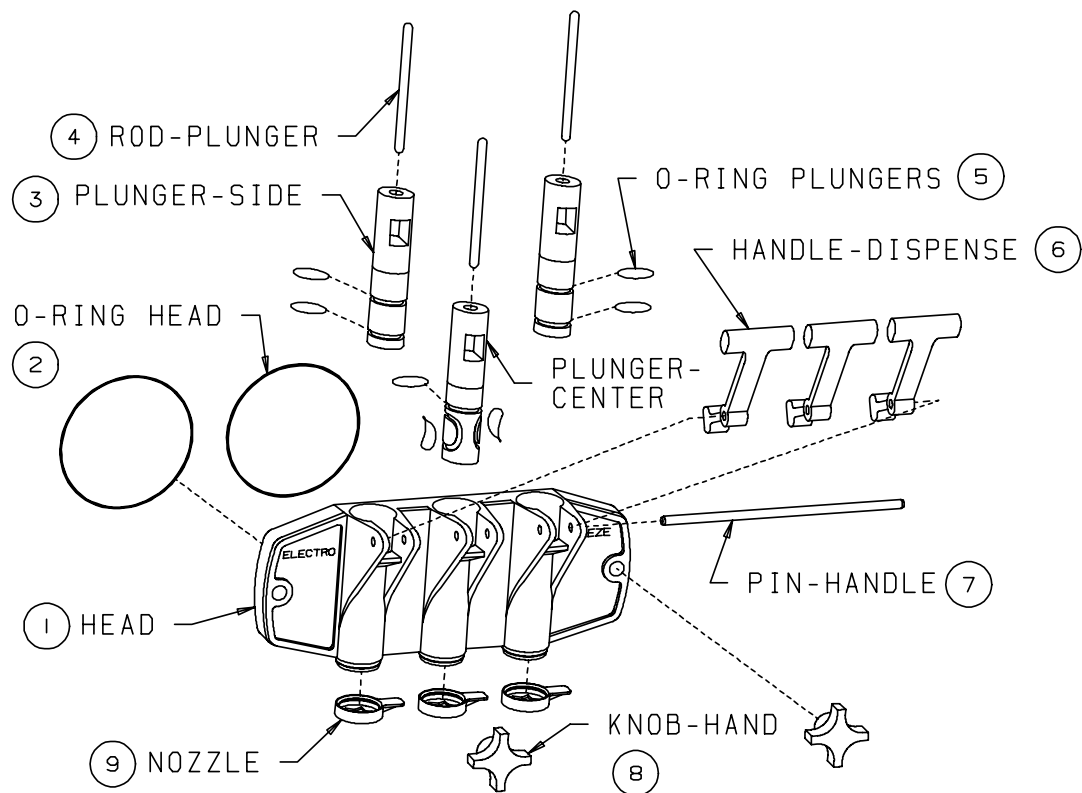


Figure 4-2      Electro Freeze Model CS8 Dimensions

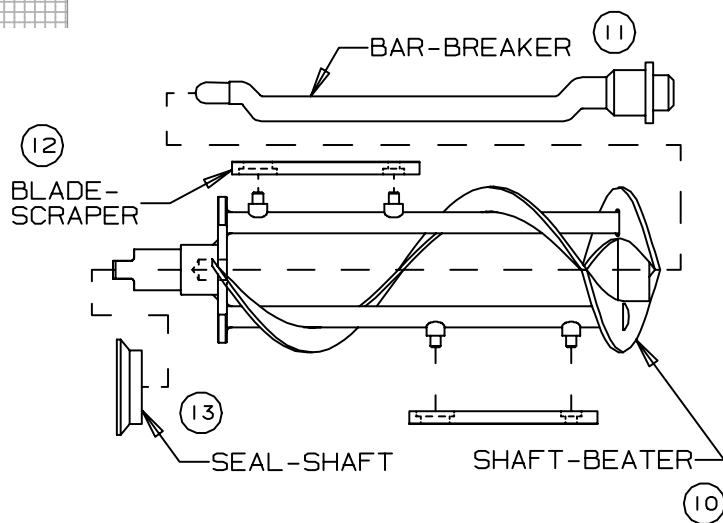
## 5 Part Names and Functions



**Figure 5-1 Head Assembly**

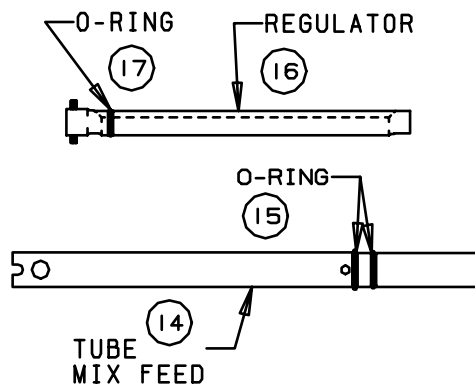
- |  |   |
|--|---|
| <p>① <b>HEAD.</b> Encloses the freezing cylinder and provides an opening for product to be dispensed.</p> <p>② <b>O-RING - HEAD.</b> Seals the head to the freezing cylinder. Must be lubricated.</p> <p>③ <b>PLUNGER.</b> Seals the product opening in the head when closed. Allows product to flow when open.</p> <p>④ <b>ROD - PLUNGER.</b> Starts the freezer when dispensing. Must be in place before freezer will operate.</p> <p>⑤ <b>O-RING - PLUNGER.</b> Seals the plunger in the head. Must be lubricated to seal and slide freely.</p> | <p>⑥ <b>HANDLE - DISPENSE.</b> Opens and closes the plunger to start and stop the flow of product from the freezer.</p> <p>⑦ <b>PIN - HANDLE.</b> Secures handle to the head.</p> <p>⑧ <b>KNOB - HAND.</b> Secures the head to the freezing cylinder.</p> <p>⑨ <b>NOZZLE.</b> Shapes the frozen product being served.</p> |
|--|---|

## 5 Part Names and Functions (continued)



- 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 the frozen product from the freezing cylinder.
- ⑬ **SEAL - SHAFT.** Seals the opening between the freezing cylinder and the beater shaft.

**Figure 5-2 Beater Shaft Assembly**



**Figure 5-3 Mix Feed Tube Assembly**

- ⑭ **TUBE - MIX FEED.** 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.

## 6 Operator Controls

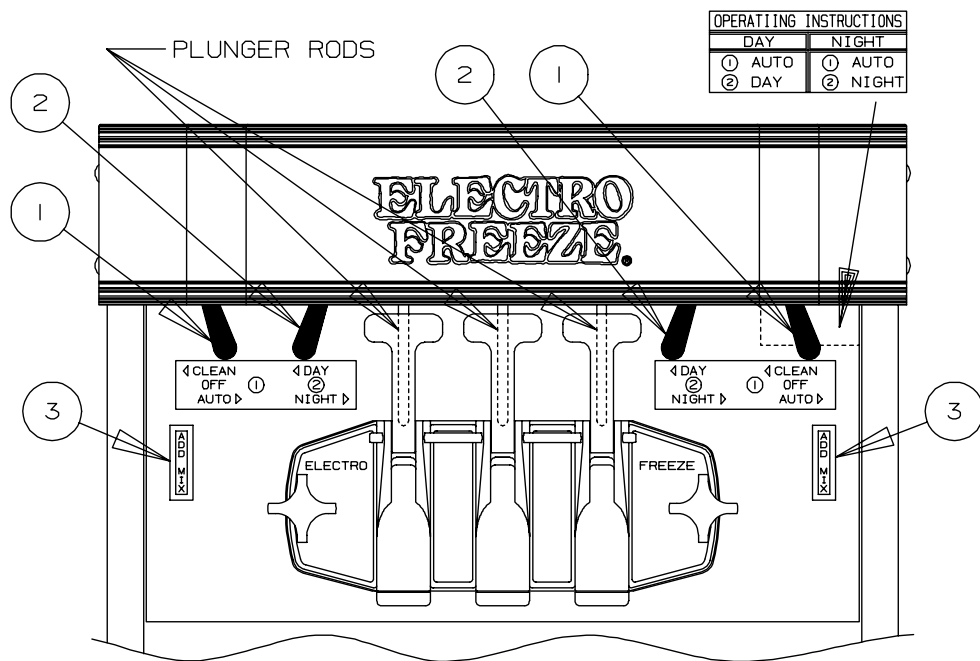


Figure 6-1

The following paragraphs describe the operator controls and indicators. Refer to figure 6-1 for location of these controls and indicators on the Model CS8 freezer.

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



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

### 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 to the cylinder). Always use this mode when performing cleaning and sanitizing operations.

b. **“OFF”** (center) — In this position the beater motor will not operate and no refrigeration will be provided to the cylinder.

#### **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 Operator Controls (continued)

### 6.2 Day–Night Switch ②

a. “**DAY**” (left) — The low temperature thermostat controls the system refrigeration to maintain the product serving temperature between  $-8^{\circ}$  to  $-6^{\circ}\text{C}$ . This is the normal operating position.

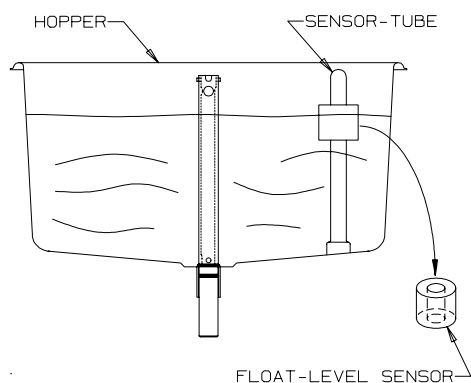
b. “**NIGHT**” (right) — This energy-saving mode will reduce product agitation. The freezer will automatically cycle to maintain temperatures below  $5^{\circ}\text{C}$ . Use this position when the freezer will not be in use for periods of more than an hour.

### 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 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.*

### 6.4 Mix Float

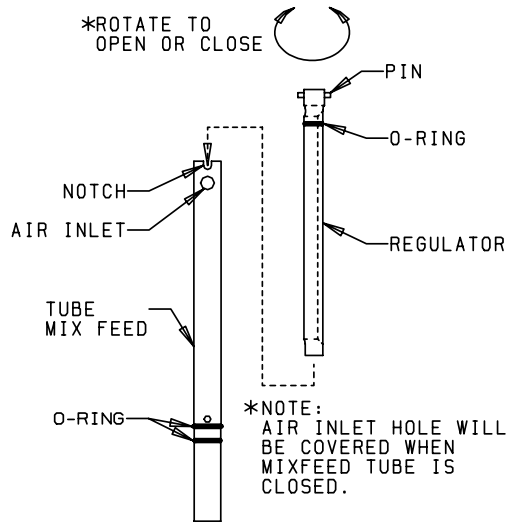


The float must be installed on the sensor tube for the “ADD MIX” indicator light to work.

**Figure 6-2**

## 6 Operator Controls (continued)

### 6.5 Mix Feed Tube & Regulator



**Figure 6-3**

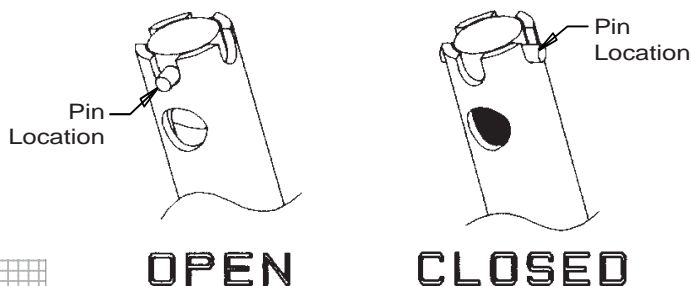
This two-position regulating device (figure 6-3) meters the correct amount of mix and air into the freezing cylinder.

