

# Operator Manual Beverage Freezer

Model 5311 and 5711



**Model 5311**



**Model 5711**



## Table of Contents

Safety Information .....	2	Troubleshooting .....	20
Specifications .....	3	Parts Identification .....	22
Installation .....	4	Parts Diagram and List .....	23
Accessory Installation .....	6	Refrigeration Schematic.....	35
Operation and Adjustments .....	7	Wiring Diagrams.....	37
Cleaning and Maintenance.....	12		

Thank you for purchasing this quality beverage freezer. For your safety and the safety of others, read all warnings and the operator manual before installing or using the product. Properly instruct all operators. Keep training records. For future reference, record serial number here:

### Grindmaster

4003 Collins Lane, Louisville, KY 40245 USA  
 Phone: 502.425.4776 Toll Free: 800.695.4500  
 Fax: 502.425.4664  
 Web: grindmaster.com Email: info@grindmaster.com

Grindmaster provides the industry's BEST warranty. Visit [grindmaster.com](http://grindmaster.com) for warranty terms and conditions.

## GRINDMASTER

0820 Form # WH-335-03  
 Part # 390-00054

## Safety Information

### Important Safety Information



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

For your safety and the safety of others, read all warnings and the operator manual before installing or using the product.

**DANGER:** This term warns the user of imminent hazard that will result in serious injury or death.

**WARNING:** This term refers to a potential hazard or unsafe practice, which could result in serious injury or death.

**CAUTION:** This term refers to a potential hazard or unsafe practice, which could result in minor or moderate injury.

**NOTICE:** This term refers to information that needs special attention or must be fully understood.

### **⚠ WARNING**

- Product must be attached to a three wire 120V 20 AMP receptacle (export units - 230V 15 AMP).
- Do not deform plug or cord.
- Follow national and local electrical codes.
- Do not use near combustibles.
- Use only on a circuit load that is properly protected and capable of the rated load.
- Always unplug unit from power supply before servicing or cleaning.
- Note all warning labels on the freezer. If any warning labels are missing or damaged, replace them immediately.
- Risk of electrical shock. Disconnect power before servicing unit. Do not attempt any repairs unless the main power supply to the freezer has been disconnected. Contact Grindmaster Technical Service for service assistance.

FAILURE TO COMPLY RISKS PERSONAL INJURY, SHOCK HAZARD, FIRE, OR DAMAGE TO EQUIPMENT.

### **⚠ CAUTION**

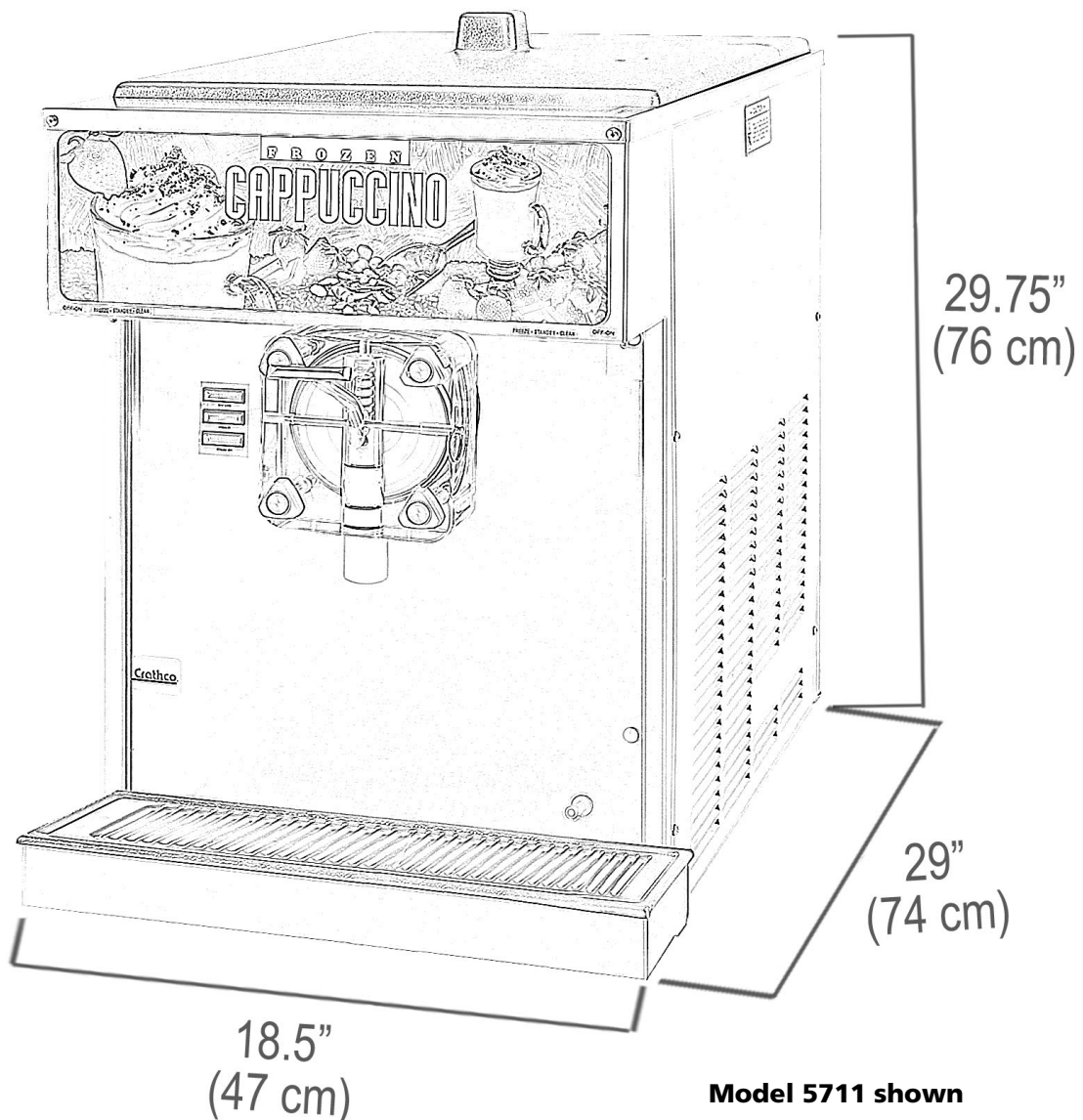
- Hazardous moving parts. Do not operate unit with panels removed.
- Do not put objects or fingers in the dispense plunger.
- Read and understand the operating instructions in this manual thoroughly. Only allow properly trained persons to operate this machine.
- While operating, servicing, or cleaning, do not wear loose fitting garments or jewelry that could get caught in the machine and cause a serious accident.
- Stay alert at all times during operation.
- Beverage freezers are heavy pieces of equipment. It is recommended that moving or lifting the unit be done by two people to avoid injury.

### **NOTICE**

- Never connect to an overloaded circuit or to an extension cord, otherwise serious damage to the motor may result.
- Do not operate freezer if any excessive noise or vibration occurs. Contact Grindmaster Technical Service for service assistance.
- Be certain machine is installed with adequate space for proper air circulation. (See installation section.) Failure to provide sufficient ventilation will reduce freezer performance and void equipment warranty.
- Keep operating area clean.

# Specifications

	5311	5711
<b>Dimensions</b>	28-1/2"H x 13"W x 29"D	29-3/4"H x 18.5"W x 29"D
<b>(H x W x D)</b>	72 cm x 33 cm x 74 cm	76 cm x 61 cm x 74 cm
	(includes header box)	(includes header box)
<b>Electrical</b>	115V / 60Hz / 1 PH	208/230V / 60 Hz / 1 PH
	Dedicated 20 Amp circuit	Dedicated 20 Amp circuit
<b>Circuit NEMA</b>	5-20R	6-20R
<b>Drive Motor</b>	1/4 hp, Capacitor Start	1/2 hp, Capacitor Start
<b>Compressor</b>	3/4 hp	1-1/2 hp
<b>Cooling</b>	Air-cooled	Air-cooled
<b>Actual Weight</b>	175 lbs (79.4 kg)	260 lbs (97 kg)
<b>Mix Hopper Capacity</b>	5 gallons (19 liters)	5 gallons (19 liters)
<b>Freezing Cylinder Capacity</b>	1-1/2 gallons (5.7 liters)	1-1/2 gallons (5.7 liters)
<b>Refrigerant</b>	See Serial Number Plate	See Serial Number Plate
<b>Refrigerant Charge</b>	See Serial Number Plate	See Serial Number Plate
<b>High Side (operating pressure)</b>	Approx. 275-350 psi	Approx. 275-350 psi
<b>Low Side</b>	Approx. 35 psi (standard) to approx. 45 psi (w/ scraper blade auger)	32-40 psi



# Installation

## Shipment Transit

1. The freezer has been operated and tested at the factory. Upon arrival the complete freezer must be thoroughly checked for any damage which may have occurred in transit.

**NOTICE:** A Tip (N) Tell warning device is placed on each shipping carton at the factory. If the indicator is red, the carton has been tipped in transit. (See Figure A.)



**Figure A**

2. **THE CARRIER IS RESPONSIBLE FOR ALL DAMAGE IN TRANSIT WHETHER VISIBLE OR CONCEALED. DO NOT PAY THE FREIGHT BILL** until the freezer has been checked for damage. Have the carrier note any visible damage on the freight bill. If concealed damage or shortages are found later, advise the carrier within 10 days and request inspection. The customer must place any claim for damage and/or shortage with the carrier. Grindmaster cannot make any claims against the carrier.

## Removal from Carton

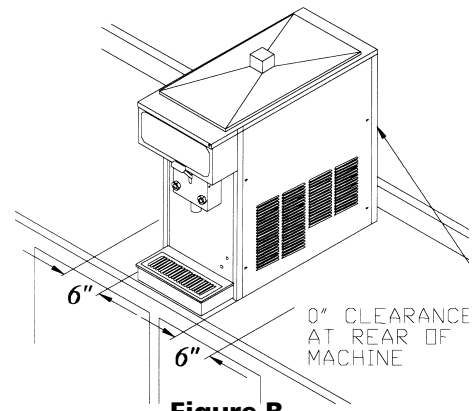
**⚠ CAUTION:** Beverage freezers are heavy pieces of equipment. It is recommended that moving or lifting the unit be done by two people to avoid injury.

1. Remove staples or cut cardboard box around the stapled area.
2. Pull the cardboard box up off machine.
3. Remove the Styrofoam packing and the plastic bag.
4. Supporting all four sides, lift machine and place in appropriate area.

**NOTICE:** If equipped with spinner, do not lift unit up by spinner shaft. It will cause serious damage to spinner.

## Installing Your Unit

1. Place freezer in a location that allows adequate space at each side and above for proper air circulation. Minimum clearance is: 6" (15 cm) on both sides 0" at back and open above the freezer. (See Figure B.)



**Figure B**

**NOTICE:** Notice: Do not place machine next to hot air from other equipment. This will drastically reduce the performance of this equipment and will void warranty!

**NOTICE:** Locating the unit in high ambient temperatures (over 80°F / 24°C) will significantly reduce the performance of your machine.

2. Place the self-sealing rubber pad (shipped with the freezer) on a level counter that is stable and strong enough to safely support the freezer's weight plus beverage product or if equipped with legs instead of pad, install legs by screwing them into the four leg holes on the bottom of the unit. (Leg Kit Part # [W0890220](#) (4) 4" Legs (10 cm) Legs)
3. Place On-Off switch (toggle switch located underneath the electrical box) in OFF position.
4. Review contents from hopper to make sure all parts are present:

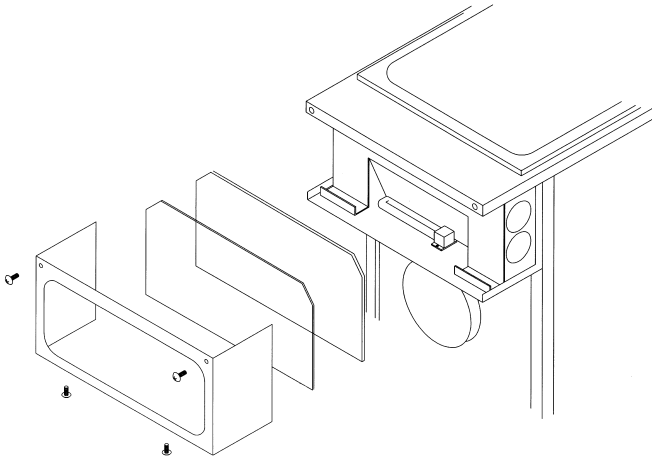
Part #	Description
390-00054	Manual
<a href="#">W0600073</a>	Rubber Pad Sheet
<a href="#">W0600121</a>	Merchandiser Installation Sheet
W0600012	MSDS Sanitizer Sheet
<a href="#">W0600159</a>	Warranty Registration Card
Model Specific	Drip Tray Kit
<a href="#">W0520094</a>	Hopper Cover
<a href="#">W0480445</a>	Valve Handle
<a href="#">W0631230</a>	Valve Spring
*	Carb Tube
*	Dispense Valve Plunger
<a href="#">W0470076</a>	Lubricant
<a href="#">W0631903</a>	Sanitizer Packets
W0600058	Laminated Cleaning Instructions
W0600327	Seal Installation Instructions

\* Optional items specified when the unit is ordered.

## Installation (continued)

### Installing Your Unit (continued)

5. Install header by removing four screws from the electrical box cover. Carefully remove electrical box cover. Place the header (transparency) between the clear and opaque plates (plastic lens). Slip the electrical box cover back on to machine and reinsert the four screws. (See Figure D.)



**Figure D**

14. Place the louvered drip tray insert into drip tray.

6. Install the standard one piece carb tube by placing it in the hole in the hopper.
7. Fill out Warranty Registration Card with the requested information and mail to Grindmaster.
8. Replace side panels.
9. Assemble the dispense valve following the instructions on page 14. The valve plunger, spring, and retaining pin come in the small parts bag.
10. Connect the power cord to a properly grounded, dedicated, 115V/20 Amp or 208-230V/20 Amp circuit (depending on the voltage of the dispenser).

**▲ WARNING** Do not alter or deform the plug in any way! Altering or deforming the plug may cause electrical shock, damage unit, and will cause serious personal injury.

11. Remove the drip tray kit from the plastic bag. Separate the parts and remove the protective coating. The drip tray is mounted on two screws that are located on the lower front of the freezer cabinet.
12. Place the key hole slot of the drip tray support bracket on to these screws and tighten the screws.
13. Place drip tray onto drip tray surround bracket.

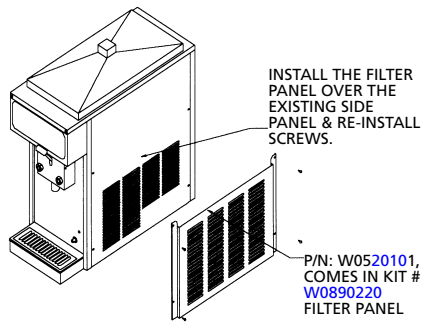
## Accessory Installation

The freezer has several optional accessories that can be added to the unit in the field to meet your application's needs.

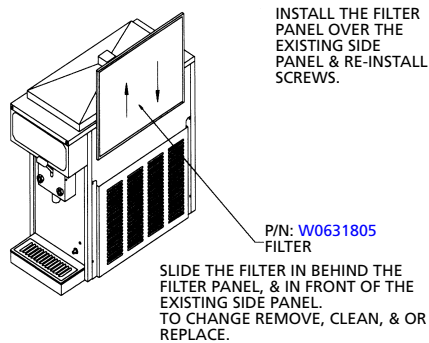
- **Concealed Air Filter** - Prevents dust from clogging the condenser.

Ideal for applications near beaches. Helps maintain maximum air flow and optimum freezer performance. (See Figures E and F.)

NSF approved. Part # [W0890200](#) stainless steel; [W0890208](#) black.

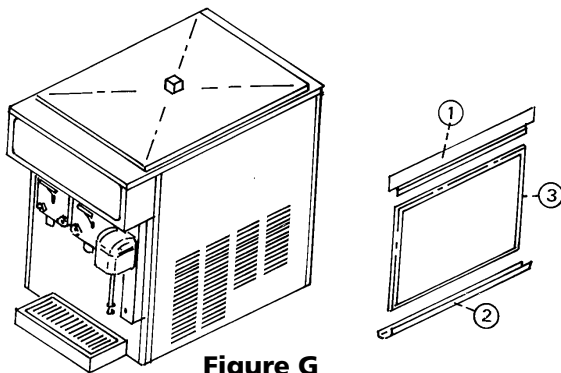


**Figure E**



**Figure F**

- **Exposed Air Filter** - Similar to concealed air filter. Not NSF approved. Part # [W0890206](#). See Figure G.

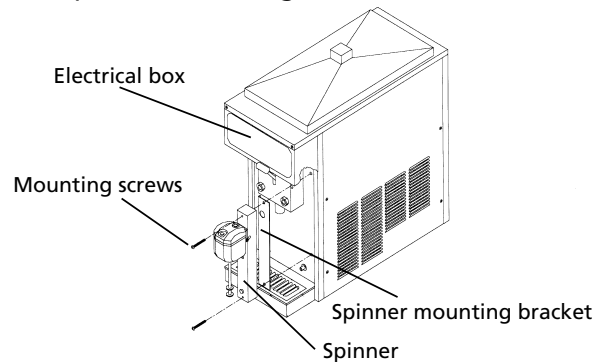


**Figure G**

- **Spinner** - Spinners are typically used in applications that add flavoring to a frozen neutral base product after it is dispensed.

Allows operator to serve a wider variety of frozen drinks from one machine (e.g. hazelnut added to cappuccino). (See Figure H.)

1. Turn to "off" and unplug the freezer from the electrical power source.
2. Remove the white plastic plugs covering the threaded holes on the right front panel (facing the freezer).
3. Remove the electrical box cover.
4. Feed the spinner electrical wires through the 7/8" (2.2 cm) hole in the spinner mounting bracket.
5. Feed these wires up through the 1/4" x 1/2" (0.6-1.3 cm) hole in the right side bottom of the electrical box.
6. Secure the spinner to the front of the freezer with the long 1/4 x 20 screws provided. (See Figure H.)



**Figure H**

7. Insert the screws through the front of the spinner bracket, then through the spinner rear mounting bracket (making sure that the bracket flange is toward the left facing toward the front of the freezer).
8. Refer to instructions included in Spinner kit to locate spinner wire connections.

# Operation and Adjustments

## How to Operate

1. Sanitize unit following the cleaning instructions starting on page 12.
2. Fill the mix storage hopper following the instructions on page 14. Allow barrel to fill with product to proper level, then insert carb tube from parts bag in hole toward rear of hopper. (See Figure I.)
3. Turn power switch to "ON" position.
4. Turn mode switch (rocker switch located next to power switch) to freeze position.
5. Allow product to freeze in barrel. Compressor will turn off when product in barrel reaches pre-set consistency.
6. To dispense product, pull down valve handle and release when done.
7. If product consistency is not as desired, adjust per the instructions on page 11.
8. Refill mix storage hopper when "mix low" light is on.
9. Clean the unit regularly following local health codes.
10. Perform maintenance when necessary to increase the life of the unit. See the chart in this manual for regular maintenance schedule (page 17).

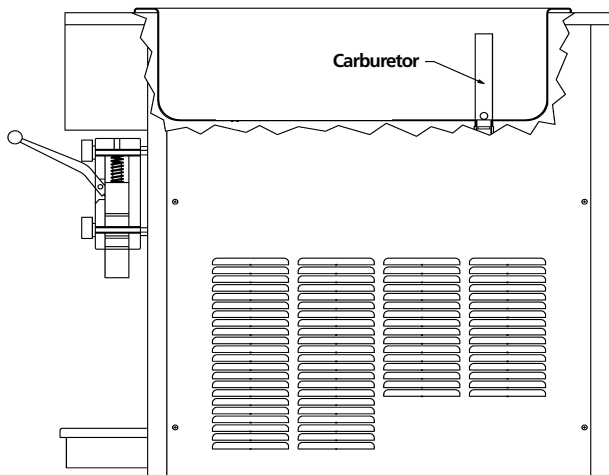


Figure I

## Mix Considerations - General

Freezing characteristics are affected by the amount of sweeteners and solids in the mix. The amount of sweeteners and solids is called BRIX. BRIX can be measured with an instrument called a refractometer. A BRIX reading of between 11 and 14 will provide optimum freezer operation. Mixes with this BRIX level will freeze down to a smooth, uniform consistency.

Mixes with too high a BRIX level will take longer to freeze down and will yield a soft, wet frozen product. Mixes with too low a BRIX level will have larger ice crystals and will have a tendency to dispense slowly.

**Note:** Always take BRIX measurement using mix that has been thoroughly blended, before it is frozen. Always allow frozen mix to thaw thoroughly before taking a reading.

Alcohol content also affects product freezing characteristics. High alcohol content may prevent the freezer from serving product at proper thickness.

For maximum output capacity always pre-chill mix before adding it to the freezer. Pre-chilled mix gives the freezer a head start on the freezing process and will speed both initial freeze down and recovery time.

