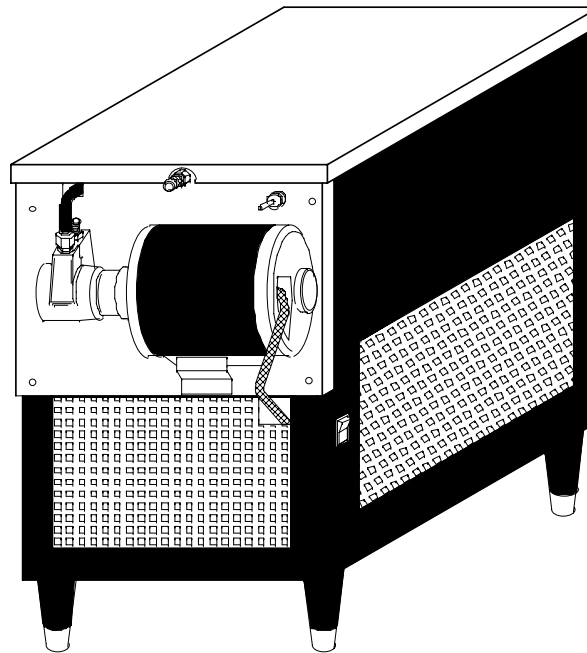


# LF-MS-GLY

LIL FELLA MID SIZE GYLCOOL



INSTALLATION AND SERVICE MANUAL



INTERNATIONAL CARBONIC INC.

16630 KOALA ROAD

ADELANTO, CALIFORNIA 92301

800 854-1177

IMPORTANT: This manual is a guide for installing, operating, servicing and maintaining this equipment. Refer to Table of Contents for page location of detailed information to answer questions that arise during installation, operating, service and maintenance, or installation of this equipment.

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## PREFACE

INTERNATIONAL CARBONIC INC. has enjoyed over 53 years of manufacturing excellence in the field of carbonation and in the beverage related industry. We have been located in the Southern California area since 1952 and have a long and proud history with quality as our standard and innovation as our goal. Originally started just after World War II in Canfield Ohio as Carbonic Dispensers we enjoyed patents on the first Sodajet type carbonator. This method of carbonation instantaneously carbonated the water to 100% saturation. We developed the first patented dispensing valve to dispense bulk beverage with carbonation equal to or in excess of bottled beverages. A valve with three flavors and soda was another first. We were the first to incorporate the total post-mix package, i.e., carbonation, refrigeration & the ability to dispense from one self contained unit. We have pioneered many such firsts and will continue to develop advance systems for the future, such as electronic interrogatable portion controls to electronic liquid level controls.

We hope you enjoy this product which has been produced to give many years of trouble free service. We thank you for your purchase and hope we may serve you in the future.

# GLYCOL

## CHAPTER I

### GENERAL DESCRIPTION

This chapter gives the description, theory of operation, and design data for the LIL FELLA MID SIZE GLYCOL, LF-MS-GLY and related components.

### SYSTEM DESCRIPTION

The LIL FELLA MID SIZE GLYCOL, LF-MS-GLY, is a completely self-contained remote cooling unit. The LF-MS-GLY is a cabinet containing a refrigeration system/evaporator, water/glycol bath, temperature control, pump and motor. The refrigeration system evaporator is located in the bath section of the unit. The bath section of the unit will hold a solution of water/glycol. This glycol solution will be cooled by the evaporator to a temperature of approximately 24 to 30 degrees. This temperature may vary depending on requirements. The LF-MS-GLY is made in two configurations, Vertical, and Horizontal.

This cooled solution will be routed through a duct line by a pump and motor. This duct line will contain a continuous outgoing and incoming tube, which will carry the cooled glycol solution to the dispensing station and then back to the LF-MS-GLY. This duct line will also consist of line/s to carry an alcoholic based beverage/s to the dispensing station. The beverage line/s will be nested in between the outgoing and incoming glycol line. This cooled glycol solution in close proximity to the beverage lines will maintain the temperature of an already chilled product. With proper insulation a duct line of 50 feet may be ran to the dispensing station and back, i.e., 25 feet each way.

It should be recognized that with out refrigeration any carbonated beverage would not produce a drink, which will hold carbonation. There is a direct relationship to the dispensed temperature and the volumes of CO<sub>2</sub> that can be held in liquid form. It also must be recognized that it is paramount to have proper insulation on all duct tubing and related tubing to maintain that refrigeration and dispense a quality drink.

## DESIGN DATA

Overall dimensions: LF-MS-GLY

Height.....20 1/2  
 Width .....12 1/2  
 Depth.....24 3/4

Weights:  
 Shipping .....105 lbs.  
 Dry weight.....97 lbs.

Operational Weight .....130 lbs.

