Crathco Beverage Freezers

Service Manual

for

Model 6321L

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

Model 6321L

GRINDMASTER CRATHCO SYSTEMS, INC.

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1102 Form # WH-324-03
Part # 90818

General Description

The Model 6321L is a freezer that dispenses frozen carbonated alcoholic beverages ***(see photo on front cover).*** The freezer has two major components, the freezer sections (dispense head) and the product feed system (lower cabinet area). The freezer consists of a freezing cylinder with a rotating internal auger (dasher) that is belt driven by an electric motor. The auger scrapes frozen product off of the inside of the refrigerated cylinder. A torque sensing mechanism controls compressor operation to maintain desired product consistency. The freezer has an air-cooled refrigeration system and is mounted on a product feed base cabinet. The cabinet contains a carbonator, pumps, interrelated tubing, and components to store, mix, and transfer carbonated liquid mix to the dispensing head.
Both the freezer and base cabinet are enclosed in independent steel cabinets. The freezer cabinet panels are easily removed to simplify installation, service and maintenance. The base cabinet has service doors located at the front and back for service and maintenance. Mix out indicator lights notify the operator when one or all of the product mixes are out.

The 6311 Frozen Dispenser is the upper portion of the 6321L only.

SPECIFICATIONS		
Unit Part Numbers:	**6321L**	**6311**
Overall Dimensions		
Height	61 1/8 in	26 ¼ in.
Width	19 ¾ in	13 in
Depth	33 5/8 in	28 ¾ in
Operating weight: (approx.)	300 lbs.	150 lbs.
Shipping Weight: (approx.)	325 lbs.	175 lbs.
Compressor Horse Power:	¾	¾
Refrigeration System:		
Refrigeration Type	404a	404a
Refrigeration Charge (See data plate)	.	
…..Expansion valve setting	35 PSI	35 PSI
Ambient Operating Temp:		
Minimum Temperature	40° F	40° F
Maximum Temperature	100° F	100° F
Electrical Requirements:		
Operating Voltage	115 V	115 V
Current Draw	15 A	15 A

Theory of Operation

A CO_2 cylinder supplies carbon dioxide gas to an adjustable carbonator regulator and an adjustable CO_2 pump regulator. The pump CO_2 regulator delivers CO_2 to both the gas driven alcohol pump and syrup pump. The process starts when plain (tap) water enters a booster pump. The water is then pumped into the carbonator and carbonated. Carbonated water flows through a manual shut-off valve to an electric solenoid that has a flow control. At the same time, alcohol from the alcohol rack, located in the front cabinet compartment, flows to the gas driven alcohol pump. The alcohol is then pumped through a manual shut-off valve to the alcohol electric solenoid with flow control. A gas driven syrup pump draws concentrated syrup from the Bag-In-Box containers located at the bottom, front of the lower cabinet. The syrup concentrate is then pumped through a manual shut-off valve to the syrup's electric solenoid with flow control. If the freezing cylinder pressure drops below 25 PSI, the solenoids open and feed product through a check valve into an accumulator. The carbonated water, alcohol and syrup concentrate are mixed together in the feed line. The mixed product flows from the accumulator to the freezing cylinder.

A clear, self-closing, dispensing valve is attached to the front of the freeze cylinder barrel. A pressure release valve is incorporated into the dispensing valve that allows excess CO_2 to be vented when filling the freeze cylinder with product. This pressure release valve will also allow excess pressure to escape the freezing cylinder.

The freezer is equipped with an automatic defrost system to allow the frozen product to melt back to a liquid. This eliminates any large ice crystal formation or poor product consistency that may develop. This automatic timer can be pre-programmed to occur at desired times of the day. The defrost cycle takes four hours to complete and should be programmed in.

Unpacking and Inspection

Shipment and Transit

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. NOTE: A Tip (N) Tell warning device is placed on each shipping carton at the factory. If the arrow tip is blue, the carton has been tipped in transit. ***(See Figure 1)***

IMPORTANT: The carrier is responsible for all damage in transit whether visible or concealed. ***DO NOT PAY THE FREIGHT BILL*** until the freezer has been checked for damage. Have the carrier note any visible damage on the freight bill. If concealed damage and/or shortage is found later, advise the carrier within 10 days and request inspection. The customer must place any claim for damage and/or shortage with the carrier. The manufacturer cannot make any claims against the carrier.

Figure 1

Loose Parts Shipped with Unit

Part #	Name	Quantity
90881	Installation Guide	1
90882	Operators Manual	1
W0660060	Plastic parts bag	1
W0600121	Header installation instruction sheet	1
W0631903	Sanitizer packets	6
W0600159	Warranty card	1
W0890237	Drip pan kit	1
W0340022	“O” ring #213	6
W0660300	Dow Corning Silicone lubricant	1
W0480437	Plunger, Slush pressure	1
W0480445	Handle, valve	1
W0611728	Fas-Pin	1
W0631230	Compression Spring	1
W0660016	Silicone adhesive	1
W0610718	Screw 5/16-18 Hex Hd	2
W0611255	Washer, 5/16” lock	2
W0611086	Nut, 5/16” Hex, Zinc	2
60382	Heyco 1” snap bushing	1
90748	Silicone Nozzle	6
90749	Bottle Holddown Clamp	6
90750	Adjustment Knob	6
90770	90° Support	1
90878	Lock Washer #10	6
W0611254	Washer	2
W0631549	Coke® Cleaning Fitting	1

Safety and Inspection

Safety Precautions

1) Read and understand the operating instructions in this manual thoroughly.
2) Note all warning labels on the freezer.
3) Do not wear loose fitting garments or jewelry that could cause a serious accident.
4) Stay alert at all times during operation.
5) Keep operating area clean.

Do not operate freezer if any excessive noise or vibration occurs. Contact an authorized service agent.

Periodic Inspection

1) Check the CO_2 tank pressure gauge on the cylinder regulator assembly. Replace if tank pressure drops below red line.
2) Make sure the unit contains a sufficient supply of syrup and alcohol.
3) Check to see that there is sufficient air space on both sides of the unit. Proper air circulation is required for efficient operation. Make sure that the louvers are not obstructed at any time. **CAUTION:** ***Failure to provide minimum air flow clearance will void the freezer warranty.*** **(See Locating Freezer)**

Freezer Assembly and Installation

Attaching Freezer to Base Cart

1) Unbox freezer (top half)
    a) Remove both side panels and then use a 7/16" socket to remove the 2 bolts at the bottom of the freezer that hold it to the shipping pallet.
    b) Cut the wire tie (note red tag) on freezer drive motor. (Figure 2)
    c) Leave right side panel (when facing front of freezer) off.
2) Place a bead of silicone sealant all the way around the edge of the base cart top. (See Figure 3)
3) Place beverage freezer onto the base cabinet on top of the bead of silicone. Position freezer over mounting holes before sealant sets. (Figure 4)
4) Secure top half of unit to base cart by installing 7/16" bolts and nuts using the same holes used to secure the freezer to shipping pallet.
5) Open rear door of base cabinet and place black plastic bushing in wire hole in the top of the cabinet.
6) Feed the 2-multi-pin connectors found in the freezer down into the base cabinet through the hole in the top of the lower cabinet. Connect each connector from the cabinet to matching connector in the freezer. (See Addendum 5)

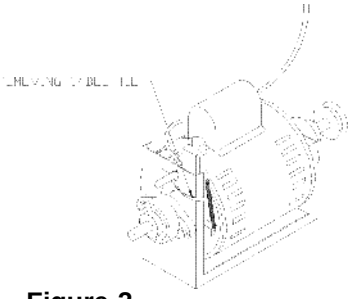


Figure 2

CAUTION: Do not leave too much slack in the wires as they could get caught in the fan blades. Use wire tie and holder to secure wires in place. See electrical diagram.

7) Remove the base cart electrical box cover (located in the upper right corner of the base cart). Feed the power cord (found inside lower rear right side of freezer, near the terminals) through hole into the base cart and then feed it into the hole in the rear of the electrical box. **Connect power cord wires**. (See Addendum 3 and 4)

Figure 3

8) Route the product feed tubing (located in the freezer) down through hole into base cabinet. Route the tubing to the top part of the freezer following the same path as the wiring.
9) Attach the tubing to the John Guest 90° elbow fitting which is located in the base cabinet behind the electrical box. Make certain that the tubing is pushed all the way into the fitting. (Figure 5)
10) Replace freezer side panels.
11) Turn "on/off/clean" switch on front of unit to the OFF position.

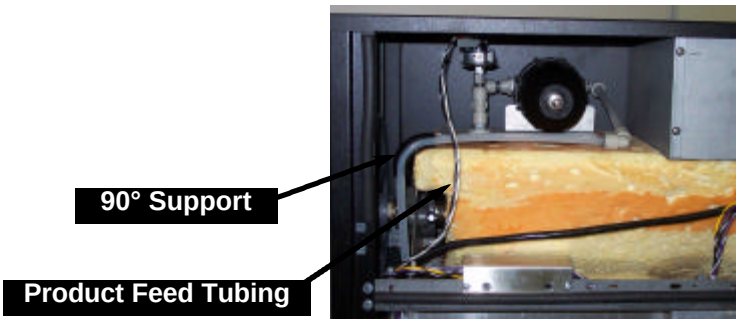


Figure 5

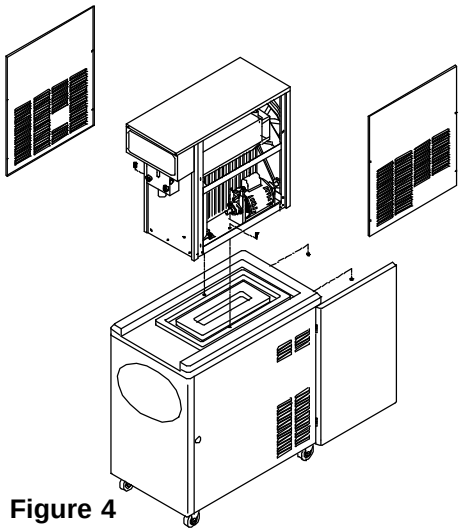


Figure 4

Attaching Drip Tray

1) The drip tray is mounted on two screws that are located on the lower front of the freezer cabinet.
2) Place the key hole slot of the drip tray support bracket W0471022 on to these screws and tighten the screws.
3) Angle the back of the drip tray surround bracket into the drip tray support bracket W0471022 and lower bracket to lock it into place.
4) Place drip tray onto drip tray surround bracket.
5) Place the louvered drip tray insert into drip tray.

Locating Freezer

1. Locate freezer close to a source of potable water. Water pressure must be 15-psig or higher.
2. Connect freezer to a properly grounded 115-120 VAC, 60Hz single-phase electrical circuit with a 20-amp (NEMA 5-20R) minimum-rated disconnect switch (not provided) that is fused at 20 amps (slow-blow).

CAUTION: Safe operation of this unit can only be achieved if the freezer is properly connected to an appropriate grounded, electrical receptacle that complies with current national safety standards. The manufacturer cannot be held responsible for damage and/or injury caused by failure to connect the unit to an appropriate source of power.

3. A minimum air clearance of 6" is required on both sides of the freezer during operation.

CAUTION: Restricting air flow through the freezer will greatly reduce the output capacity as this is an "Air cooled" unit. Air is drawn in to cool the unit through the right side (facing front of freezer) and exhausted through the left side. *Failure to provide minimum air flow clearance will void the freezer warranty.*

Connecting City Water Source Line to Unit

The National Sanitation Foundation requires the following for an NSF approved water hook-up:

- A quick disconnect water connection or enough coiled tubing so that the machine can be moved for cleaning underneath.
- An approved backflow prevention device, such as a double check valve to be installed between the machine and water supply. On units plumbed to permanent water line, installation of a water filter/softener system is recommended to prevent lime and scale build-up in the machine.
- Water pipe connections and fixtures directly connected to potable water supply shall be sized, installed and maintained in accordance with Federal, State, and Local codes.

1) Gather 3/8" OD low-density polypropylene tubing or 3/8" OD copper tubing with a 1/4” SAE Flare Connection (not provided).
2) Connect the tubing to the 1/4” SAE Flare fitting found under the left side of the base unit. (Figure 6)
3) Connect the other end of the tubing to a water source.

NOTE: Where water quality is low an activated charcoal water filter may be needed to achieve adequate frozen product overrun and proper flavor profile.
If water pressure exceeds 50 psig install a water regulator such as Shurflo # 183-059-06, or equivalent, to inlet water line.

Figure 6

Installing CO_2 Regulator Assembly on CO_2 Cylinder

1) Unscrew protector cap (with chain attached) from CO_2 cylinder valve. Open CO_2 cylinder valve slightly counter-clockwise to blow any dirt or dust from outlet fitting before installing CO_2 regulator assembly, then close valve.

CAUTION: CO_2 cylinders contain gas under high pressure. Handle cylinders with care.

2) Remove shipping plug from CO_2 regulator assembly coupling nut, then make sure gasket is in place inside the nut. Install hose regulator assembly on the CO_2 cylinder, then tighten coupling nut. **DO NOT OPEN CO_2 CYLINDER VALVE AT THIS TIME.**

NOTE: Before attempting to activate the systems, insure that all manual shut-off valves, located in the lower back compartment of the base cabinet, are closed (vertical position). Do not open them until instructed to do so.

Installing CO_2 Regulator Assembly on Existing CO_2 Line

NOTE: Bulk system must have 100 psi to operate.
1) Purchase a low pressure regulator set. (Norgren Model C81-570-2 recommended)
2) Disconnect carbonator and BIB pump lines. Remove existing regulator set and install low pressure set.
3) Reconnect lines to outlet side of set. Bring in bulk system line to inlet of regulator.

NOTE: Install a cutoff valve between regulator and bulk system.

Filling CO_2 Lines

CAUTION: CO_2 lines should be filled slowly to prevent the possibility of damaging components. Open tank shut off valve slowly until it is completely open.
NOTE: Open valve all the way to prevent leakage around the valve shaft.

Adjusting CO_2 Regulators

NOTE: CO_2 regulators are pre-set at the factory. Check for accuracy.

1) Adjust the CO_2 regulator that drives the bag-in-box syrup pump and alcohol pump to 60 psi. *Turning regulator adjustment clockwise raises the pressure.* Tighten locknut at this setting. (Figure 7)

CAUTION: The use of excessive pressure (above 75 psi) will result in pump seizure.

2) Adjust the CO_2 regulator, connected to the carbonator, to 90 psi. NOTE: Do not exceed 120 psig, the carbonator pressure relief setting. *Turning regulator adjustment clockwise raises the pressure.* Tighten locknut at this setting.

Figure 7

Activating Water Source Line Connection

Open the water line manual shut-off valve in the base cabinet of the 6321L and check for water leaks.

Sanitizing and Starting Unit

Sanitizing

1) **Prepare a minimum of 2 gallons (7.6 liters) of sanitizing solution (Divorsol CX or equivalent).**

NOTE: Add 5 ounces (150 ml) of Divorsol CX to 2 gallons (7.6 liters) of 120° Fahrenheit (50° Centigrade) water to achieve a concentration of 500 parts per million.

2) **Disassemble the freezer following steps 1 through 8 in the Cleaning Section.**

NOTE: For initial start-up, be sure to clean and sanitize the freezer before adding product.

3) **After disassembly, thoroughly scour each part of the freezer in a warm mild detergent solution including the inside of the freezing cylinder. Dip or wipe each part in sanitizing solution and allow to air dry on clean paper toweling. DO NOT WASH COMPONENTS IN A DISHWASHER.**
4) **Rinse each part with clean water.**
5) **Reassemble components following the instructions in the Cleaning section of this manual.**
6) Pour 1.5 quarts of sanitizing solution into both the front and back alcohol bottle rack.
7) Connect a red QCD cleaning fitting to one of the BIB connectors in the lower back cabinet and immerse the BIB connector into the remaining solution.

NOTE: If a QCD cleaning fitting is not available, cut the plastic outlet fitting out of an empty BIB container.

8) Sanitize system by opening all three of the manual shut-off valves in the back of the lower cabinet (syrup, alcohol and carbonated water).
9) Turn the freezer switch to "CLEAN".
10) Turn the control switch in the back of the base cabinet to "AUTO".
11) Allow the freeze cylinder to fill half way and run for 5 minutes.
12) Turn the freezer switch from "CLEAN" to "OFF".
13) Open the pressure relief valve located on the freezer dispensing valve to relieve all of the pressure in the freeze cylinder.
14) Remove the QCD cleaning fitting from the first BIB line and place it on the other BIB connection. Place second line in remaining solution.
15) Pull or push transfer valve to opposite setting.(Figure 8)
16) Repeat steps 9-12.
17) Remove BIB connector from container of sanitizing solution.
18) Purge sanitizer from product lines and barrel.


Figure 8

Adding Product

Connecting Syrup Supply

1) Open new bag-in-box as instructed on box.
2) Connect red QCD syrup connector to new bag-in-box.
3) Repeat for second bag-in-box.

NOTE: Make sure that the BIB lines run behind the bottle rack line so the bottle rack can be slid open easily.

Connecting Alcohol Supply

1) Remove bottle cap.
2) Slide a white tubular plastic adapter over the neck of each liquor bottle until the bottle seats itself against the shoulder of the adapter.
3) Remove the blue plastic protective cap from reservoir port and save it.
4) Bend the nozzle of the white plastic adapter over with your forefinger to stop liquor flow. (Figure 9)
5) Insert the nozzle of the white plastic tubular adapter into the reservoir port and allow adapter to drop into the reservoir opening.
6) Stand inverted bottle upright.
7) Loosen the thumbscrew on the hold-down bracket and slide the hold-down bracket until it is centered on the bottom of the bottle.
8) Push down on bracket until it firmly holds the bottle in place and tighten the knob.