## Carburetor Assembly

Your new freezer uses a metering device, known as a carburetor, to feed the proper ratio of mix and air into the freezing cylinder. For products such as dairy based shake mixes, the proper mix to air ratio is generally accepted to be two parts mix to one part air. This proportion yields a finished product that is both tasty and profitable. At this ratio, one gallon of liquid mix will yield a volume of one and one-half gallons of frozen product.

The carburetor is a tube with a hole, or series of holes, bored through the side. It is located in the hopper and fits in a hole that leads to the freezing cylinder. Air flows into the freezing cylinder through the top of the tube and mix flows in through a smaller hole in the side of carburetor tube. The size of the mix inlet is balanced with the viscosity (thickness) of the liquid mix and product draw rate, in such a way that the proper amount of mix is fed into the freezer cylinder to blend with air at just the right ratio. Mix viscosity varies by mix type, mix temperature, and mix age.

## Mix Out Function

This model will sense when the mix is low in the hopper. The mix out buzzer will activate for 2 minutes. After 2 minutes, the mix out light will flash and the buzzer will continue to activate the next 8 minutes. At the end of the 10 minute time, the buzzer will deactivate and the mix out light will continuously flash until product is refilled. At this time, the machine is placed into standby mode to prevent any damage to the machine from running dry of product. The unit can be reset back into freeze mode by simply adding mix into the hopper.

## Operation and Adjustments (continued)

### Mix Out Function (continued)

1. If the unit is low in mix or the unit shuts down due to extended mix out condition ("Mix Out" safety function has activated), refill hopper with fresh product. The unit will automatically revert back to its original operation mode.
2. If the mix out safety function has activated disabling the unit, and the product has not been added for an extended period of time - verify the product is okay for re-use. If it is not, use fresh product to restart the unit. Empty the unit of old product and follow sanitizing and start up procedures.

### Computing Overrun

1. Weigh an empty cup.
2. Weigh this cup filled to the top with liquid mix, and subtract the weight of the cup.

Note: Repeat this step only when changing mix sources, as mix weight will vary slightly from one supplier to another.

3. Draw a heaping cup of frozen product that contains no air pockets. Note: Use a spatula or other device to help fill the cup completely. Avoid tamping the cup as this artificially reduces overrun.
4. Use a straight edge to scrape off excess product flush with the rim of the cup and weigh the cup.
5. Subtract the cup weight and use the overrun formula to determine overrun.

$$\frac{\text{Weight of Liquid Mix (Minus) Weight of Frozen Product}}{\text{Weight of Frozen Product}} \times 100 = \text{Overrun}$$

For Example:

If a full cup of liquid mix weighs 23 ounces (0.652kg) and a full cup of frozen product weighs 15-1/2 ounces (0.439kg), then:

$$\frac{23 - 15 \frac{1}{2}}{15 \frac{1}{2}} \times 100 = 48.4\% \text{ Overrun}$$

Note: Several companies manufacture scales that automatically read out the overrun for one-pint samples. A scale of this type is a valuable tool and should be part of any well-run operation. A trick is to place the empty cup on the scale and zero it out first; this will then automatically eliminate the weight of the cup from the calculation.

Overrun has a major impact on the size of the finished frozen portion. As the percentage of overrun (air in the frozen product) increases, the size of the finished portion also increases, yet the portion weight remains the same.

For example, an increase from 25% to 50% overrun will

yield a 20% larger portion. Customers equate size with perceived value, so proper overrun will result in increased customer satisfaction. Experiment with carburetor settings to achieve optimum overrun and product quality with each mix. Some products such as Cappuccino taste better with low overrun. Experiment with different carburetor settings to find the ideal combination for each product.

### Use of Stand-By Switch

The "STAND-BY" switch allows the operator to retain optimum product quality and conserve energy during extended non-draw periods. The "Stand-by" mode keeps the mix in the hopper at a safe storage temperature and allows the product in the freezing cylinder to return to a refrigerated liquid state. Switching back to "Freeze" mode returns the product in the freezing cylinder to proper serving consistency.

#### **At the start of the "STAND-BY" period:**

1. Select the "STAND-BY" mode by moving the mode switch to the middle position. The front panel "STAND-BY" light will illuminate.

#### **At the end of the "STAND-BY" period:**

1. Turn the switch to the "FREEZE" position by moving the mode switch. The "FREEZE" light will illuminate.
2. When the freezer cycles off by reaching the desired consistency, you are ready to start serving.

**IMPORTANT:** The STAND-BY SWITCH should not be used in lieu of cleaning and sanitizing procedures specified by local regulatory agencies.

### Product Tips

The 5000 Series was designed to dispense a wide variety of frozen beverages including smoothies, frozen cappuccino, shakes, and frozen cocktails. These products can be served in consistencies ranging from thin to fairly thick. For optimum long-term freezer reliability, it is recommended that product thickness not be set too thick.

Two types of white plastic dispensing valve plungers are available. One style, part [W0480462](#), is used to serve these thin to medium products such as cappuccino and cocktails and has one horizontal outlet slot. The other plunger, part [W0480463](#), is used to serve thicker product such as shakes and smoothies and has two horizontal outlet slots. These plungers are interchangeable.

Over an extended period of time some products, such as frozen cocktails that contain alcohol, have a tendency to separate, or stratify. Separation of product in the mix storage hopper can result in frozen product quality inconsistency. Simply keeping the product stirred on a regular basis will eliminate this problem.

## Operation and Adjustments (continued)

Some of cappuccino or latte mixes contain dairy products which can spoil if not refrigerated. If the freezer is to be turned off at night these products must be removed from the freezer. **Contact your local health department regarding its regulations for proper mix handling and storage.**

### Consistency Control - Overview

The "freeze" mode consistency setting adjusts the frozen product thickness. In the "freeze" mode, as the liquid mix in the cylinder freezes, it becomes harder for the motor to turn the dasher assembly. The control board senses the amount of energy that the drive motor consumes as it rotates the dasher assembly through the product in the cylinder. The control board will turn the compressor and barrel solenoid valve off at the proper consistency. The drive motor will continue to run for 45 seconds after the compressor is cycled off. This is called the blending cycle. After the blending cycle is complete, the drive motor also is shut off. The drive motor and compressor will run together at any time refrigeration is required in the barrel. The compressor will run independently for the hopper if required. The hopper is controlled by temperature. The thermistor will signal the board and the board will start the compressor and open the hopper solenoid valve.

The unit will remain off until the timer in the control board (10 minutes) restarts the drive motor. In this case, the drive motor will run for 45 seconds and, if no refrigeration is required, the drive motor will then shut off. If refrigeration in the barrel is required, the freeze cycle is repeated as well as the blending cycle. The unit will also restart the drive motor if the plunger is raised. The plunger switch will start the drive motor and remain on as long as it is held open. After the plunger is closed, the drive motor will continue to run for 45 seconds. The compressor will start, and barrel solenoid valve will open. If refrigeration is required during this time, the freeze cycle and blend cycle will follow.

In the "standby" mode, the control board senses the temperature of the product in the barrel. The drive motor is cycled on time only. It will operate for 2 minutes ON then 18 minutes OFF as long as it is in "standby". The compressor and drive motor are cycled independently for the barrel in the "standby" mode. Once the barrel thermistor signals to the board, the board will start the compressor and the barrel solenoid valve will open as refrigeration is required. It will continue to run until satisfied. The plunger switch is disabled and the drive motor will not start when the plunger is opened. The hopper is still controlled by temperature. If the thermistor signals a raise in temperature, the compressor will start and the hopper solenoid valve will be opened. It will continue to run until satisfied. In the "clean" mode, the drive motor will run continuously. (The compressor will not run in

the "clean" mode.) This is for emptying out product for cleaning purposes.

There are eleven (11) lights on the circuit board that indicate the following: (See Figure J next page.)

BARREL (D1) - Illuminated when the freezing cylinder (barrel) has achieved the pre-set temperature in the "Standby" mode.

HOPPER (D2) - Illuminated when the hopper has achieved the pre-set temperature in the "Standby" and "Freeze" modes.

WASH (D3) - Illuminated when the mode switch is in the wash or "Clean" position.

FREEZE (D4) - Illuminated when the mode switch is in the "Freeze" mode.

DISPENSE (D5) - Illuminated when the dispensing valve is open, calling for both the compressor and drive motor to operate.

GREEN CONSISTENCY (D6) - Off when the motor and compressor are off. Illuminated when the compressor and dasher are bringing product to preset consistency. Blinks as preset consistency is achieved and then goes out.

RED CONSISTENCY (D7) - Blinks as preset product consistency is approached. Glows steadily when preset consistency is achieved and then goes out.

COIL (D8) - Compressor contactor energized.

COIL (D9) - Drive motor coil energized.

COIL (D10) - Hopper refrigeration solenoid coil energized.

COIL (D11) - Freezing cylinder refrigeration solenoid coil energized.

# Operation and Adjustments (continued)

## Model: 5311 & 5711 LED "on" status indications

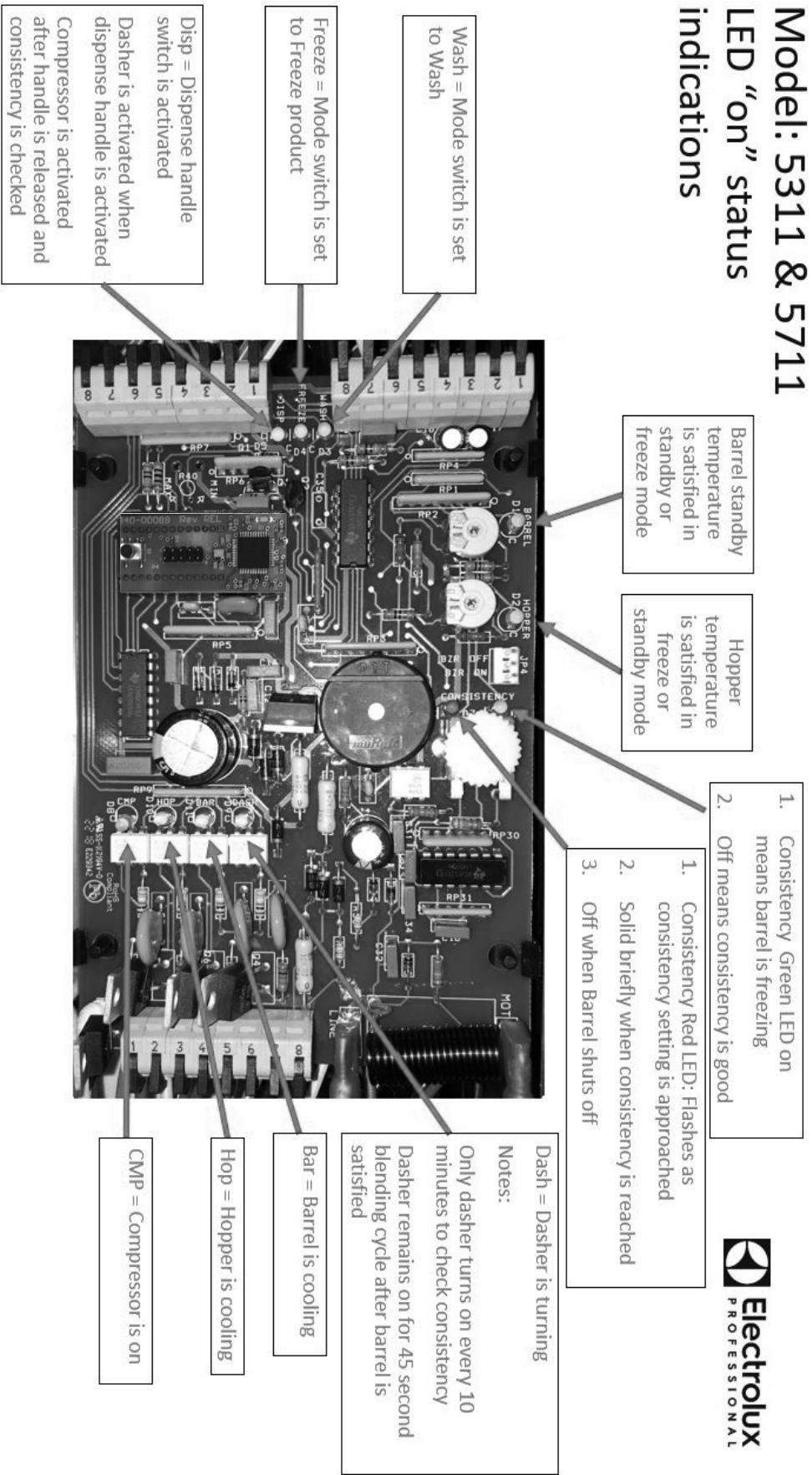
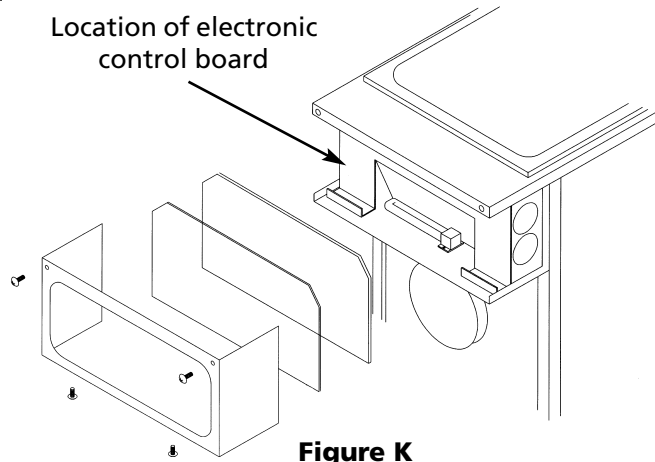


Figure J Electronic Control Board

## Operation and Adjustments (continued)

### Consistency Adjustment

**⚠ CAUTION:** Shock hazard. The following adjustments require removal of the electrical box cover and should be made by a qualified service technician.



1. Remove the front electrical box cover by removing the two screws. (See Figure K.)
2. If the product in the cylinder has been frozen for more than 30 minutes, draw out 16 ounces (1/2 liter) before checking consistency.
3. Turn the consistency control knob, located at the top center of the circuit board, clockwise to achieve a colder setting or thicker product or counter-clockwise to achieve a less cold setting or less thick product. (See Figure J.)

**NOTICE:** This control setting is very sensitive, so always make small adjustments. If you visualize this control as a clock face, with the adjuster set all the way counter-clockwise it would be 5:00. The recommended Start setting is 7:00 which is the warmest setting for the machine. A one-hour change will make a noticeable difference in product consistency.

4. When making adjustments to a thicker (colder) setting, dispense approximately 16 ounces (1/2 liter) of product and recheck consistency after the compressor has cycled off.
5. If the consistency is still not correct, repeat steps 2 and 3.

### "Standby" - Freezing Cylinder Temperature Adjustment

**⚠ CAUTION:** Shock hazard. The following adjustments require removal of the electrical box cover and should be made by a qualified service technician.

1. Remove the front electrical box cover. (See Figure K.)
2. For a colder setting, turn the "Barrel" control adjuster, located at the top left of

the circuit board, counter clockwise. (See Figure J.)

**NOTICE:** This control setting is very sensitive, so always make small adjustments. If you visualize this control as a clock face, a one-hour change will make noticeable difference in freezing cylinder product temperature. The recommended setting is 11:00.

### Hopper Temperature Adjustment

**⚠ CAUTION:** Shock hazard. The following adjustments require removal of the electrical box cover and should be made by a qualified service technician.

1. Remove the front electrical box cover.
2. For a colder setting, turn the "Hopper" control adjuster, located at the top left of the circuit board, counter clockwise. (See Figure J.)

**NOTICE:** This control setting is very sensitive, so always make small adjustments. If you visualize this control as a clock face, a one-hour change will make a noticeable difference in hopper product temperature. The recommended setting is 10:00.

**NOTICE:** Some models will have a built in feature (in the freeze mode) that will make the machine inoperable if the mix gets low and is not refilled after ten minutes. (The normal sequence is five beeps every two minutes for a total of ten minutes, shut down occurs until the unit is refilled). These models will also have a forty-five second dasher run time after the compressor turns off.

## Cleaning and Maintenance

Cleaning and sanitizing frequency must be followed in accordance with state and local health department regulations.

**NOTICE:** Each time the freezer is fully disassembled, all food zone freezer components must be thoroughly washed and sanitized using procedures recommended by the local health department. In lieu of local health department recommendations, use a three compartment sink; one compartment to wash parts in detergent, one compartment to rinse, and one to sanitize.

### Drain and Rinse

1. If the freezer is empty, proceed to Disassembly and Cleaning. If there is product in the freezer, turn the mode switch to "CLEAN". It is recommended to schedule cleaning when product in the hopper is low to minimize product loss.
2. On freezers using the optional electric pump and tank assembly and optional Remote Fill Control, turn the switch on the Remote Fill Control to "OFF" and unplug the pump.
3. On freezers using the optional Remote Fill Control and Proportioning Pump, turn off water to the proportional pump by operating the water valve next to the inlet pressure regulator.
4. Open the front dispensing valve and drain all product from the freezer. Close the dispensing valve and turn freezer to "OFF".

**NOTICE:** Use approximately 2½ gallons (10 liters) of cool water to rinse product out of freezer.

5. Remove the carburetor tube and pour water into the storage hopper. Allow the water to fill the freezing cylinder.
6. Turn the panel switch to "CLEAN" for 5 minutes.
7. Open the dispensing valve and drain the water from the freezer.

### Clean-In-Place Procedure (Daily Cleaning)

This equipment has been approved for a Clean-In-Place procedure that does not require complete disassembly on a daily basis. The unit still requires regular complete disassembly for cleaning and sanitizing. To perform the C-I-P procedure, follow the instruction below:

### Empty and Disassemble

1. Empty any product in the machine and turn the main switch to "OFF".
2. Disassemble the dispensing valve assembly. Pull out valve handle retaining pin while supporting the valve plunger from the bottom (Figure M). Push up on the valve plunger and remove the stainless handle (Figure N.). Slide the valve plunger and spring downward to remove (Figure O). Remove the O-rings from the plunger assembly and back of the dispensing valve body. (See Figure L.)

**NOTICE:** The best way to remove an O-ring is to first wipe off all of the lubricant using a clean paper towel. Pinch the O-ring upward with a dry paper towel between your index finger and thumb. When a loop is formed in the O-ring, roll it out of the groove with your other thumb. Always remove the O-ring farthest from the end of the plunger first. Be careful not to pull or tug excessively on O-rings. O-rings can be distorted which will deteriorate sealing performance.(See Figure L.)

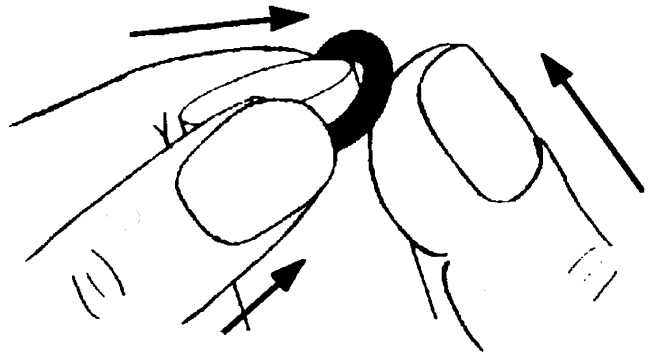


Figure L Ring Removal

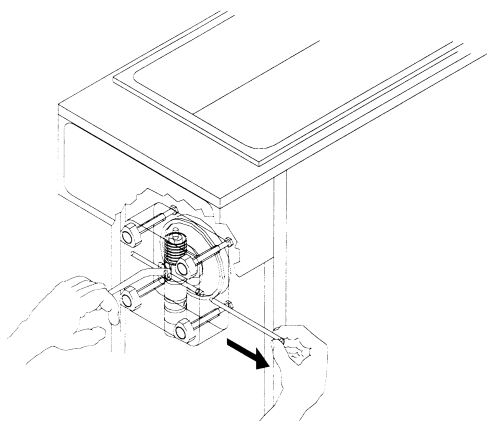


Figure M Remove Pin

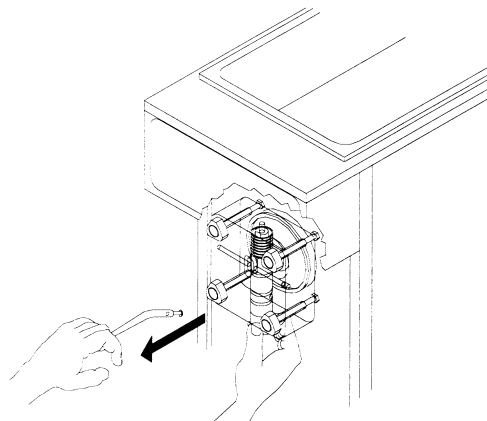


Figure N Remove Handle

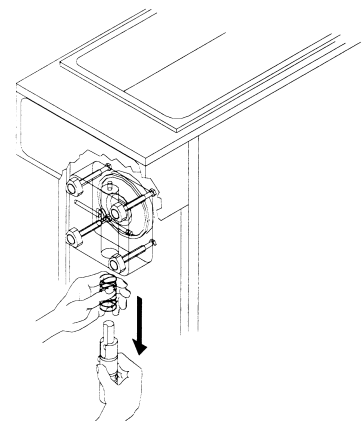
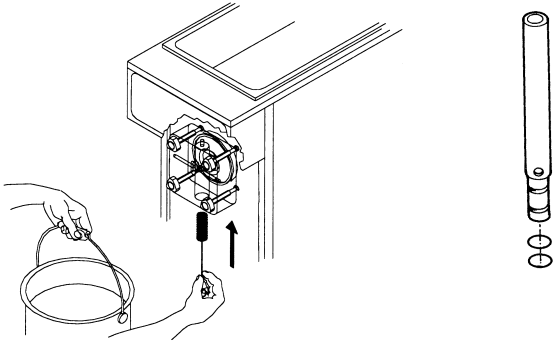


Figure O Remove Plunger and Spring

## Cleaning and Maintenance (continued)

### Clean-In-Place Procedure (Daily Cleaning) cont. Cleaning Carburetor, Dispensing Valve, and Plunger Assembly

3. Take all components to the cleaning area.
4. Carefully inspect the O-rings for cracks, chips, or cuts and replace if necessary.
5. Prepare 1 gallon (3.8 liters) solution of hot tap water and common dishwashing detergent.
6. Thoroughly wash all parts including handle, pin, valve plunger, spring, carburetor assembly, and all O-rings in detergent solution.
7. Use a medium sized brush to clean the bottom of the valve body and the inside of the plunger bore with detergent solution taking care to remove any remaining lubricant. (See Figure P.)