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 the 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.

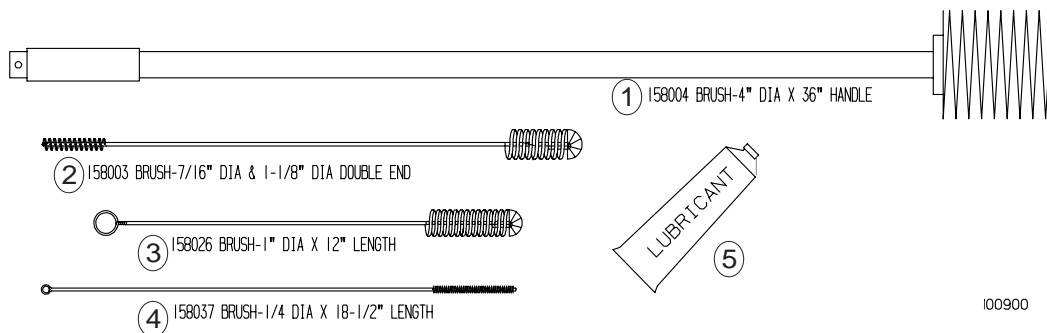
The cleaning and sanitizing instructions explained in this manual are required to maintain a clean, sanitary freezer. The freezer should be disassembled, cleaned, reassembled, lubricated and sanitized daily to ensure the best possible product and freezer operation.

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

### 7.1 Cleaning Accessories

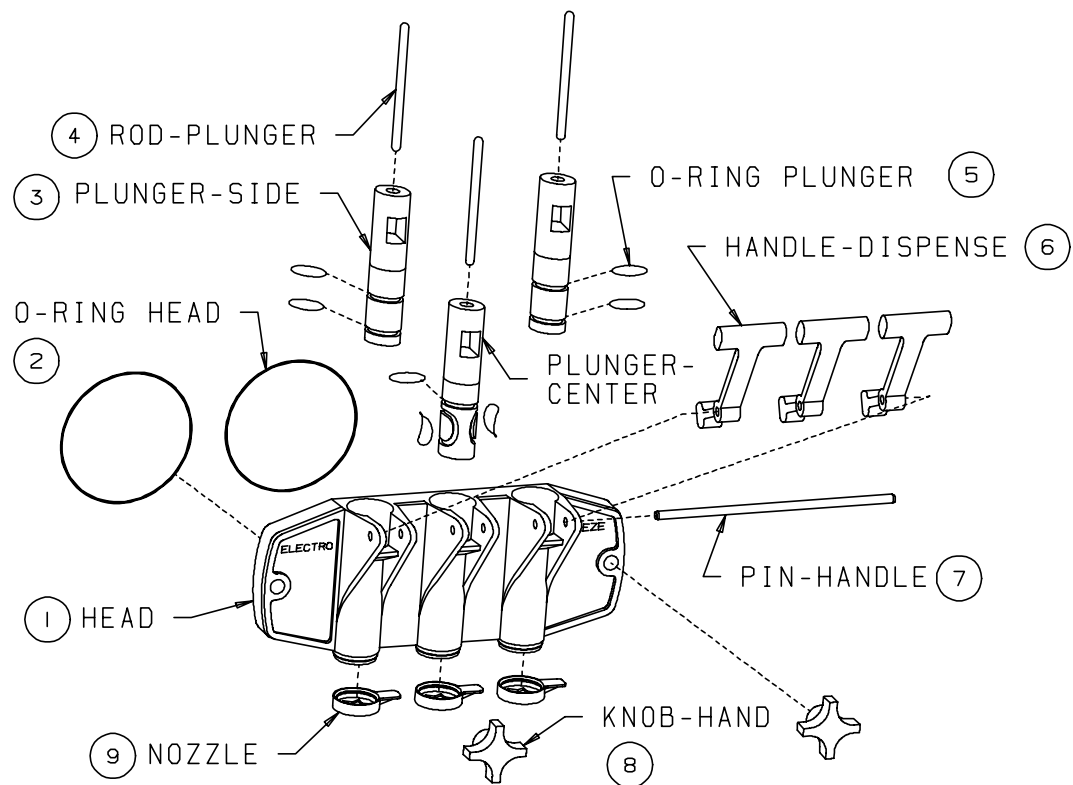
The following are accessories necessary for cleaning, sanitizing and disassembly/assembly.

1. BRUSH, Cylinder. 4-inch diameter with 28-inch 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, General parts cleaning. 1-inch diameter, 12-inches overall length, used for cleaning the head.
4. BRUSH, Mix feed assembly. 1/4-inch diameter, 18-1/2 inches overall length used for cleaning the mix feed tube and regulator.
5. LUBRICANT, Petrol Gel. 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 Disassemble the dispense head**



### 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. If there is product in the freezer, refer to Section 10, Closing Procedures, 10.2 Draining Product.

2. Remove plunger rods (4, figure 7-2) and hand knobs (8), and pull dispensing head (1) straight out.

3. Remove the handle pin (7), plungers (3) and nozzles (9) from head (1).

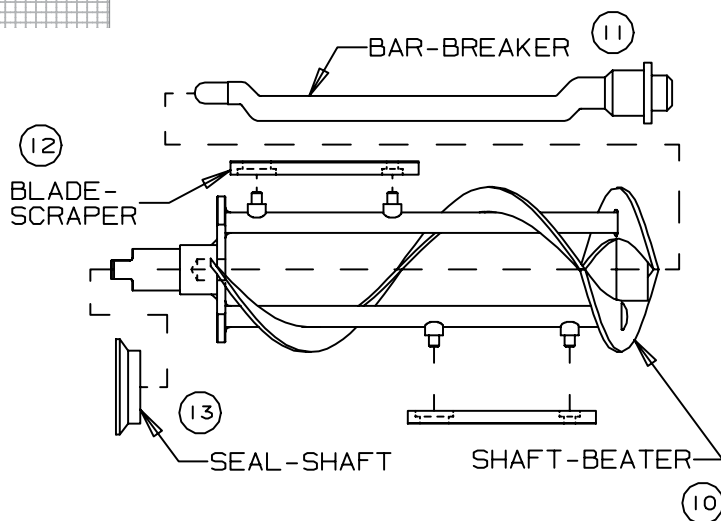
4. From each side of the freezer, remove the beater shaft (10, figure 7-3) from the cylinder. Then remove breaker bar (11), scraper blades (12) and shaft seal (13) from the beater shaft.

5. Remove hopper cover, drip tray, and drip tray insert.

6. Remove the mix feed tube (figure 7-4) and mix float from the hopper.

— continued

## 7.2 Disassembly Instructions (continued)

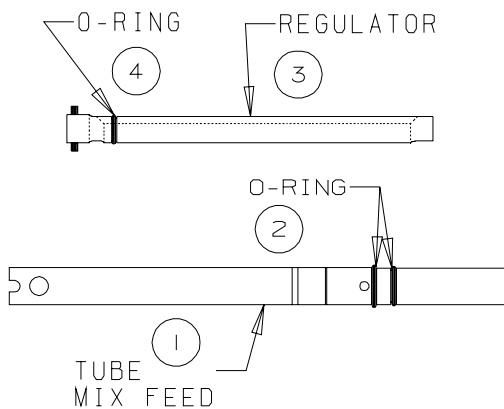


**Figure 7-3 Beater Shaft**

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

7. Remove regulator (3) from mix feed tube. Remove O-ring (4) from regulator. Remove O-rings (2) from mix feed tube (1).

8. Remove O-rings (figure 7-2, #2) from head (1). Remove O-rings (5) from plungers (3). Remove the shaft cup seals from the washer on the shaft seal assembly (figure 7-3, #13).



**Figure 7-4 Mix feed tube**

## 7.3 Cleaning Instructions

The cleaning instructions explained in this section are procedures to remove bacteria and maintain a clean sanitary freezer. Both sides of the soft serve freezer must be disassembled, washed and sanitized according to the instructions in this



### 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.

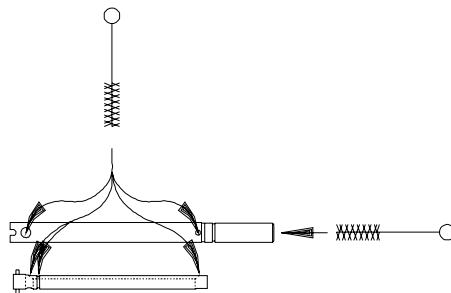
**Important:**  
*Do not use unapproved sanitizers or laundry bleach. These materials may contain high concentrations of chlorine and will chemically attack freezer components.*

**NOTE:** It is your responsibility to be aware of and conform to all governmental regulations concerning the frequency of sanitizing the freezer.

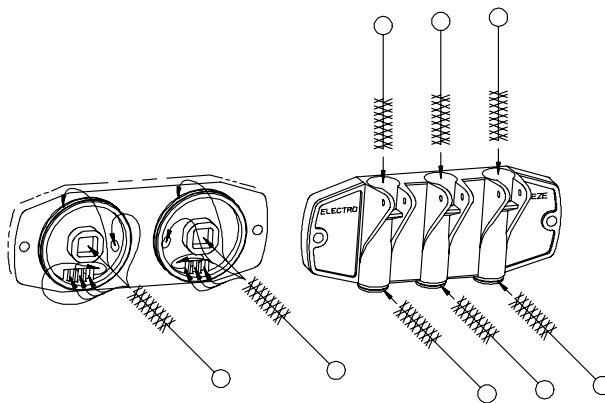
1. Wash and sanitize your hands and forearms.

2. Prepare a three-compartment sink for washing, rinsing, and sanitizing parts removed from the freezer per applicable health codes. 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 (38° to 43°C) to wash, rinse, and sanitize.



**Figure 7-5** Clean the mix feed tube



**Figure 7-6** Clean the head ports

### Important:

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

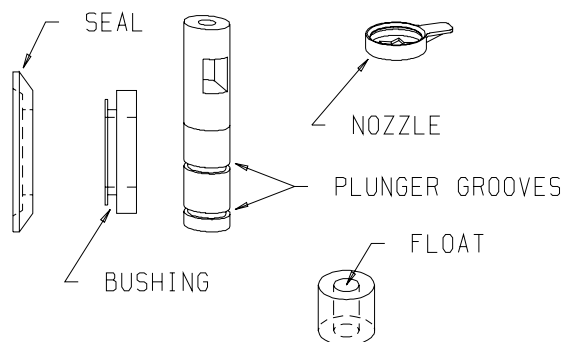
3. Wash all parts removed from the freezer thoroughly with dish detergent. Clean the following parts with the appropriate brush provided:

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

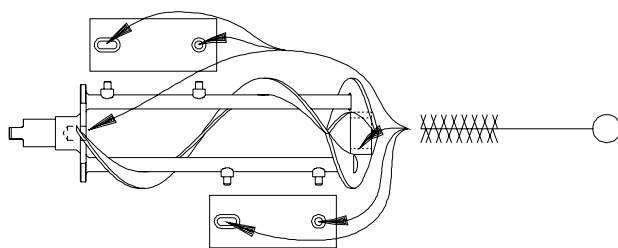
b. The head plunger openings, center plunger ports, breaker bar cavities, O-ring grooves, dispense nozzle, mounting rings and mix ports (figure 7-6).