Figure 9

Note: If you are using partially empty bottles place the emptiest bottle at the end of the reservoir farthest from the reservoir outlet tubing. This will allow the partially filled bottle to be emptied first.

Activating Alcohol and Syrup System

NOTE: See Addendum 2 photo for location of components

1) Open manual valve located between gas powered alcohol pump and the alcohol electric solenoid with flow control. This activates the alcohol supply system.
2) Open the manual valve between the gas powered syrup pump and the syrup electric solenoid with flow control. This activates the syrup supply system.
3) Liquid should fill the lines and the pumps should cycle.

Checking BRIX (Water-to-Syrup Ratio) of Dispensed Product

NOTE: The water, syrup, and alcohol ratio are all pre-set at the factory to meet drink quality standards. Adjustment of these ratios can only be done by authorized service technicians.

A graduated cylinder that holds at least 17 ounces (500ml) is needed to test the BRIX. A measuring cup can be used if a graduated cylinder is not available.

1) Switch back cabinet control box switch (Figure 10) to "TEST" mode.
2) Switch Freezer control to "CLEAN".
3) Open test output port valve.

Figure 10

Water Ratio Check:

NOTE: See Addendum 2 for location of components.

1) Close all manual valves except the water valve.
2) Put test output port tube into the graduated cylinder.
3) Toggle "Sample Timer" switch to "ON".
4) Water will flow into the graduated cylinder for 10 seconds.
5) When water flow stops, measure the water volume in cylinder. The proper setting is 13.5 oz. (400ml).
6) If the volume is not 13.5 oz (400ml), consult the Troubleshooting Guide in this manual.

Syrup Ratio Check:

1) Close all manual valves except syrup.
2) Put test outlet port tube into the graduated cylinder.
3) Toggle "Sample Timer" switch to "ON".
4) Syrup will flow for 10 seconds.
5) When flow stops, measure syrup volume in cylinder. The proper setting is 3.7 oz. (110ml).

Checking BRIX (Water-to-Syrup Ratio) of Dispensed Product (cont'd)

6) If the volume is not 3.7 oz. (110 ml), consult the Troubleshooting Guide in this manual.

Note: Due to the thick viscosity of the syrup, it may be necessary to purge the syrup line to obtain an accurate flow rate reading. Purge the syrup line by first closing the syrup valve, opening the water valve and then momentarily turning on the test switch. This will purge all syrup from the lines and allow them to drain properly for a correct reading of the syrup flow rate.

7) After the correct water and syrup flow rates are set, open both the water and syrup valves.
8) Turn the "TEST" switch to "ON".
9) Dispense mixed water and syrup though the test line.
10) Check the BRIX of the mix using a refractometer. Verify that the solution has a BRIX reading of 15.

Alcohol Ratio Check:

1) Close all manual valves except for "ALCOHOL".
2) Put test outlet port tube into the graduated cylinder.
3) Toggle "Sample Timer" test switch to "ON". Product will flow for 10 seconds.
4) When flow stops, measure volume in the graduated cylinder. The proper setting is 3.4 oz. (100ml).
5) If the volume is not 3.4 oz. (100ml), consult the Troubleshooting Guide in this manual.

Checking Unit for Syrup, CO_2, and Water Leaks

After checking all the ratios, open all manual valves. Open the cabinet's front and rear doors and check for any leaks. If any leaks are located, contact an authorized service technician to fix the leak. Close and lock the front and rear doors.

Defrost Timer

Setting Clock (Time of Day)

1) The timer is located inside the freezer back lit merchandiser box on the top front of the freezer. (Figure 11)
2) Rotate the timer dial, in the direction of the arrows, until the mark lines up with the current time of day.
3) The timer has a 2 week battery backup that requires 24 hours to charge fully.

Programming Defrost (Automatic)

1) Push all switch pin actuators toward the outer edge of the programming disk.
2) Set freeze time by pushing the switch pin actuators toward the center of the programming disk. (Figure 11) An adequate defrost cycle should last 3-1/2 hours.

Note: Each pin actuator is equivalent to 15 minutes. Do not run a defrost for more than 4 hours. May result in damage to seals.

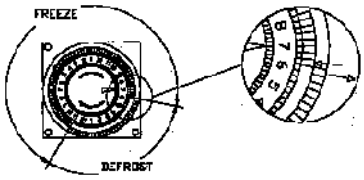


Figure 11

Filling Freezer

1) Open all product manual control valves.
2) Set lower control box Power switch to "ON" and Sample Timer switch to "OFF" and Control Select switch to "Run". (Figure 10)
3) Fill freezer with product
    a. Turn freezer to "CLEAN", barrel will fill
    b. When BIB pump stops switch freezer "OFF"
    c. Open dispensing relief valve vent and relieve pressure. Close vent.
    d. Repeat steps a-c until product reaches vent opening.
4) Switch freezer to "FREEZE" and allow approximately 15 minutes for product to reach proper frozen consistency.

NOTICE: For applications with extended periods between use (i.e. stadiums, arenas, special events) the freezer must remain in "FREEZE" mode at all times, with a programmed defrost cycle. Turning the freezer "OFF" or unplugging it with product in the cylinder can damage the seal, resulting in product leakage. If the freezer must be unplugged or turned "OFF", for a period of time exceeding 12 hours, it must be drained, cleaned and sanitized. Contact a qualified service technician, such as ICEE Company, phone (800) 423-3872, to perform this service. Freezer damage resulting from failure to follow this procedure is not covered under warranty.

Cleaning

NOTE: Before cleaning, all product should be drained from the freezing cylinder, pressure vented, and either the valves set closed or product removed from the machine.

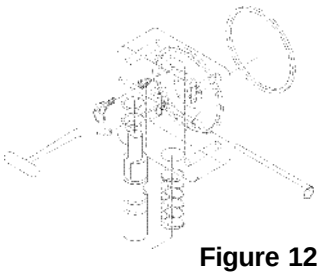


Figure 12

1) Disassemble the dispensing valve by first removing the dispensing valve pin (Figure 12)
2) Push up on the dispensing valve plunger and pull out the dispensing handle. The plunger assembly complete with spring and "O" Rings can then be removed as a unit.
3) Remove knobs and carefully remove the freezer dispensing valve assembly.
4) Remove the O-Rings from the plunger assembly and back of the dispensing valve body.

NOTE: 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 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. (Figure 13)

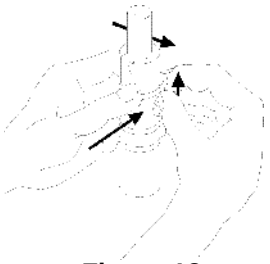


Figure 13

5) Carefully inspect the O-Rings for wear, nicks or cracking and replace if necessary.
6) Carefully pull out the auger assembly taking care to avoid damaging the rear seal assembly at the back of the freezing cylinder.
7) Remove stationary portion of the shaft seal assembly (silicon carbide ring and rubber boot) from the back end of the freezer cylinder. This is accomplished by reaching into the cylinder and pulling the seal out with your index finger. (Figure 14)
8) Slide the rotary seal off of the auger shaft. (Figure 15) Inspect both seal components carefully for nicks or cracks. Replace seal if defective. NOTE: To prevent leakage both surfaces of the seal must be smooth with no chips or cracks.
9) Wash all components in a detergent solution, sanitize and allow to air dry. **DO NOT WASH COMPONENTS IN A DISHWASHER.**
10) 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 facing toward the back of the auger.
11) Insert the stationary portion of the seal into the grooved rubber boot with the polished surface facing out (forward), away from the rubber boot. Lubricate the grooved rubber exterior portion of the boot with silicone lube and insert it straight back into recess at the back of the freezing cylinder, RUBBER FIRST.

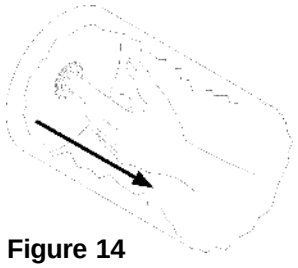


Figure 14

NOTE: On the circular portion of the seal, make sure that the groove is toward the rubber (back of freezer).

Figure 15

12) Reassemble the dasher assembly, as shown in Fig.16. Insert the larger front and smaller rear white plastic bearings into dasher, then slip in the stator rod. ***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 coupling.
13) Reassemble the dispensing valve assembly. (Fig. 12) Be sure to lubricate o-rings and relief vent before assembling.
14) Thoroughly wash and sanitize all components. Inspect and **lubricate all surfaces of 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 knobs.**

IMPORTANT: Failure to lubricate the large "O" Ring can result in product leakage.

15) Reinstall the O-Rings on the plunger assembly and lubricate the O-Rings and plunger. Reassemble the valve and replace the retainer pin.

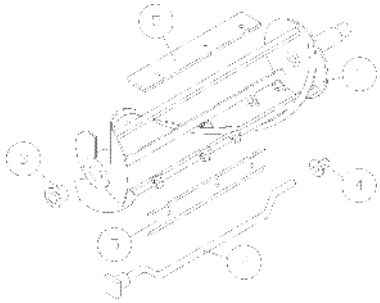


Figure 16

<u>Daily Cleaning of Unit</u>

The exterior of the unit should be cleaned as needed, at the end of the operating day or during defrost cycle. Remember to empty and clean the drip tray and drip tray bracket.

CAUTION: Course rags, abrasive cleaners, and excessive force can damage and/or destroy the surfaces of this unit.

Controls and Product Issues

Consistency Adjustment

NOTE: The following product consistency (thickness) control adjustment procedure requires removal of the right side panel. It is suggested that a qualified service technician make this adjustment because side panel removal exposes hazardous moving parts.

Warning: Do not attempt freezer adjustments until electrical power has been disconnected.

It may become necessary to readjust the consistency setting (thickness) to compensate for variations.

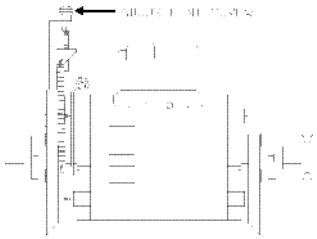


Figure 17

1) Disconnect electrical power.
2) Remove right side panel (facing freezer).
3) Use the adjustment screw located on the top, front of the drive motor mounting bracket to change product thickness. (See Figure 17).
    - Clockwise for thicker product consistency.
    - Counterclockwise for thinner product consistency.

NOTE: It may require up to three 180° turns of this adjusting screw to see a noticeable change in product thickness.

4) Turn freezer to "ON" and allow it to freeze to desired consistency.
5) Wait 15 to 20 minutes, check product consistency (thickness) and repeat as needed.
6) Reinstall the side panel and reconnect power.

Mix Out Lights

Red indicator lights, located on the front of the freezer, illuminate if the unit runs out of CO_2, syrup, water or alcohol. **When a light is on, the unit will not fill or freeze product.**

Freezer Controls

NOTE: This dispenser has several power switches, that must be set in their operating position for the unit to operate properly.

"ON/OFF/CLEAN" SWITCH

The "ON/OFF/CLEAN" switch is a three-position toggle switch located on the front of the freezer. The left (facing the machine) position is the "ON" or freeze position. The middle position is the "OFF" position. The Right position is the "CLEAN" position (the auger is turning but the compressor is off).

Lower Base Control Panel Switches

All of the following switches are located on the lower control box, inside the rear cabinet door. (See Addendum 2 at the back of the manual)

Power Switch

This is the unit's main power switch.

- **On** - power is supplied to the base unit.
- **Off** - No power is supplied to the base unit.

Control Switch

This switch determines whether the unit is in the test mode or operating mode.

- **Test** - The Test switch is used to check the BRIX of the product allowing the Timer Switch to control the solenoids.
- **Off** - Turns off the product feed system.
- **Run** - Allows product to be automatically fed to the freezer.

Timer Switch

- **On** - Activates the 10 second timer use to test BRIX and mix ratios
- **Off** - Timer is de-activated (normal operating setting).

Faceplate Relief Valves

A spring-loaded pressure relief valve maintains a safe pressure in the freezing cylinder. When filling the cylinder the relief valve acts as a vent to allow the CO_2 and air trapped in the freezing cylinder to escape. Venting the freezing cylinder is essential to obtain proper overrun. The vent is also used to break a vacuum when draining a unit.

Dispensing Valve

CAUTION: The product in the freezing cylinder is under pressure, open the dispensing valve slowly when dispensing product.

Product Quality

BRIX

Correct BRIX effects product flavor and freezing characteristics. Frozen product with low BRIX may have a weak flavor, larger ice crystals, and a tendency to dispense slowly. Product with high BRIX has an overly strong flavor, increased portion cost and results in lower freezer output capacity.

Alcohol Content

High alcohol content may prevent the freezer from serving product at proper thickness. High alcohol also suppresses the syrups ability to absorb CO_2 and depresses the temperature of the frozen product. Too much alcohol will also lower product overrun.

What Is Overrun?

Overrun is the increase in product volume, expressed as a percentage, resulting from the carbonation of the water. The freezer chamber is pressurized, which holds the carbonation in the frozen product. The carbonation causes the volume of the frozen product to increase when dispensed. For example, if one gallon (4.4 liters) of liquid mix is fed into a freezing cylinder and one and a half gallons (6.6 liters) of frozen product is drawn out, the result is a fifty percent volumetric increase, or a fifty percent (50%) "overrun".

Why is overrun important? The introduction of CO_2 into the finished frozen product is essential from two standpoints...taste and profitability. Frozen product that has a low percentage of overrun costs more to serve, appears wet, and is heavy. The introduction of CO_2 makes the finished frozen product taste richer. Too much overrun causes the finished frozen product to be too light and fluffy, making it less satisfying and adversely effecting sales.

Factors Effecting Overrun

Syrups

The foaming agent in the syrup increases the ability of the frozen product to expand as it is dispensed.

Frozen Product Draw Rate Effects Overrun

Infrequent frozen product usage can result in a drink that may appear wetter and have less overrun.

Carbonation In The Water Effects Overrun.

There is a direct correlation between the level of carbonation of the water and the overrun of the frozen drink. Water quality has a direct effect on carbonation. If it is difficult to achieve adequate overrun an activated carbon filter will have to be added to the system. Also try readjusting the carbonator CO_2 pressure.

Computing Overrun

1) Weigh an empty cup.
2) Weigh this cup filled to the rim with liquid mix, and subtract the weight of the cup.
3) Draw a heaping cup of frozen product that contains no air pockets. Avoid tapping 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.

$$\frac{\text{Weight of Liquid Mix} - \text{Weight of Frozen Product}}{\text{Weight of Frozen Mix Product}} \times 100 = \textbf{OVERRUN}$$

For Example:

If a full cup of liquid mix weighs 23 ounces (.652kg) and a full cup of frozen product weighs 15 ½ ounces (.439kg), then:

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

Operating Freezer

Unit Operation

1) Check that a "Mix Out" light is not illuminated. This indicates the freezer has an adequate amount of syrup, CO_2, alcohol and water (only one light will be ON at a time). Check machine after each product is filled.
2) Insure that the "ON/OFF" switch in the lower back compartment of the cabinet is in the "**ON**" position.
3) Insure that the "TEST/OFF/RUN" switch in the lower back compartment of the cabinet is in the "**RUN**" position.
4) Insure that the "ON/OFF/CLEAN" switch on the front of the freezer is in the "**ON**" position.
5) Allow the freezer sufficient time to reach desired product consistency (compressor will shut off).
6) Slowly open the dispensing valve to dispense frozen product.
7) If frozen product consistency is not correct, readjust following the instructions found in the PRODUCT CONSISTENCY section of this manual.

Replenishing Syrup Supply

A vacuum transfer valve will automatically switch from an empty BIB container to a full one. Check BIB containers on a regular basis and replace empty BIB following the procedure in the CONNECTING SYRUP SUPPLY section of this manual.

Replenishing CO_2 Supply

1) Open rear cabinet door.
2) Turn CO_2 cylinder valve clockwise until it is fully sealed.
3) Detach Regulator assembly.

CAUTION: Remove connector slowly to relieve pressure build-up in the lines.

4) Unhook S-hook from safety chain.
5) Remove empty CO_2 cylinder.
6) Slowly crack the valve on the new CO_2 cylinder to blow any debris out of the valve.
7) Close the valve.
8) Place new CO_2 cylinder in the place of the used CO_2 cylinder.
9) Make sure that the CO_2 regulator assembly coupling nut gasket is undamaged.
10) Attach the regulator hose on the new CO_2 cylinder.

CAUTION: The CO_2 lines need to be pressurized slowly to insure they are not damaged. Open the tank shut off valve slowly until it is fully open. NOTE: Opening the valve all the way prevents leakage around the valve shaft.

Replenishing Alcohol Supply

1) Remove empty alcohol bottles.
2) Remove white tubular adapters from bottles.
3) Remove caps from new bottles and slide white plastic adapter over the neck until the bottle seats itself against the shoulder of the adapter.
4) Bend the nozzle of the white plastic adapter over with your forefinger to stop liquor flow.
5) Insert the nozzle of the white plastic adapter into the reservoir port and allow adapter to drop into the reservoir opening.
6) Stand inverted bottle upright.
7) Loosen the thumbscrew on the hold-down bracket and slide the hold-down bracket until it is centered on the bottom of the bottle.
8) Push down on bracket until it firmly holds the bottle in place…tighten the knob.
9) Repeat for each bottle

Note: If you are using partially empty bottles place the emptiest bottle at the end of the reservoir farthest from the reservoir outlet tubing. This will allow the partially filled bottle to be emptied first.