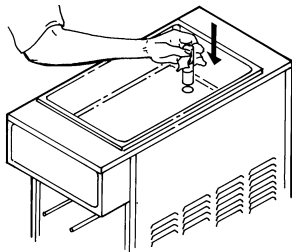


**Figure P** Clean Valve Body

**Figure Q** Carb Tube

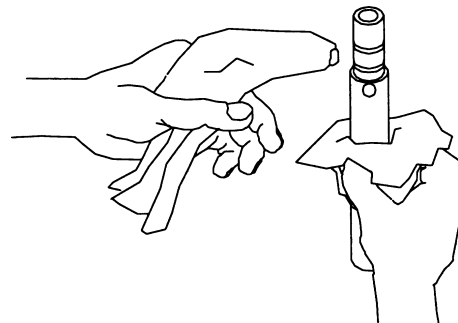
### Sanitizing Carburetor and Valve Components

8. Re-assemble carburetor assembly installing the two "O" Rings at the bottom of the carb tube. (See Figure Q.)
9. Place the carburetor assembly in the bottom of the hopper. (See Figure R.)



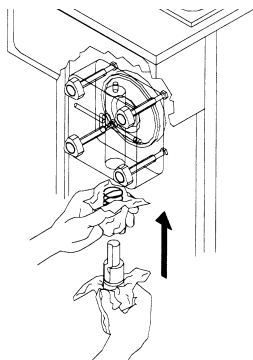
**Figure R** Insert Carb Tube

10. Replace "O" Rings on valve plunger and lay plunger assembly on a clean piece of paper towel.
11. Prepare a minimum of 4 gallons (15 liters) of sanitizing solution following the manufacturer's instructions.
12. Dip the medium sized brush (supplied) into the sanitizing solution and sanitize the inside bore of the dispensing valve. (See Figure P.)
13. Place a small amount of sanitary lubricant onto a piece of clean paper towel.
14. Use a clean piece of paper towel to pick up the small end of the valve plunger assembly. Apply the lubricant on the other piece of paper towel to the O-rings on the valve plunger assembly. (See Figure S.)

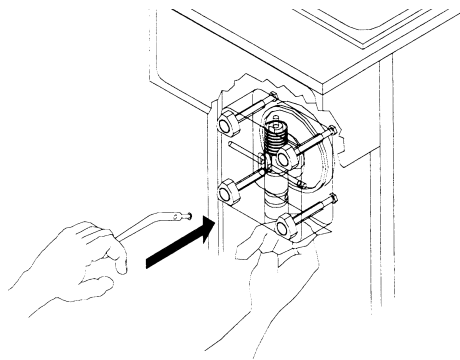


**Figure S** Lubricate Plunger

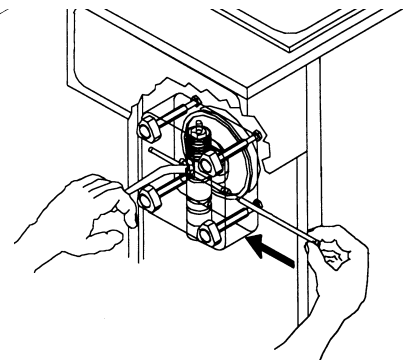
15. Slide the valve plunger spring over the small end of the valve plunger and, using another clean piece of paper towel, pick up the valve plunger at the outlet end and insert plunger and spring into the valve body. (See Figure T.)
16. Push up on the valve plunger and insert the stainless steel handle. (See Figure U.)
17. Insert the dispensing valve handle retaining pin. (See Figure V.)



**Figure T** Installing Plunger and Spring



**Figure U** Insert Valve Handle



**Figure V** Insert Retaining Pin

## Cleaning and Maintenance (continued)

### Clean-In-Place Procedure (Daily Cleaning) cont.

#### Sanitizing and Refilling

18. Pour sanitizing solution into the mix storage hopper and allow the solution to fill freezing cylinder. Use a large brush (supplied) to sanitize all hopper surfaces. (See Figure W.)

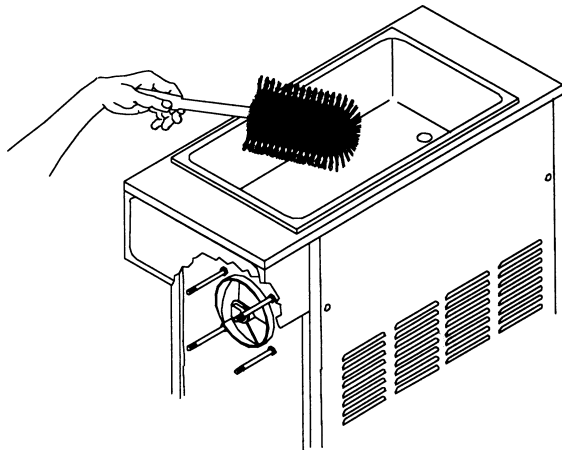


Figure W Sanitize Hopper

19. Turn Main Panel switch to "CLEAN" and allow freezer to run for 20 minutes.
20. Open dispensing valve and drain solution. Allow the auger to push remaining sanitizer out of the freezing cylinder.
21. Place a small amount of sanitary lubricant onto another piece of clean paper towel. (See Figure X.)

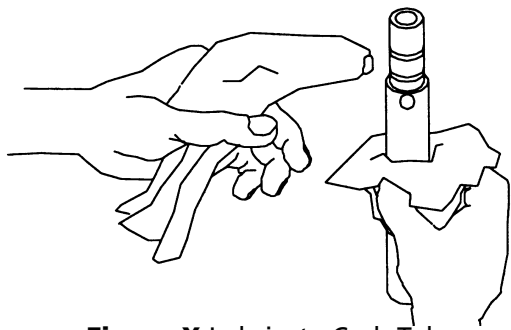


Figure X Lubricate Carb Tube

22. Use a clean piece of paper towel to pick up the large end of the carburetor from the bottom of the hopper, taking care not to touch the sanitized carburetor with your bare hands.
23. Apply the lubricant on the other piece of paper towel to the two "O" Rings on the bottom of the carburetor assembly. (See Figure X.)
24. Place the lubricated carburetor assembly on a clean piece of paper towel.
25. Use either fresh product or mix new product according to manufacturer's instructions.
26. Fill mix storage hopper with product.
27. Open dispensing valve. Pour product into the

hopper and allow this product to chase out any remaining sanitizer.

28. Watch the product flowing out of the dispensing valve and close the valve when the sanitizer remaining in the cylinder has been purged by the new mix.
29. Use a clean piece of paper towel to insert the sanitized carburetor assembly into the hopper inlet hole. (See Figure Y.)

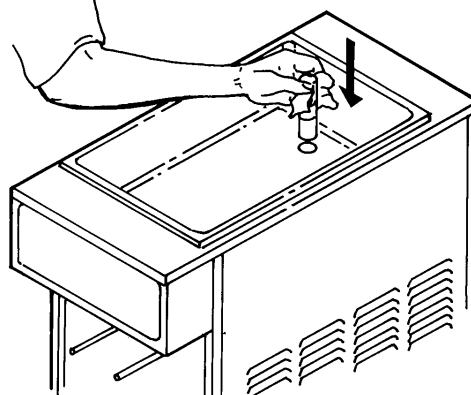


Figure Y Carb Tube

30. Fill mix storage hopper with fresh product.
31. Turn Main Panel switch to "ON". Allow approximately 20 to 30 minutes for the freezer to reach proper consistency.

### Cleaning Following Complete Disassembly of Unit

#### Disassembly

1. Remove knobs and carefully remove the front dispensing valve assembly.
2. Disassemble the dispensing valve assembly by removing the retaining pin, pushing up on the plunger assembly and pulling out the handle. This will allow the plunger assembly, complete with O-Rings, to be removed as a unit. Remove the spring. Remove the O-Rings from the plunger assembly and back of the dispensing valve body. (See Figure Z.)

**Note:** When cleaning plunger, take care not to dislodge embedded magnet. (Only for Model 5711.)

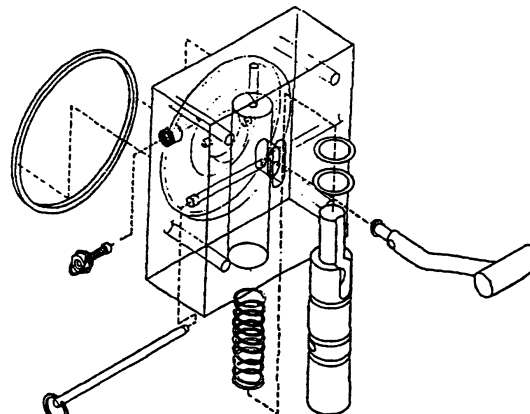


Figure Z Exploded View of Dispensing Valve

## Cleaning and Maintenance (continued)

### Cleaning Following Complete Disassembly of Unit (cont.)

**NOTICE:** The best way to remove an O-ring is to first wipe off all of the lubricant using a clean paper towel. Pinch the O-ring upward with a dry paper towel between your index finger and thumb. When a loop is formed in the O-ring, roll it out of the groove with your other thumb. Always remove the O-ring farthest from the end of the plunger first. Be careful not to pull or tug excessively on O-rings. O-rings can be distorted and will deteriorate sealing performance. (See Figure AA.)

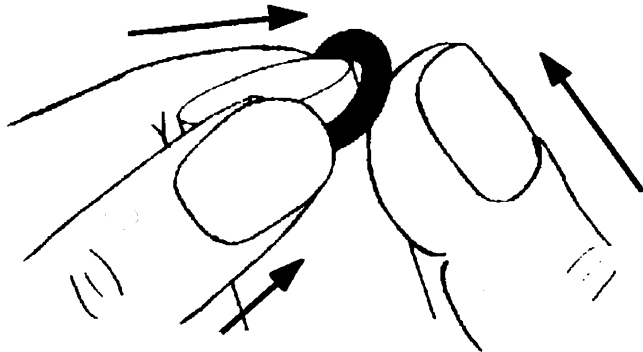


Figure AA Ring Removal

**NOTICE:** Carefully inspect the O-Rings and replace if necessary.

- Remove the dasher assembly from inside the freezing cylinder taking care to avoid damaging the rear seal assembly at the back of the freezing cylinder. Disassemble the dasher assembly by removing the stator rod and front and rear stator rod bearings. (See Figure BB)

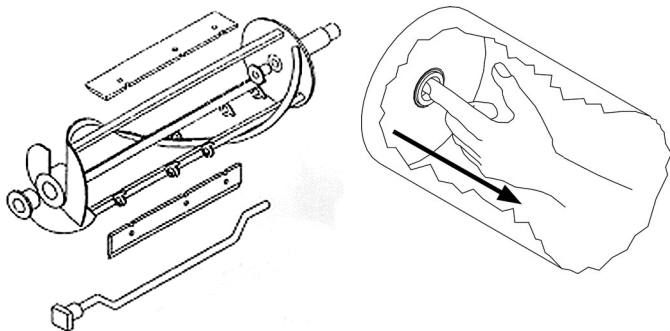


Figure BB Dasher Assembly      Figure CC Removal of stationary half of seal

- Remove stationary portion of the shaft seal assembly from the back end of the freezer cylinder. This is accomplished by reaching into the cylinder and pulling seal out with your index finger. (See Figure CC.)
- Slide the rotary seal off the the auger shaft. Inspect both seal components carefully for nicks or cracks. Replace seal if defective.

**NOTICE:** To prevent leakage, both surfaces of the seal must be smooth with no chips or cracks.

### Wash, Sanitize and Dry

- After disassembly, thoroughly scour each part of the freezer in a warm mild detergent solution, including the inside of the freezing cylinder and the mix storage hopper. **DO NOT WASH COMPONENTS IN A DISHWASHER.** Rinse each part with clear water. Prepare a minimum of 3-1/2 gallons (13 liters) of sanitizing solution following the manufacturer's instructions. Dip or wipe each part in sanitizing solution and allow them to dry on clean paper towel.
- The exterior of the freezer should be cleaned as needed with a cloth towel.

**NOTICE:** Coarse rags, abrasive cleaners, and excessive force can damage and/or scratch the surfaces of the freezer.

### Reassembly

- Wet the inner rubber lip of the rotary portion of the seal and the back end of the auger shaft with water. Slide rotary portion of assembly onto the auger shaft, **RUBBER FIRST**, with the smooth sealing surface toward the back of the auger. (See Figure DD.)

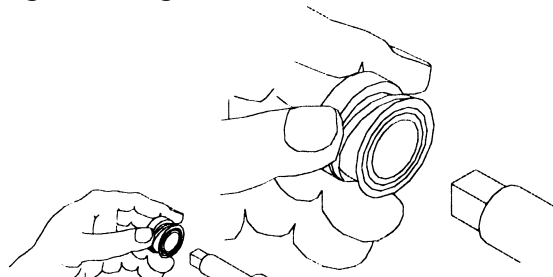


Figure DD Reassemble rotary portion of seal as shown

- Insert the stationary portion of the seal into the grooved rubber boot with the polished surface facing out (forward). Lubricate the grooved exterior portion of the boot and insert it straight back into recess at the back of the freezing cylinder, **RUBBER FIRST**. (See Figures EE & FF.)

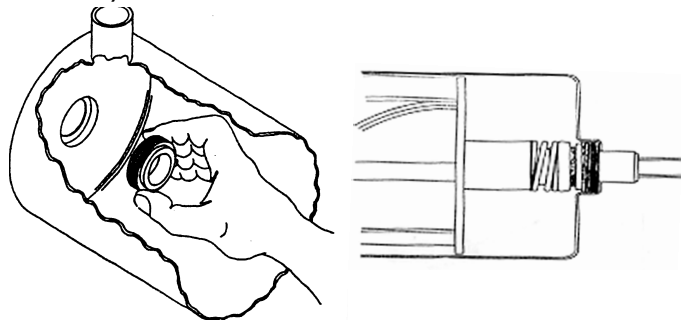


Figure EE Installing the stationary portion seal

Figure FF Seal Assembly installed correctly

**NOTICE:** If the circular portion of the seal is white, make sure that the groove is toward the rubber (back of freezer).

## Cleaning and Maintenance (continued)

### Cleaning Following Complete Disassembly of Unit (cont.)

10. Reassemble the dasher assembly, as shown in Figure GG. Insert the larger front and smaller rear white plastic bearings into dasher, then slip in the stator rod. Attach scraper blades. **Carefully and slowly guide the auger into the freezing cylinder taking care not to damage the seal assembly.** Turn auger shaft until it engages the square drive

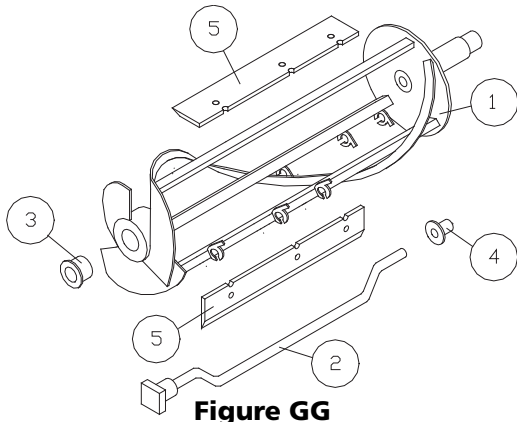


Figure GG

coupling.

11. Reassemble the dispensing valve assembly as shown in Figure HH. Thoroughly wash and sanitize all components. Lubricate the inside bore of valve body with a thin film of food grade sanitary lubricant. Reinstall the O-Rings on the plunger assembly and lubricate the entire plunger. Reassemble the valve and replace the retainer pin. Inspect and lubricate the large O-Ring and refit it into the rear of the valve assembly. Install the valve assembly on the front studs and tighten knobs until they are finger tight. **Do not use tools to tighten**

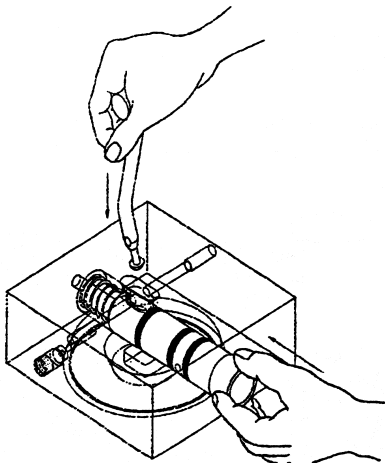


Figure HH

knobs.

12. Disassemble the carburetor assembly and remove the O-Rings. Wash and sanitize all parts.
13. Reinstall and lubricate the O-Rings. (See Figure II.)



Carb tube

Figure II

### Sanitizing and Refilling

14. Prepare a minimum of 3-1/2 gallons (13 liters) of sanitizing solution following the manufacturer's instructions.
15. Pour sanitizing solution into the mix storage hopper and allow the solution to fill freezing cylinder. Use a brush to clean the hopper sides and bottom.
16. Turn Main Panel switch to "CLEAN" and allow freezer to run for 5 minutes.
17. Open dispensing valve and drain solution. Turn freezer to "CLEAN" for a few seconds to allow the auger to push remaining sanitizer out of the freezing cylinder.
18. If you are using a concentrated product, mix the product according to the manufacturer's instructions.
19. Open dispensing valve. Pour product into the hopper and allow this product to chase out any remaining sanitizer. Watch the product flowing out of the dispensing valve and close the valve when the new mix has purged the sanitizer remaining in the cylinder.
20. Sanitize and install the carburetor. (Figure R). Refill mix hopper.
21. Turn Main Panel switch to "ON". Allow approximately 20 to 30 minutes for the freezer to reach proper consistency.

## Cleaning and Maintenance (continued)

### Maintenance

**▲ WARNING:** Disconnect power for maintenance. Do not attempt to perform maintenance on the freezer until electrical power has been disconnected.

#### Suggested Daily Maintenance

1. Clean, lubricate, and sanitize the freezer following guidelines.
2. Clean the exterior of the freezer using a soft wet cloth. (Wipe down spinner if attached.)
3. Empty drip tray.

#### Suggested Weekly Maintenance

1. Clean, lubricate, and sanitize the freezer following guidelines in Cleaning and Maintenance.
2. Clean the exterior of the freezer using a soft wet cloth.

#### Suggested Annual Maintenance

1. Disconnect electrical power.
2. Clean condenser.
3. Remove dispensing valve assembly and replace all O-Rings.
4. Remove dasher assembly, inspect stator bearings and replace shaft seal set.
5. Remove rear panel and inspect "V" belt.
6. Inspect the drive shaft square hole for wear (rounding-out).
7. Check drive shaft and motor shaft bearings for excessive wear.
8. Reinstall side and back panels.
9. Re-connect power supply.

#### Parts Replacement Schedule

Part Description	Every 3 Months	Every 6 Months	Annually	Quantities to be Replaced
Shaft Seal			Inspect & replace if necessary	1
Drive Shaft			Inspect & replace if necessary	1
Drive Belts			Inspect & replace if necessary	1
Scraper blades on dasher (if equipped)		Inspect & replace if necessary		2
Square cut O-ring on valve body/face plate			Inspect & replace if necessary	1
Front stator flange bearing			Inspect & replace if necessary	1
Rear stator flange bearing			Inspect & replace if necessary	1
Dispense valve O-rings	Replace			Thick Product Plunger: 2 Standard Product Plunger: 3
Carb tube O-rings	Replace			2 or 3
Cleaning brush		Inspect & replace if necessary		1
Condenser	Inspect & clean if necessary		Maximum	1

Refer to the Crathco Parts Price List when ordering the above parts.

## Cleaning and Maintenance (continued)

### Preventative Maintenance Procedure

#### (Every 6 to 12 Months)

A preventative maintenance visit should be performed every 6 to 12 months depending on the usage and environment where the unit is placed. (Ex. seasonal machines - once before season, year round machines - twice per year). The following procedures should be performed during a preventative maintenance visit. This does not take the place of daily care and cleaning procedures as described by local health codes and the manual. PM kit #250-00118 for CFB 5311 and kit 250-00119 for CFB 5711 contain the standard replacement parts needed for preventative maintenance including O-rings, standard seal kit, stator bearings, and drive belt. One kit is required for each barrel receiving maintenance. Units with a coconut oil product seal should order all parts separately. Units with scraper blade dasher will require the scraper blades be ordered separately.