— continued

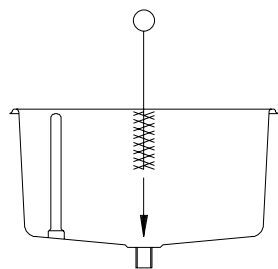
## 7.3 Cleaning Instructions (continued)



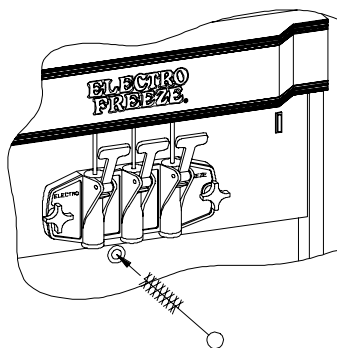
**Figure 7-7** Clean shaft seal, bushing, plunger, nozzle and float



**Figure 7-8** Clean beater shaft



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



**Figure 7-10** Clean Drain Tube

c. The shaft seals, 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).

4. 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 10 minutes.

5. Use the sanitizing solution to wipe down both sides of the freezer. Brush out the insides of the hoppers and around the mix level sensor tubes.

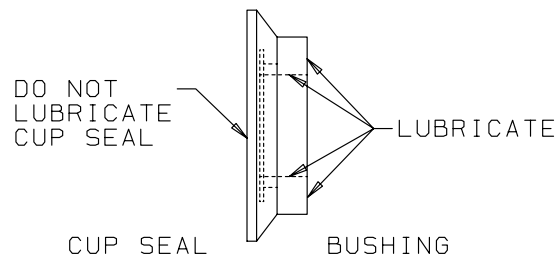
6. Thoroughly brush the hoppers and mix feed ports to the cylinders with sanitizer (figure 7-9)

7. Brush the inside of the cylinders, making certain to clean the back walls of the cylinders.

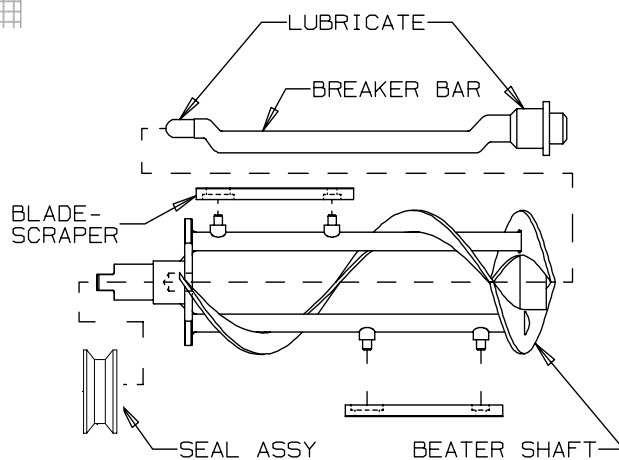
8. Brush the inside of the drain tube with sanitizer (figure 7-10).

**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 Petrol-Gel). 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. Follow these instructions for each side of the freezer to be used.



### 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. Apply a moderate amount of approved sanitary lubricant (such as Petrol-Gel or equivalent) to the internal surface and the face of the plastic bushing opposite the bell portion of the seal. Do not allow any lubricant to come in contact with the bell-shaped rubber portion of the seals (figure 8-1).

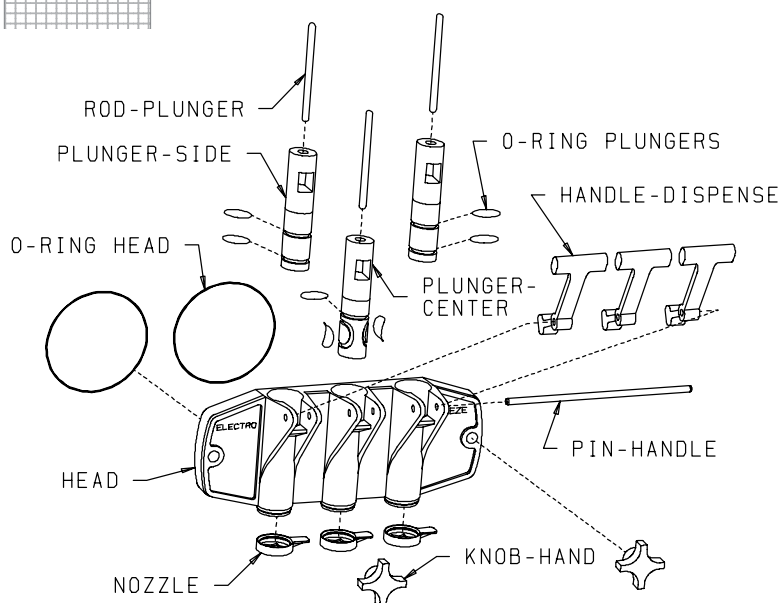
2. Install the shaft seal assembly over the rear of the beater shaft, with the bell-shaped portion facing the rear (figure 8-2).

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

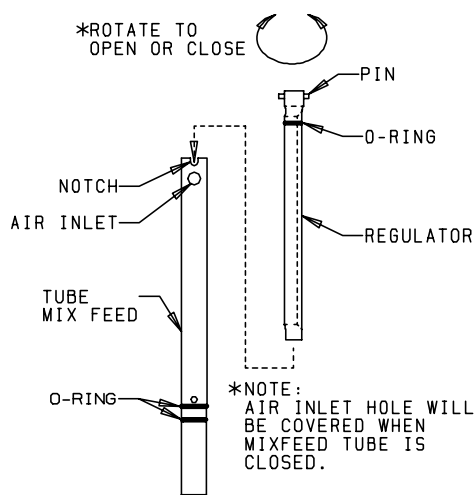
4. Slide the breaker bar into the center of the beater shaft, so the bar fits into the hole in the rear beater shaft disc. Place both scraper blades on the beater shaft, as shown in figure 8-2.

—continued

## 8 Assembly (continued)



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



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

5. Insert the assembled beater shaft 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 while pushing, until the shank has engaged the drive shaft. Install both beater shafts.

6. Install and lubricate the O-rings (see O-ring chart) on the dispensing plungers, and insert into the head (figure 8-4).

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

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

9. Snap the nozzles on the mix outlets 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 bars with the square in the dispensing head. Slide the head into the cylinders and install the hand knobs, being careful to tighten evenly and finger-tight only.

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

11. Install the plunger rods.

12. Install the O-rings on the mix feed tubes and regulators, as shown in figure 8-4.

14. Lubricate the O-rings on the regulators and install into the mix feed tubes. See figure 8-4. (No lubrication is required on the mix feed tube O-rings.)

## 9 Start-up Instructions

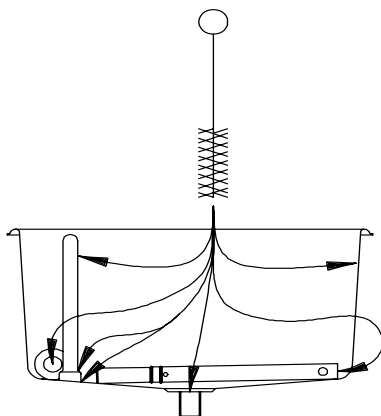
### 9.1 Sanitizing

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



**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 all governmental regulations concerning the frequency of sanitizing the freezer.

1. Wash and sanitize your hands and forearms. Follow these directions for each side of the freezer.

2. Prepare 7.6 liters of sanitizing solution for each cylinder. 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 (37° to 43°C) to wash, rinse, and sanitize.

3. Ensure that the mix feed tube assembly and mix float are in the bottom of the hopper pan.

#### Important:

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

#### Important:

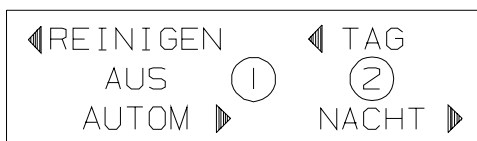
**Do not insert any tools or objects into the mix feed port or head dispensing hole while the freezer is running.**

4. Pour sanitizing solution into the hopper pan. Using a clean brush, scrub the hopper wall, 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.

5. Install mix float on mix level sensor and wash down the inside of the hopper cover.

—continued

## 9.1 Sanitizing (continued)



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

### **Important:**

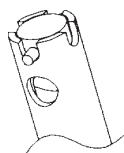
**Do not use the “AUTO” position with sanitizer in the cylinder. The freezer will be damaged.**

6. 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) and allow the beater to run for 5 minutes. During this time period, check for leaks around the head, plunger and drain tube.

7. Place an empty container under the dispensing head and drain the solution by opening the appropriate plunger to allow cylinder and hopper to empty. Open and close each plunger at least 10 times during draining to sanitize the port area of dispense head.

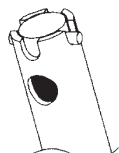
8. When the sanitizing solution has drained from the freezer, turn the selector switch to the “OFF” position.

## 9.2 Priming



**OPEN**

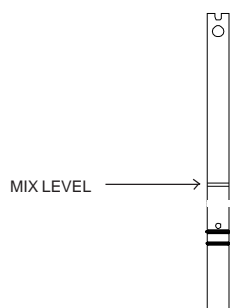
Look through top hole in tube — you should see clear through.



**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

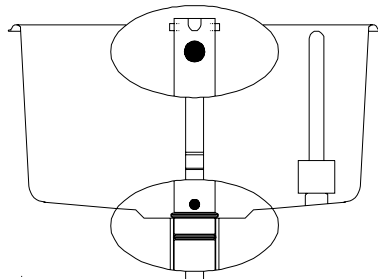


**Figure 9-4** Mix level line

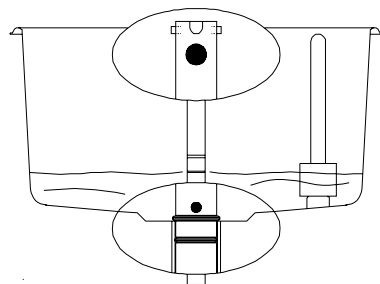
Priming the freezer removes all excess air and sanitizer from the freezing cylinder and sets the proper overrun for the first cylinder of product. For each cylinder, follow these steps:

1. Wash and sanitize your hands.
2. Install the mix feed tube assembly in the hopper. Push all the way down and ensure the regulator is in the “CLOSED” position, as shown in figure 9-3.
3. Fill the hopper with mix to the mix level line (figure 9-4) on the mix tube assembly (1.4 liters).
4. Place an empty container under the dispense head. While holding the plunger open, also open the regulator, allowing mix to force out all remaining sanitizer. When pure mix appears, close the plunger.
5. Remove the mix feed tube and allow the remaining mix in the hopper to flow into the cylinder.

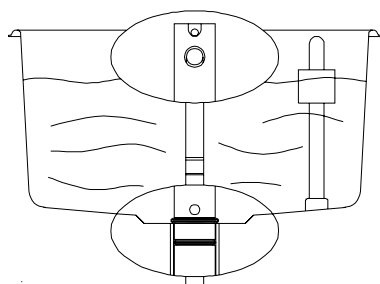
## 9.2 Priming (continued)



**Closed — empty hopper**



**Closed — first level mix**



**Open — full hopper**

6. Reinstall 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.**

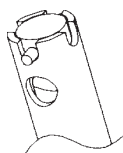
7. Turn selector switch to “AUTO” to begin the freezing process. Fill the hoppers with mix to the full operating level and install the hopper cover.