Service and Maintenance

Quarterly Preventative Maintenance

Quarterly Preventative Maintenance is recommended to extend the life of the machine. Preventative Maintenance visits include sanitizing the entire system, checking for and replacing any worn parts, optimizing operating conditions. See the parts replacement schedule at the end of this section.

Sanitizing Entire Liquid Systems

It is essential that the entire liquid system be sanitized every 3 months by a qualified technician. Follow the above instructions.
NOTE: Clean and sanitize the entire liquid system before and after storage.

Routine Product System Sanitizing

Note: During sanitizing, all "O" Rings and seals should be inspected for damage

1) Drain product from freezing cylinder barrel
   a) Turn freezer switch to "CLEAN".
   b) Close manual syrup feed valve in back lower compartment of the cabinet.
   c) Close manual alcohol feed valve in back lower compartment of the cabinet.
   d) Place container under product dispensing valve, open dispensing valve handle.
   e) Continue to remove product until it starts to become semi-clear and has a liquid consistency.
   f) Close manual carbonated water feed valve in back lower compartment of the cabinet.
   g) Drain remaining product. If liquid flow stops before the freezing cylinder is empty pull vent (round ring) in valve block and break vacuum.
2) Remove product from BIB supply lines
   a) With freezer in "CLEAN" mode, disconnect BIB connectors.
   b) Open manual syrup valve in back lower compartment of the cabinet.
   c) Place a container under test line and open test port manual valve.
   d) Turn the control switch in lower cabinet to "TEST".
   e) Turn test switch to "ON".
   f) Allow pump to operate until it stops.
   g) Move BIB connector to other BIB container and repeat steps (e) and (f) above.
   h) Install a cleaning connector to BIB connector that is indicated as active by the switch on the BIB vacuum transfer valve.
   i) Put line with connector into a container of clean water.
   j) Repeatedly cycle the "TEST" switch to "OFF" then to "ON" until the line is clear of syrup.
   k) Repeat process for alternate BIB hose starting at (g) above.
   l) When the syrup lines are clean close the manual syrup line valve.
3) Remove product from Alcohol supply lines
   a) With freezer in "CLEAN" remove the alcohol bottles from storage rack.
   b) Open the manual alcohol valve in the back lower compartment of the cabinet.
   c) Place a container under test line and open manual test port valve.
   d) Move control switch in lower cabinet to "TEST". Turn test switch to "ON".
   e) Allow pump to operate until it stops or all alcohol is removed.
   f) Pour clean water into the alcohol rack reservoir .
   g) Cycle the test switch from "OFF" to "ON" until the line is clear of alcohol.
   h) When lines are clean close the manual valve on alcohol line.

Complete the sanitizing procedure by following the steps in the Sanitizing & Starting Unit Section.

Servicing Dispensing Valves, O-Rings, and Freeze Cylinder Drive Shaft/Seal Assemblies

NOTE: Dispensing valve "O" Rings should be replaced **every 120 days** to correspond with quarterly preventative maintenance visits.
The best technique for removing 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 towel between your finger and thumb. When a loop is formed in the "O" Ring, roll it out of the groove with your thumb. Always remove the "O" Ring farthest from the end of the plunger first. **(See Figure 13)**

Lubricating Plunger O-Rings

1) Close syrup and alcohol manual control valves located in the back compartment of the lower cabinet.
2) Place freezer in "**CLEAN**" position.
3) Drain freeze cylinder while purging with carbonated water.
4) Turn freezer control switch to the "**OFF**" position.
5) Vent pressure and drain completely.
6) Remove dispensing valve plunger.
    a) Remove valve handle retaining pin.
    b) Push plunger up and remove handle.
    c) Pull plunger down.
7) Remove "O" Rings and clean "O" Ring grooves.
8) Replace "O" Rings.
9) Lubricate the "O" Rings on the plunger and the area inside of the clear plastic valve body where the plunger "O" Rings make contact with the valve body using silicone lubricant.
10) Replace Plunger assembly.
    a) Place spring on top of plunger.
    b) Place plunger in valve body making sure that the handle opening faces forward.
    c) Push up on plunger and replace handle.
    d) Insert handle retaining pin.
    e) Sanitize unit following instructions in manual.
11) Refill unit following instructions in manual.

Note: Plunger o-rings, face plate quad ring, shaft seal set, motor belt, etc. should be replaced annually.

Changing Back Lit Sign Merchandiser Bulb

1) Remove the two screws, located on the top on either side of the sign.
2) Lower the metal enclosure that frames the merchandiser insert.
3) Pull merchandiser enclosure down and out.
4) Replace bulb inside.
5) Reassemble.

Cleaning Condenser Coil

1) Turn machine "OFF".
2) Remove both freezer side panels.
3) Place a wet towel on the inlet side of the condenser (right side facing front of freezer).
4) Use compressed air to blow out condenser coils from the exhaust side of condenser coil (fan motor side).

NOTE: Follow all health and safety standards.

5) Replace side panels.

Drive Belt Adjustment

CAUTION: Unplug the machine before performing any adjustments.
Check the belt tension quarterly. Proper belt tension is ½" deflection measured mid way between the drive and driven pulleys. If the deflection is more than ½" adjust the motor height to achieve proper tension using the following procedure:

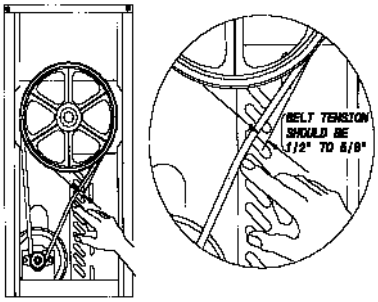


Figure 18

1) Unplug the unit and remove the side and rear panels.
2) Locate the motor flange bearings (W0380009) located at each end of the drive motor. Two bearings support the motor, one on the shaft at each end of the motor. The bearings are secured to the motor cradle using two Allen bolts on each bearing.
3) Loosen all four bearing Allen bolts. NOTE: Do not loosen the setscrews that hold the bearing collars to the motor shaft.
4) Lower or raise the motor as needed to achieve proper belt tension. The motor must be kept level from front to back. NOTE: Excessive belt wear and belt noise can occur if the motor is not kept level.
5) Tighten all four Allen bolts down.
6) Align the driven motor pulley with the top driven pulley if needed. Use a straight edge along the top pulley. If the pulleys are not in alignment, remove the setscrew from the pulley and move either in or out as needed.

NOTE: Use non-permanent Loc-Tite on the driven pulley setscrew and tighten down on the flat of the motor shaft.

Parts Replacement Schedule

Part Description	Monthly	Every 3 Months	Every 6 Months	Annually	Quantities to be Replaced
Drive shaft seal W0340210		Inspect & replace if necessary		Replace	1
Drive shaft W0451067				Inspect & replace if necessary	1
Drive belts W0450209				Inspect & replace if necessary	1
Scraper blades on dasher W1431084		Replace			2
Square cut o-ring on valve body/face plate W0340055			Inspect & replace if necessary		1
Front stator flange bearing W0430032			Inspect & replace if necessary		1
Rear stator flange bearing W0430024			Inspect & replace if necessary		1
Dispense valve o-rings W0340022		Replace			3
Dispense valve relief valve W0650429			Inspect & replace if necessary		1
Inlet tube o-rings W0340011				Inspect & replace if necessary	2
Condenser W0200256		Inspect & clean if necessary			1
Alcohol Holder components 90750 - knob 90749 - clamp 90748 - nozzle		Inspect & replace if necessary.		Nozzle replacement mandatory.	6
Alcohol, syrup, & water solenoid 90863				Inspect & replace if necessary	3
Alcohol, syrup pump 90729 and Water pump 61290				Inspect & replace if necessary	2 - CO_2 Driven, 1 - Electric
Alcohol rack				Disassemble and sanitize	

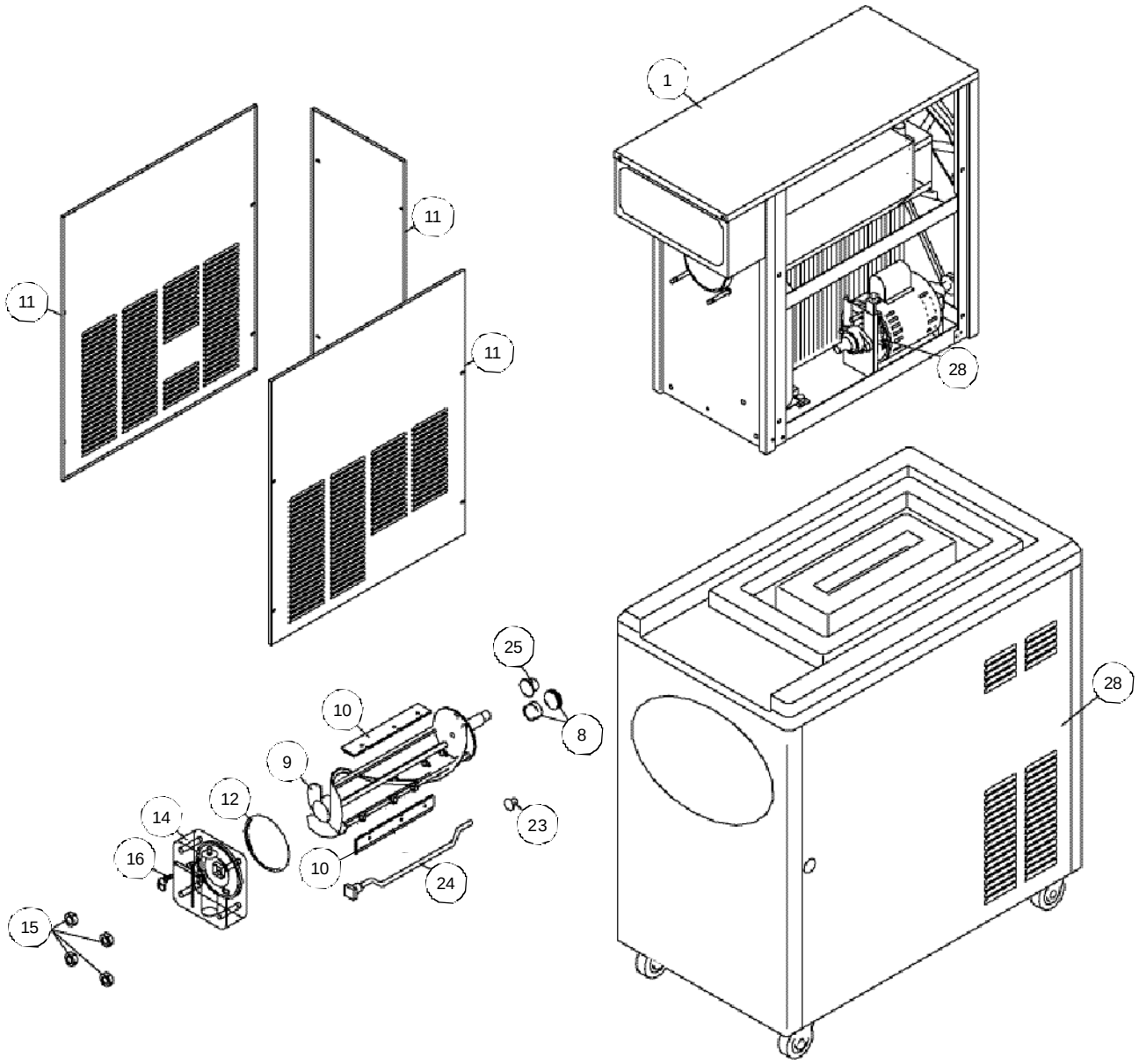
Troubleshooting Guide

If machine is not operating properly, check the following list for possible solutions. Only a qualified service technician should perform electrical and mechanical adjustments or repairs. Always disconnect power before attempting any maintenance procedures.

Problem	Probable Cause	Remedy
Machine won't run (no lights, not motor)	• Machine not plugged into wall receptacle • Building circuit breaker tripped or fuse blown • Switches in wrong position	• Plug machine directly into outlet. Do not use extension cord. • Place circuit breaker in the ON position or replace fuse • Turn lower panel Power Switch to **ON,** Control Switch to **OFF** and freezer switch to **ON**.
Machine will not freeze	• Dasher assembly not installed • Drive belt broken or off pulley • Inadequate airflow • Freezer in CLEAN position • Mix low light on indicating an *out of* condition • Condenser clogged • Compressor not operating • Low refrigerant charge • Improper expansion valve setting • Defrost timer set	• Install dasher assembly • Repair or replace • Allow 6" (15cm) on both sides • Switch to ON • Correct *out of* condition (syrup, water, alcohol, or CO_2) • Clean condenser • Check for cause and correct • Check for leaks, repair and recharge • Adjust within specifications • Wait for defrost cycle to end
Product too soft (thin)	• Consistency adjuster too thin • Too much alcohol • Product BRIX level too high	• Readjust consistency firmer • Readjust alcohol flow control • Check water and syrup flow controls for proper test volume
Product too thick (firm)	• Consistency adjuster set too firm • Too little alcohol • Product BRIX level too low	• Readjust consistency setting thinner • Increase product BRIX level and check product feed • Increase product BRIX level
Product will not dispense	• Power switch OFF • MIX LOW light on • Drive belt broken or off pulley	• Turn power switch ON • Refill empty product • Repair or replace
Leakage from drip tube	• Worn out or defective drive shaft seal	• Replace seal and then lubricate at each cleaning
Excessive Dispensing Valve Leaks	• Worn or defective o-ring(s)	• Replace and lubricate at each cleaning
Clicking sound from inside the machine	• Low voltage • Extension cord is used	• Use dedicated circuit with proper rating • Connect directly to power source or use power cord of proper size
Thumping sound from inside the machine	• Worn belt • Low alcohol content	• Replace belt • Check mix
Product does not feed	• Low CO_2 pressure • Product pumps defective • Carbonator pump defective • Transformer defective or transformer overload tripped • Solenoids defective	• Check bottle and regulator • Replace pumps • Replace pumps • Replace transformer or reset transformer circuit breaker • Replace solenoids
Premature seal wear	• Incorrect installation of dasher • Improper drive shaft clearance	• Advise careful installation • Adjust to proper clearance

If you still need help, call an authorized dealer in your area or GCS' Technical Service Department. You can reach Technical Service at (800) 425-4776 Monday-Friday, 8:00 AM-6:00 PM Eastern Standard Time. Please have the model and serial number ready so that accurate information can be given.
Prior authorization must be obtained from Grindmaster Crathco Systems' Technical Service Department for all warranty claims.

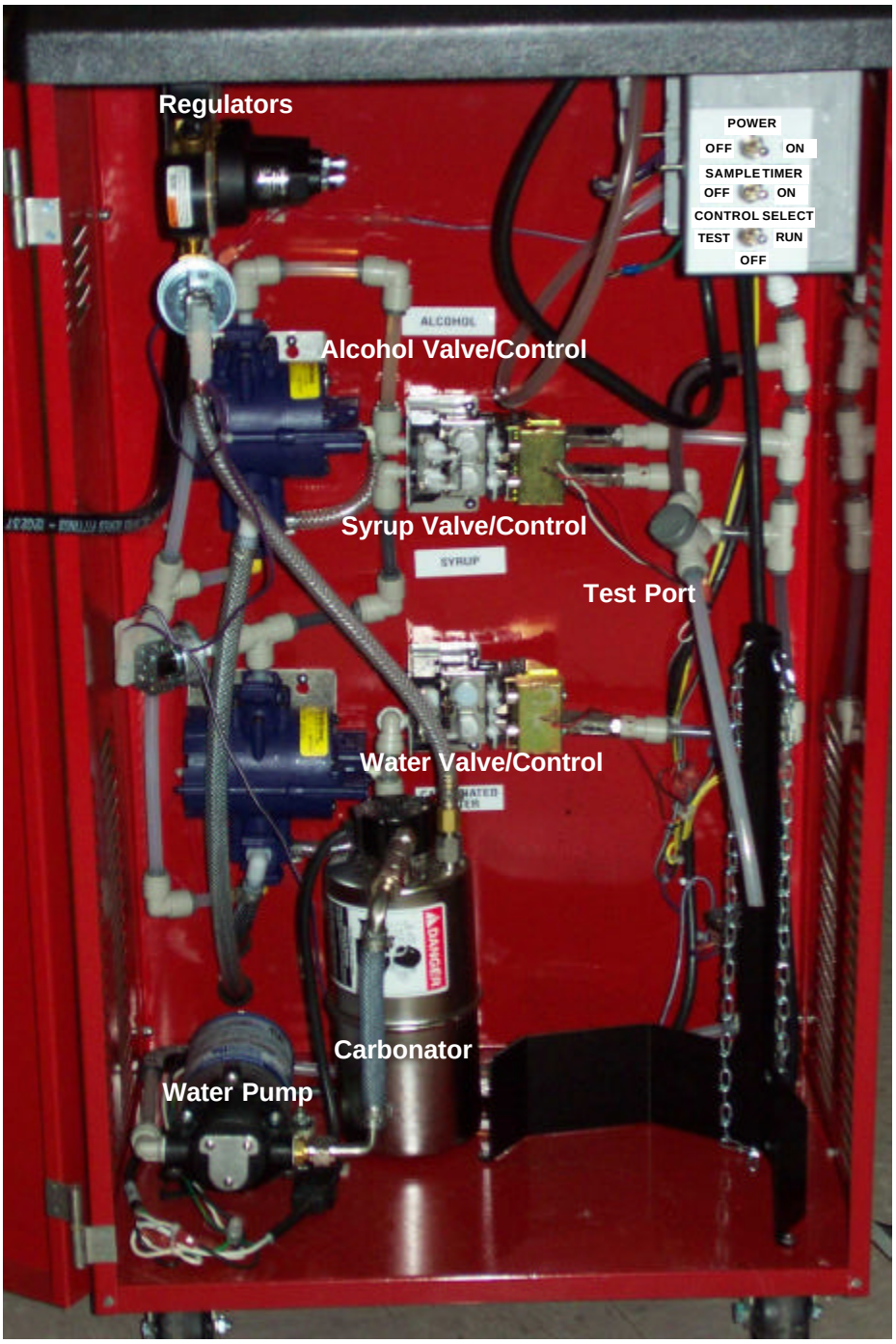
Addendum 1 - Complete Unit Exploded View