- Verify ventilation is adequate: 6" (15 cm) minimum on both sides, open at top, and as far as possible from dust sources;
- Check product temperature and consistency for proper setting (refer to product manufacturer's recommendation) - adjust if necessary. Where equipped, be sure to check the temperature in both the hopper and cylinder.
- Ensure product is being mixed properly and is within specification (check brix - most products should be around 13% - refer to food product manufacturer's recommendations for exact recommended brix).
- Check for any leaks.
- Empty product from the unit. Disassemble unit completely (as if for cleaning).
- Clean and sanitize all disassembled parts following the cleaning instructions in the manual.
- Clean and sanitize hopper, freezing cylinder, and splash zones on the machine.
- Check condition of all panels and lids - replace if necessary.
- Check dasher scraper blades for wear if equipped - replace once per year minimum.
- Check dasher for signs of wear - replace if necessary. Verify alignment when replacing.
- Check valve body gasket for wear - replace once per year minimum.
- Check valve body knobs (used to hold valve body in place) - replace if necessary.
- Check condition of shaft seals and stator bearings - replace once per year minimum.
- Inspect drip cup at back end of freezing cylinder for signs of seal leakage.
- Replace O-rings on hopper float (where necessary), dispense valves, and carb tubes (lubricate).
- Lubricate parts where appropriate (dispense valve O-rings, carb tube O-rings, rubber boot of stationary shaft seal). Lubricate with FDA approved food grade lubricant.
- Re-assemble unit and sanitize hopper and freezing cylinder by running CLEAN cycle.
- Clean and sanitize spinner if equipped.
- Check operation of merchandiser and mode lights - replace light bulbs if necessary.
- Clean reusable filter if equipped. Check condition of filter and replace if necessary.
- Clean condenser.
- Inspect the drive shaft and motor shaft bearings for excessive wear (drive shaft hole rounding out) - replace if necessary. Verify alignment when replacing.
- Check V-belt tension (should be 1/2" - 5/8" or 1.3 - 1.6 cm) and verify all set screws are tightened - adjust if out of range. Replace belt once per year minimum.
- Verify compressor operation and freezer controller operation.
- Check electrical connections (outlet should be properly grounded with amperage capacity equal to or over the amperage specified on the serial tag).
- Check condenser fan operation and clean fan blades if necessary.
- Review proper periodic care and cleaning instructions (disassembly, cleaning, sanitizing, lubrication, and re-assembly) with store personnel. Train store personnel to follow proper procedures (stress importance of store level maintenance i.e. lubrication, filter cleaning, etc.).
- Make sure store personnel have appropriate supplies (lubricant, cleaning brushes, and sanitizer) to care for machine.

## Cleaning and Maintenance (continued)

### How to Clean Condenser

**NOTICE:** Loss of refrigeration efficiency will result if condenser is allowed to become dirty. Excessive compressor run time or loss of capacity is a good indication that the condenser needs to be cleaned.

1. Disconnect electrical power.
2. Remove side panels.
3. Place a damp towel over the side of the condenser opposite the fan motor.
4. Using compressed air or CO<sub>2</sub>, blow out dirt from the fan side of the condenser. An alternate cleaning method is to use a condenser brush and vacuum cleaner.

**CAUTION:** Procedure can create a loud noise. Use hearing protection.

### How to Clean Exposed Filter

1. Slide exposed filter out of the rails by pulling forward on the filter. It is recommended to remove the filter by using the palm of your hand and applying even pressure to the face of the filter.
2. Clean filter with liquid soap and water.
3. Soak filter for 15 minutes.
4. Rinse filter with heavy stream of water, opposite the direction of air flow. Allow filter to dry.
5. Slide the filter into the rails until the filter contacts the stop on the top rail.

### How to Clean Concealed Filter

1. For concealed filters, lift lid and pull up on filter tab to remove filter.
2. Clean filter with liquid soap and water.
3. Soak filter for 15 minutes.
4. Rinse filter with heavy stream of water, opposite the direction of air flow. Allow filter to dry.
5. Slide filter into top of filter cover with removal clip up and the air flow arrows facing the existing panel.

### How to Adjust Belt

**CAUTION:** Unplug the machine before performing any adjustments. This procedure must be done by a qualified technician.

Check the belt tension. The proper belt deflection is 1/2" (1.3 cm) over all. If the deflection is more than 1/2" (1.3 cm) the motor will need to be lowered. If the deflection is less than 1/2" (1.3 cm), the motor will need to be raised. Follow this procedure to adjust the motor to achieve proper belt tension. (See Figure JJ.)

1. Unplug the machine and remove both side and the rear panels.
2. Locate the motor flange bearings

(#W0380009). These are the pillow block bearings that hold the motor to the cradle. The motor is double shafted and the shaft extends through a bearing on each end. The bearing is held to the motor cradle by two allen bolts on each bearing.

3. Loosen the allen bolts on each bearing. Do not loosen the set screws that hold the bearing collar to the motor shaft.
4. Lower the motor or raise the motor as needed. The motor must be kept level from front to back. Do not lower or raise only one end of the motor. This will result in excessive belt wear and belt noise.
5. Align the motor pulley with the top pulley if needed. Tighten all four allen bolts down.

**NOTICE:** The motor pulley should be in alignment with the large (driven) top pulley. Use a straight edge along the top pulley.

6. If the pulleys are not in alignment, remove the setscrew from the motor pulley and move either in or out as needed.
7. Reinstall the setscrew. Use non-permanent loc-tite on the setscrew and tighten it back down on the motor shaft. Be sure the setscrew is tightened down flat on the motor shaft.
8. Reassemble and return the unit back into service.

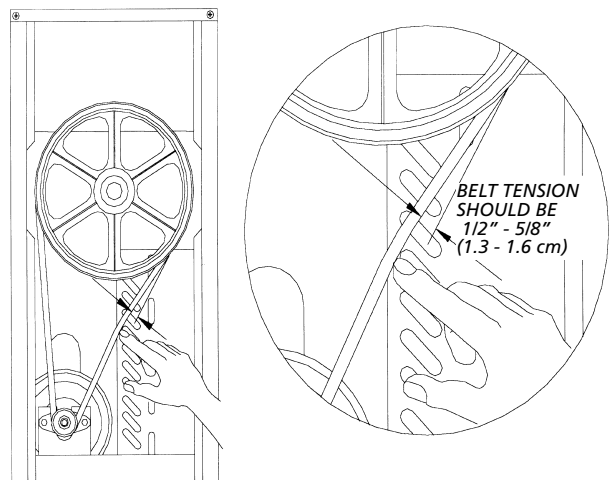


Figure JJ

## Troubleshooting

Freezer problems originate from three sources - improper operation, mix problems, or mechanical malfunction. Always check for improper operation and mix problems first, as they are the most common cause of most equipment problems.

**▲ CAUTION:** Always disconnect power before attempting any maintenance procedures.

**Only a qualified service technician should perform electrical and mechanical adjustments or repairs.**

PROBLEM	PROBABLE CAUSE	SOLUTION
Freezer will not run or freeze down	• Freezer not plugged in	• Plug in machine
	• Circuit breaker tripped or fuse blown	• Reset breaker or replace fuse
	• Freezer in "CLEAN" position	• Switch to "FREEZE"
	• Dasher or scraper blades not installed	• Install dasher and blades
	• Obstructed condenser air flow	• Allow 6" (15cm) on sides • Clean condenser, check for 6" air clearance on each side of unit
Product too soft	• Freezer in "Stand-by" mode	• Switch to "FREEZE"
	• Improper consistency control setting	• Re-adjust consistency control
	• Mixed soft, no overrun	• Drain and refill with fresh mix
	• Carburetor set incorrectly	• Re-adjust carburetor
Improper product taste	• Extended non-draw period	• Use STANDBY during slow business periods
	• Mix spoiled	• Check date code, use only fresh mix
	• Used rerun/leftover mix	• Use only fresh mix
Frozen product too stiff, or freezer runs continuously	• Frozen product too fluffy and icy (Product frozen too long, low draw)	• Draw out 1 quart (1 liter), dispose of product. Allow product to refreeze
	• Consistency control set too firm	• Re-adjust consistency control
Frozen product not dispensing	• Dispensing valve not fully closed	• Close valve, lubricate properly
	• Power switch OFF	• Turn Power Switch to ON
	• Insufficient mix in storage hopper, light on, beeper	• Refill storage hopper
	• Carburetor in off position, between holes	• Set carburetor to proper hole size
	• Carburetor inlet hole clogged	• Unclog carburetor
	• Foam buildup, liquid mix cannot feed properly	• Remove foam from hopper using sanitized utensil
	• Drive belt broken or off of pulley	• Replace or repair
• Machine in STAND-BY mode	• Set switch to FREEZE	
Liquid coming out of drain tube, front of freezer	• Worn, defective or improperly installed seal	• Replace and lubricate per manual
Excessive dispensing valve leakage	• Worn or defective O-Rings	• Replace and lubricate at each cleaning
Scraping sound during freeze down	• Frozen product scraping off of cylinder walls	• Normal sound during freeze down, goes away when product is frozen to proper consistency

## Troubleshooting (continued)

Freezer problems originate from three sources - improper operation, mix problems, or mechanical malfunction. Always check for improper operation and mix problems first, as they are the most common cause of most equipment problems.

**▲ CAUTION:** Always disconnect power before attempting any maintenance procedures.  
**Only a qualified service technician should perform electrical and mechanical adjustments or repairs.**

PROBLEM	PROBABLE CAUSE	SOLUTION
Clicking sound from electrical box	• Low voltage	• Connect freezer to dedicated circuit of proper rating
	• Extension cord or improperly sized electrical wire	• Connect freezer directly to power source using properly sized wiring
Merchandiser light flickers when freezer cycles	• Low voltage	• Connect freezer to dedicated circuit or proper rating
Thumping sound from inside freezer	• Worn drive belt	• Replace belt

If you still need help, call Grindmaster Technical Service Department, (502) 425-4776 or (800) 695-4500 (USA & Canada only) (Monday through Friday 8 AM - 6 PM EST). Please have the model and serial number ready so that accurate information can be given.

Prior authorization must be obtained from Grindmaster for all warranty claims.

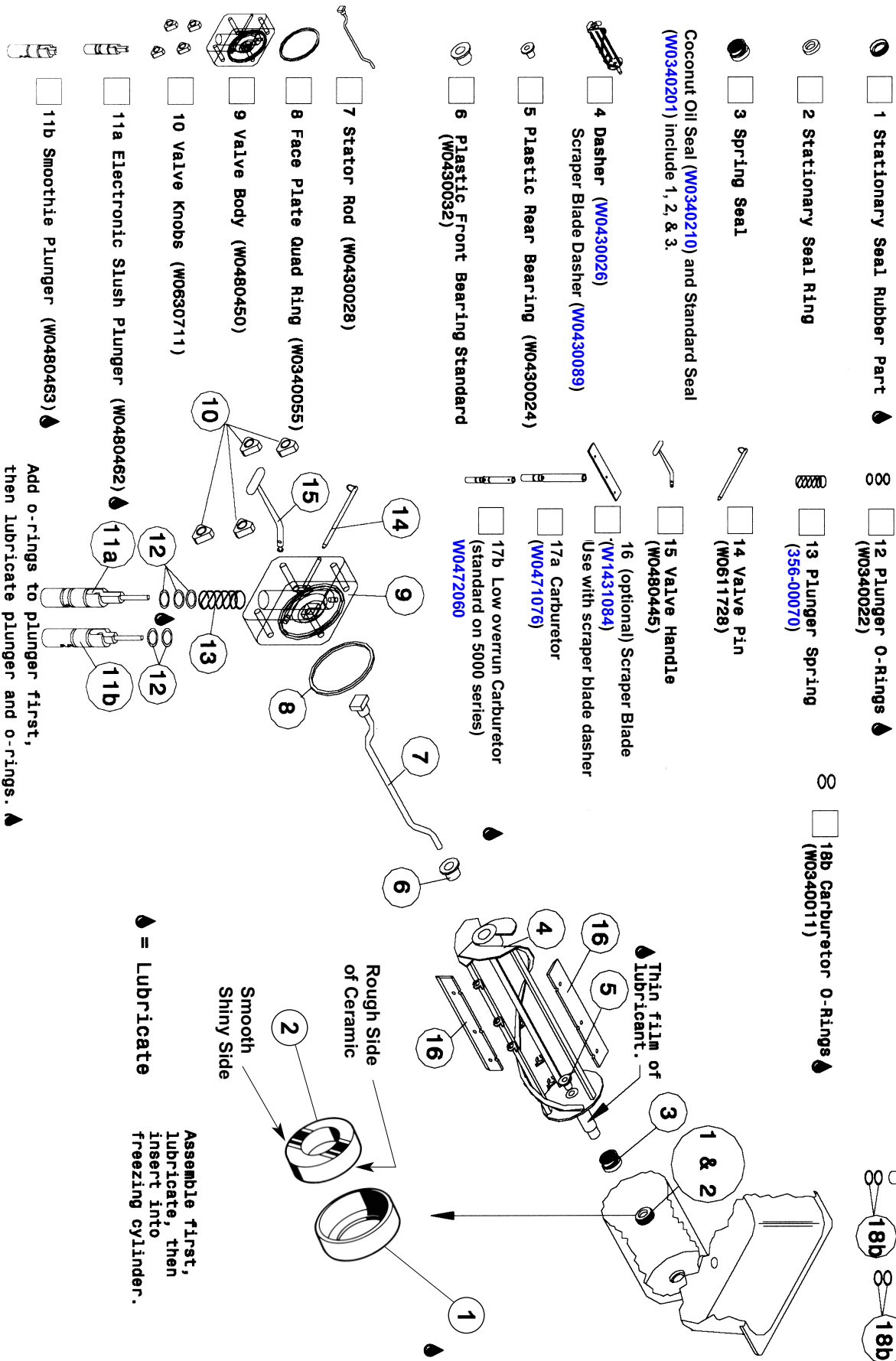
**Grindmaster provides the industry's BEST warranty. Visit our website at [grindmaster.com](http://grindmaster.com) for warranty terms and conditions.**

# Parts Identification

## CHECK LIST

### PARTS IDENTIFICATION

Do not cover ventilation grill on sides of machine.  
Read equipment instructions before handling parts.



- 1 Stationary Seal Rubber Part
- 2 Stationary Seal Ring
- 3 Spring Seal
- 4 Dasher (W0430026)  
Scraper Blade Dasher (W0430089)
- 5 Plastic Rear Bearing (W0430024)
- 6 Plastic Front Bearing Standard (W0430032)
- 7 Stator Rod (W0430028)
- 8 Face Plate Quad Ring (W0340055)
- 9 Valve Body (W0480450)
- 10 Valve Knobs (W0630711)
- 11a Electronic Slush Plunger (W0480462)
- 11b Smoothie Plunger (W0480463)
- 12 Plunger O-Rings (W0340022)
- 13 Plunger Spring (356-00070)
- 14 Valve Pin (W0611728)
- 15 Valve Handle (W0480445)
- 16 (optional) Scraper Blade (W1431084)  
Use with scraper blade dasher
- 17a Carburetor (W0471076)
- 17b Low overrun Carburetor (standard on 5000 series) (W0472060)
- 18a Carburetor O-Rings (W0340011)
- 18b Carburetor O-Rings

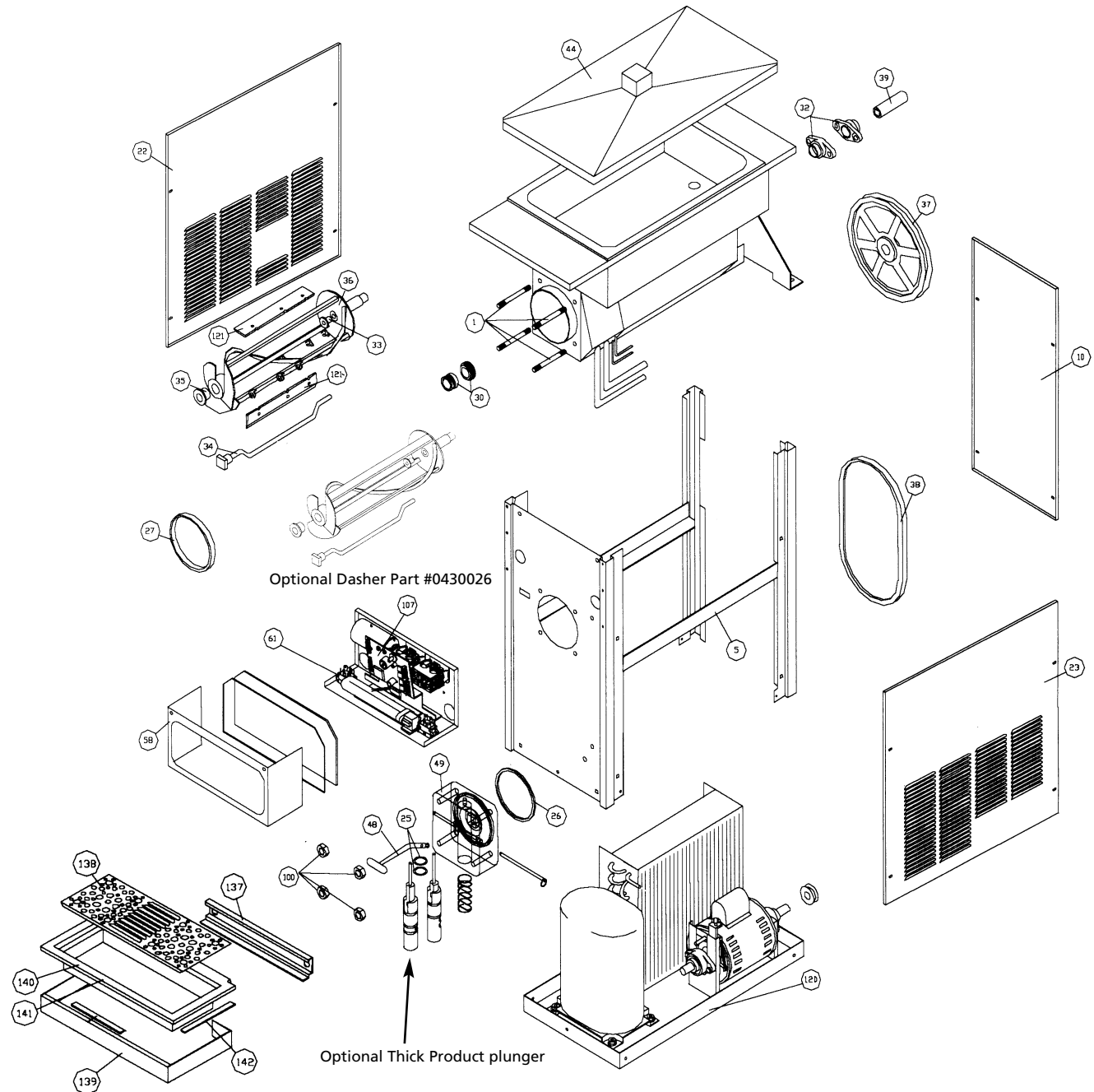
▲ = Lubricate

Assemble first, lubricate, then insert into freezing cylinder.