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

9. During long idle periods, the regulators should be closed — **but remember — when dispensing product, make sure 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.

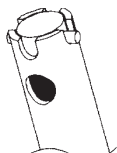
## 10 Closing Procedures

### 10.1 Night Switch Operation



**OPEN**

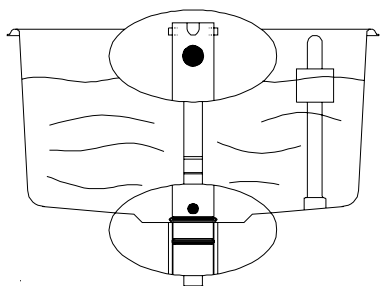
*Look through top hole in tube — you should see clear through.*



**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**



**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 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 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 for each cylinder:

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 7.6 liters of cold water into the hopper.

7. Dispense the cold water. Follow with warm water and repeat until the water coming out is clear.

8. Drain the remainder of the warm water from the cylinder. Turn selector switch to the "OFF" position.

9. Prepare 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 (37 to 43°C).

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 10-2.

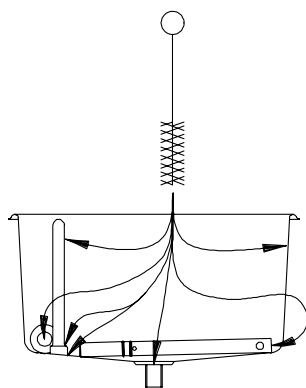
**Important:**

**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 5 minutes.

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

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



**Figure 10-2 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% — 30 liters of liquid mix has become 60 liters 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 liter container on the scale\* and adjust your scale to zero.
2. Remove container from scale and fill the container with liquid mix to the top. Weigh and record.

3. Replace liquid mix 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 weigh.

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 ½ liter of liquid mix = 510 g

Weight of ½ liter frozen product = 340 g

Difference = 170 g

170g divided by 340 g = .5

.5 x 100 = 50% overrun

\*Your *Electro Freeze* Distributor can provide a scale (P/N 158049) that is graduated in overrun percentage.

### 11.2 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 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, Inc., phone (309) 755-4553.

## 12 Routine Maintenance

Electro Freeze recommends the following schedule to help maintain your Model CS8 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 and drain tube with the appropriate brushes.
3. Upon cleaning, inspect all seals and O-rings that come into contact with mix. Replace any O-ring 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.

### 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.

—continued

## 12 Routine Maintenance

### QUARTERLY

1. Have air-cooled condenser fins cleaned by your Electro Freeze Distributor.

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

2. Have your Electro Freeze Distributor check the refrigeration system and make the necessary adjustments.

### 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, Inc. *Electro Freeze Service Department* for factory service assistance.

Phone (309) 755-4553 or FAX (309) 755-9858.

### 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 your Electro Freeze Distributor.
2. Have the inside of the freezer cleaned, including base, side panels, condenser, etc., by your Electro Freeze Distributor.
3. Have drive shaft and bearing assemblies inspected by authorized service technician.

### 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. If you have an air cooled freezer, have the condenser fins cleaned by Electro Freeze Distributor.



# Replacement Parts Manual

with Illustrations

**COMPACT SERIES  
Soft Serve Freezer  
Model CS8**

184965-04 EXPORT 3/04

## 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. Use the alphabetized parts list to verify part numbers pertaining to the serial number of your unit.

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

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



Phone: (309) 755-4553

FAX: (309) 755-9858

## PART II

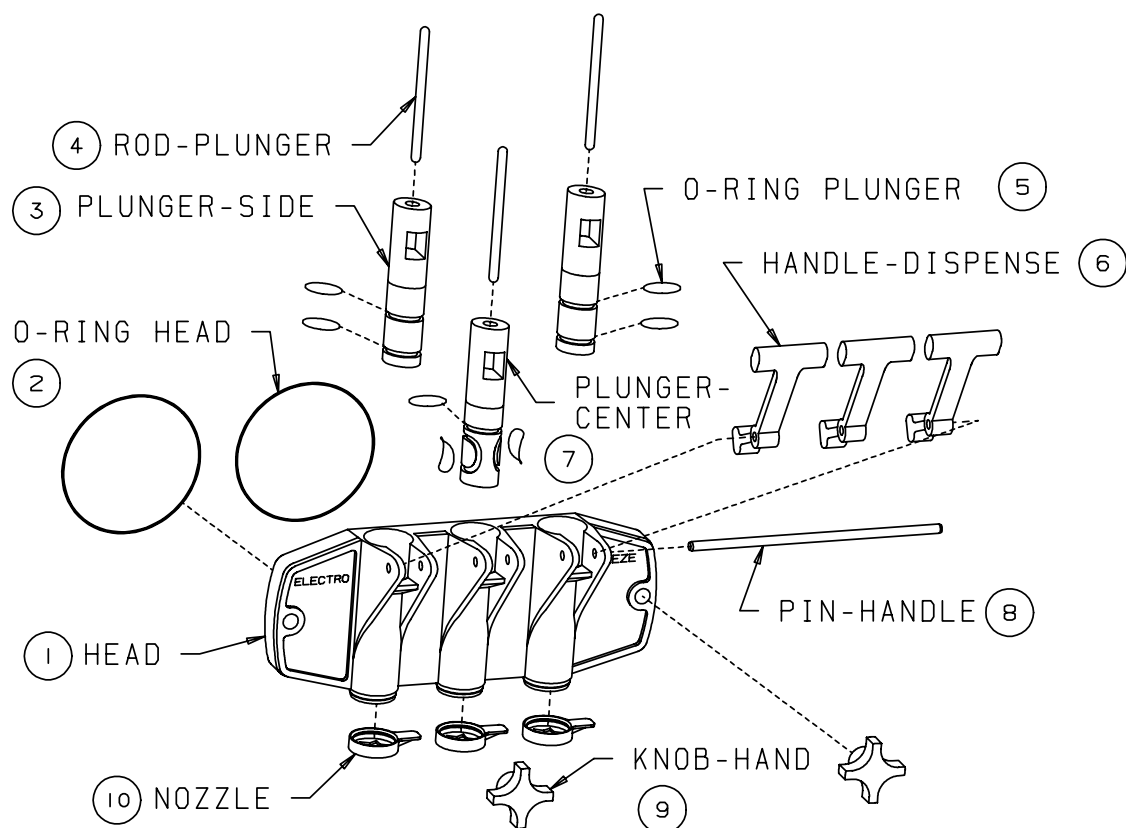
## Table of Contents

### ILLUSTRATIONS

Figure 1	Head Assembly .....	1
Figure 2	Beater Shaft Assembly .....	2
Figure 3	Mix Feed Tube Assembly .....	3
Figure 4	Switch Box .....	4
Figure 5	Capacitor/Relay Box .....	6
Figure 6	Connection Box .....	7
Figure 7	CS8 Assembly .....	8
Figure 8	Panel View .....	10

### OTHER LISTS and INFORMATION

Accessories .....	11
O-Ring Chart .....	12



## Figure 1 Head Assembly

Item	Part No.	Description
*	117783	Head-Assy.Dispense Complete
1	118672	Head-Assy. Dispense Only
2	160623	O-Ring (Head )
3	137807	Plunger-Dispense Side
4	137763	Rod-Actuator (Plunger)
5	160624	O-Ring (Plunger)
6	116323	Handle-Dispense Dispense (Stainless Steel-not shown)
7	137902	Plunger-Dispense Center
8	160266	Pin-Handle
9	162625	Knob-Hand
9A	114341-06	Stud-Assy. Cylinder 2-1/16" (Not Shown)
10	196167	Nozzle-Dispense

\* Includes all items above except #4, #9 and #9A.

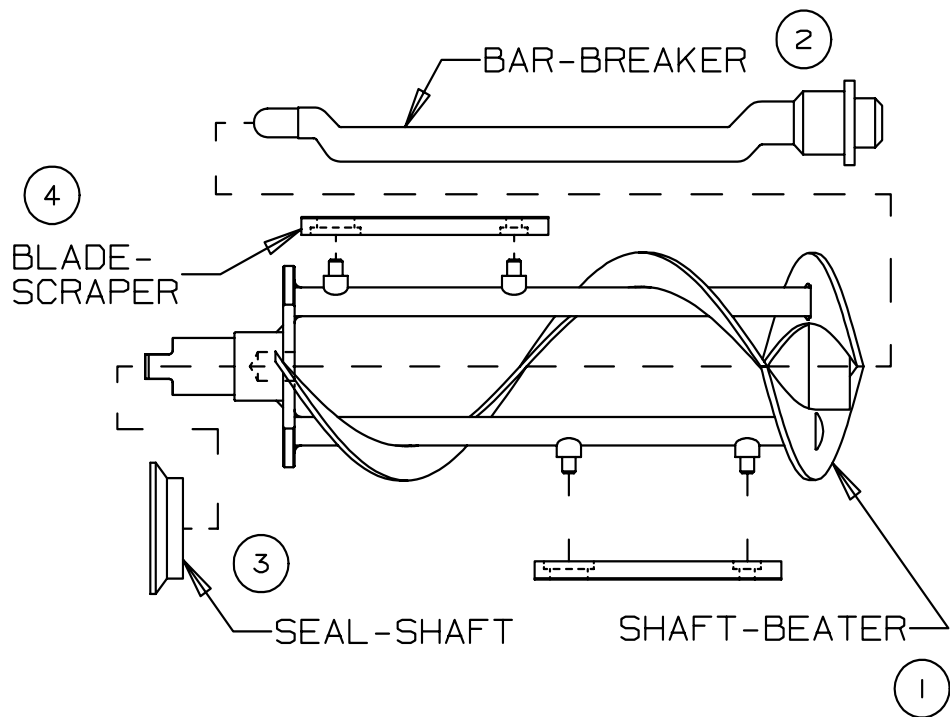


Figure 2 Beater Shaft Assembly

Item	Part No.	Description
1	115677	Shaft-Assy. Beater
2	138202	Bar-Breaker
3	113824	Seal-Assy. Shaft Double
	160557	Seal-Beater Shaft (Cup)
	136025	Washer-Shaft Seal (Bushing)
4	137934	Blade-Scraper