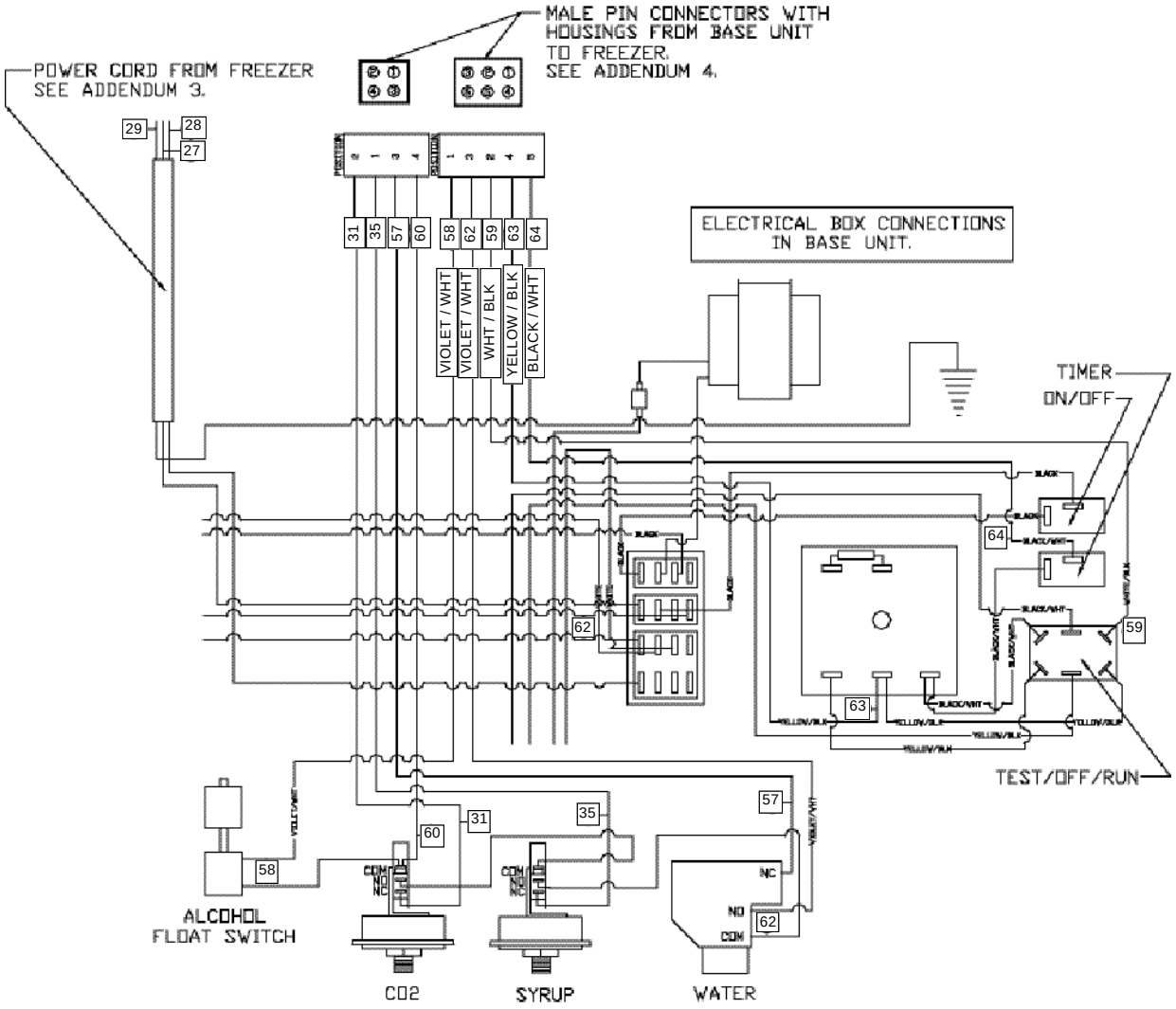


ITEM	PART #	DESCRIPTION
1	W0150590	Stock Assembly
2	00800	Serial Label
4	W0800120	Base Board Assembly
5	W0800121	Shipping Box
6	W0800122	L-Block
7	W0800124	Foam Top Carton Pad
8	W0340210	Coconut Oil Seal
9	W0430089	Scraper Dasher
10	W1431084	Scraper Blade
11	W0890235	Kit, Panel Black
12	W0340055	O-ring, Valve Body
13	W0610133	Panel Screws
14	W0480460	Body, Valve Pressure

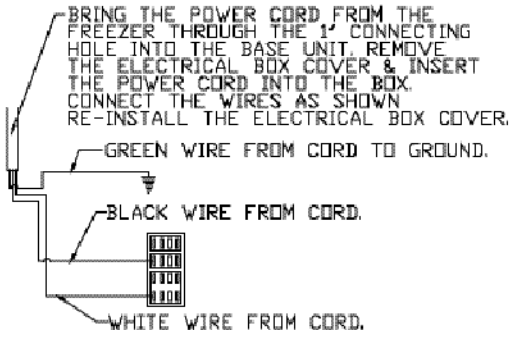
ITEM	PART #	DESCRIPTION
15	W0630711	D-Knob, w/ 5/15-18 Female Threads
16	W0650429	Pressure Relief Valve, Modified
17	W0631238	Spring, Extension Yellow
18	W0610574	1/4-20 Hex Head Cap Screw
19	W0611074	1/4-20 Hex Nut
21	W0611242	Flat Washer
22	86823	1/4 Lock Washer
23	W0430024	Stator Flange Bearing (Rear)
24	W0430028	Stator Weldment
25	W0430032	Stator Flange Bearing (Front)
26	60832	Bushing, Heyco 1” Snap
27	90822	Patent Pending Label
28	90719	Cart, Carbonated Alcohol Injected
29	W0660058	Plastic Shipping Bag

Addendum 2 - Base Cabinet

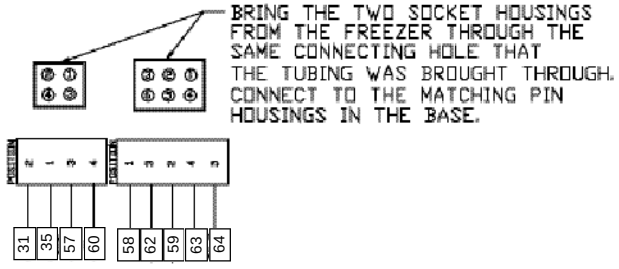




Addendum 3 - Electrical Connections in Lower Cabinet

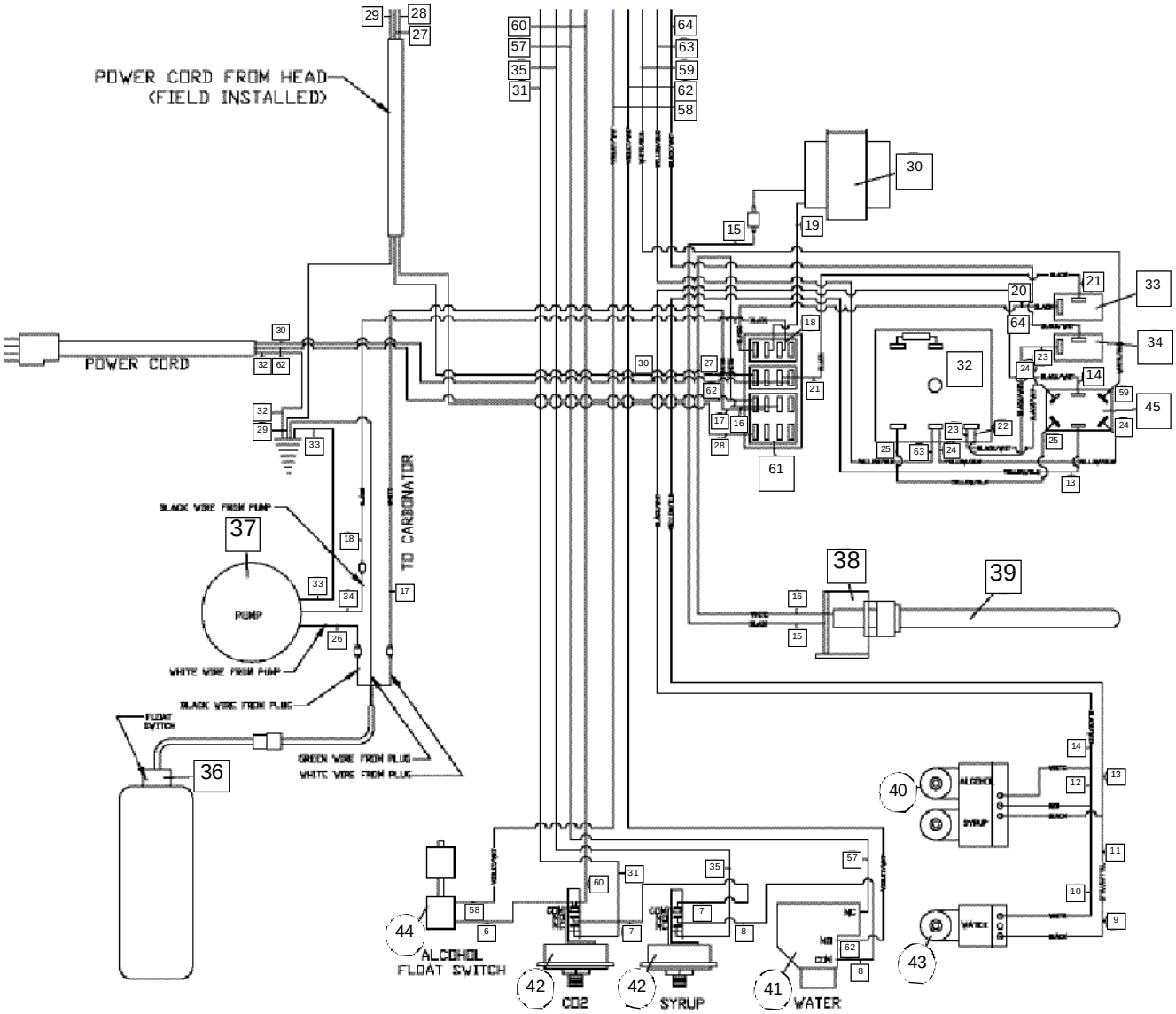


Addendum 4 - Electrical Connections in Lower Cabinet



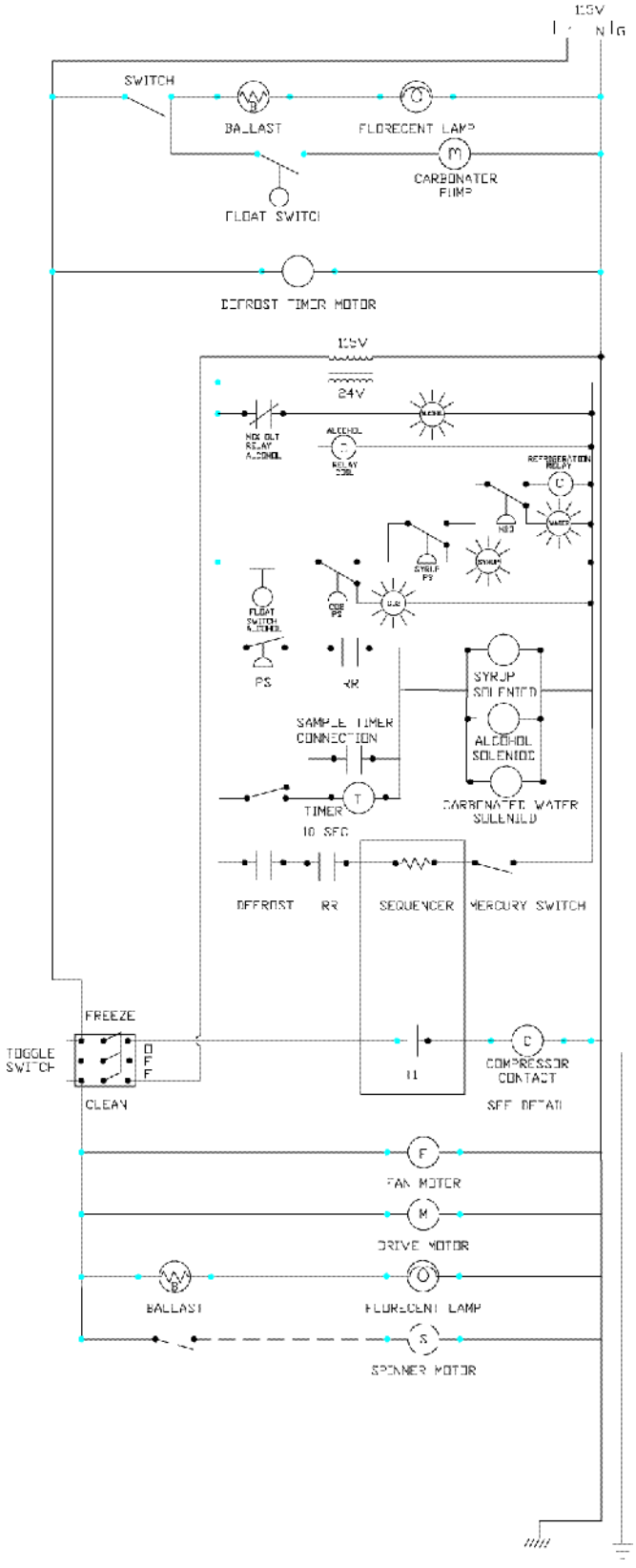
Addendum 5 - Electrical Connections Cabinet to Freezer

Addendum 6 - 6321 Base Cabinet Electrical Schematic

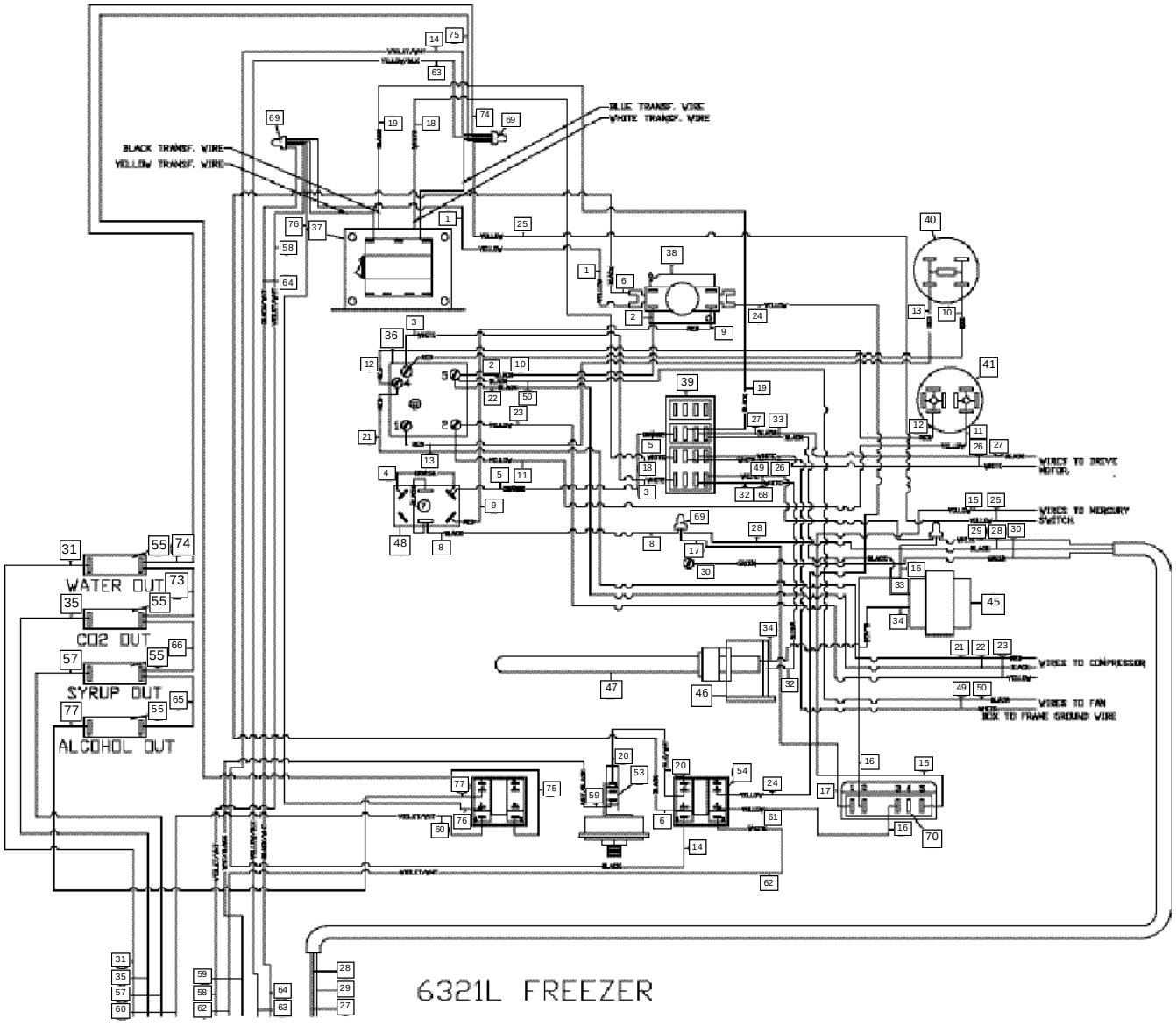


ITEM	PART NUMBER	DESCRIPTION
30	W0570045	BALLAST
61	W0570235	TERMINAL BLOCK
32	90811	TIMER
33	61847	POWER SWITCH
34	61847	TIMER SWITCH
45	W0570924	SWITCH
36	COMES WITH CARBONATOR	FLOAT SWITCH
37	90834	PUMP
38	W0570044	LIGHT SOCKET
39	W0570043	LIGHT BULB
40	90857	SYRUP AND ALCOHOL SOLENOIDS
41	W0650415	SOLD OUT SWITCH
42	W0650400	BARKSDALE PRESS. SWITCH # MSPS-JJ100SS-F
43	90858	WATER SOLENOID
44	90879	ALCOHOL FLOAT SWITCH