Add o-rings to plunger first, then lubricate plunger and o-rings. ▲

# Parts Diagram and List

## Exploded View Model 5311

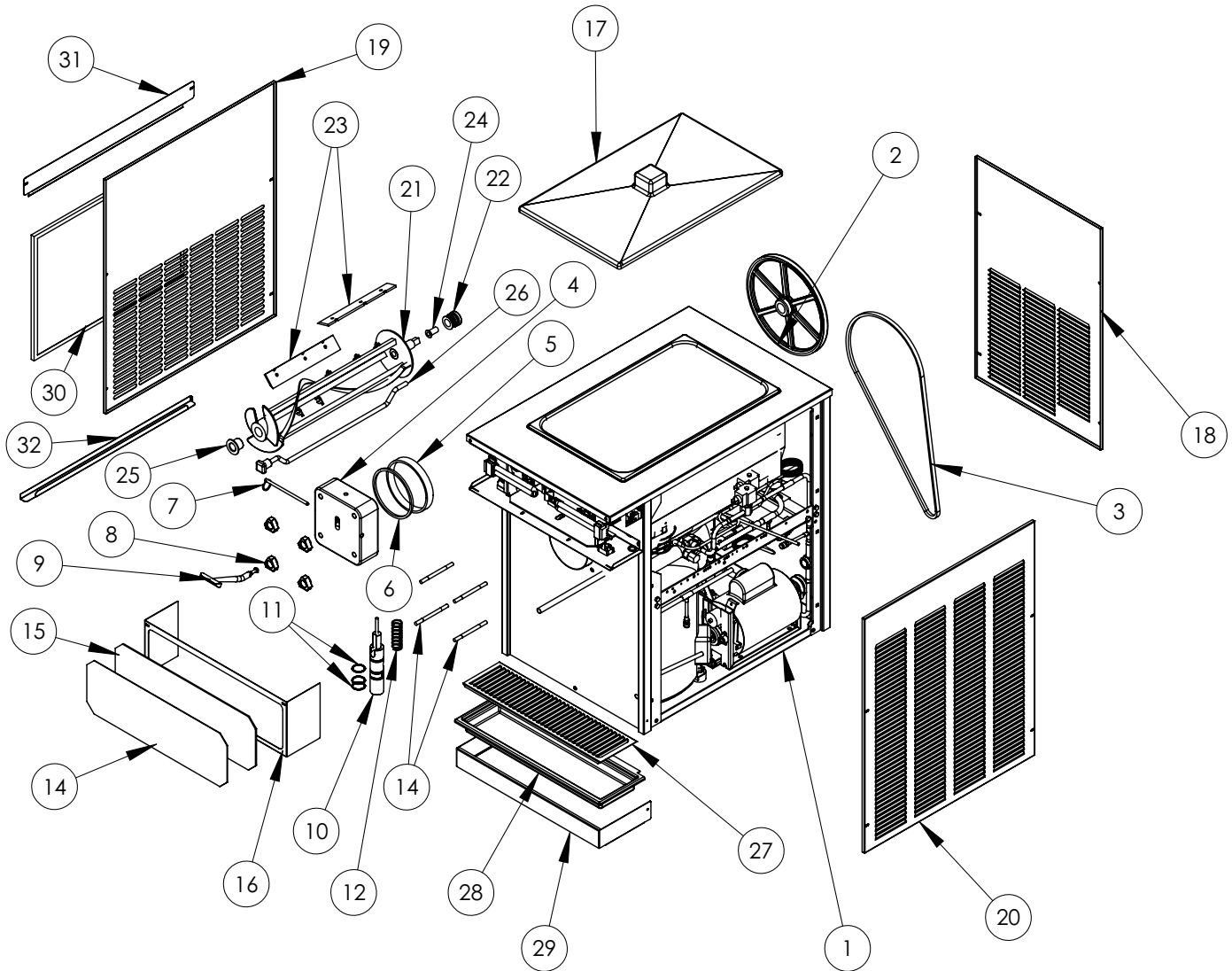


Optional X-large drip pan for units with spinners

Item	Part Number	Description	Item	Part Number	Description
1	W0110013	Valve Stud	44	W0520094	Hopper Cover Black
5	W0210171	Frame Assembly	48	W0480445	Valve Handle
10	W0520063	Stainless Steel Rear Panel	49	W0480450	Valve Body
22	W0520107	Stainless Steel Side Panel Left	58	W0572452	Electrical Box Cover
23	W0520065	Stainless Steel Side panel Right	61	W0572453	Electrical Box Assembly
25	W0340022	213 O-Ring	100	W0630711	Valve Knob
27	W0340058	Barrel Gasket	107	250-00360	Circuit Board
30	W0340210	Seal Set Standard	120	W0212700	Base Assembly
32	W0389001	Modified Flange Bearing	121	W1431084	Scraper Blade
33	W0430024	Blind Flange Bearing	137	W0472064	Drip Pan Bracket
34	W0430028	Stator Rod Weldment	138	W0472063	Drip Pan Insert
35	W0430032	Stator Flange Bearing	139	W0472062	Drip Pan Form
36	W0430089	Scraper Dasher	140	W0631631	Plastic Drip Pan (white)
37	W0450008	Pulley (10 inch)	141	W0631632	Plastic Drip Pan (black)
38	W0450209	Drive V-Belt	142	W0670007	Sound Insulation
39	W0451067	Drive Shaft			

# Parts Diagram and List (continued)

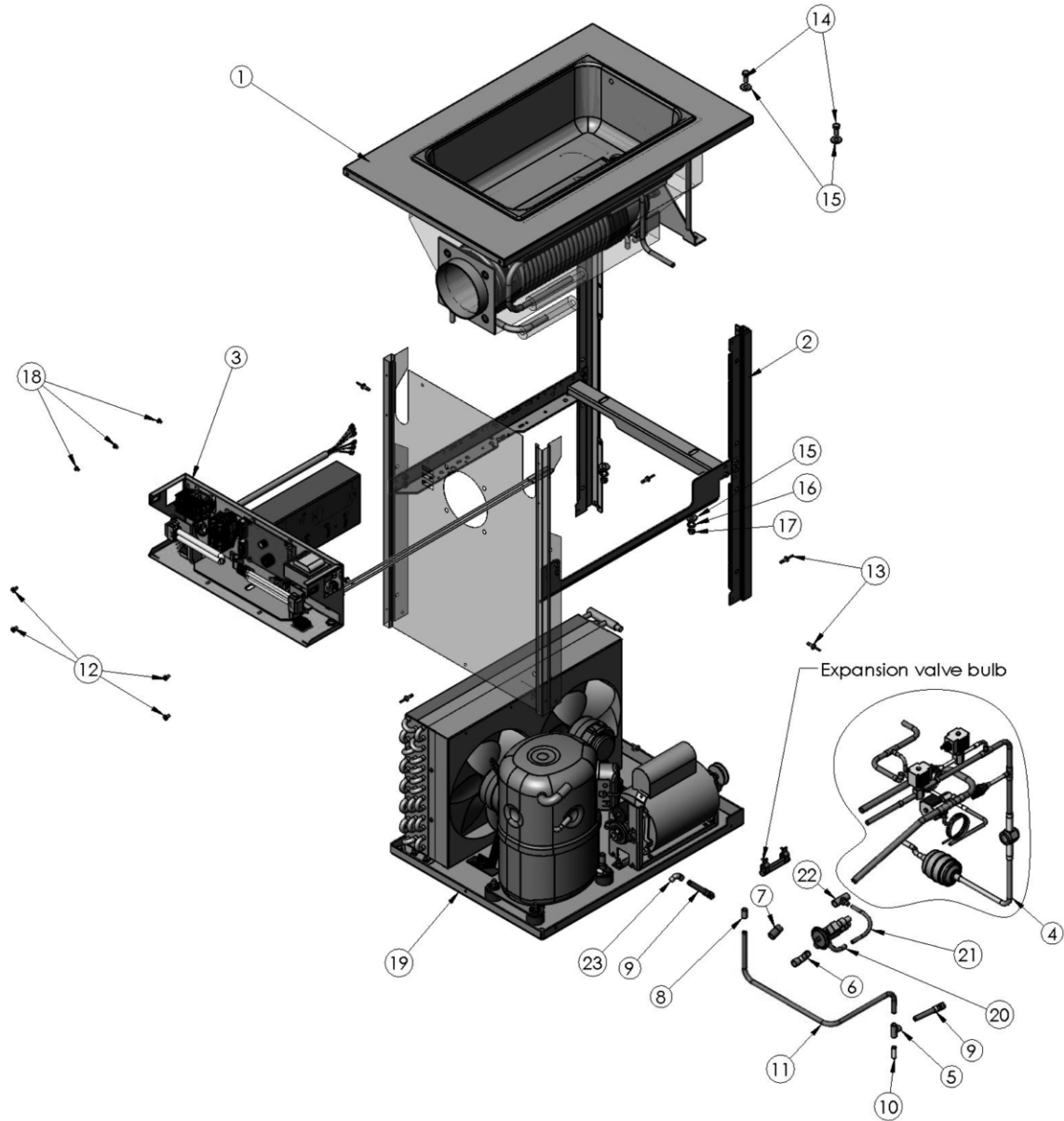
## Exploded View Model 5711



Item	Part No.	Description	QTY	Item	Part No.	Description	QTY
1	232-00058	Stock Assy,5711	1	17	W0520094	Hopper Cover Single	1
2	W0450053	PULLEY, 10" W/ 1" BORE	1	18	W0520080	Rear Panel 3312	1
3	W0450211	Belt,V,49"	1	19	W0520137	Panel, L. H. Side 5711	1
4	W0480450	Valve Body	1	20	W0520136	Panel, R.H. Side 5711	1
5	W0340058	Barrell Gasket	1	21	W0430089	Dasher, Scraper	1
6	W0340055	Valve Square Cut O-Ring	1	22	W0340201	Shaft Seal Set,FDA Buna	1
7	W0611728	FasPin, Valve	1	23	W1431084	Scraper Blade, New Style	2
8	W0630711	Valve Knob	4	24	W0430024	REAR STATOR BEARING	1
9	W0480445	Valve Handle	1	25	W0430032	STATOR FLANGE BEARING	1
10	W0480462	PLUNGER, STD PROD 5000 SERIES	1	26	W0430028	STATOR WELDMENT PICKLED	1
11	W0340022	Plunger O'Rings	3	27	W0472078	Insert,Drip Tray,5711	1
12	W0631230	Valve Spring	1	28	W0472077	Drip Pan,5711	1
14	W0110013	STUD, VALVE NEW STYLE	4	29	W0472076	Pan, Drip Form, 5711	1
14	W0631638	Front Display 5711,	1	30	W0631805	FILTER 14" X 19.5" X 3/8"	1
15	W0631639	Front Display 5711,	1	31	W0520109	TOP FILTER COVER FOR 14 X 20 FILTER	1
16	W0520145	Elec. Box Cover	1	32	W0520110	BOTTOM FILTER COVER FOR 14 X 20 FILTER	1

# Parts Diagram and List (continued)

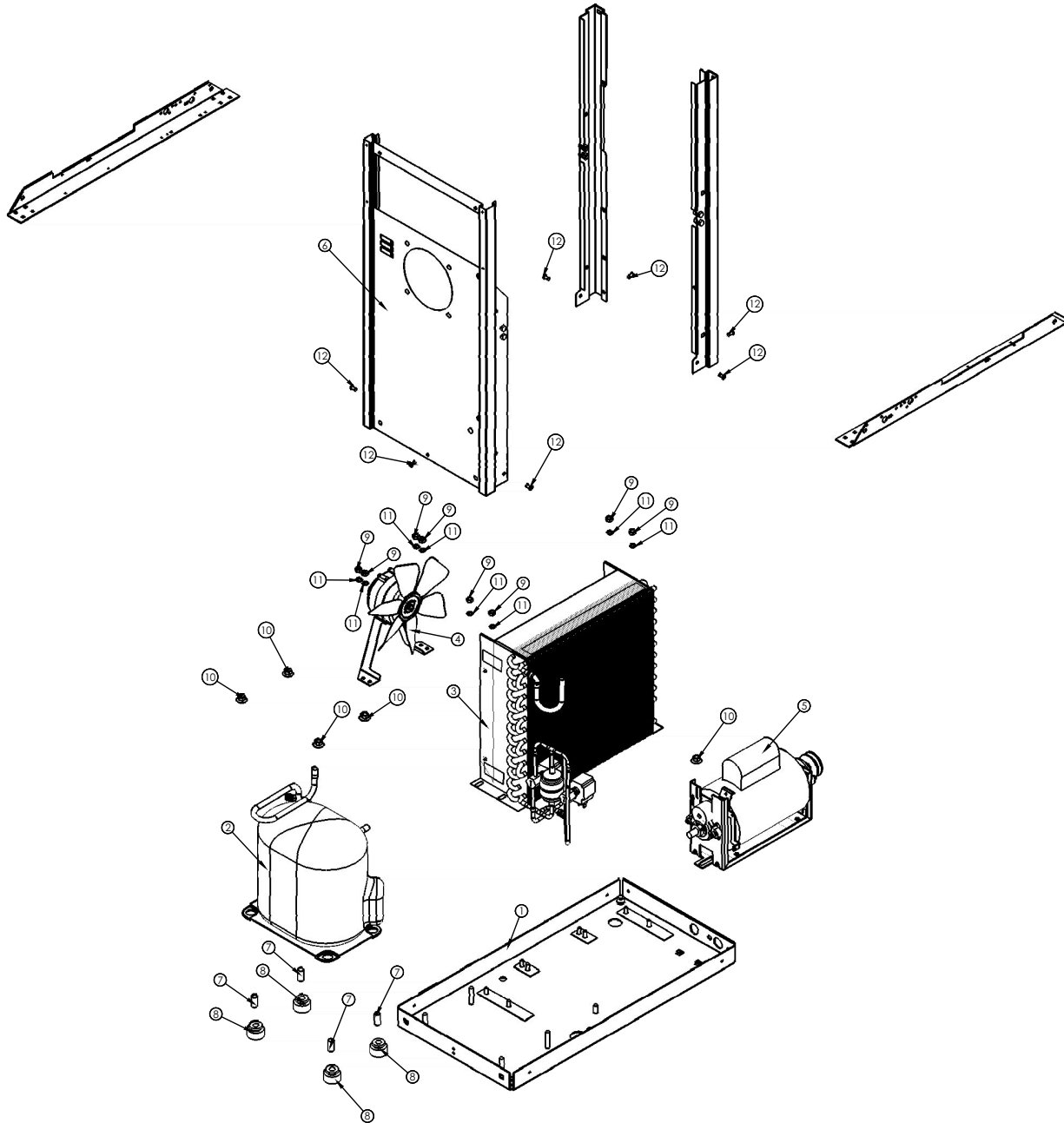
## Exploded View Model 5711 Stock Assembly



Item	Part Number	Description	QTY	Item	Part Number	Description	QTY
1	232-00059	EVAPORATOR ASSY, 5711 (w/o accumulator)	1	12	W0610265	Screw, 10-24x3/8 PH PN HD typ23 TCS, STL/ZN	4
2	232-00085	FRAME ASSEMBLY , 5711	1	13	W0611410	Rivet, 3/16" SS	7
3	232-00081	ELECTRICAL BOX ASSEMBLY, 5711	1	14	W0610682	Screw, 5/16-18 x 3/4 HX HD Cap Zinc	2
4	232-00072	Kit, 5711 valve tubing sub-assemblies	1	15	W0611254	Washer, 5/16 USS Zinc plated steel	4
5	W0620114	Fitting, 3/8 ODS, Copper Tee	1	16	W0611255	Washer, 5/16 split Zinc plated steel	2
6	W0620141	Elbow, 3/8 copper street	1	17	W0611086	Nut, 5/16-18 HX MS Zinc plated	2
7	W0620187	Bushing, 5/8 OD x 1/2ID Sleeve	1	18	w0610131	SCR, 8-32 X 1/4 SELF THRD PH	3
8	W0620103	Fitting, 3/8" slip Wraught copper coupling 1/4" x 1/4"	1	19	232-00079	Base Assy, 5711 Tecumseh	1
9	280-00062	VALVE,	2	20	280-00078	VALVE, THERMOSTATIC,	1
10	W0201135	Liquid line	1	21	362-00235	Tube, 5711 expansion valve to	1
11	362-00223	Tube, 5711 Tecumseh discharge	1	22	W0620121	1/2" IDx 1/4" IDx 1/2" ID Copper	1
				23	W0620107	ELBOW, 3/8" ID x 3/8" OD, 90 DEG, COPPER	1

# Parts Diagram and List (continued)

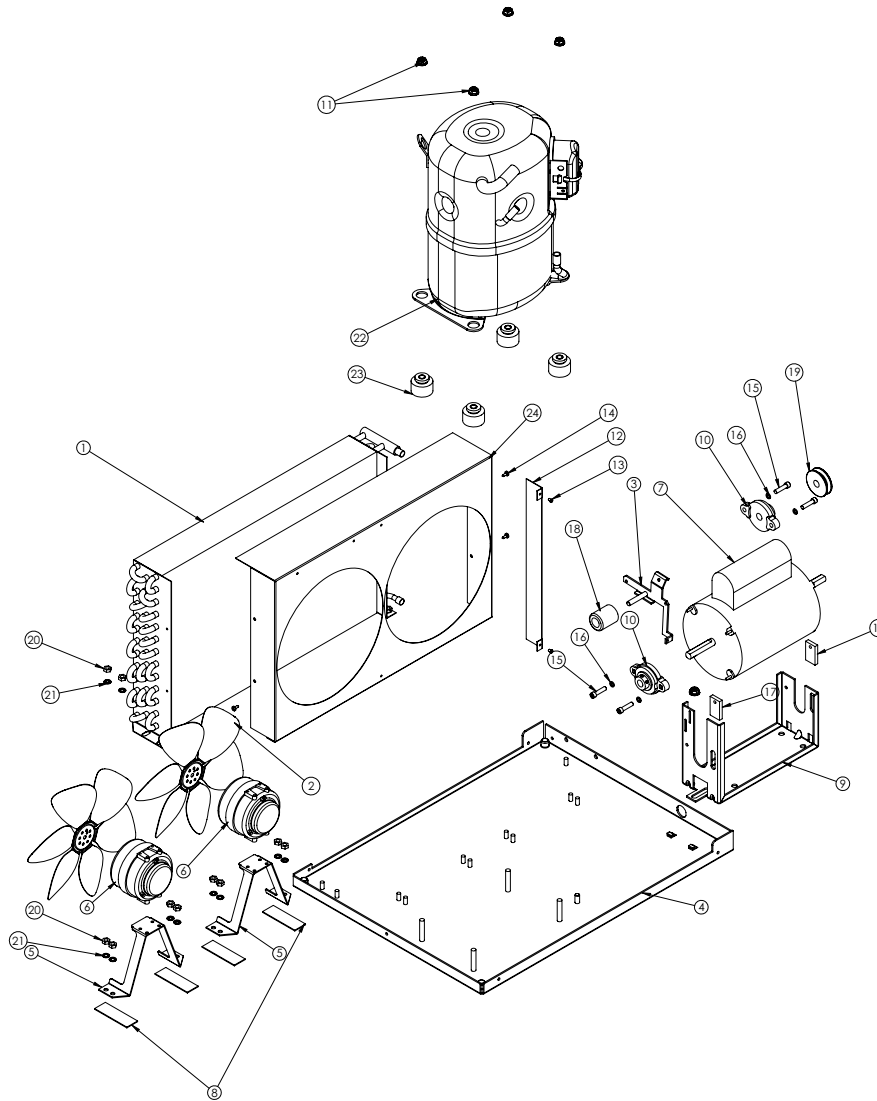
## Exploded View Model 5311 Base Assembly



ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	W0210106	Base Pan Assy
2	1	W0201001	Compressor Assy, 3311, 115V
3	1	W0202300	Condenser Assembly
4	1	W0321029	Fan Assembly, 115V
5	1	W0321032	Drive Motor Assembly
6	1	W0210171	Frame Assy, 5311 & 5511
7	4	W0200412	Spacer, Compressor
8	4	W0200413	Compressor Mount Grommet
9	8	P043A	Nut, Hex, 1/4-20, Z/P
10	5	W0611082	NUT, 5/16-18 FLANGE, LARGE
11	8	W0611247	1/4" Int. Tooth Lockwasher
12	7	W0611410	RIVET, MAGNA-LOK MGLP-U6-4

# Parts Diagram and List (continued)

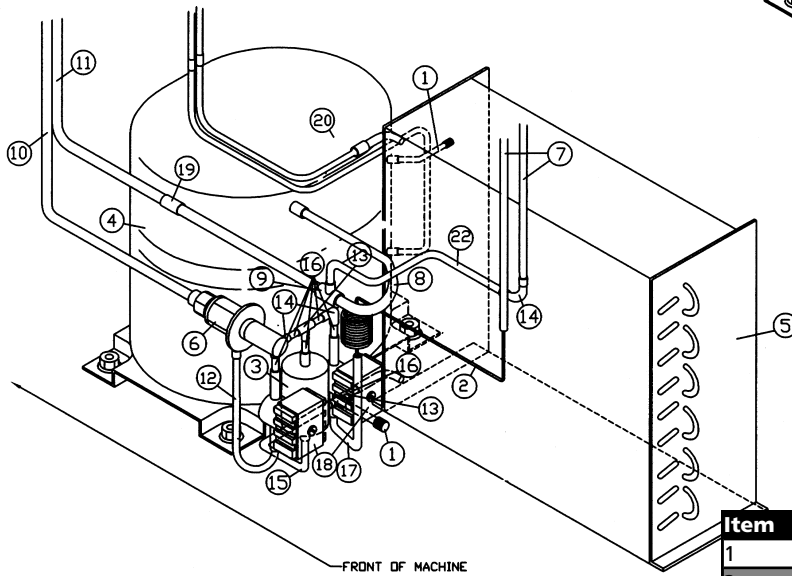
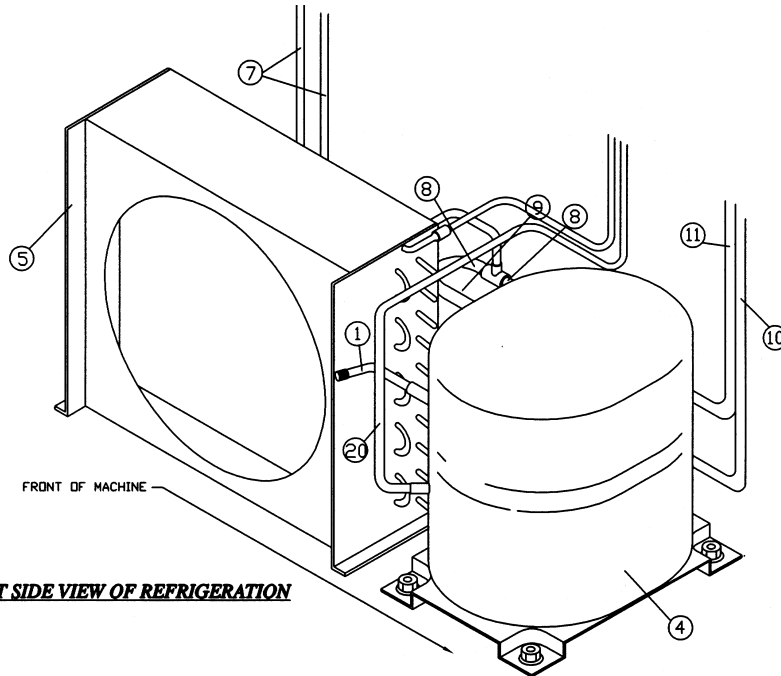
## Exploded View Model 5711 Base Assembly



ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	W0200257	1	Condenser, 5711 Refrigeration
2	W0320286	2	Propeller, Axial flow 9.5"
3	W0321025	1	Motor Stop Bracket Assy.
4	W0210004	1	Base Plate Pan, 5711
5	W0200411	2	BRKT, FAN MOTOR MNT.
6	W0320220	2	Motor, Fan 5512 ESP_L35EM2M
7	W0320020	1	MOTOR, DRIVE DUAL CYCLE 1/2 HP
8	W0671022	4	Insulation, Motor Bkt Sound
9	W0210169	1	Motor Cradle
10	W0380009	2	1/2" Flange Bearing
11	W0611082	5	NUT 5/16"-18 HX LCK FLNG GR 2
12	W0201059	1	Shroud Baffle
13	86127	2	RIVET, POP MAXG 1/8 X 1/8 SS
14	W0610112	4	Screw#8-15 x 3/8 PH PN HD Type A SMS Zinc plated steel
15	W0610559	4	SOCKET HEAD CAP SCREW 1/4 X 1
16	W0611249	4	1/4" Lock Washer
17	W0321013	2	NUT, MOTOR ADJUSTMENT
18	W0340111	1	BUMPER, ZB-1214 MINOR RUBBER
19	W0450016	1	1/2" ID X 1.7 Dia. Motor Pulley
20	P043A	11	Nut, Hex, 1/4-20, Z/P
21	W0611247	11	Lockwasher, 1/4" Internal Tooth
22	330-00012	1	Compressor, Tecumseh DCAW114_AWA2450ZXD
23	355-00077	1	Grommet kit, Tecumseh LP99
24	W0201058	1	Shroud, 5711 condenser

# Parts Diagram and List (continued)

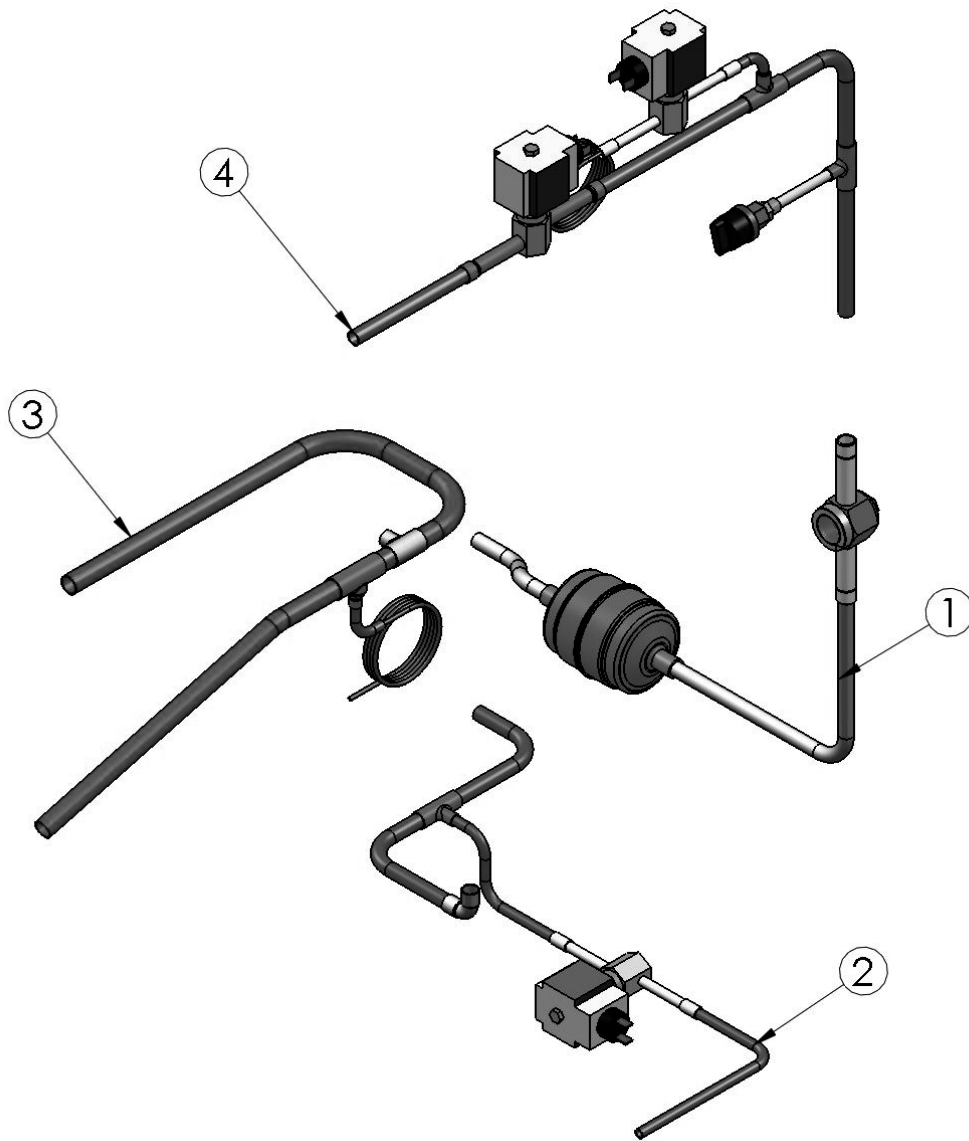
## 5311 Base Assembly Refrigeration



Item	Part Number	Description
1	W0650501	Access Valve
2	W0200314	Capillary Tube, .042 x 12 Ft.
3	W0650112	Filter Drier
4	W0200123	Compressor
5	W0200256	Condenser
6	W0650104	Automatic Expansion Valve
7	W0201120	Hopper Coolant Lines
8	W0201191	Suction Line
9	W0620109	3/8" x 3/8" x 1/4" Tee
10	W0201114	Evaporator Line
11	W0201113	Suction Line
12	W0201323	Exp. Valve Solenoid Coolant Line
13	W0620102	1/4" x 1/4" x 1/4" Tee
14	W0620110	1/4" Copper Elbow
15	W0201324	Filter/Condenser Coolant Line
16	W0201325	Coolant Line
17	W0201326	Solenoid/Cap Tube Line
18	W1650002	Solenoid Valves
19	W0620103	3/8" Straight Couple
20	W0201039	Compressor/Condenser Hot Gas Line

# Parts Diagram and List (continued)

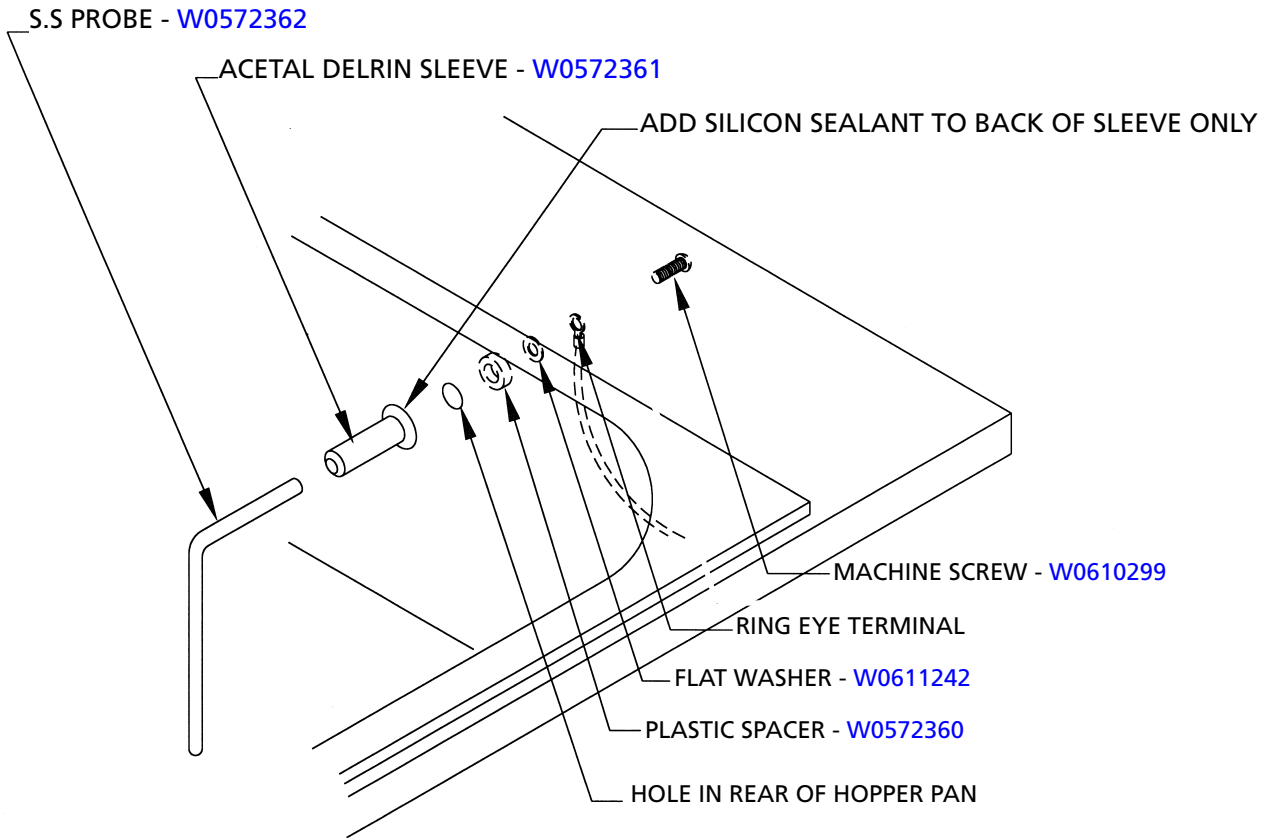
## Model 5711 Refrigeration Tube Assembly



Item	Part Number	Description	Qty
1	232-00073	SIGHT GLASS TUBE ASSY, 5711	1
2	232-00084	ASSY, 5711 HOT GAS BYPASS VALVE TUBING	1
3	232-00083	ASSY, REFRIGERATION TUBE-5711	1
4	232-00086	ASSY, 5711 TECUMSEH VALVE	1

# Parts Diagram and List (continued)

## Exploded View Probe Assembly

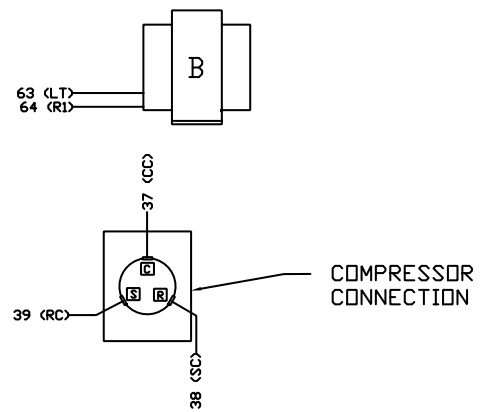
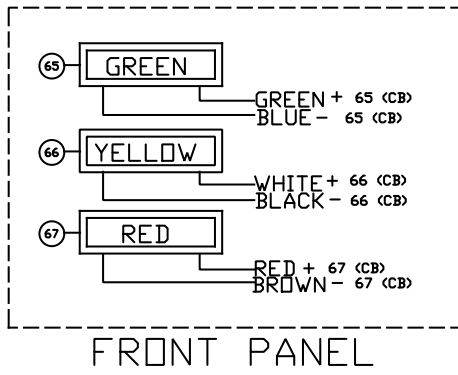
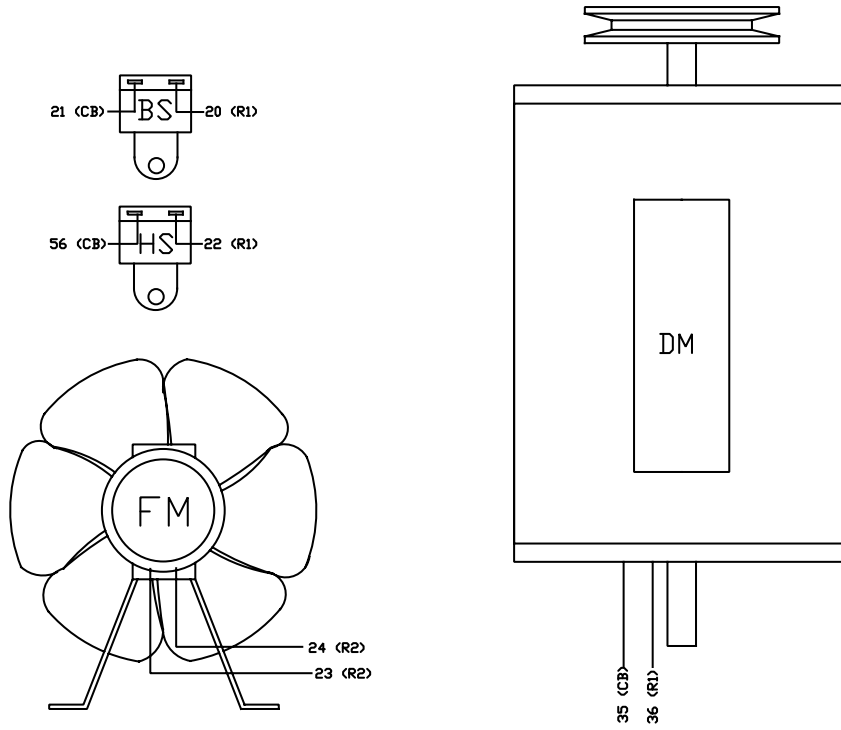


# Parts Diagram and List (continued)

## 5311 Electrical Components

25 (CB) — ○  
MIX OUT ASSEMBLY

34 (GRND) — ○ — POWER CORD  
FRAME GROUND

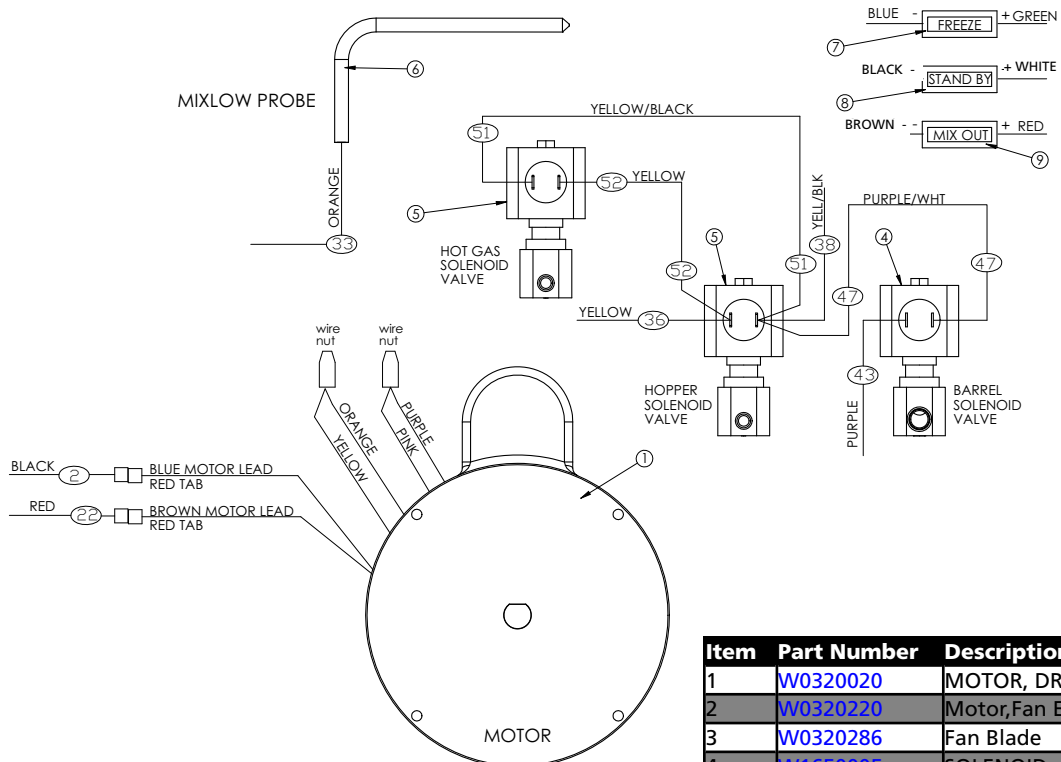
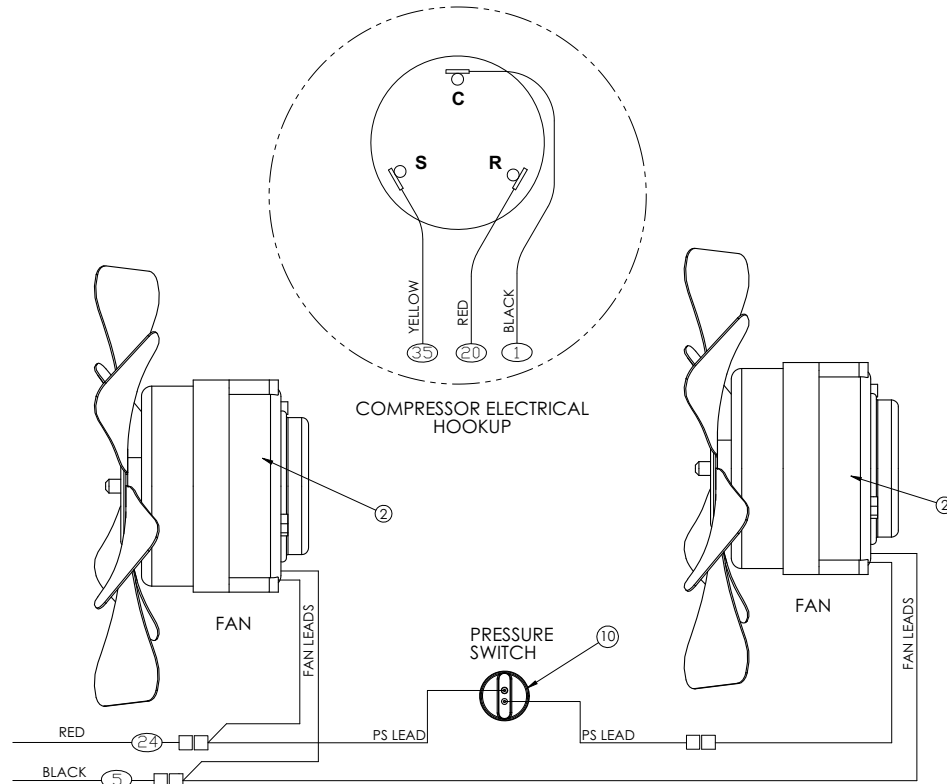


Item	Part Number	Description
HS	W1650002	HOPPER SOLENOID
BS	W1650002	BARREL SOLENOID
FM	W0320209	FAN MOTOR
DM	W0320019	DRIVE MOTOR
	W0570712	POWER CORD
R1	W0570655	DRIVE MOTOR CONTACTOR
R2	W0570655	COMPRESSOR CONTACTOR
SC	W0570603	START CAPACITOR

Item	Part Number	Description
RC	W0570617	RUN CAPACITOR
CR	W0570638	COMPRESSOR RELAY
CB	250-00360	CIRCUIT BOARD
B	W0570045	BALLAST
LT	W0570043	FLUORESCENT BULB
65	W1570012	GREEN INDICATOR LIGHT
66	W1570010	YELLOW INDICATOR LIGHT
67	W1570011	RED INDICATOR LIGHT