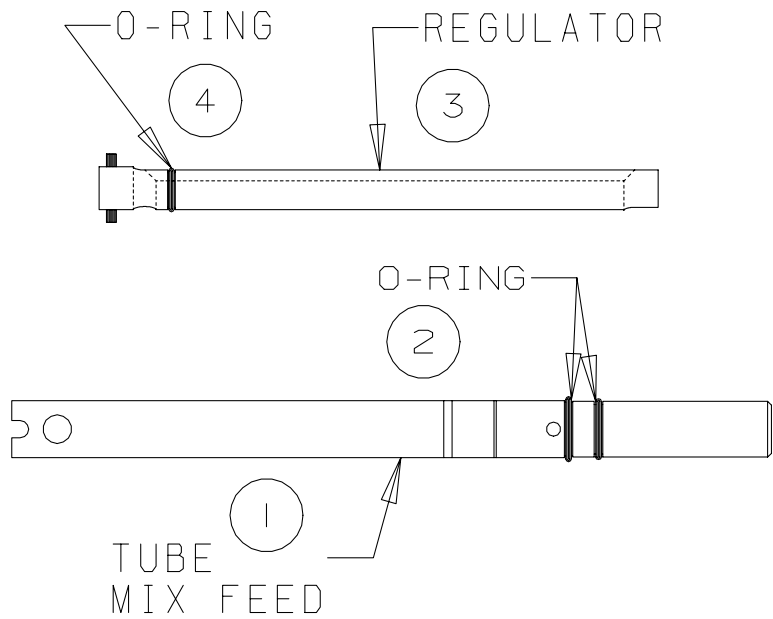
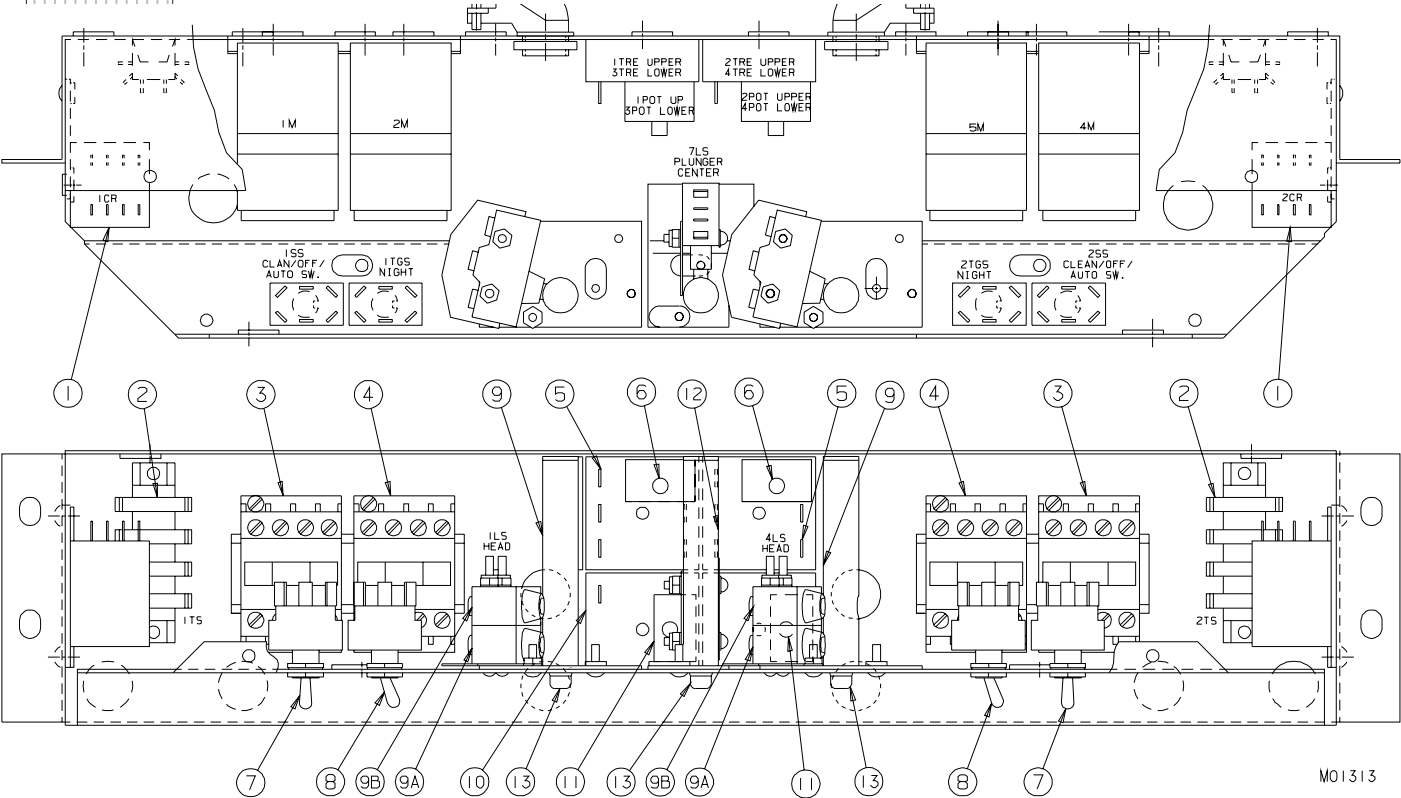


Figure 3 Mix Feed Tube Assembly

Item	Part No.	Description
*	116021	Tube-Assy. Mix Feed Complete
1	138129	Tube-Mix Feed
2	160626	O-ring (Mix Feed Tube)
3	116005	Insert-Assy. Mix Feed
4	160610	O-ring (Regulator)

\*Includes all items above.

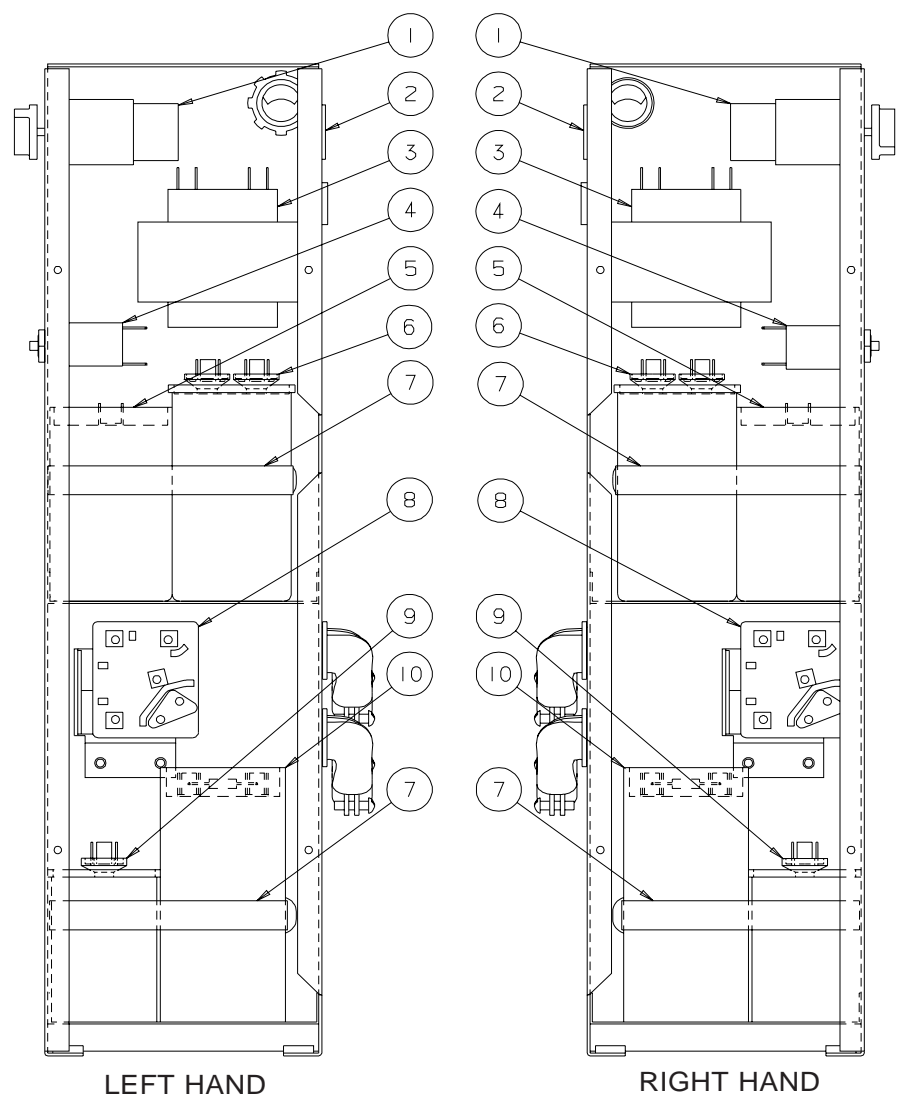
Figure 4 Switch Box (Sheet 1 of 2)



M01313

## Figure 4 Switch Box (Sheet 2 of 2)

Item	Part No.	Description
1	150343	Relay-Control Flange DPDT 24V
2.	150795	Strip-Terminal
3	150345	Contactor-3 Pole 24VAC 50/60HZ (Beater Motor)
4	150345	Contactor-3 Pole 24VAC 50/60H (Compressor)
5	150261	Timer-.5-60 Sec. Delay on Break 24VAC
6	150253	Module-Plug on Vari Time .5-60 Sec.
7	150463	Switch-Toggle DPDT (AUTO/OFF/CLEAN-Selector)
8	150461	Switch-Toggle SPDT (DAY/NIGHT)
9	116613	Switch-Assy. Plunger Sides
9A	150456	Switch-Snap Button (Head Switch)
9B	150456	Switch-Snap Button (Plunger Switch)
	115684	Guide-Assy. Push Rod (not shown)
	137893	Insulator-Switch (not shown)
	162303	Spring-Plunger Rod (not shown)
10	150560	Timer-.5-3 Sec. Delay on Make 24V
11	150257	Module-Plug on Vari Time .5-3 Sec.
12	115744	Switch-Assy. Plunger Center
	115742	Guide-Assy. Push Rod (not shown)
	150479	Switch-Push Button DPDT (not shown)
	162303	Spring-Plunger Rod (not shown)
13	137760	Rod-Plunger Switch (Actuator Button)



**Figure 5      Capacitor/Relay Box**

Item	Part No.	Description
1	161202	Thermostat-5° Fixed Diff. (Hopper )
2	150778	Bushing-Insulator
3	150277	Transformer-CNTRL 24 VAC 80VA
4	150418	Breaker-Circuit Mini 250V 5A
5	150233	Capacitor-Start (Beater Motor)
6	150234	Capacitor-Run (Beater Motor)
7	160743	Clamp-Hose 3-1/6 to 4 (Capacitor)
8	151444	Relay-Compressor
9	151421	Capacitor-Run (Compressor)
10	151445	Capacitor-Start (Compressor)

LH = Left hand side is determined as you face the front of the freezer.  
RH = Right hand side is determined as you face the front of the freezer.