Addendum 7 - 6321L-A Ladder Diagram



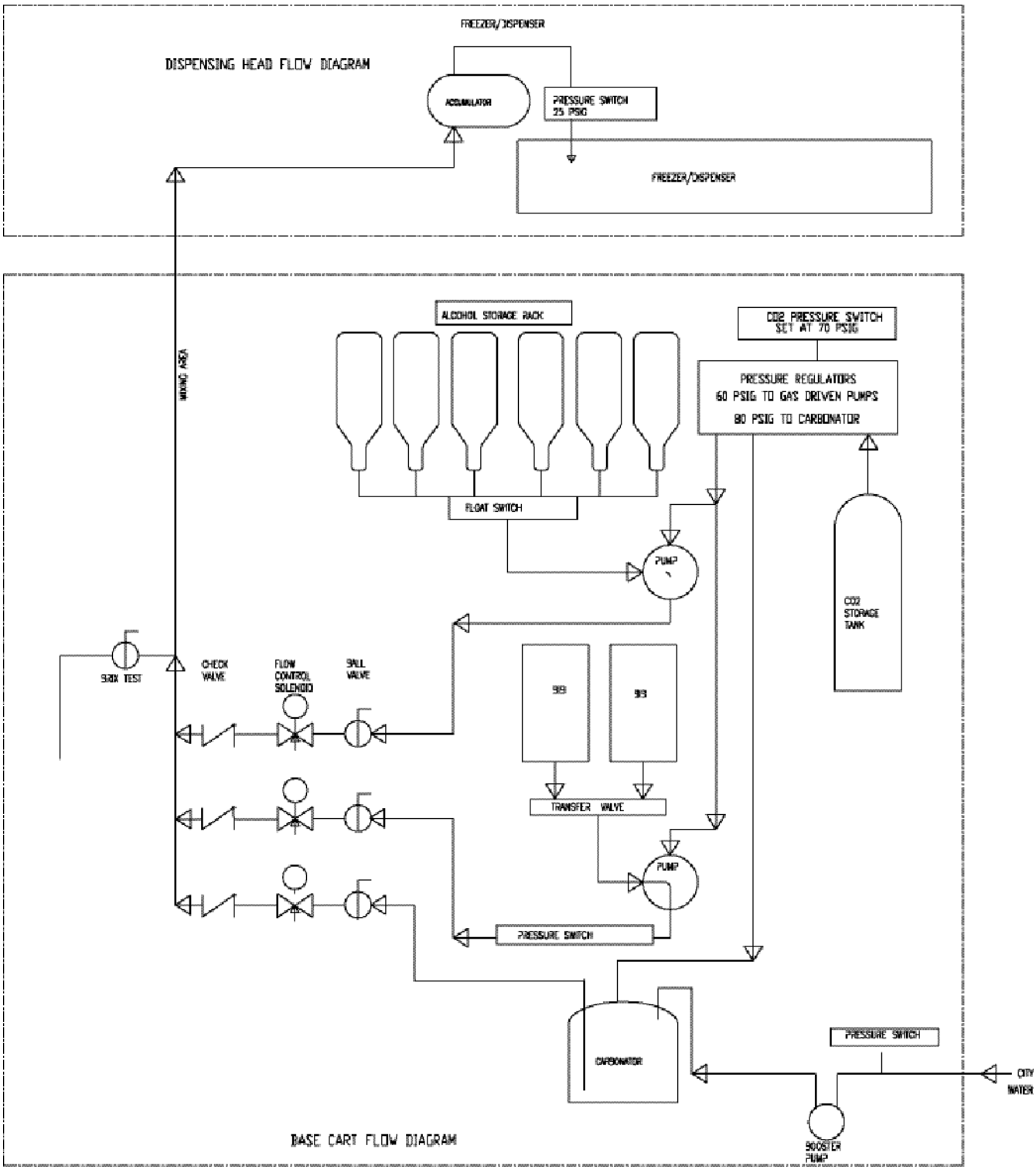
Addendum 8 - 6321 Freezer Electrical Schematic



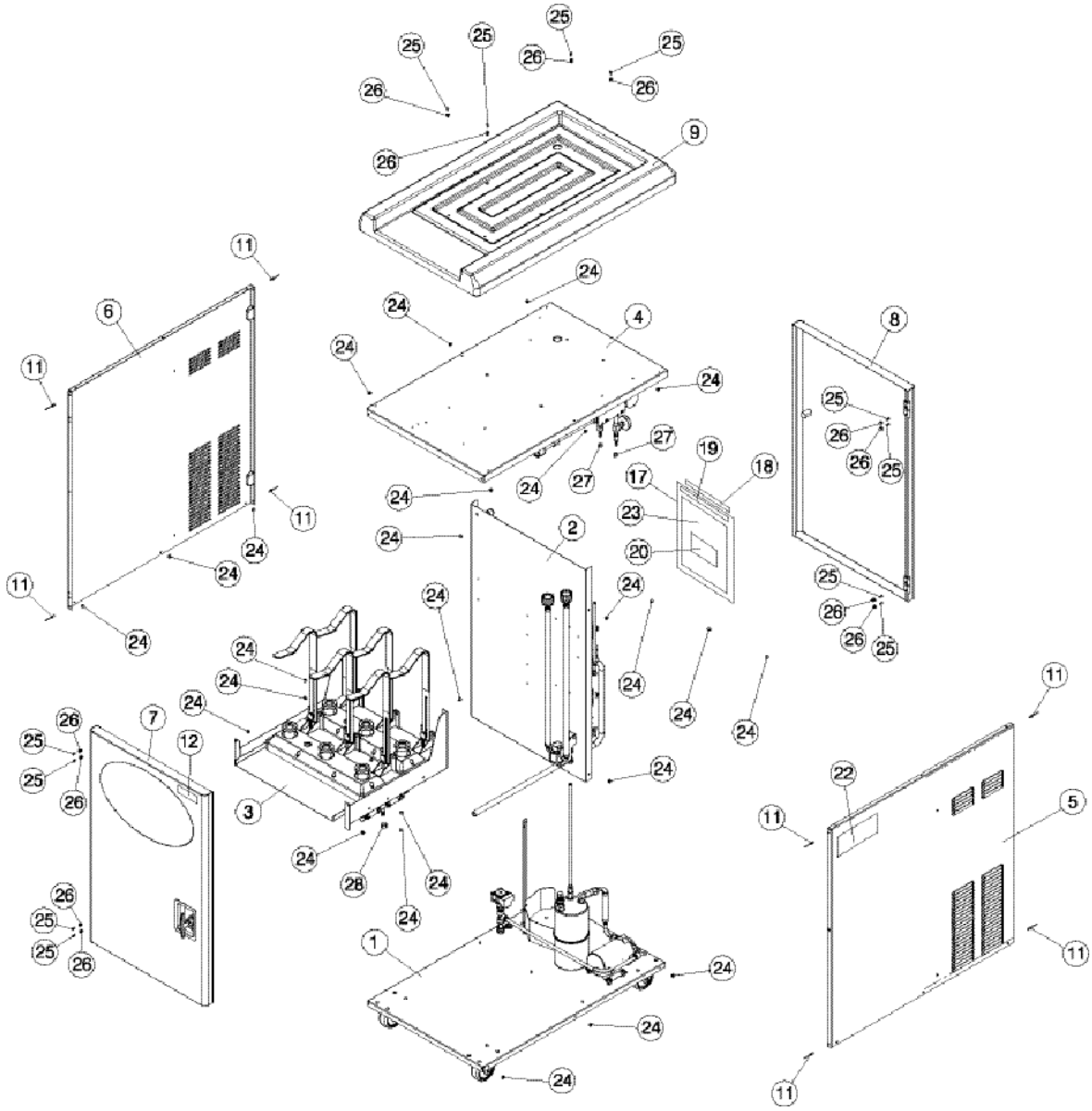
ITEM	LENGTH	DESCRIPTION
72	W0570662	RELAY SOCKET
71	W0570661	RELAY
70	W0570682	TIMER
69	W0570242	SPLICE CAPS
67	60110	PIGGYBACK TERMINAL
56	60034	LIGHT, AMBER
55	60033	LIGHT, RED
54	85303	RELAY
53	W0650407	PRESSURE SWITCH
52	W0650121	LOW PRESSURE SWITCH
51	W0650011	SOLENOID VALVE
48	W0570924	SWITCH
47	W0570043	FLUORESCENT LIGHT BULB

ITEM	LENGTH	DESCRIPTION
46	W0570044	LIGHT SOCKET
45	W0570045	CORE & COIL BALLAST
44	W0630801	TIE WRAPS
43	W0572050	POWER CORD
42	W0572192	LOW MIX SUB-ASSY
41	W0570604	RUN CAPACITOR
40	W0570603	START CAPACITOR
39	W0570235	TERMINAL BLOCK
38	W0570651	TIME DELAY RELAY
37	W0570656	TRANSFORMER
36	W0570638	COMPRESSOR RELAY

Addendum 9 - Product Flow Schematic



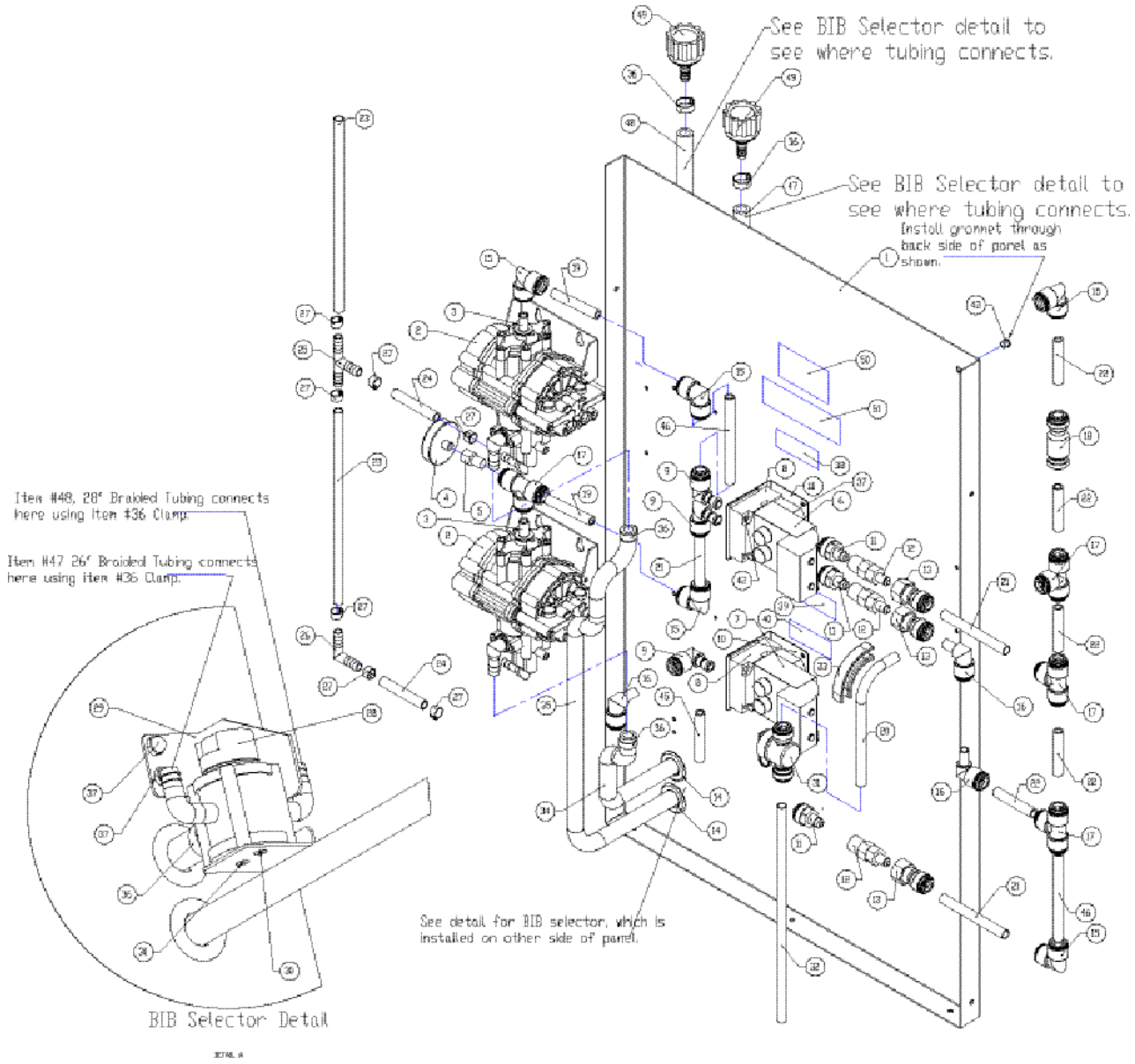
Addendum 10 - 6321 Base Cabinet Panels Exploded View



ITEM	PART NO.	DESCRIPTION
1	90780	PANEL, BOTTOM ASSY, BASE CART
2	90727	PANEL ASSY, INTERIOR, BASE CART
3	90746	ALCOHOL HOLDER
4	90827	TOP PANEL ASSY
5	90724	RIGHT SIDE PANEL ASSY
6	90829	LEFT PANEL ASSY
7	90830	DOOR ASSY
8	90831	REAR DOOR ASSY
9	90728	PLASTIC COSMETIC COVER
10	86600	TIE, WIRE, NYLON, T18R (NOT SHOWN)
11	07348-1	POP RIVET
12	62486	DECAL, GCS LOGO - 4 X 1.25
13	W0570205	TERM, 2-520103-2.250 FASTON- (NOT SHOWN)
14	W0570207	TERM, FASTON 16-14 GA FULLY (NOT SHOWN)
15	W0570242	SPLICE CAP, INSULATED (NOT SHOWN)

ITEM	PART NO.	DESCRIPTION
16	W0570272	TERM, RING EYE (NOT SHOWN)
17	W0660060	BAG, PLASTIC, 12 X 10
18	W0631809	VELCRO, HOOK
19	W0631810	VELCRO, LOOP
20	W0600031	LABEL, SERVICE, ICEE
21	90847	LOOSE SHIPPED PARTS KIT (NOT SHOWN)
22	00800	LABEL, SERIAL NUMBER, NAME PLATE
23	90818	MANUAL, SERVICE, 6321L
24	82085	8-32 UNF S.S. ACORN NUT
25	W0610923	PEM STUD, 8-32 X 3/8”
26	61339	8-32 UNF S.S. ACORN NUT
27	60593	CLAMP, 1/2 STEPLESS
28	60550	CLAMP, 11/16 STEPLESS
29	W1631510	WIRE TIE HOLDER
30	W1631508	SADDLE WIRE, ALL STATES (NOT SHOWN)