# Parts Diagram and List (continued)

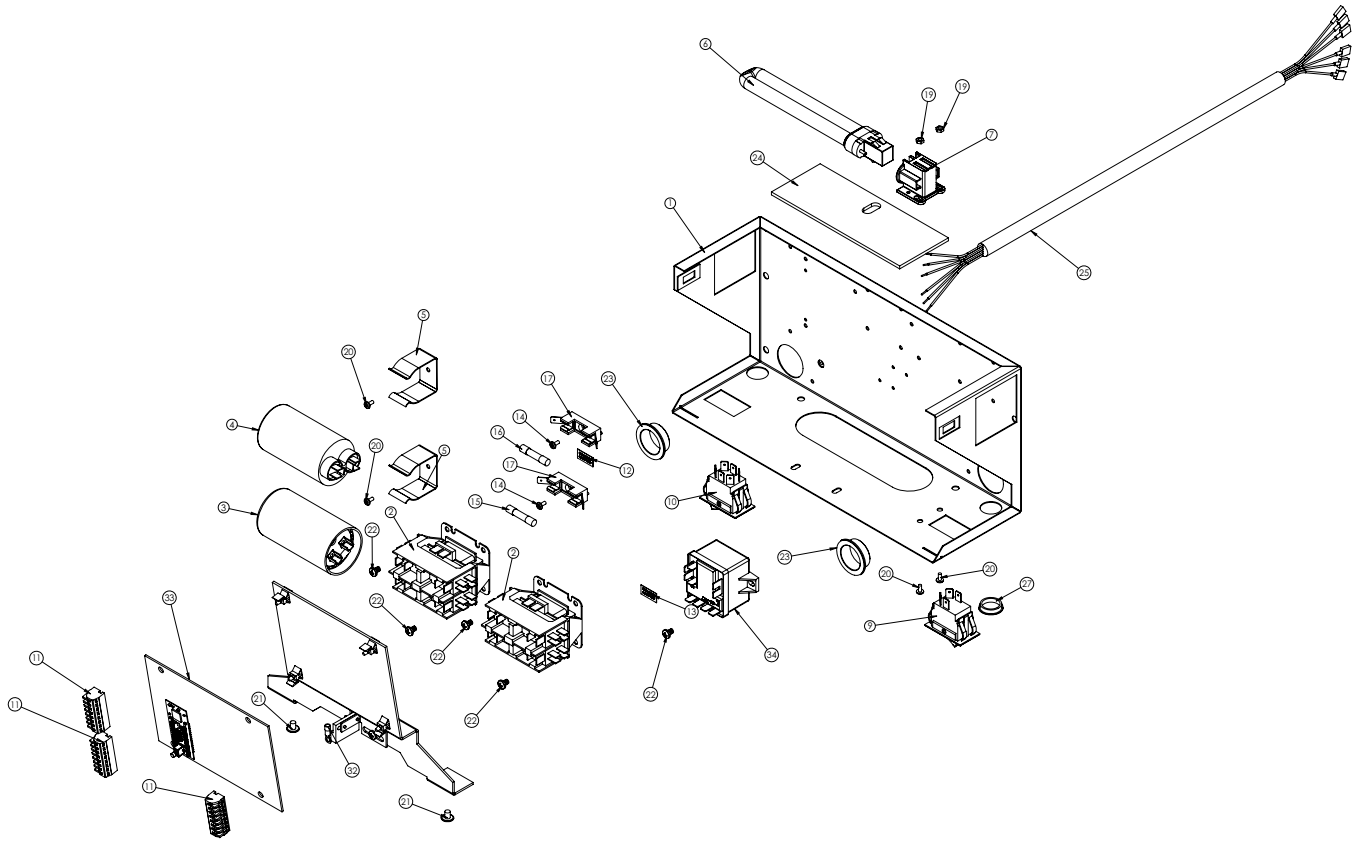
## 5711 Electrical Components



Item	Part Number	Description	QTY
1	W0320020	MOTOR, DRIVE DUAL CYCLE 1/2 HP	1
2	W0320220	Motor,Fan ESP-LD16EM1	2
3	W0320286	Fan Blade	2
4	W1650005	SOLENOID, COMP E5S130S-24/50	1
5	W1650002	SOLENOID, COMP E5S120S-24/50	2
6	W0572362	Mix Out Probe	1
7	W1570012	LIGHT, INDICATOR GRN 12V LED	1
8	W1570010	LIGHT, INDICATOR DK AMBER 12V	1
9	W1570011	LIGHT, INDICATOR LT RED 12V	1
10	W0620431	Switch,Pressure,5711	1

# Parts Diagram and List (continued)

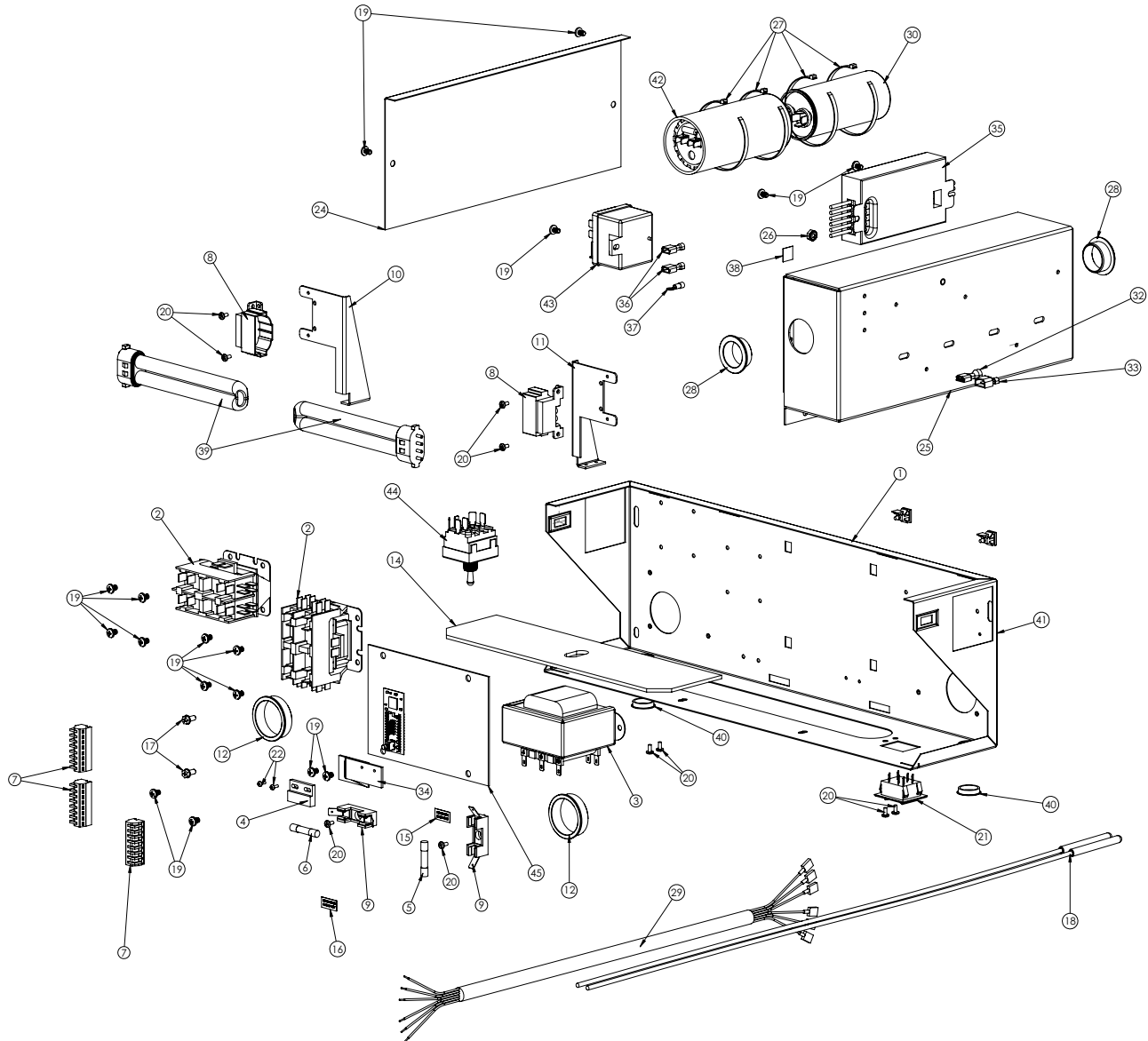
## 5311 Electrical Box



ITEM NO.	PART NO.	QTY.	DESCRIPTION	ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	W0572451	1	Electrical Box,5311	18	83151	1	WASHER, LOCK, #8, EXT TOOTH
2	W0570655	2	Contactora,240-600V,24VAC	19	86827	2	NUT #6-32 HEX
3	W0570603	1	START CAPACITOR	20	W0610015	4	SCR #6-32 X 1/4
4	W0570617	1	RUN CAPACITOR	21	W0610264	2	Screw, 10-24x1/4 PH TR HD MS, 18-8 S/S
5	W0630811	2	CLIP, CAPACITOR-SMALL	22	W0610131	5	SCR, 8-32 X 1/4 SELF THRD PH
6	W0570043	1	BULB, FLOURESCENT	23	W0630006	2	BUSHING SNAP HEYCO
7	W0570044	1	SOCKET,LIGHT-LEVITON	24	W0631629	1	Lens,Electrical Box
8	W0572706	1	ASSY, CTRL BOARD MNT	25	W0572121	1	Harness, 6-wire cable
9	W0570934	1	SWITCH, ROCKER 15 AMP	26	W0570504	2	Probe, Thermistor
10	83231	1	SWITCH, RCKR 3 POS	27	101126	1	PLUG, HEYCO SHORTY #1693
11	W0570214	3	Strip,8 pin Term 90 deg scrw	28	W0572432	1	Wire Bundle,5311 left
12	W0600201	1	Decal, "Replace with 3.2 Amp"	29	W0572433	1	WIRE BUNDLE_RIGHT_5311
13	W0600202	1	Decal, "Replace with 5.0"	30	W0572424	1	BUNDLE, ELEC BOX WIRE
14	83248	2	SCR #6-32X1/4" PH PN T/F ZNC	31	86600	6	TIE WIRE 4" NYLON
15	W0570842	1	Fuse, 5 amp 3AG-5A-313	32	101124	1	TERMINAL, #8 RING, 22-18 AWG
16	W0570823	1	FUSE, BUSS # MDL 3.2 SLO	33	349-00089	1	Control, 5000 series CFB Gen-2
17	W1570616	2	FUSEBLOCK, SINGLE POLE 1/4"	34	W0570638	1	Relay, AKA9455ZXA Tecumseh Compressor

# Parts Diagram and List (continued)

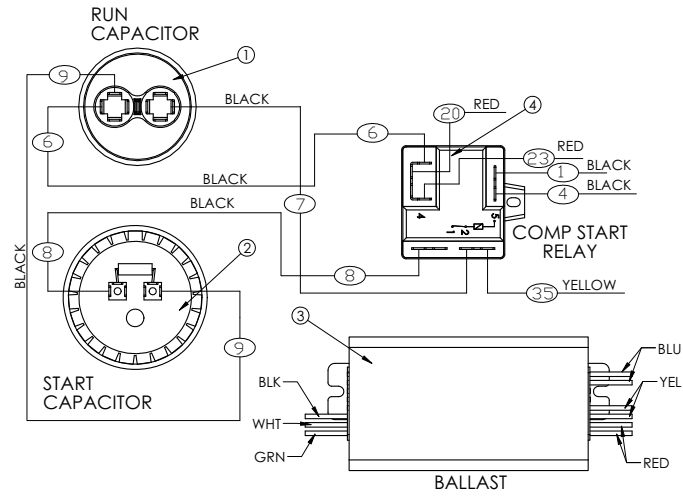
## Exploded 5711 Electrical Box



ITEM NO.	PART NUMBER	QTY.	DESCRIPTION	ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	W0572465	1	ELECTRICAL BOX, 5711	24	W0575066	1	Cover,Cap/Relay box, 5711
2	W0570655	2	Contact,240-600V,24VAC Coil	25	W0575065	1	BOX, CAPACITOR/RELAY, CFB5711
3	W0570659	1	TRANSFORMER, P/N FD8-24 MAGNETEK	26	86810	1	NUT, 8-32 KEPS LOCK W/EXT TOOTH L/W, STL/ZINC
4	W0570916	1	SWITCH, REED NORMALLY OPEN	27	W0630802	4	Wire tie, 5" Nylon
5	w0570823	1	FUSE, BUSS # MDL 3.2 SLO BLO	28	W0630006	2	BUSHING SNAP HEYCO
6	w0570842	1	Fuse, 5 amp 3AG-5A-313 Littlefuse	29	W0572121	1	Harness, 6-wire cable
7	W0570213	3	STRIP, TERM 8 PIN SPRING CLAMP	30	W0570610	1	Capacitor, Run
8	W0570049	2	Socket,4-pin Fluorescent,2GX7	31	W0570292	1	Terminal, 12-10 AWG #10 stud ring, insulated
9	w1570616	2	FUSEBLOCK, SINGLE POLE 1/4"	32	W0570207	1	Term, Faston 16-14 Ga fully insulated
10	w0572713	1	Bracket,L.H. Light,5711	33	70425	1	1/4" MALE CONNECTOR
11	W0572714	1	R.H. Light Brkt, 5711	34	W0572709	1	BRACKET, SERVE SWITCH, 5711
12	W0630008	2	BUSHING, 1-1/2" HEYCO #2240	35	W0570059	1	BALLAST,120-277V 50/60Hz
13	86600	8	Cable tie,4"L x 0.1"W 18lb, Natural Nylon	36	70426	2	TERM, 1/4F INS QD 18-22 GA
14	W0631637	1	Lens,5711 Bottom electrical box	37	101124	1	TERMINAL, #8 RING, 22-18 AWG
15	W0600201	1	Decal, "Replace with 3.2 Amp"	38	10073	1	Label, Ground Symbol
16	W0600202	1	Decal, "Replace with 5.0 Amp"	39	W0570050	2	Description
17	76	2	SCR, 8-32 X 3/8 HEX HD, GRN	40	61743	2	Hole Plug, 3/4" shorty, Blk Nyl, Heyco # 1693
18	W0570504	2	Probe, Thermistor	41	w0630427	4	Standoff, Circuit Board
19	w0610131	17	SCR, 8-32 X 1/4 SELF THRD PH	42	341-00008	1	Capacitor, 143 uf Start (5711 AWA Tecumseh
20	83248	10	SCR #6-32X1/4" PH PN T/F ZNC	43	346-00074	1	Relay, AWA Tecumseh Compressor, 5711
21	W0570939	1	Switch, Rocker	44	344-00060	1	SWITCH, TOGGLE, 3PST
22	W0610000	2	Screw, 4-40x1/4" SL RH	45	349-00089	1	Control, 5000 series CFB Gen-2
23	W0572431	1	Wire bundle,5711				

# Refrigeration Schematic

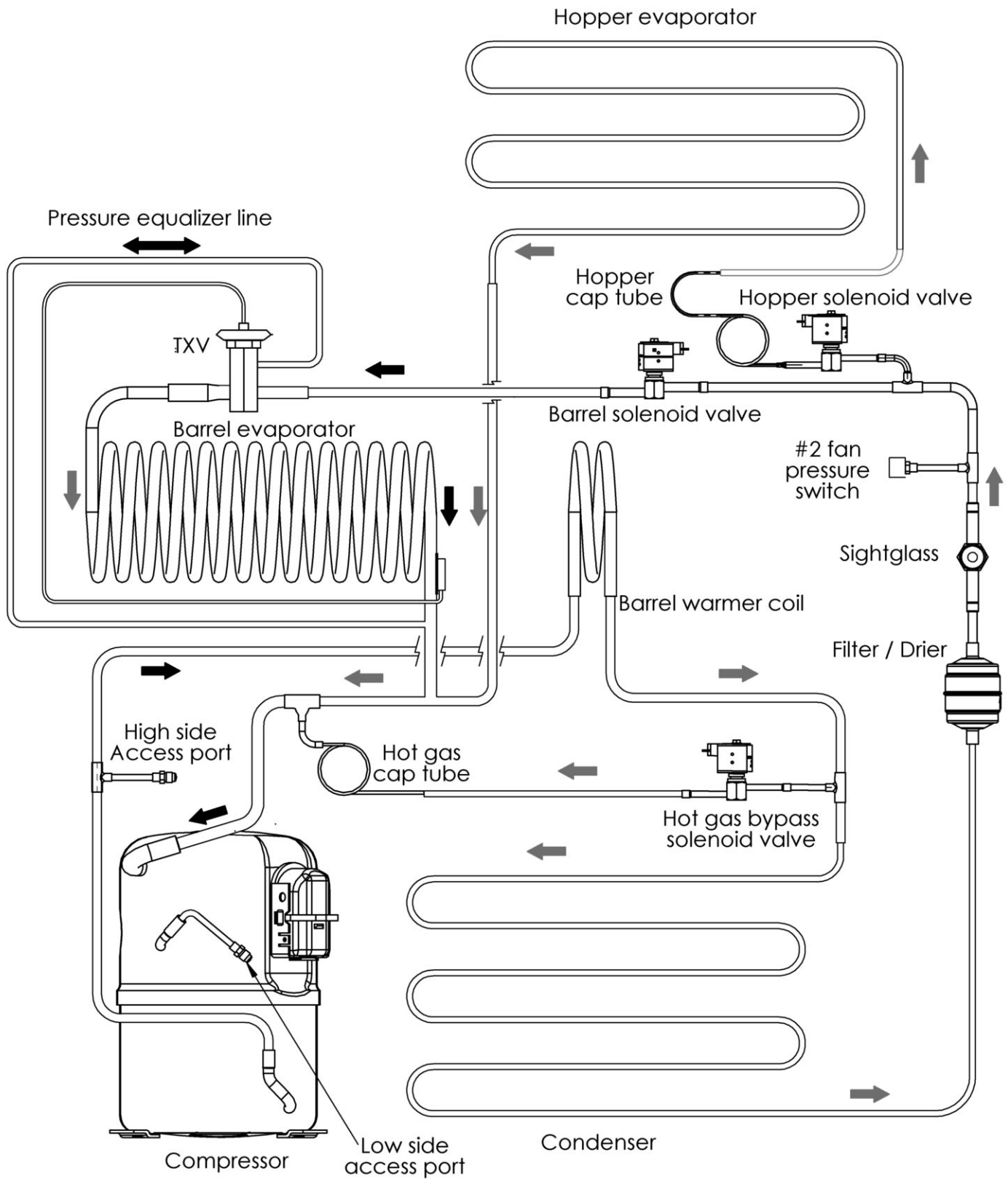
## 5711 Side Electrical Box



Item	Part Number	Description	Qty
1	<a href="#">W0570610</a>	Capacitor,Run,5711	1
2	341-00008	Start Capacitor,5711	1
3	<a href="#">W0570059</a>	BALLAST, 120-277V 50/60Hz	1
4	<a href="#">346-00074</a>	Relay,Compressor,5711	1