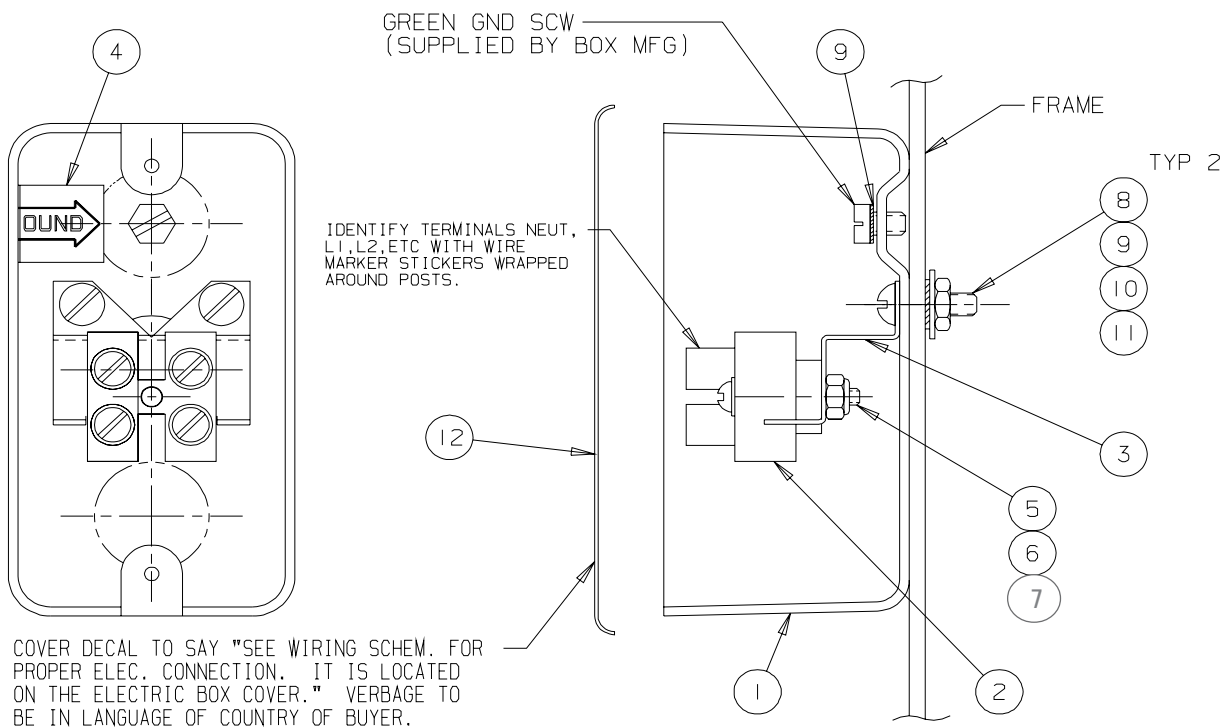
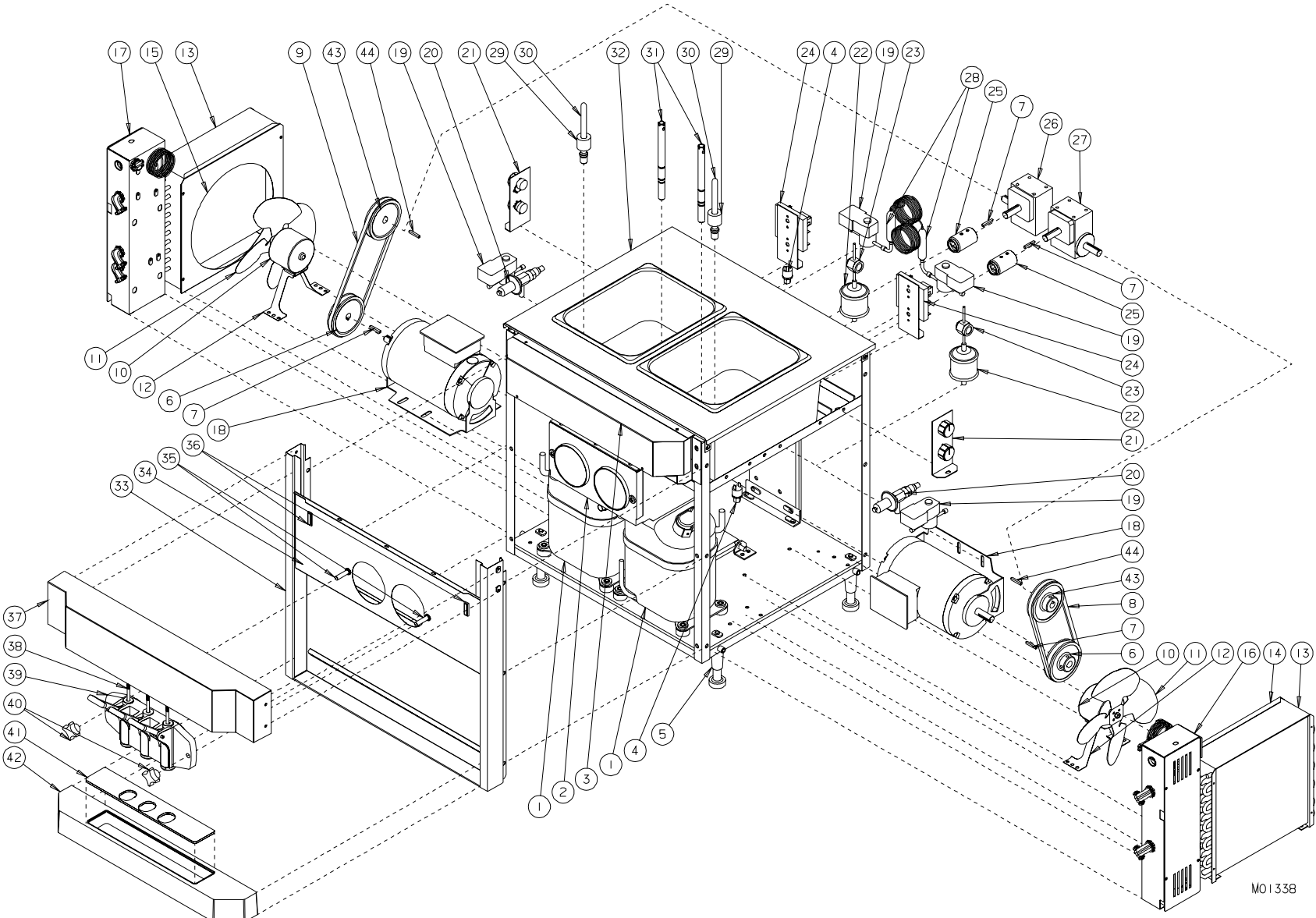


FIG. 2  
MODEL CS8 CUSTOMER CONNECTION BOX  
TYPICAL "CE" ARRANGEMENT

## Figure 6 Connection Box

Item	Part No.	Description
1	150738	Box-Ele 4 x 2-1/8 x 1-7/8
2	139056	Strip-Terminal 2 Pole
3	139054	Bracket-Terminal Strip Mtg.
4	165205	Decal-Ground
5	159975	Screw-RDHM #6-32 x 1 ZN
6	160393	Washer-Flat #6 Brass
7	160199	Nut-El Stop #6-32 Zn
8	160394	Screw-RDHM #10-24 x 5/8 Zn
9	160148	Washer-Ext. Tooth #10 Zn
10	160138	Washer-Flat #10 Zn
11	160109	Nut-Hex #10-24 Zn
12	150739	Cover-Ele Box 2 x 4

Figure 7 Model CS8 – Assembly (Sheet 1 of 2)



MO1338

Use only original or authorized replacement parts with this freezer

Figure 7 Model CS8 – Assembly (Sheet 2 of 2)

## Model CS8 - Assembly

Item	Part No.	Description	Item	Part No.	Description
1	119379	Compressor-Assy. 220v (See Figure 5 for Capacitor/Relay Box) includes compressor and	22	155063	Drier-Filter 3 cu in Sweat
		151421 Capacitor-Run	23	155459	Glass-Sight
		151445 Capacitor-Start	24	119016	Control-Assy. and Bracket
		151444 Relay-Start/Run		161218	Control-Electronic Temp Dual
		155063 Drier-Filter 3 cu in Sweat	25	115760	Coupling-Assy 5/8 Drive
2	115738	Cylinder-Assy. Complete	26	115919	Kit-Gear Reducer LH w/o Sheave
3	137849	Cover-Electrical Box	27	115920	Kit-Gear Reducer RH w/o Sheave
4	155450	Cut Out-High Pressure	28	139924	Tube-Capillary & Strainer
5	115800	Leg-Assy.	29	161301	Float-Level Sensor
6	153648	Sheave-5/8 Bore 3.95 OD 3.7 PD	30	161300	Switch-Float Level Sensor
6A	160495	Screw-Sk Set 1/2-20 x 1/4	31	116021	Tube-Assy. Mix Feed (See Figure 3)
7	153321	Key-Drive 3/16 Sq x 1-1/4	32	115735	Panel-Assy. Hopper & Top
8	153183	Belt-V RH	33	115759-C	Panel-Assy. Front
9	153161	Belt-V LH	34	137876	Panel-Dispense
10	151006	Motor-Fan 16x 230v 50/60 Hz	35	114341-06	Stud-Assy. Cylinder 2-1/16
11	162608	Blade-Fan 10" Axial	36	150541	Light-Indicator 28v ADD MIX
12	162611	Bracket-Fan Motor	37	196208	Trimstrip
13	155126-01-C	Condenser-Air Rifled	38	137763	Rod-Actuator
14	137873	Shroud-Fan RH	39	117783	Head-Assy. Dispense (See Figure 1)
15	137739	Shroud-Fan LH	40	162625	Knob-Hand
16	----	Box-Assy. Capacitor RH (See Figure 5)	41	196210	Insert-Tray
16A	115809	Cover-Assy Capacitor/Relay Box	42	196209	Tray-Drip
17	----	Box-Assy. Capacitor LH (See Figure 5)	43	153606	Sheave-5/8 Bore 3.25 OD 3.00 PD
17A	115809	Cover-Assy. Capacitor/Relay Box	43A	160033	Screw-Sk Set 5/16-18 x 3/8
18	118137	Kit-Motor & Capacitors 3/4 HP (Beater Motor) (See Figure 5 for Capacitor/Relay Box) includes motor and	44	153322	Key-Drive 3/16 Sq x 1-1/2
		150234 Capacitor-Run	<i>Not Shown:</i>		
		150233 Capacitor-Start		115721	Drain-Assy. Overflow
19	155470	Valve-Solenoid 1/4 ODF 24VAC		159064	Grommet-7/8 OD x 5/8 ID (Drain Tube)
20	155452	Valve-Auto Expansion Sweat		155419	Valve-Access
21	119017-01	Potentiometer-Assy & Bracket		150884	Filter-Power 1 Phase 6A
	165069-01	Decal-Therm Dual Celsius		150646	Cord-14-2 Black/Red
	162605	Knob-Round Dial	LH = Left hand side of the freezer as you face the front.		
	150199	Potentiometer-Trimmed 0-451 OHM	RH = Right hand side of the freezer as you face the front.		

Use only original or authorized replacement parts with this freezer

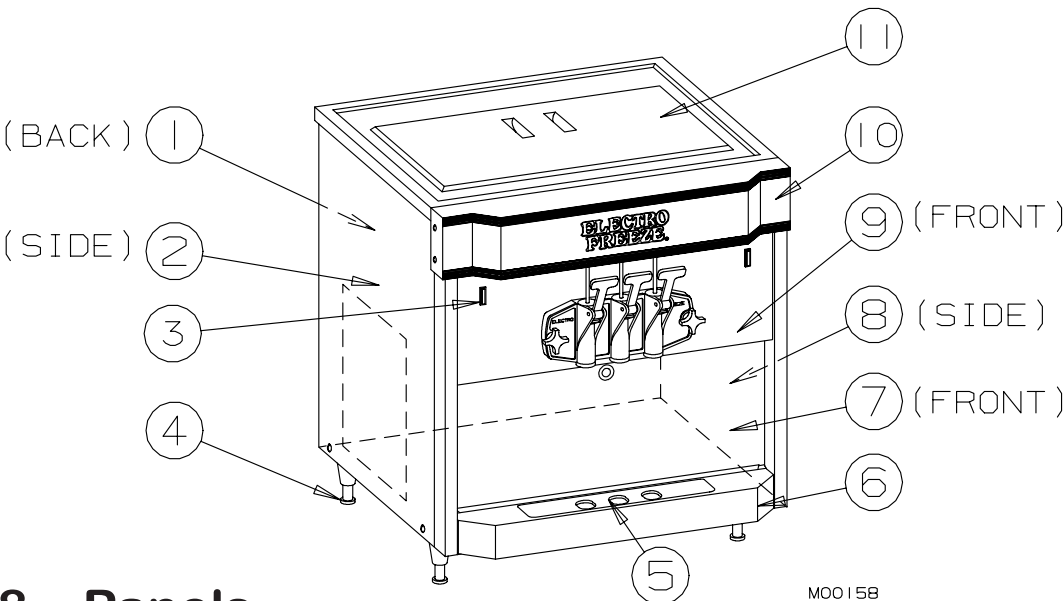


Figure 8 Panels

M00158

Item	Part No.	Description
1	137862-C	Panel-Rear
2	137860-C	Panel-Side LH
3	150541	Light-Indicator "ADD MIX"
4	115800	Leg-Assy. (Adjustable)
5	196210	Insert-Tray (Black)
6	196209	Tray-Drip (Black)
7	115759-C	Panel-Assy Front
8	137861-C	Panel-Side RH
9	137876	Panel-Dispense
10	196208	Trimstrip (Black)
11	196207	Cover-Hopper (Black)