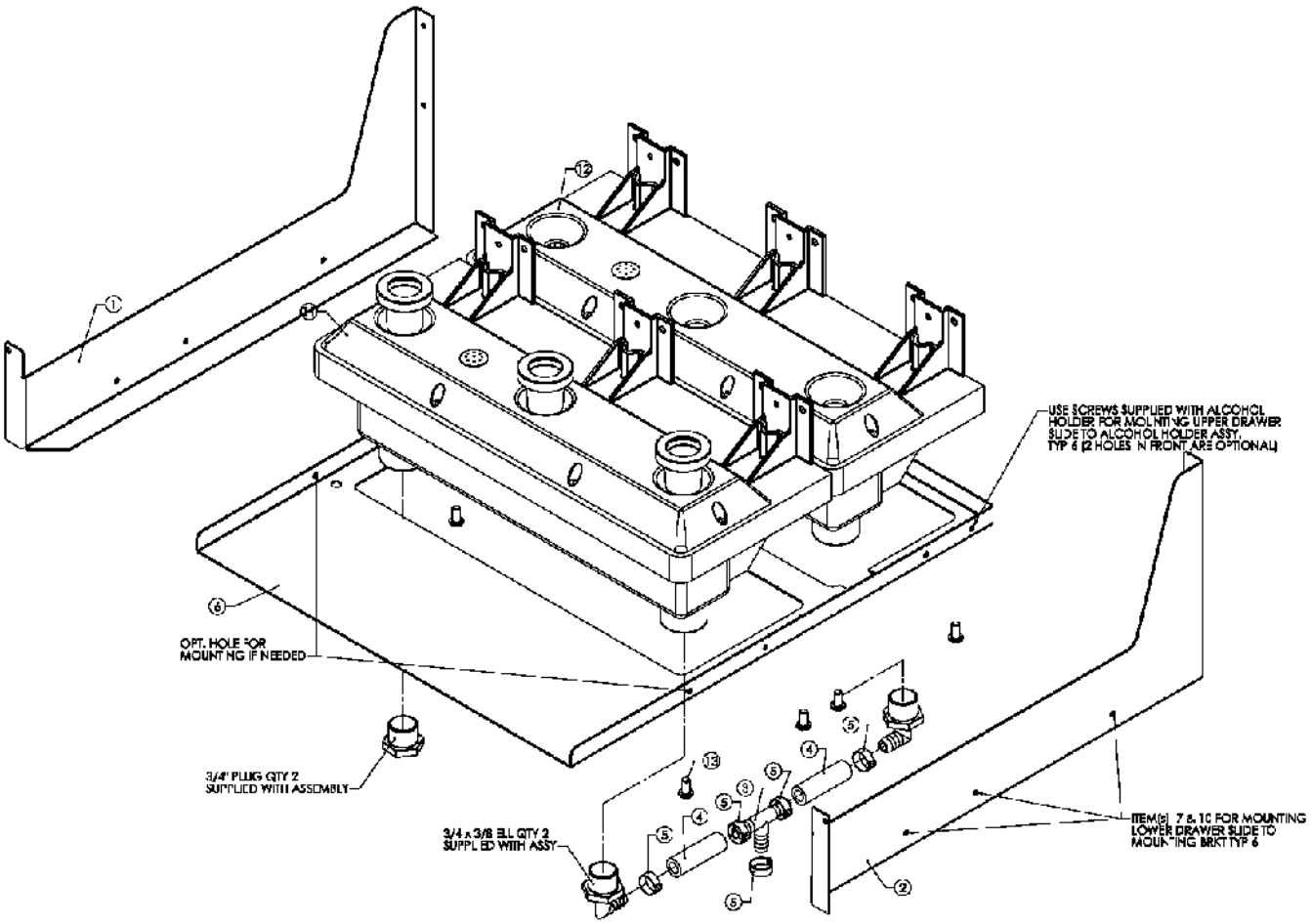
Addendum 11 - 6321 Base Cabinet Exploded Parts View



6321 Cabinet Exploded Parts View

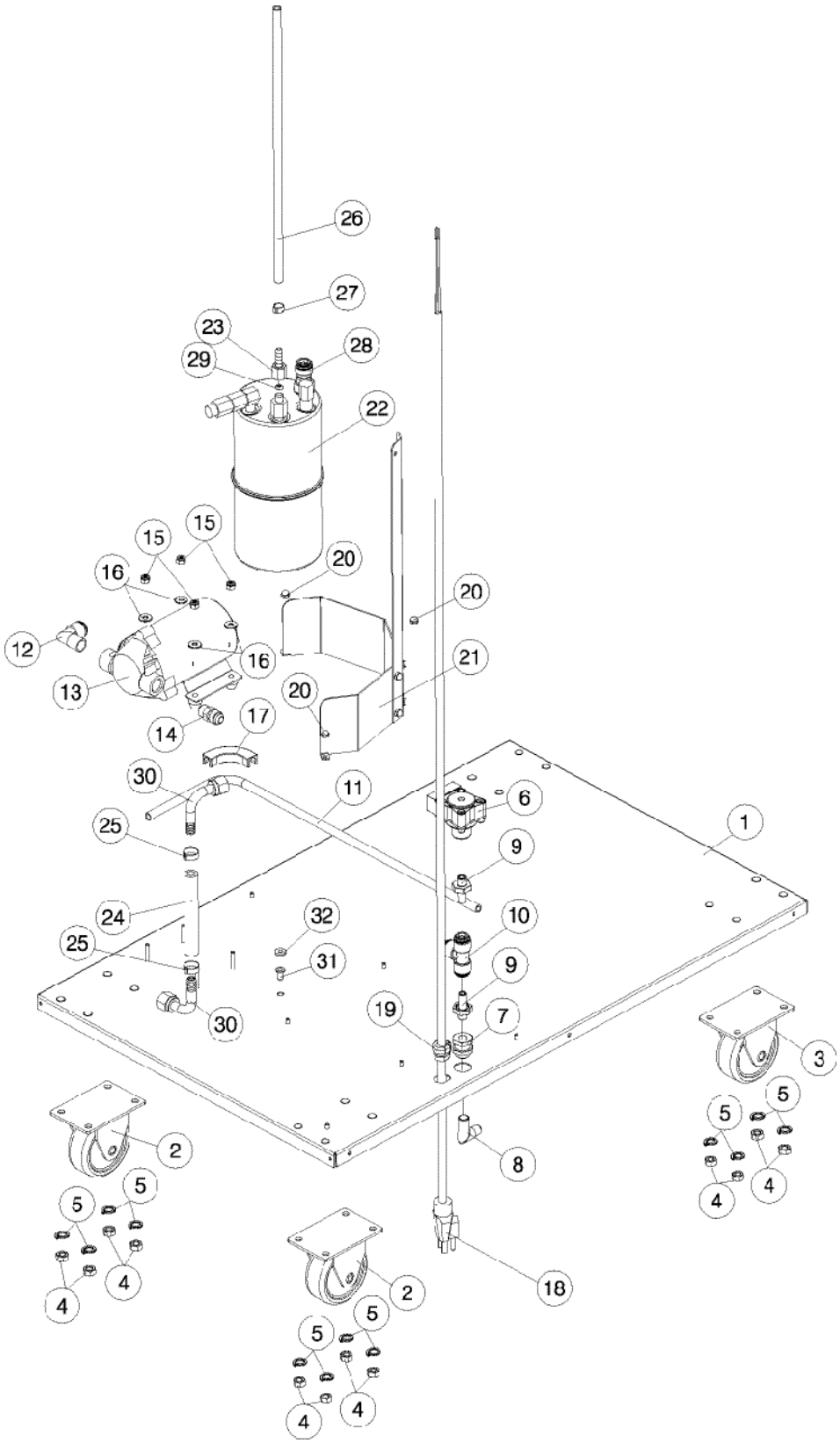
ITEM	PART NO.	DESCRIPTION
1	90726	PANEL, INTERIOR-BASE CART
2	90729	SYRUP PUMP
3	90730	FITTING, SHURFLO TO 3/8” JOHN GUEST
4	90875	SWITCH, PRESSURE, BARKSDALE-40 PSI
5	W0620283	ADAPTER, 1/8” FPT X 3/8” STEM
6	90857	VALVE, FLOMATIC 424 DUAL SYRUP PISTONS (P/N 407-CSY-D22)
7	90858	VALVE, FLOMATIC 424 SINGLE SODA PISTON AND PLUG (P/N 407-CF-D22-R)
8	90855	FLOMATIC VALVE MNT BLOCK 380 Q
9	90854	FITTING, 3/8 PLUG-IN ELBOW
10	90859	FLOMATIC VALVE MNT BRACKET
11	90860	FITTING, MALE CONNECT-1/4” X 1/4” MFL (JG# PIO108F4S)
12	90758	CHECK VALVE
13	90767	FTG, 1/4 SAE X 3/8 JG# PI4512F4S
14	W0340120	RUBBER GROMMET
15	90763	FITTING, 3/8” ELL JG# 1032-S
16	90764	FITTING, 3/8 PLUG-IN ELBOW
17	W0620282	TEE, 3/8 X 3/8 X 3/8 TUBE
18	W0650123	CHECK VALVE, JG
19	90733-3.000	TUBING, LOW DENSITY POLYETHYLENE 3”
20	90733-8.0	TUBING, LOW DENSITY POLYETHYLENE 8”
21	90733-3.375	TUBING, LOW DENSITY POLYETHYLENE 4”
22	90733-2.0	TUBING, LOW DENSITY POLYETHYLENE 2”
23	60591-10.00	TUBING, 1/4” BRAIDED 10.00”
24	60591-2.25	TUBING, 1/4” BRAIDED 2.250”
25	90869	FITTING, 1/4” X 1/4” X 1/4” BARB TEE
26	90868	FITTING, 1/4” X 1/4” ELL BARB, CHUDNOW (P/NS29-M44U)
27	60593	CLAMP, 1/2 STEPLESS
28	90743	VALVE, AUTOMATIC, BIB, SELECTOR
29	90813	BRKT, BIB SELECTOR SWITCH
30	90781	SCREW, #4 X 1/4 SM,P (MNTG ITEM #33 - NOT SHOWN)
31	90745	VALVE, 3/8 JG# PSV0412CS
32	90733-10	TUBING, LOW DENSITY POLYETHYLENE - 10.0”
33	90770	SUPPORT, 90 TURN JOHN GUEST # PM2610S
34	61153-10	BRAIDED TUBING, 10.0”
35	61153-42	BRAIDED TUBING, 42.0”
36	60550	CLAMP, 11/16 STEPLESS
37	82085	8-32 UNF S.S. ACORN NUT
38	90824	DECAL, ALCOHOL
39	90825	DECAL, SYRUP
40	90826	DECAL, CARBONATED WATER
41	90863	SOLENOID, DUAL CONTROL (FLOMATIC P/N 770-D22) (NOT SHOWN) SPARE PARTS
42	61288	8-32 X 7/8” PH PN BLK SCREW
43	90885	HEYCO BUSHING, BACK (P/N 2853)
44	90886	INSERT, TAMPER PROOF (FLOMATIC P/N 1025) - NOT SHOWN
45	90733-2.500	TUBING, LOW DENSITY POLYETHYLENE 2.50”
46	90733-4.000	TUBING, LOW DENSITY POLYETHYLENE 4.00”
47	61153-26	BRAIDED TUBING, 26.0”
48	61153-28	BRAIDED TUBING, 28.0”
49	90774	FITTINGS, BIB COKE
50	W0600013	DECAL, INDEMNITY CLAUSE
51	W0600035	LABEL, WARNING, TAMPERING

Addendum 12 - Rack Exploded View



ITEM NO.	PART NO.	DESCRIPTION
1	90751	MNT BRACKET, LEFT, BERG ALCOHOL HOLDER ASSY
2	90752	MNT BRACKET, RIGHT, BERG ALCOHOL HOLDER ASSY
3	90794	3/8” X 3/8” X 3/8” BARB TEE
4	61153	TUBING, BRAIDED .375” ID X .625” OD X 2.5” L
5	60550	CLAMP, 11/16 STEPLESS
6	90802	DRAWER SLIDE MNT. BRACKET, RIGHT
7	90850	6-32 UNF S.S. ACORN NUT
8	90799	DRAWER SLIDE, LEFT (NOT SHOWN)
9	90800	DRAWER SLIDE, RIGHT (NOT SHOWN)
10	07023-04	SCREW, 6-32 X 1/4” PH BD M/S - S.S. (NOT SHOWN)
11	90747	BERG ALCOHOL HOLDER ASSY
12	90877	ASSY, 3 BOTTLE RESERVE WITH FLOAT SWITCH-MODEL #8000200
13	60012	1/4-20 X 1/2” ROUND HEAD
14	90748	RESERVE NOZZLE
15	90749	ADJUSTABLE BOTTLE CLAMP
16	90750	THUMBSCREW, ADJUSTABLE BOTTLE CLAMP
17	90878	WASHER, #10, LOCK, INTERNAL, NOT SHOWN - SHIP LOOSE