# Refrigeration Schematic (continued)

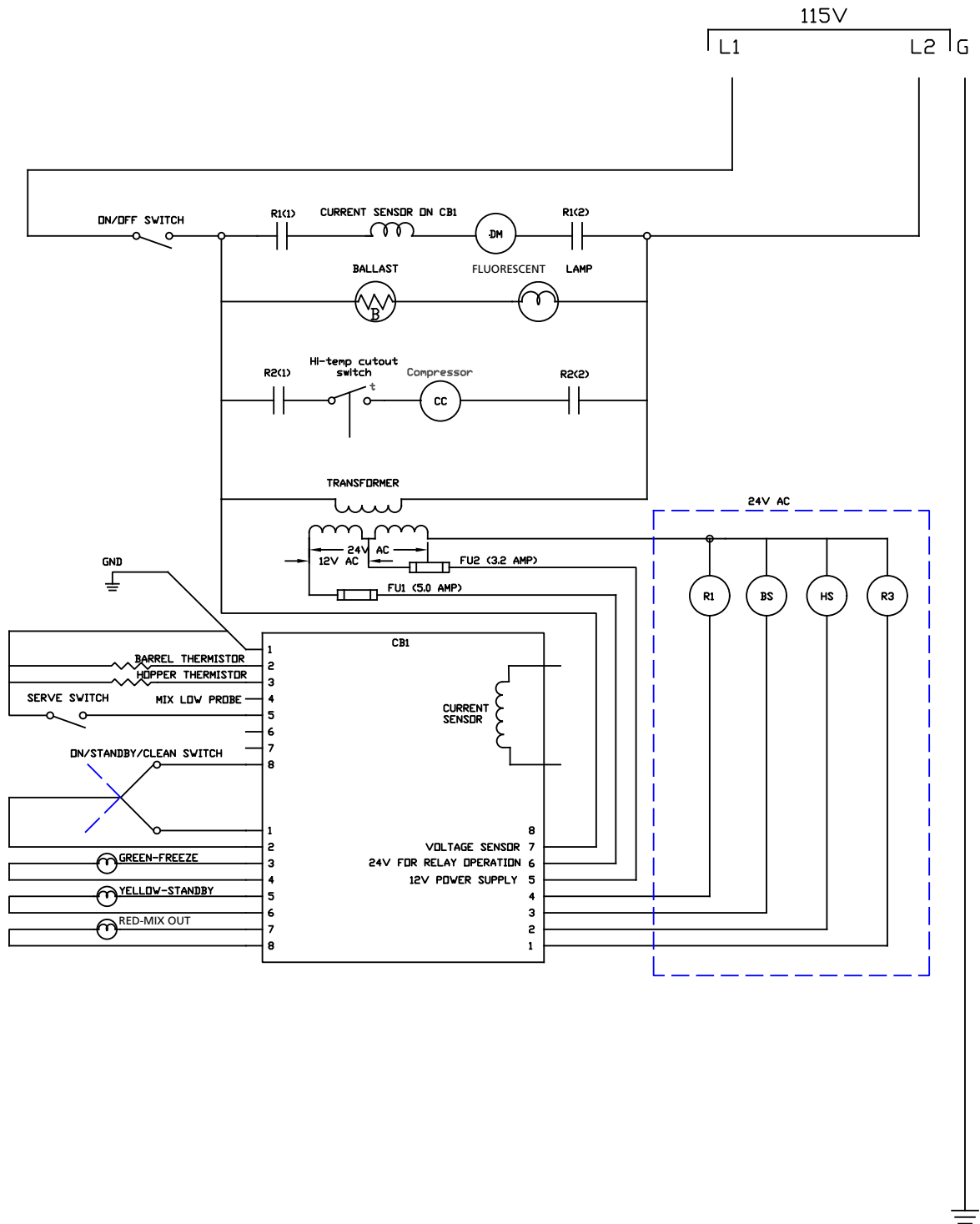
## Refrigeration Circuit



5711 Refrigeration Circuit

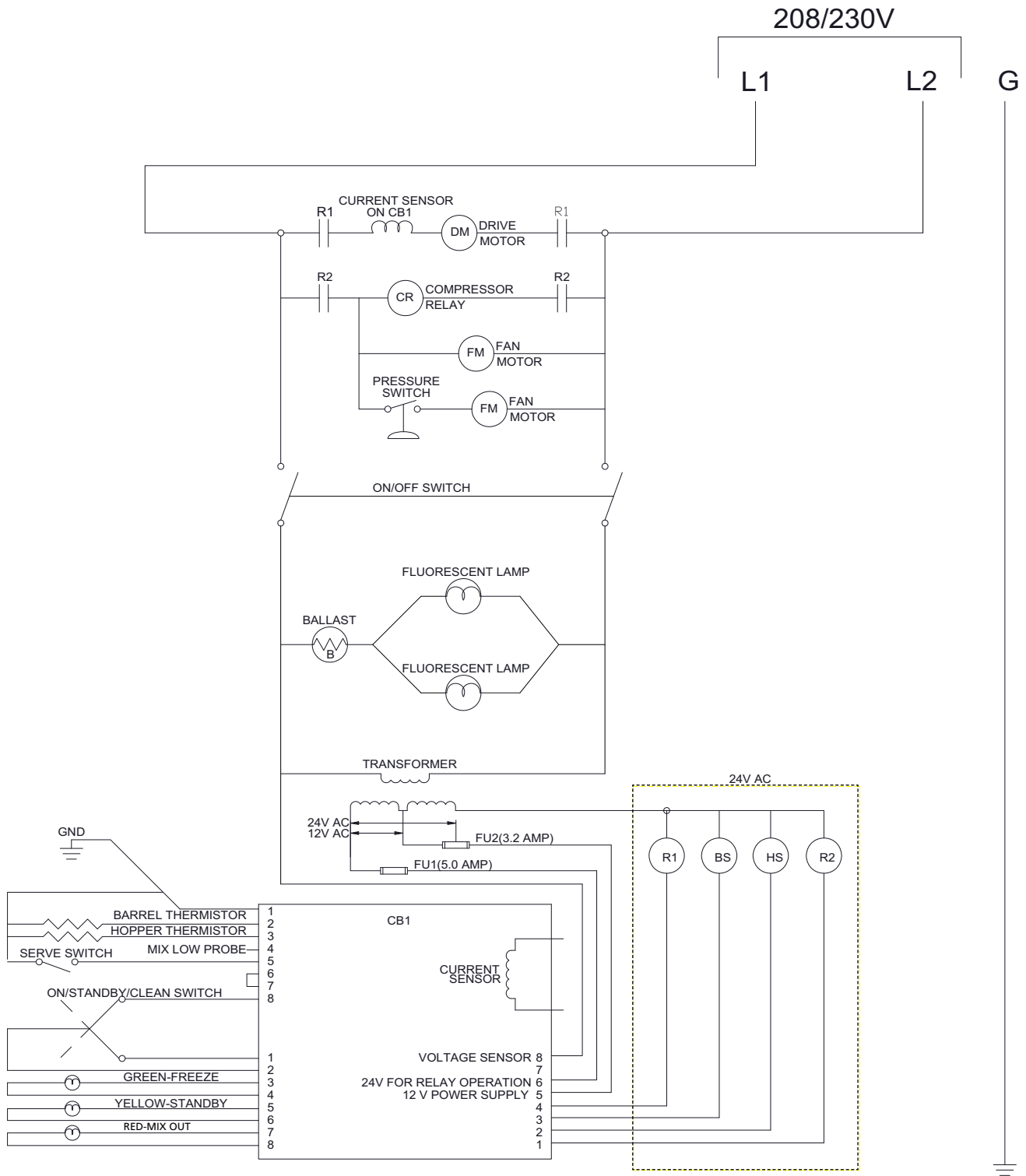
# Wiring Diagrams

## 5311 Ladder Diagram 115V 60 Hz



# Wiring Diagrams (continued)

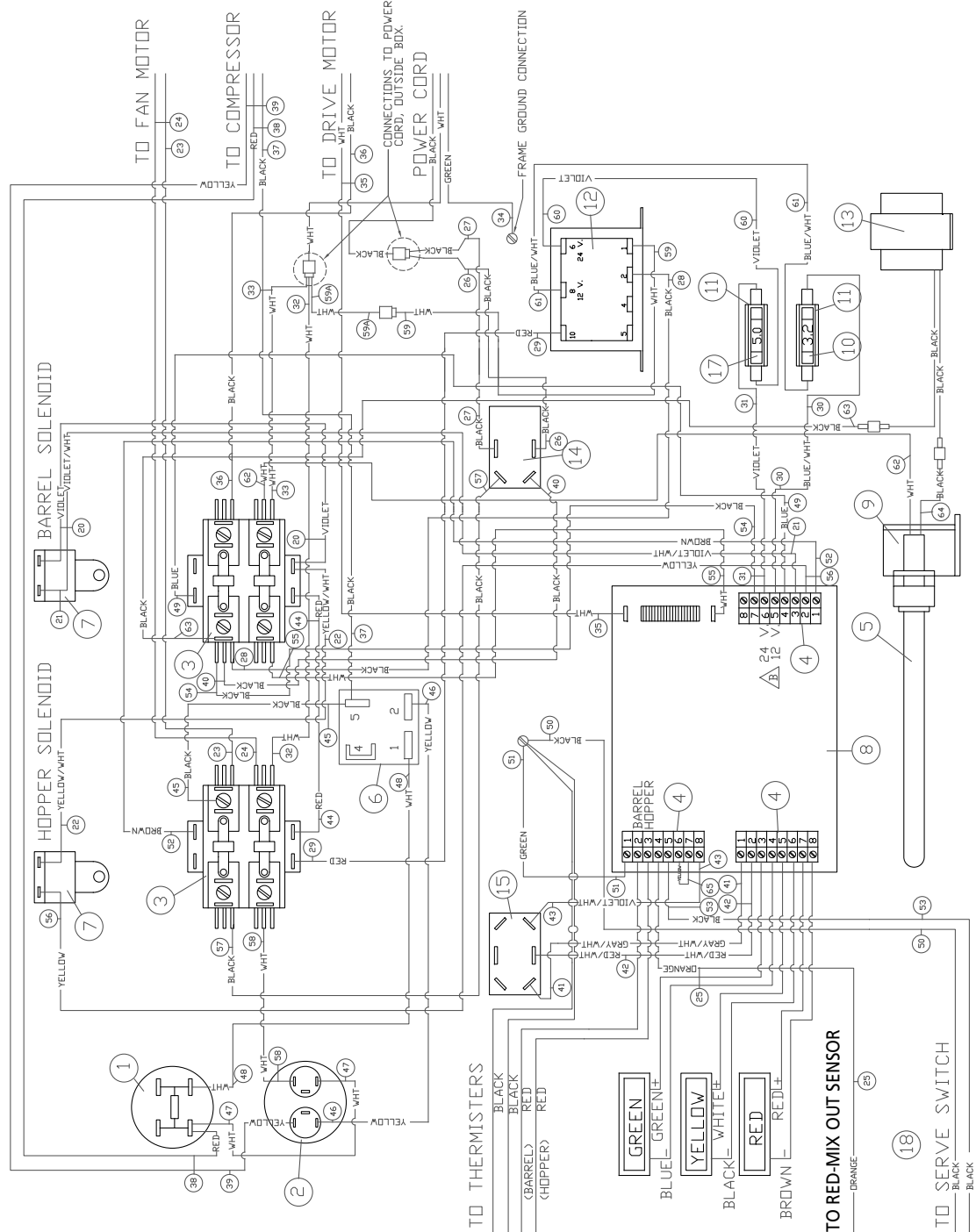
## 5711 Ladder Diagram



# Wiring Diagrams (continued)

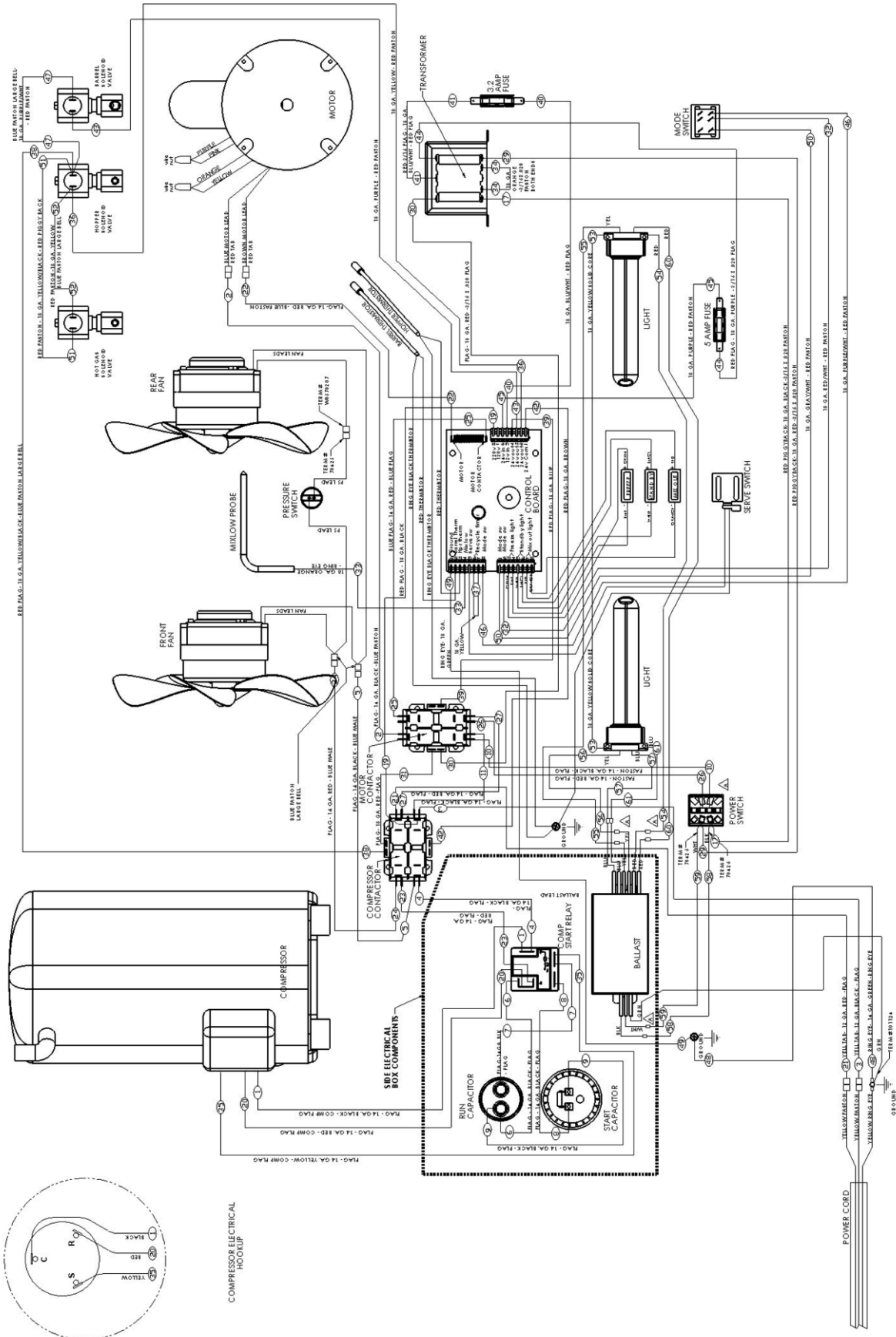
## 5311 Wiring Diagram

Item	Qty.	Part Number	Description	Item	Qty.	Part Number	Description
1	1	W0570603	Start Capacitor	11	2	W1570616	Fuse Holder
2	1	W0570604	Run Capacitor	12	1	W0570659	Transformer
3	2	W0570655	Contact	13	1	W0570045	Ballast
4	3	W0570213	8 Pin Terminal Strip	14	1	W0570934	On/Off Switch
5	1	W0570043	Bulb	15	1	W1570901	Stand-By Switch
6	1	W0570638	Compressor Relay	16	1	W1572121	Harness, 6 Wire Cable
7	2	W1650004	Solenoid Coil	17	1	W0570842	Fuse 5 Amp
8	1	250-00360	Circuit Board	18	1	W0570935	Switch (Serve)
9	1	W0570044	Light Socket	19	1	W0572704	Bracket Serve Switch
10	1	W0570823	3.2 Amp Fuse				



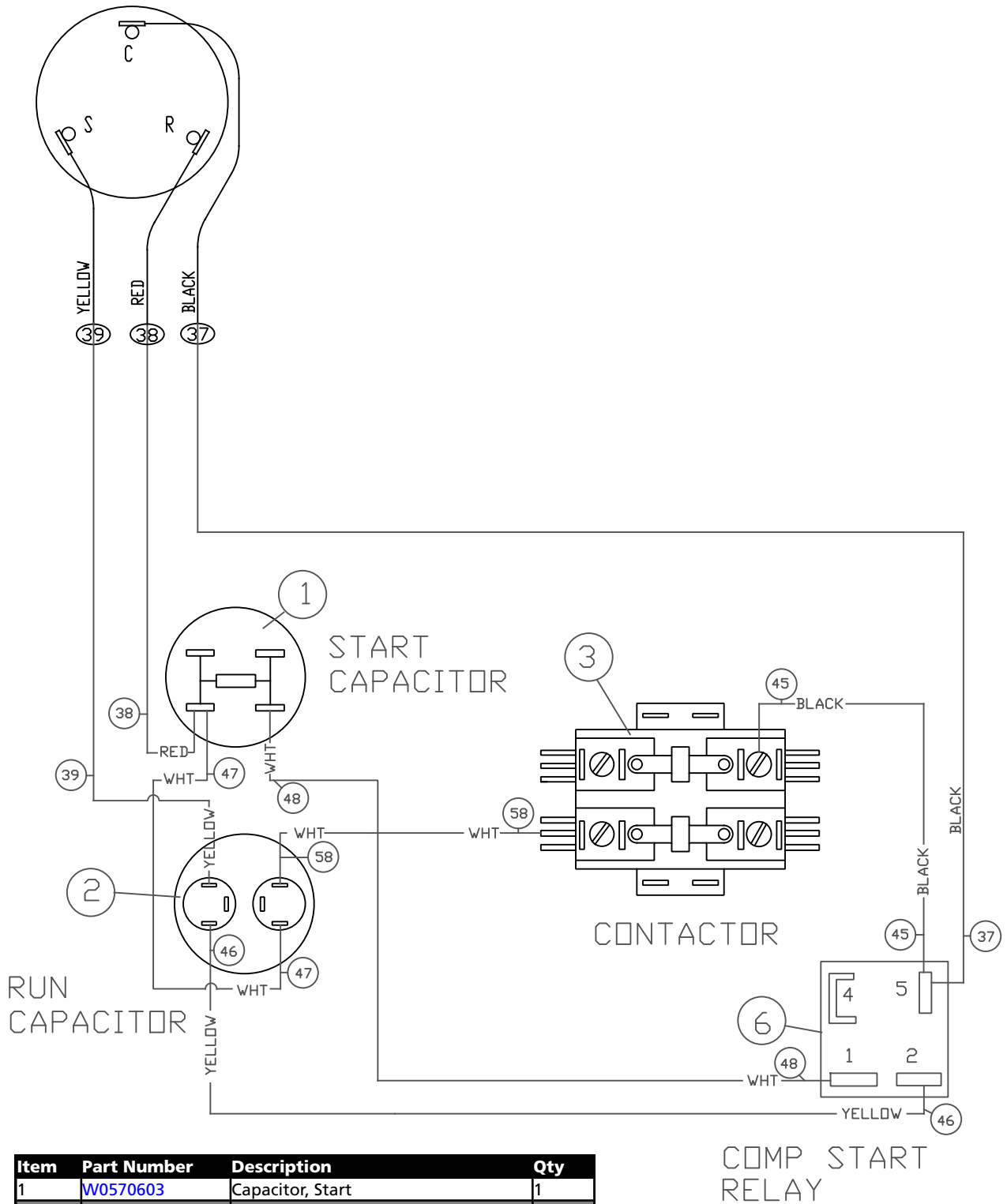
# Wiring Diagrams (continued)

## 5711 Wiring Diagram



# Wiring Diagrams (continued)

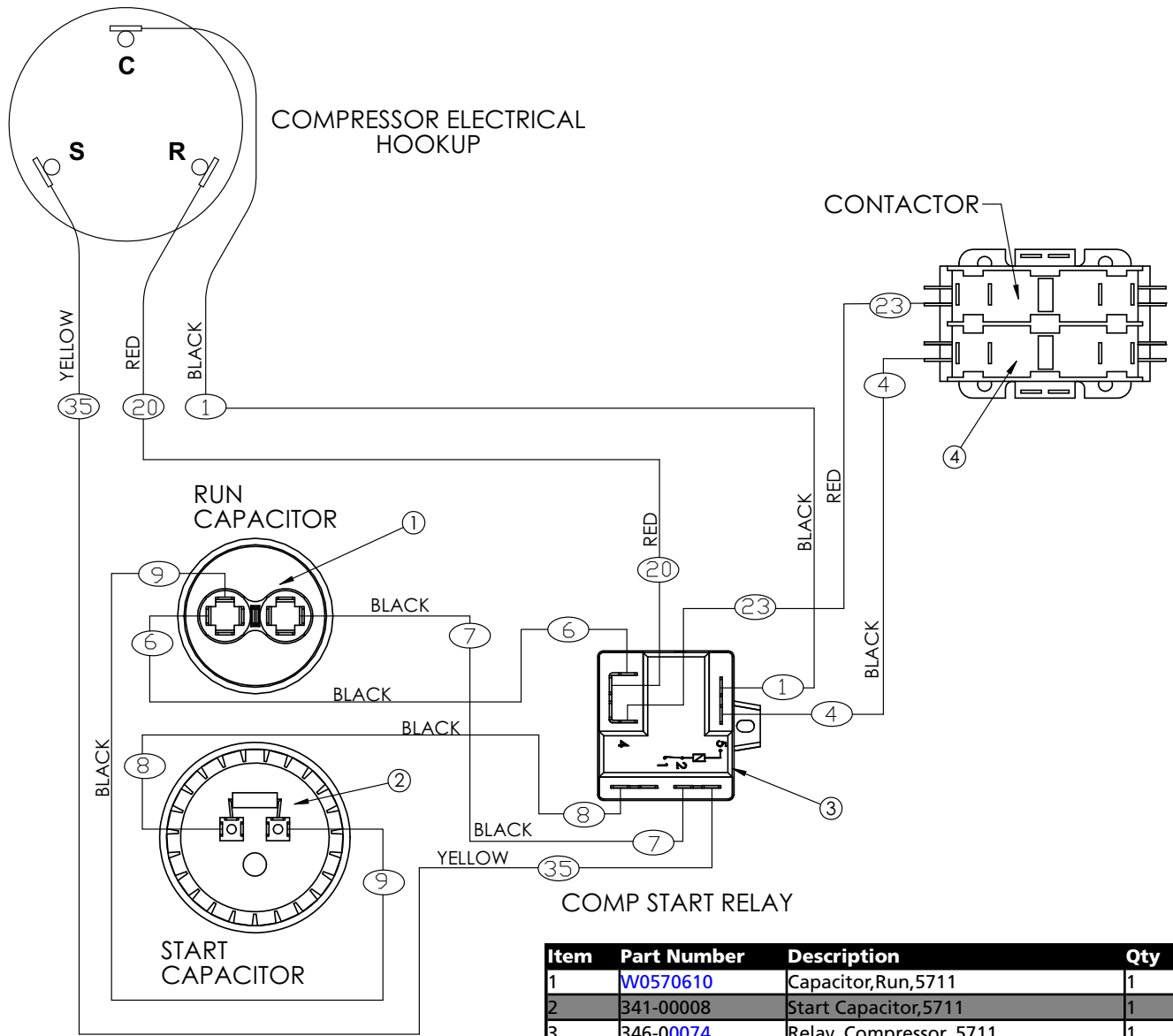
## 5311 Compressor Wiring Diagram



Item	Part Number	Description	Qty
1	W0570603	Capacitor, Start	1
2	W0570617	Capacitor, Run	1
3	W0570655	Contactator, 24V Coil	1
6	W0570638	Relay, Compressor	1

# Wiring Diagrams (continued)

## 5711 Compressor Wiring Diagram



Item	Part Number	Description	Qty
1	<a href="#">W0570610</a>	Capacitor,Run,5711	1
2	341-00008	Start Capacitor,5711	1
3	<a href="#">346-00074</a>	Relay, Compressor, 5711	1
4	<a href="#">W0570655</a>	Contactor, 24V Coil	1



**Grindmaster**

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