Hardware for Panels		
Panel	Screw	Nut-Speed on Frame
Dispense	2-160076 3-160025	2-159132
Front	160048	160117
Rear	160048	160117
Side	159219	n/a
Trimstrip	160076	n/a
n/a - Not Applicable		

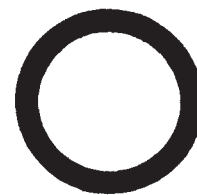
Panel Decal & Labels	
Part No.	Description
165025	Beater Warning
165234	Cleaning Instructions
165093	Clear Overlay
163492	On/OFF/ON Symbol
164004-03	Operating Instructions
165126	Panel Removal
165145	Trimstrip LH
165146	Trimstrip RH
169052	Ventilation 3 in. (7.6cm)

## Accessories

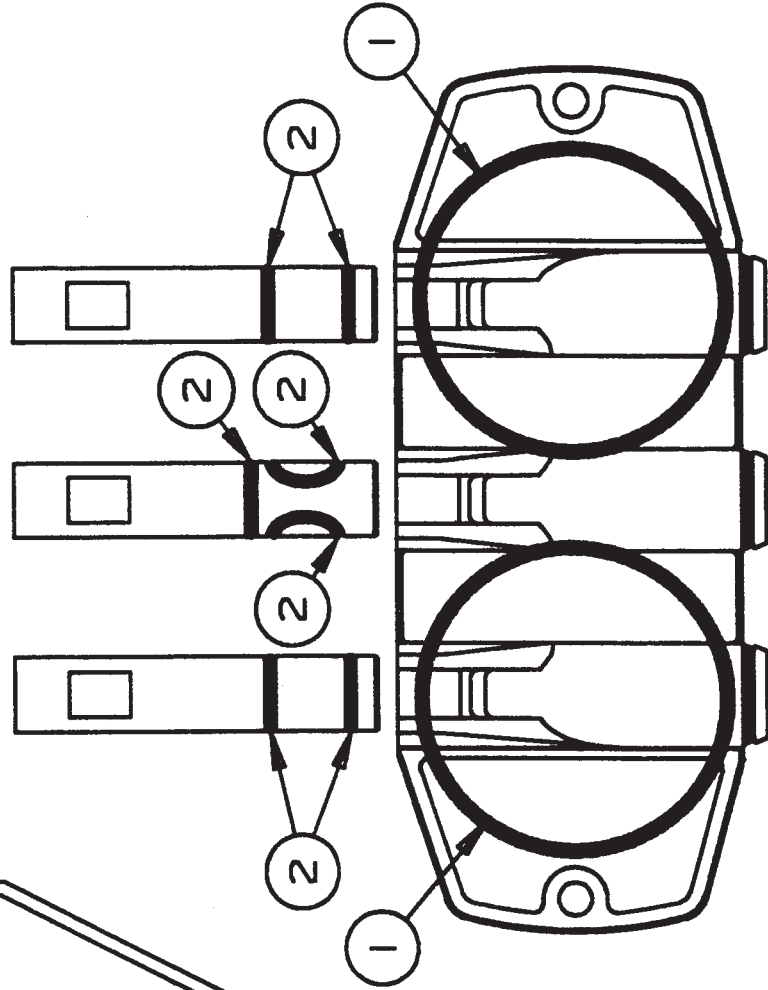
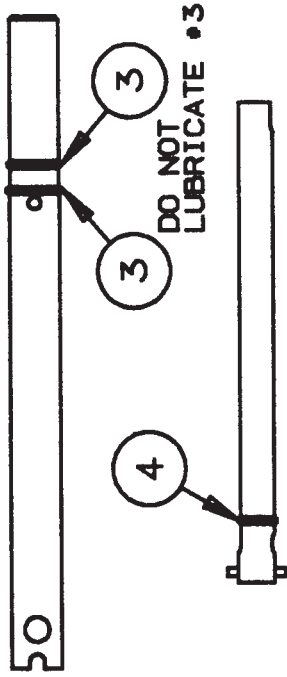
PART No.	DESCRIPTION
158003	Brush-7/16 x 1-1/8 Double End
158004	Brush-4 inch w/ 36 inch Handle
158009	Brush-4 inch w/o Handle
158026	Brush-1 inch Dia. 12 in. Long
158037	Brush-1/4 inch Dia. 18-1/2 OAL
158051	Cup-Overrun Measuring 1 Pint (use with P/N 158049 scale)
119402	Kit-O-ring
158000A	Lubricant-Petrol Gel (per tube)
184232	O-ring Chart
158014	Sanitizer-Stera-Sheen (per case - 4 x 4 lb. jars)
158014A	Sanitizer-Stera-Sheen (per 4 lb. jar)
158049	Scale-Overrun
169374	Tool-O-Ring Removal

# MODEL CS2, CS8

184232



PART NO.  
160623 (1)



## O-RING CHART

PH.NO. 309-755-4553

H.C. DUKE & SON, INC

# Alphabetized Parts List for Model CS8

*Important: All parts shown are for standard models designed for 230V/1PH/60HZ.*

PART DESCRIPTION	PART NUMBER	QTY	SERIAL NUMBER (FROM – TO)
Bar-Alignment	115798	1	G2H-1726 -
Bar-Breaker	138202	2	G2H-1726 -
Belt-Poly V-LH***	153162	1	G2H-1726 -
Belt-Poly V-RH***	153173	1	G2H-1726 -
Blade-Fan	162608	2	G2H-1726 -
Blade-Scraper	137934	4	G2H-1726 -
Board-Triac 50/60 HZ	150857	2	G2H-1726 -
Bracket-Fan Motor	162611	2	G2H-1726 -
Brush-1/4" dia. 18-1/2" Overall (Mix Feed Assy.)	158037	1	G2H-1726 -
Brush-4" w/36" Handle (Cylinder)	158004	1	G2H-1726 -
Brush-7/16" x 1-1/8" Double End	158003	1	G2H-1726 -
Brush-1" dia. 12" Long (Drain Tube)	158026	1	G2H-1726 -
Bushing-Insulator	150778	2	G2H-1726
Bushing(Washer)-Only (Shaft Seal)	137593	2	G2H-1726 -
Capacitor-Run (Beater Motor)	150293	2	G2H-1726 -
Capacitor-Run (Compressor)	151421-01	2	G2H-1726 -
Capacitor-Start (Beater Motor)	150294	2	G2H-1726 -
Capacitor-Start (Compressor)	151436	2	G2H-1726 -
Clamp-Hose 3-1/16" to 4" (Capacitor Box)	155001	4	G2H-1726 -
Compressor-Assy. 208-230/60/1 (AJA2425ZXD)			
w/Start Components	119152	2	G2H-1726 -
Compressor	155001		
Capacitor-Run (15MFD 370VAC 50/60 HZ)	151421	2	G2H-1726 -
Capacitor-Start (161-191MFD 330VAC 50/60 H)Z	151436	2	G2H-1726 -
Relay-Start/Run (Tecumseh 820ARR3C71)	151417-01	2	G2H-1726 -
Drier-Filter 3 cu in Sweat	155063	2	G2H-1726 -
Condenser-Air Rifled	155126-01-C	2	G2H-1726 -
Contact-2 Pole (Compressor/Beater Motor)	150340	2	G2H-1726 -
<p>* As Required</p> <p>** Items Included In O-Ring Kit No. 115814</p> <p>*** LH or RH — Left or right hand is determined as you face the front of freezer.</p> <p>NLA No Longer Available</p>			

**Use only original or authorized replacement parts with this freezer.**

# Alphabetized Parts List for Model CS8

*Important: All parts shown are for standard models designed for 230V/1PH/60HZ.*

PART DESCRIPTION	PART NUMBER	QTY	SERIAL NUMBER (FROM – TO)
Control-Assy. & Bracket (Day/Night)	119016	2	G2H-1726 -
Control-Electronic Temperature (Day/Night)	161218	2	G2H-1726 -
Cord-Molded w/Plug	150605	1	G2H-1726 -
Coupling-Assy. 5/8" Drive	115760	2	G2H-1726 -
Cover-Cap/Relay Box	115809	2	G2H-1726 -
Cover-Electrical Box 2x4	150739	2	G2H-1726 -
Cover-Electrical Box	137849	1	G2H-1726 -
Cover-Hopper Black	196207	1	G2H-1726 -
Cut-out-High Pressure R404a	155450	2	G2H-1726 -
Cup-Only (Shaft Seal Assembly)	160557	2	G2H-1726 -
Cup-Overrun Measuring 1 Pint	158051	*	G2H-1726 -
Cylinder-Assy. Complete	115738	1	G2H-1726 -
Decal-Beater Warning	165025	1	G2H-1726 -
Decal-Cleaning Instructions	165242	1	G2H-1726 -
Decal-Clear Overlay	165093	1	G2H-1726 -
Decal-Electric Box Danger	165000	1	G2H-1726 -
Decal-Electric Shock	165186	2	G2H-1726 -
Decal-Operating Instructions	164004-03	1	G2H-1726 -
Decal-Panel Removed	165126	3	G2H-1726 -
Decal-Refrigerant 404a	165114	2	G2H-1726 -
Decal-Trimstrip LH (Switches)	165145	1	G2H-1726 -
Decal-Trimstrip RH (Switches)	165146	1	G2H-1726 -
Decal-Trimstrip (Electro Freeze)	165217-01	1	G2H-1726 -
Decal-Trimstrip (Self Service)	165220	1	Optional
Decal-Pulley Removal	165050	2	G2H-1726 -
Drain-Assy. Overflow	115721	1	G2H-1726 -
Drier-Filter 3 cu in Sweat	155063	2	G2H-1726 -
<p>* As Required</p> <p>** Items Included In O-Ring Kit No. 115814</p> <p>*** LH or RH — Left or right hand is determined as you face the front of freezer.</p> <p>NLA No Longer Available</p>			