Addendum 13 - 6321 Cabinet Base Exploded View

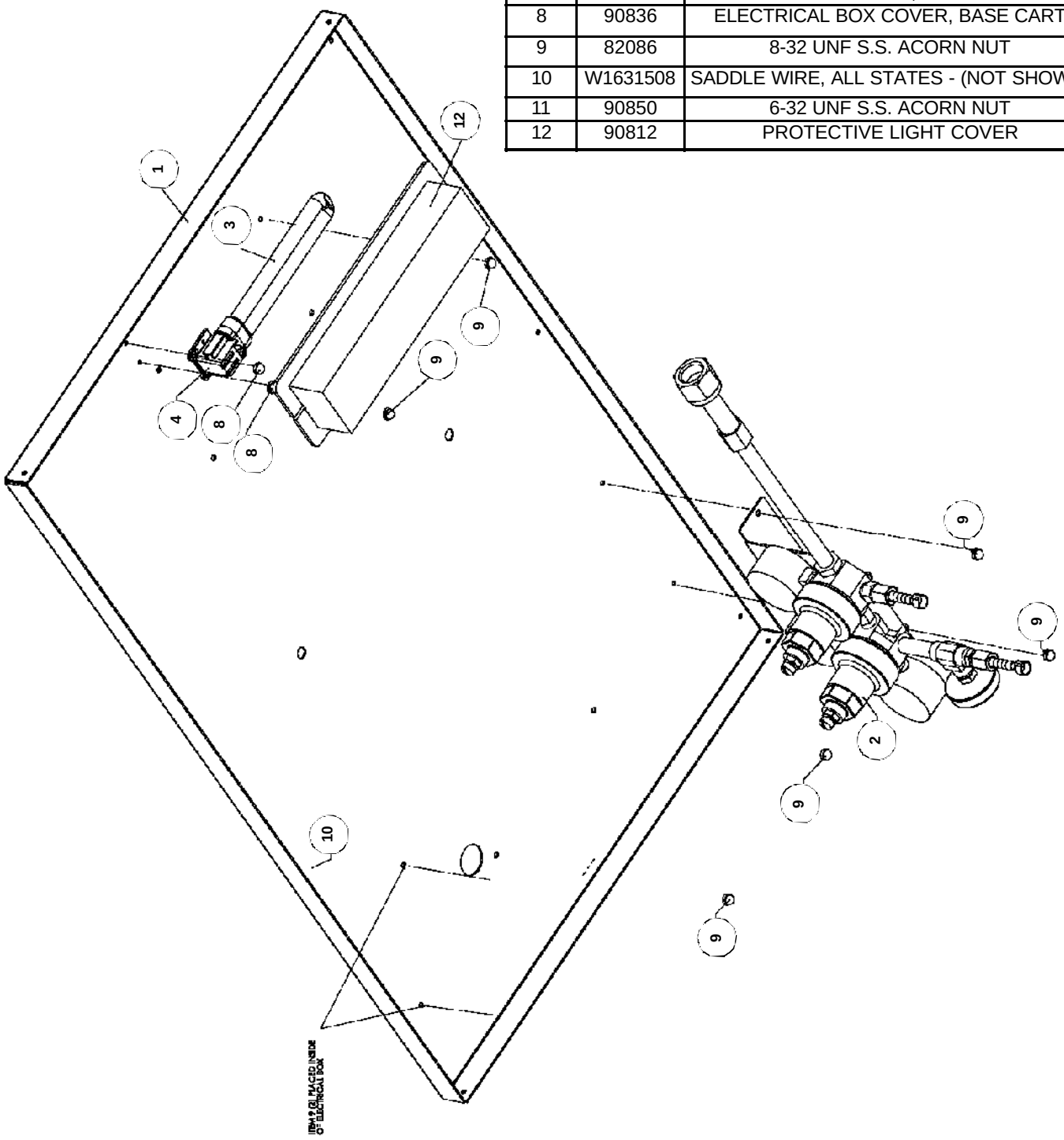


6321 Cabinet Base Exploded View Key

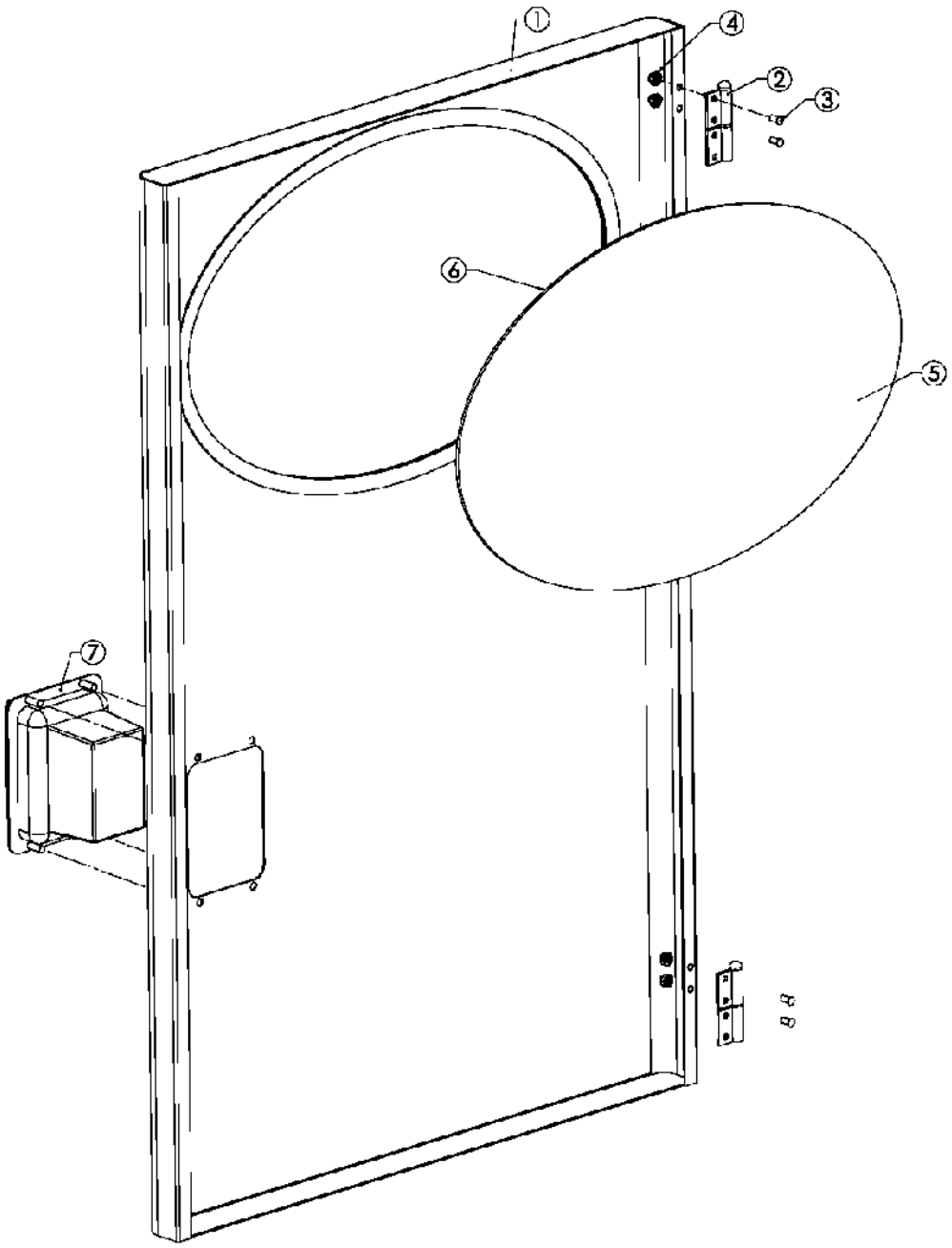
ITEM	PART NO.	DESCRIPTION
1	90723	PANEL, BOTTOM-BASE CART
2	W0630900	CASTER, RIGID-TWIN BASE CART
3	W0630898	CASTER, SWIVEL-TWIN BASE CART
4	W0611086	NUT, 5/16-18 HEX ZINC
5	W0611255	WASHER, 5/16 LOCK
6	W0650415	SWITCH, SOLD OUT, 8-30 PSI
7	90873	ANCHOR COUPLING PARKER P/N 207ACBH-4
8	90874	MALE ELBOW PARKER P/N 149F-4-4
9	W0620278	ADAPTER, 1/4 NPT X 3/8 STEM
10	W0620282	TEE, 3/8 X 3/8 X 3/8 TUBE
11	90733-23.250	POLYETHYLENE TUBING, 23.250”
12	90776	FITTING, 3/8 MPT X 3/8 MPT JG#P14812235
13	61290	CARBONATOR, PUMP SHURFLO
14	90786	3/8 MPT X 3/8 SAE, BRASS
15	W0611042	NUT, 8-32 NYLON INSERT ZINC
16	W0611235	WASHER, 3/16 SAE FLAT, 7/32 ID
17	90770	SUPPORT, 90 TURN JOHN GUEST # PM2610S
18	W0570105	POWER CORD, 14/3, #02-520,11’
19	61479	STRAIN RELIEF, HEYCO
20	82085	8-32 UNF S.S. ACORN NUT
21	90761	TANK RETAINER ASSY
22	90777	CARBONATOR, McCANN STANDARD NEW PROBE
23	71237	FITTING, 1/4” BARB X 1/4” FF SWVL
24	61153-6	BRAIDED TUBING 6.0”
25	60550	CLAMP, 11/16 STEPLESS
26	60591	TUBING, 1/4” BRAIDED, 14 3/4”
27	60593	CLAMP, 1/2 STEPLESS
28	90782	FTG, 3/8 SAE X 3/8 JG # PI4512F5S
29	60797	GASKET, 1/4 COPR FLARE 45 DEG
30	90783	FITTING, 3/8 TUBE X 3/8 SAE ELL
31	83759	10-32 RIVNUT
32	W0631008	WASHER, BONDED NEOPRENE

Addendum 14 - 6321 Base Cart Top Panel Exploded View

ITEM	PART NO.	DESCRIPTION
1	90722	PANEL, TOP-BASE CART
2	90840	REGULATOR ASSEMBLY
3	W0570043	BULB, FLUORESCENT
4	W0570044	SOCKET, LIGHT-LEVITON
5	90835	ELECTRICAL ASSY
6	90807	WIRING HARNESS - BROWN FOREMAN
7	90810	ELECTRICAL BOX, BASE CART
8	90836	ELECTRICAL BOX COVER, BASE CART
9	82086	8-32 UNF S.S. ACORN NUT
10	W1631508	SADDLE WIRE, ALL STATES - (NOT SHOWN)
11	90850	6-32 UNF S.S. ACORN NUT
12	90812	PROTECTIVE LIGHT COVER

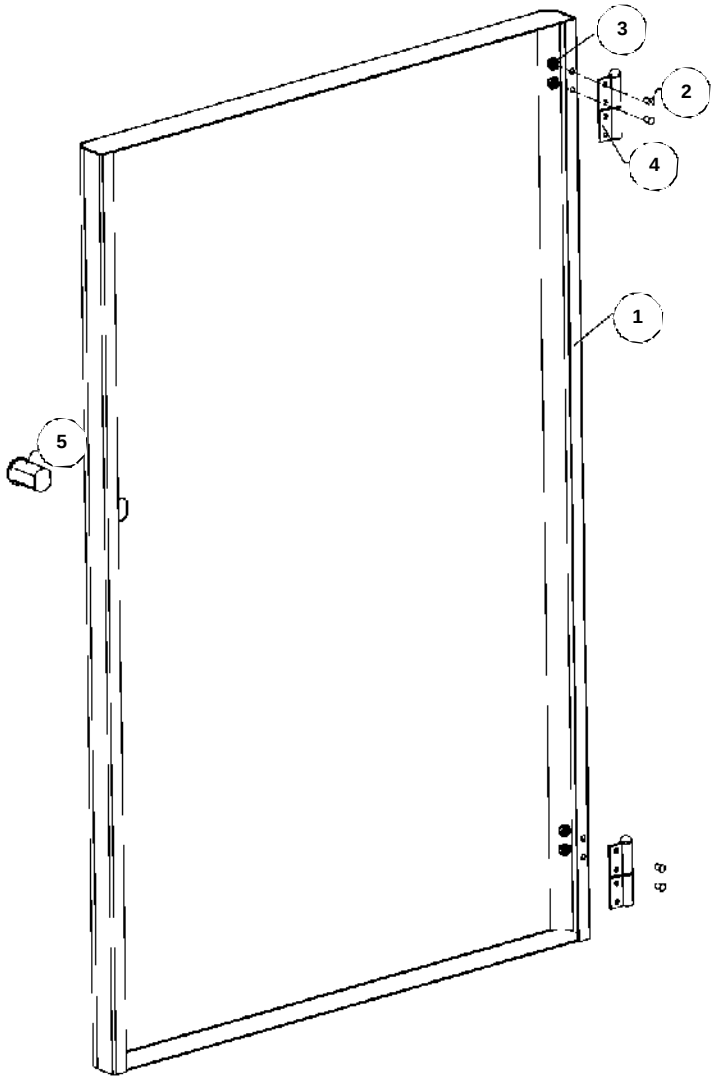


Addendum 15 - 6321 Front Cabinet Door



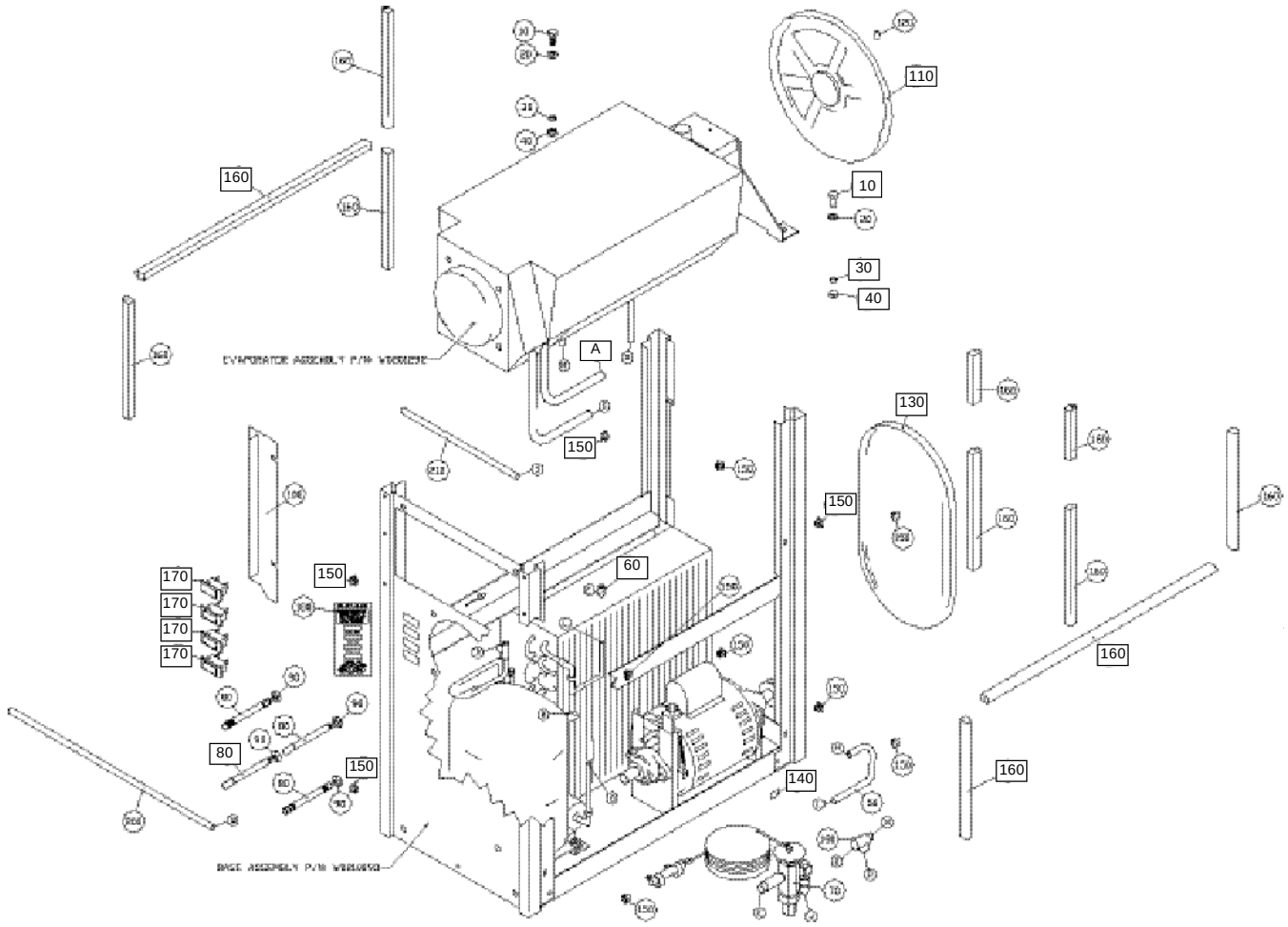
ITEM	PART NO.	DESCRIPTION
1	90721	DOOR, FRONT-BASE CART
2	90851	DOOR HINGE, STANDARD DUTY
3	W0610923	PEM STUD, 8-32 X 3/8”
4	61339	8-32 UNF S.S. ACORN NUT
5	90760	INSERT, OVAL
6	90870	TAPE, 3/64 X 1/2, DBL CTD NEOPRENE
7	90871	PAWL/CAM LATCH-SOUTHCO P/N 24-20-812-35

Addendum 16 - Rear Door and Key



ITEM NO.	PART NO.	DESCRIPTION
1	90720	DOOR, REAR-BASE CART
2	W0610921	PEM STUD, 8-32 X 1/4”
3	61339	8-32 UNF S.S. ACORN NUT
4	90851	DOOR HINGE, STANDARD DUTY
5	90771	LOCK, DOOR-REAR

Addendum 17 - Freezer Exploded View

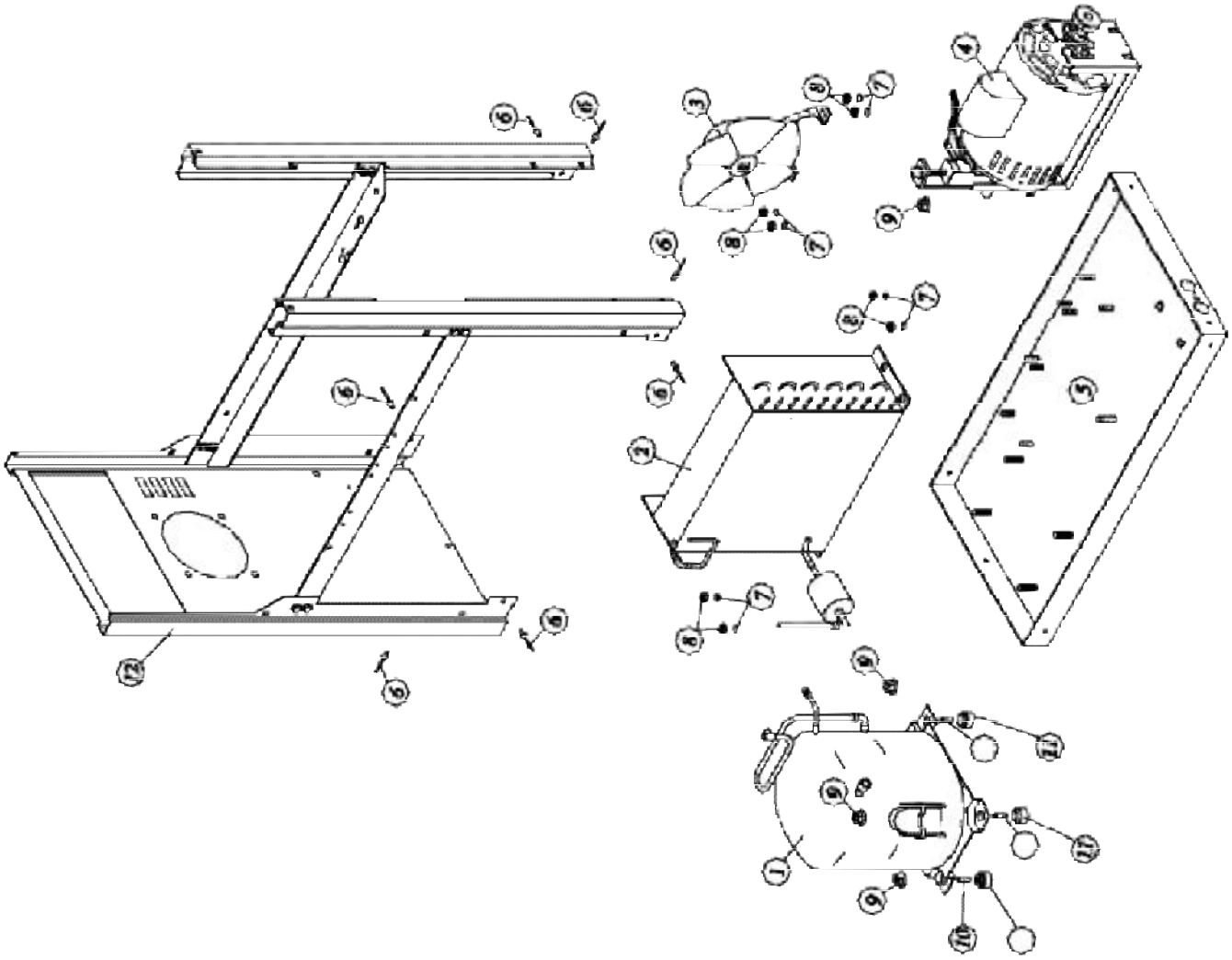


ITEM	PART #	DESCRIPTION
10	W0610682	5/16-18 x 3/4 Hex Hd Cap Screw
20	W0611254	5/16 Flat Washer
30	W0611255	5/16 Split Lock Washer
40	W0611086	5/16-18 Hex Nut Z/P
50	W0201191	Suction Line Pressure
60	W0620103	3/8 Copper Couple
70	W0650119	Thermostatic Expansion Valve
80	W0110013	Valve Studs
90	W0611085	5/16-18 SS Hex Nuts
100	W0201192	Air Baffle Side Piece
110	W0450053	10” Pulley
120	W0610646	5/16-18 x 3/8 Socket Hd Set SC
130	W0450209	V-Belt
140	W0600029	Motor Serial Plate
150	71373	Nylon Screw Anchor
160	W0670008	Trim-Lok Rubber Strip
170	W0570018	Indicator Light
180	W0600230	On-Off-Clean Label
190	W0620106	Tee, 1/2 x 3/8 x 3/8 Copper
200	W0201008	Low Side Process Tube
210	W0201006	High Side Process Tube

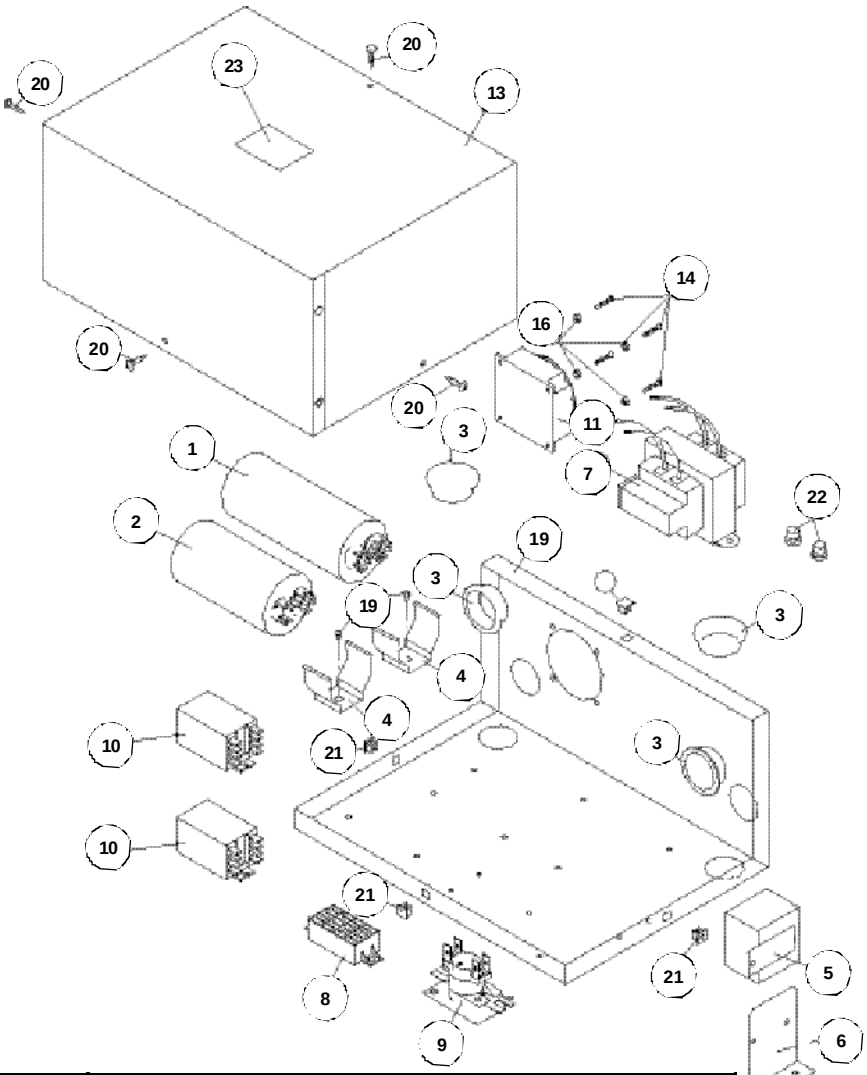
ITEM	SOLDER CONNECTIONS
A	To suction line, Item G
B	From Item “B” to Item “E”
C	To TXV Item “K”
D	Connects Items “F”, “M” & “S”
E	Connects Items “B” & “L”
G	Connects to Item “J”
H	Connects to Item “R”
I	Connects to Item “N”
J	Connects to Item “G”
K	Connects to Item “C”
L	Connects to Item “E”
M	Connects to Item “D”
N	Connects to Item “I”
O	Connects to Item “A”
P	Connects to Item “Q”
Q	Connects to Item “P”
R	Connects to Item “H”
S	Connects to Item “D”

Addendum 18 - Freezer Base Exploded View

ITEM	Part #	Description
1	W0201001	Compressor Assembly
2	W0201000	Condenser Assembly
3	W0320129	Fan Sub-Assembly
4	W0321026	Drive Motor Assy.
5	W0210106	Base Pan Assy.
6	W0611410	Rivet, Magna-Lok
7	W0611247	1/4 Int. Tooth Lk. Wshr.
8	W0611074	1/4-20 Hex Nuts
9	W0611082	5/16-18 Flange Nut
10	W0200412	Compressor Spacer
11	W0200413	Compressor Grommet
12	W0210104	Frame Assembly

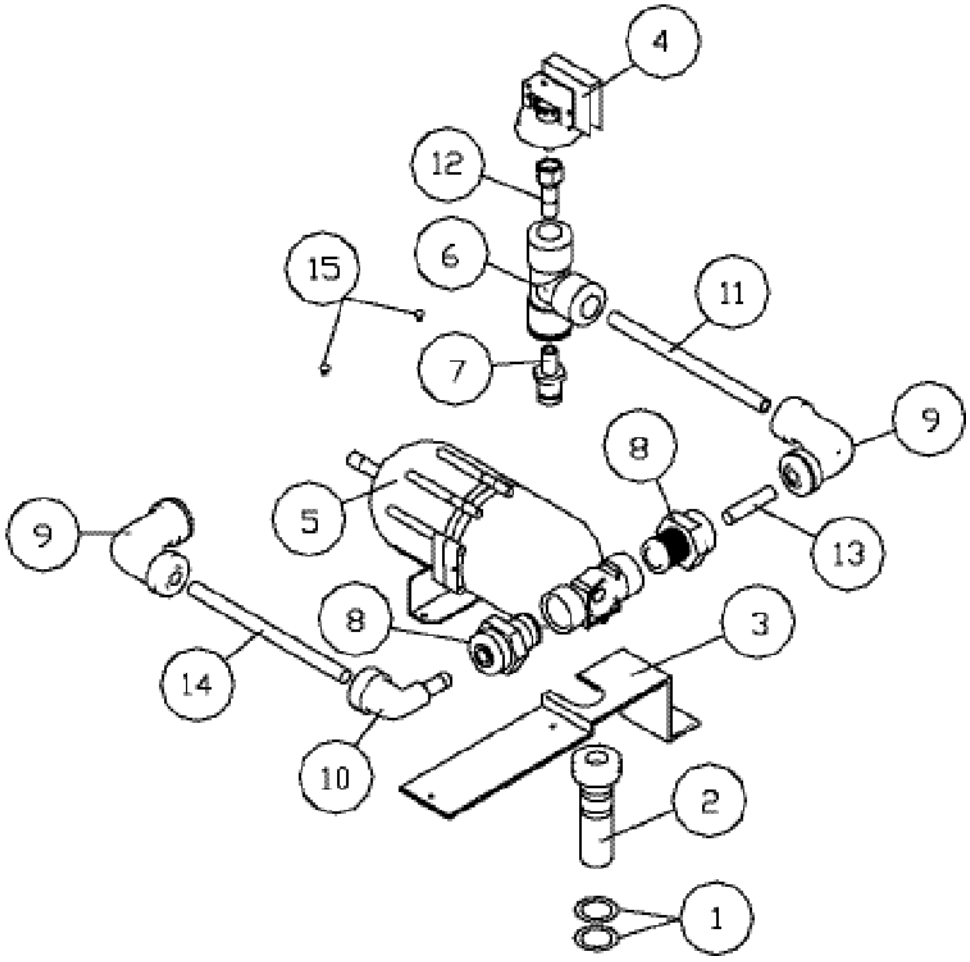


Addendum 19 - Freezer Electrical Box Exploded View



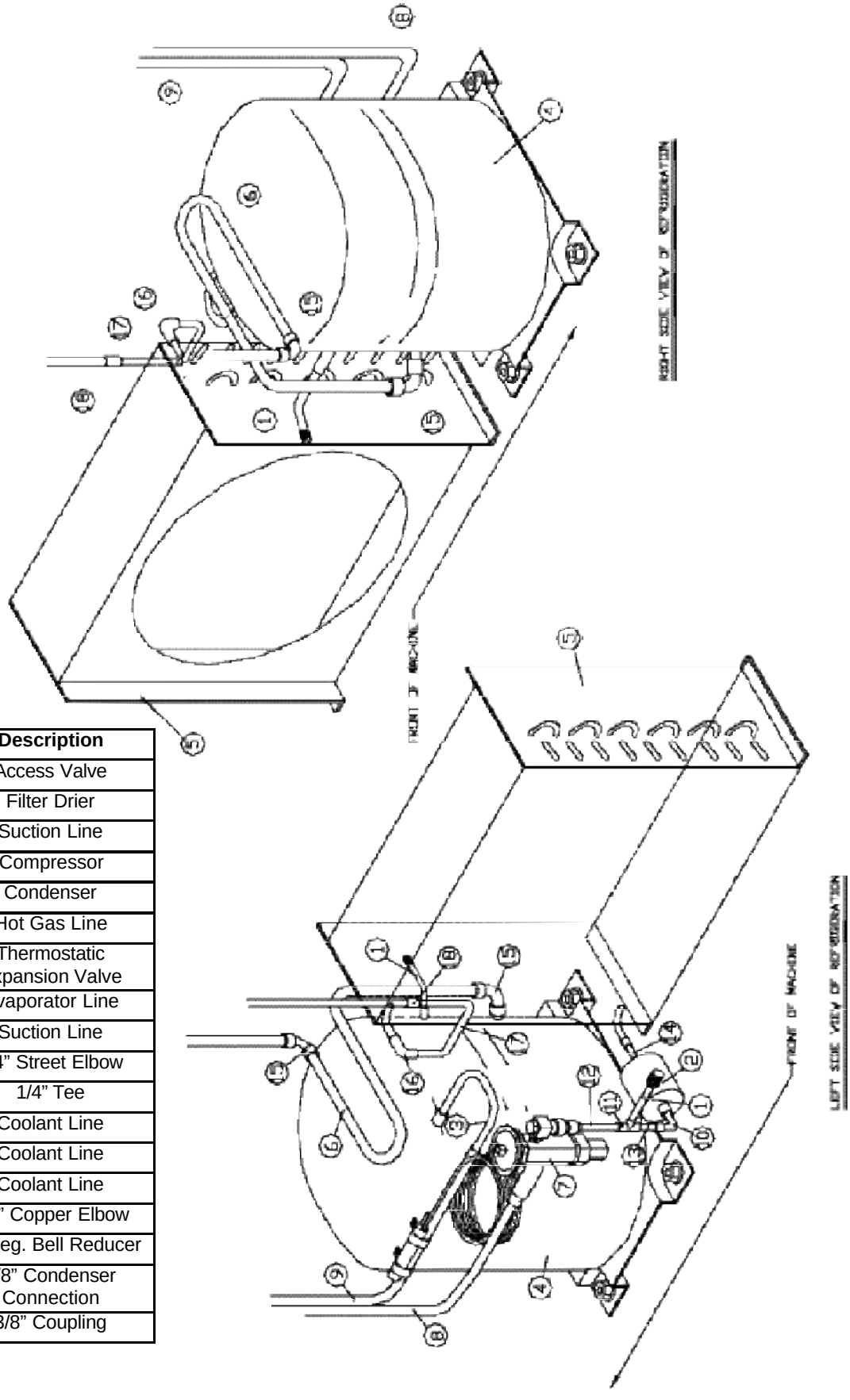
ITEM	PART #	DESCRIPTION
1	W0570603	Start Capacitor
2	W0570617	Run Capacitor
3	W0630006	Heyco Bushing
4	W0630811	Clip, Capacitor (small)
5	W0570638	Compressor Relay
6	W0572409	Relay Bracket
7	W0570656	Transformer 4000-01515K999
8	W0570235	Terminal Block
9	W0570660	Heat Sequencer, Products Unlimited
10	W0570600	Relay
11	W0570682	Timer
12	W0572407	Electrical Box
13	W0572408	Electrical Box Cover
14	86805	6-32 x 1 Screw
15	W0610131	8-32 x 1-4 Screw
16	61532	6-32 Nylon Lock Nuts
17	86600	Cable Tie
18	W0572530	Wire Harness
19	83248	6-32 x 1/4 Screw
20	W0610127	#8 Type AB Point S.S. Truss HDNylon Screw Anchor
21	71373	#8 Nylon Screw Anchor
22	W0570242	Closed End Splice Cap, AMP #55929-1
23	W0600218	Risk of Electrical Shock Label
24	W0572390SH2	Elec. Wiring Ref. Drawing 6321 L

Addendum 20 - Product Feed Components Exploded View



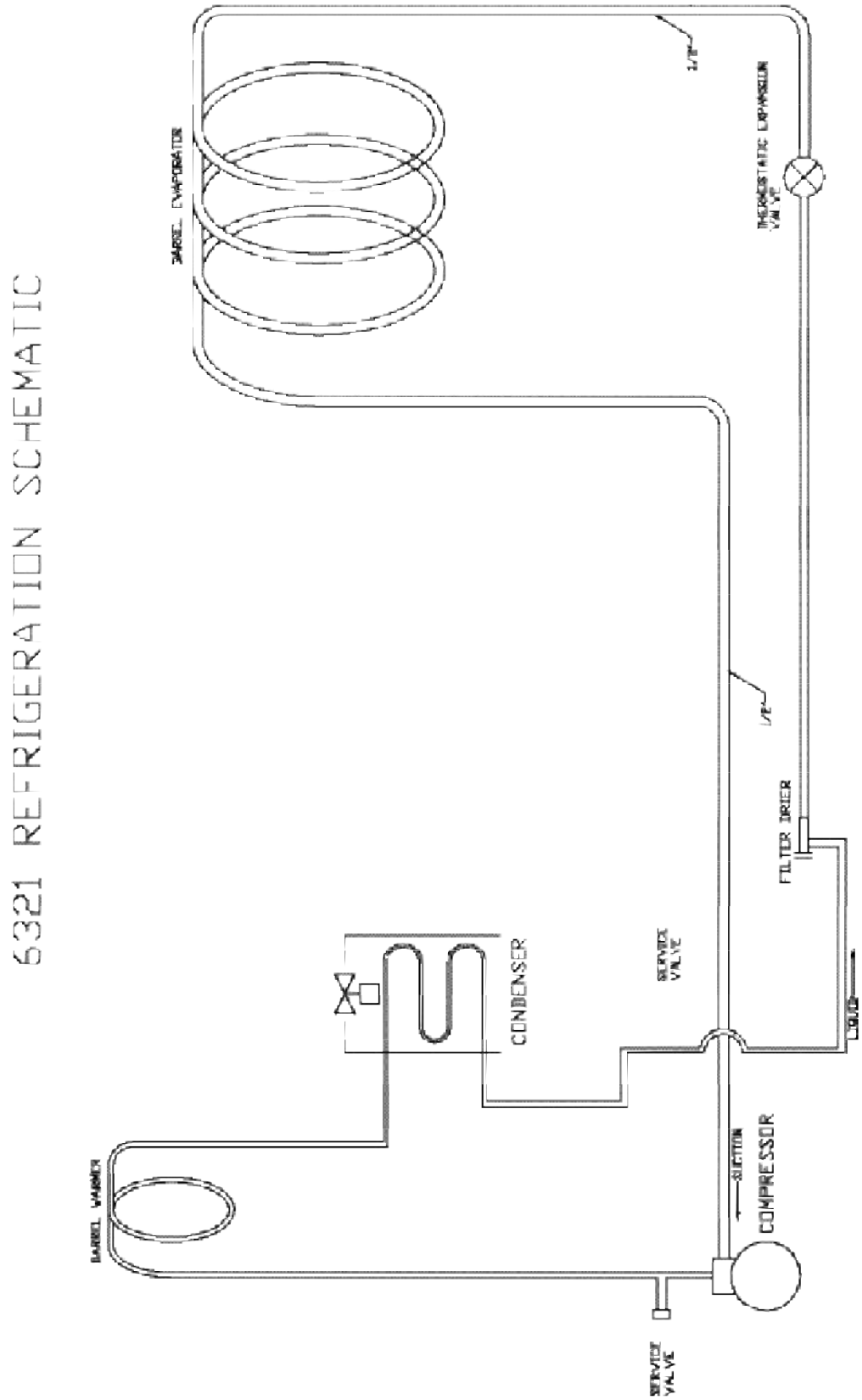
ITEM	PART #	DESCRIPTION
1	W0340011	#115 O-ring (Carburetor)
2	W0471115	Pressure Inlet Fill
3	W0471118	Pressure Inlet Fill Retainer
4	W0650400	Press Switch MSPS - JJ100SS-F
5	60552	Accumulator
6	W0620282	Tee, 3/8 Tube John Guest
7	W0620285	3/8 NPT x 3/8 NPT Stem J/G
8	W0620280	Adapter, 1/2 NPT x 3/8 Tube
9	90763	Elbow, 3/8 Tube x 3/8 Tube
10	90764	Elbow, 3/8 Stem x 3/8 Stem
11	90733	Tubing, LDPET, .250ID x .375OD
12	W0620283	1/8 NPT x 3/8 J/G Stem
13	90733	Tubing, LDPET, .250ID x .375OD
14	90733	Tubing, LDPET, .250ID x 375OD
15	W0610131	8-32 x 1/4 Self Tap Screw

Addendum 21 - Refrigeration Components



ITEM	Part #	Description
1	W0650501	Access Valve
2	W0650112	Filter Drier
3	W0201191	Suction Line
4	W0200123	Compressor
5	W0200256	Condenser
6	W0201009	Hot Gas Line
7	W0650119	Thermostatic Expansion Valve
8		Evaporator Line
9		Suction Line
10	W0620105	1/4” Street Elbow
11	W0620102	1/4” Tee
12	W0201011	Coolant Line
13	W0201012	Coolant Line
14	W0201013	Coolant Line
15	W0620112	3/8” Copper Elbow
16	W0201153	90 Deg. Bell Reducer
17	W0201151	3/8” Condenser Connection
18	W0620103	3/8” Coupling

Addendum 22 - Refrigeration Schematic



NOTES

Cocktail Machine Indemnity

The Purchaser and/or Lessee hereby releases the manufacturer of this machine, Grindmaster Crathco Systems, Inc. (the Company), any and all alcohol and non-alcohol product companies, the Company's officers, agents, employees, directors, shareholders, affiliates, successors, and assigns, and shall indemnify and hold them wholly harmless from, any and all claims, actions, suits, proceedings, demands, damages, costs, expenses, and liabilities of whatever nature, including without limitation Company's reasonable attorneys' fees and expenses, relating to or in any way arising out of operation or dispensing of beverages from this machine.

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"Global Customer Satisfaction"

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