**Use only original or authorized replacement parts with this freezer.**

# Alphabetized Parts List for Model CS8

*Important: All parts shown are for standard models designed for 230V/1PH/60HZ.*

PART DESCRIPTION	PART NUMBER	QTY	SERIAL NUMBER (FROM – TO)
Fan-Assy. Condenser	115757	2	G2H-1726 -
Bracket-Fan Motor	162611	2	G2H-1726 -
Blade-Fan 10" 24°	162608	2	G2H-1726 -
Motor-Fan	151006	2	G2H-1726 -
Float-Level Sensor	161301	2	G2H-1726 -
Glass Sight	155459	2	G2H-1726 -
Grommet-Drain Tube	159064	2	G2H-1726 -
Guide Assy.-Plunger Rod (Center)	115742	1	G2H-1726 -
Guide Assy.-Plunger Rod (Sides)	115684	2	G2H-1726 -
Handle-Dispense (Plastic)	196166	3	G2H-1726 -
Handle-Dispense (Stainless Steel)	116323	3	G2H-1726 -
Head-Assy. Dispense Complete	115774	1	G2H-1726 -
Handle-Dispense	196166	3	G2H-1726 -
Head-Dispense (Head only)	118672	1	G2H-1726 -
Nozzle-Dispense	196167	3	G2H-1726 -
O-ring (Head)	160623	2	G2H-1726 -
O-ring (Plunger)	160624	7	G2H-1726 -
Pin-Handle	160266	1	G2H-1726 -
Plunger-Dispense Side	137807	2	G2H-1726 -
Plunger-Dispense Center	137902	1	G2H-1726 -
Head-Assy. Dispense Complete (Stainless Steel Handles)	117783	1	G2H-1726 -
Handle-Dispense	116323	3	G2H-1726 -
Head-Dispense (Head only)	118762	1	G2H-1726 -
Nozzle-Dispense	196167	3	G2H-1726 -
O-ring (Head)	160623	2	G2H-1726 -
O-ring (Plunger)	160624	7	G2H-1726 -
Pin-Handle	160266	1	G2H-1726 -
Plunger-Dispense Side	137807	2	G2H-1726 -
Plunger-Dispense Center	137902	1	G2H-1726 -
* As Required ** Items Included In O-Ring Kit No. 115814 *** LH or RH — Left or right hand is determined as you face the front of freezer. NLA No Longer Available			

**Use only original or authorized replacement parts with this freezer.**

# Alphabetized Parts List for Model CS8

*Important: All parts shown are for standard models designed for 230V/1PH/60HZ.*

PART DESCRIPTION	PART NUMBER	QTY	SERIAL NUMBER (FROM – TO)
Insert-Assy. Mix Feed	116005	2	G2H-1726 -
Insert-Tray (Black)	196210	1	G2H-1726 -
Insulator-Switch (Side Plunger Switch)	137893	2	G2H-1726 -
Key-Drive 3/16" sq x 1-1/4"	153321	6	G2H-1726 -
Kit-Gear Reducer Seal	117381	2	G2H-1726 -
Kit-O-Ring	119402	1	G2H-1726 -
Kit-Gear Reducer LH w/o Sheave	115919	1	G2H-1726 -
Plate-Reducer Mounting	137821	1	G2H-1726 -
Kit-Gear Reducer RH w/o Sheave	115120	1	G2H-1726 -
Plate-Reducer Mounting	137821	1	G2H-1726 -
Kit-Solenoid Valve	155437	4	G2H-1726 -
Knob-Hand	162625	2	G2H-1726 -
Label-Trimstrip LH	165145	1	G2H-1726 -
Label-Trimstrip RH	165146	1	G2H-1726 -
Leg 4" Adj.	115800	4	G2H-1726 -
Light-Indicator "ADD MIX"	150541	2	G2H-1726 -
Lubrication-Gear Reducer	158055	*	G2H-1726 -
Lubrication-Petrol-Gel 4 oz. Tube	158000A	*	G2H-1726 -
Manual-C82 Operator's (Order by Serial No.)	184965	1	G2H-1726 -
Module-Plug on Vari Time .5-3 Sec.	150257	2	G2H-1726 -
Module-Plug on Vari Time .5-60 Sec.	150253	2	G2H-1726 -
Motor-Beater & Capacitor Kit	118136	2	G2H-1726 -
Board-Triac 50/60 HZ	150857	2	G2H-1726 -
Capacitor-Run 60 HZ 65MFD 240VAC	150293	2	G2H-1726 -
Capacitor-Start 60 HZ 431-518MFD			
165VAC	150294	2	G2H-1726 -
Switch-Start 60 HZ	150856	2	G2H-1726 -
* As Required ** Items Included In O-Ring Kit No. 115814 *** LH or RH — Left or right hand is determined as you face the front of freezer. NLA No Longer Available			

**Use only original or authorized replacement parts with this freezer.**

# Alphabetized Parts List for Model CS8

*Important: All parts shown are for standard models designed for 230V/1PH/60HZ.*

PART DESCRIPTION	PART NUMBER	QTY	SERIAL NUMBER (FROM – TO)
Motor-Fan Cond. 240V-50/60 HZ	151006	2	G2H-1726 -
Nozzle-Dispense	196167	3	G2H-1726 -
Nut-Speed #10-20	159132	3	G2H-1726 -
Nut-Speed 1/4-20	160117	10	G2H-1726 -
O-Ring (Head)	160623	2**	G2H-1726 -
O-Ring-Kit (**Items included in Kit)	119402	1	G2H-1726 -
O-Ring (Plunger)	160624	7**	G2H-1726 -
O-Ring (Regulator Mix Feed)	160610	1**	G2H-1726 -
O-Ring (Tube Mix Feed)	160626	2**	G2H-1726 -
Oil-Special Gear Reducer	158055	*	G2H-1726 -
Panel-Assy. Front	115759-C	1	G2H-1726 -
Panel-Assy. Hopper & Top	115735	1	G2H-1726 -
Panel-Dispense	137876	1	G2H-1726 -
Panel-Rear	137862-C	1	G2H-1726 -
Panel-Side LH***	137860-C	1	G2H-1726 -
Panel-Side RH***	137861-C	1	G2H-1726 -
Pin-Handle	160266	1	G2H-1726 -
Plunger-Dispense Center	137902	1	G2H-1726 -
Plunger-Dispense Side	137807	2	G2H-1726 -
Potentiometer-Assy. & Bracket	119017	2	G2H-1726 -
Pulley	See Sheave		
Reducer-Gear	(See Kit-Gear Reducer)		
Regulator-Tube (Insert-Assy. Mix Feed)	116005	2	G2H-1726 -
Relay-Flange Base w/Cover	150381	2	G2H-1726 -
* As Required ** Items Included In O-Ring Kit No. 115814 *** LH or RH — Left or right hand is determined as you face the front of freezer. NLA No Longer Available			

**Use only original or authorized replacement parts with this freezer.**

# Alphabetized Parts List for Model CS8

*Important: All parts shown are for standard models designed for 230V/1PH/60HZ.*

PART DESCRIPTION	PART NUMBER	QTY	SERIAL NUMBER (FROM – TO)
Relay-Start/Run Compressor 60 HZ	151417-01	2	G2H-1726 -
Rod-Actuator (Plunger)	137763	3	G2H-1726 -
Rod-Plunger Switch (Actuator Button)	137760	3	G2H-1726 -
Sanitizer-Stera Sheen 4 lb. Jar	158014A	*	G2H-1726 -
Sanitizer-Stera Sheen Case/4 Jars	158014	*	G2H-1726 -
Scale-Overrun	158049	1	G2H-1726 -
Screw-TRPM #8 32 x 3/8 SST (Dispense Panel & Trimstrip)	160025	3	G2H-1726 -
Screw-TRPM #10 24 x 1/2 SST (Dispense Panel & Trimstrip)	160076	6	G2H-1726 -
Screw-TRPM 1/4-20 x 1/2 SST (Front & Rear Panels)	160048	10	G2H-1726 -
Screw-TRPM 1/4 20 x 1 SST (Side Panel)	159219	4	G2H-1726 -
Screw-Trimstrip Assy.	155980	4	G2H-1726 -
Seal-Assy. Shaft	113824	2**	G2H-1726 -
Seal-BeaterShaft (Cup)	160557	2	G2H-1726 -
Washer-Shaft Seal (Bushing)	136025	1	G2H-1726 -
Seal-BeaterShaft (Cup)	160557	2	G2H-1726 -
Sensor-10K Thermistor	161216	2	G2H-1726 -
Shaft-Assy. Beater	115677	2	G2H-1726 -
Sheave-5/8 Bore 3.95 OD 3.7 PD	153648	4	G2H-1726
Shroud-Fan LH	137739	1	G2H-1726 -
Shroud-Fan RH	137873	1	G2H-1726 -
Sight-Glass	155459	2	G2H-1726 -
Spring-Plunger Rod	162303	3	G2H-1726 -
Strip-Terminal	150795	2	G2H-1726 -
<p>* As Required</p> <p>** Items Included In O-Ring Kit No. 115814</p> <p>*** LH or RH — Left or right hand is determined as you face the front of freezer.</p> <p>NLA No Longer Available</p>			

**Use only original or authorized replacement parts with this freezer.**

# Alphabetized Parts List for Model CS8

*Important: All parts shown are for standard models designed for 230V/1PH/60HZ.*

PART DESCRIPTION	PART NUMBER	QTY	SERIAL NUMBER (FROM – TO)
Stud-Assy. Cylinder 2-1/16"	114341-06	2	G2H-1726 -
Switch-Assy. Plunger Center	115744	1	G2H-1726 -
Switch-Assy. Plunger Side	116613	2	G2H-1726 -
Switch-Float Level Sensor	161300	2	G2H-1726 -
Switch-Push Button DPDT (Center Plunger Switch)	150479	4	G2H-1726 -
Switch-Snap Button (Side Plunger Switch)	150456	4	G2H-1726 -
Switch-Start 60 HZ (Beater Motor)	150856	2	G2H-1726 -
Switch-Toggle "AUTO-OFF-CLEAN"	150463	2	G2H-1726 -
Switch-Toggle "DAY-NIGHT"	150461	2	G2H-1726 -
Thermostat-Electronic Temp. Control (Cylinder)	161215	4	G2H-1726 -
Thermostat-5° Fixed Dif. (Hopper)	161202	2	G2H-1726 -
Timer-.5-60 Sec. DOB 240v 50/60 Hz	150252-01	2	G2H-1726 -
Timer-Delay on Make	150212	2	G2H-1726 -
Tool-O-Ring Removal	169374	1	G2H-1726 -
Transformer CL2 240 PRI/24 Sec.	150290	1	G2H-1726 -
Tray-Drip (Black)	196209	1	G2H-1726 -
Trimstrip (Black Panel Switch Box)	196208	1	G2H-1726 -
Tube-Assy. Mix Feed (Regulator Style)	116021	2	G2H-1726 -
Tube-Assy. Mix Feed (Two Hole-Shake)	117091	2	G2H-1726 -
Tube-Capillary & Strainer	139924	2	G2H-1726 -
Tube-Mix Feed (Regulator Style)	138129	2	G2H-1726 -
Tube-Mix Feed (Two Hole-Shake)	138884	2	G2H-1726 -
Valve-Access	155419	2	G2H-1726 -
Valve-Automatic Expansion Sweat	155452	2	G2H-1726 -
Valve-Solenoid 230V/ 50-60 HZ	155432	4	G2H-1726 -
* As Required ** Items Included In O-Ring Kit No. 115814 *** LH or RH — Left or right hand is determined as you face the front of freezer. NLA No Longer Available			

**Use only original or authorized replacement parts with this freezer.**

# Alphabetized Parts List for Model CS8

*Important: All parts shown are for standard models designed for 230V/1PH/60HZ.*

PART DESCRIPTION	PART NUMBER	QTY	SERIAL NUMBER (FROM – TO)
Washer-Shaft Seal (Bushing)	136025	2	G2H-1726 -
<div><div>*</div><div>As Required</div><div>**</div><div>Items Included In O-Ring Kit No. 115814</div><div>***</div><div>LH or RH — Left or right hand is determined as you face the front of freezer.</div><div>NLA</div><div>No Longer Available</div></div>			

Use only original or authorized replacement parts with this freezer.