Capacities:

Unit water/glycol bath .....4.5 gallons

Refrigerant requirement .....(R-134a)180 grams  
 6.3 ounces

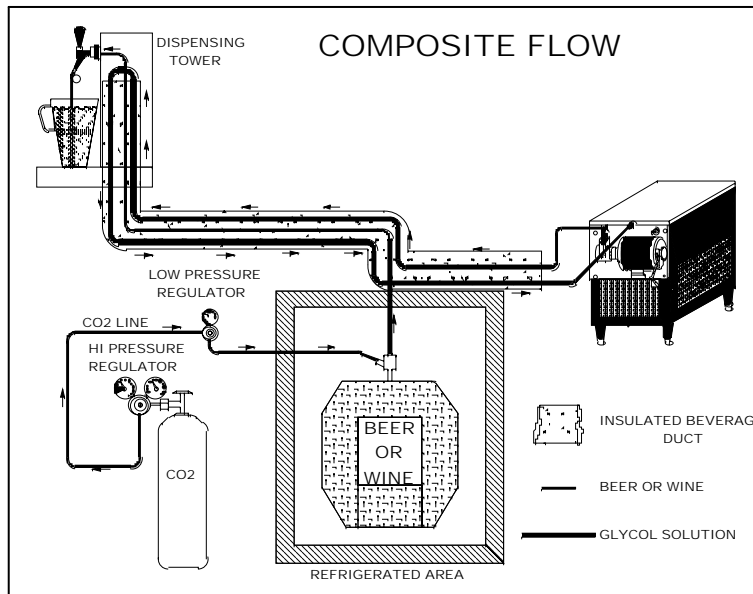
Ambient operating temperature 40 F to 100 F

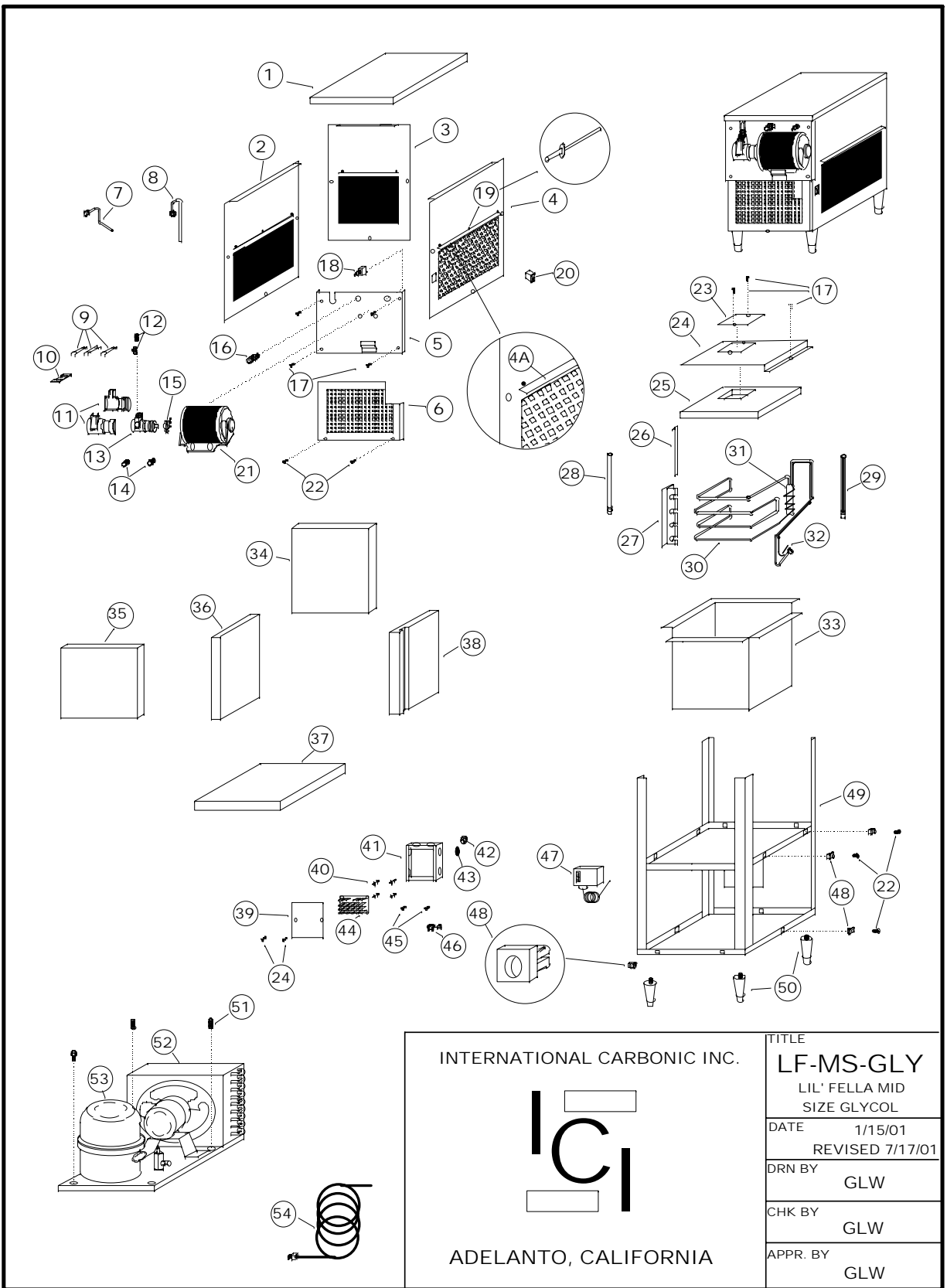
Electrical Requirements:

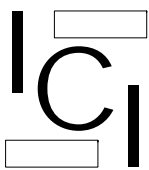
The cooling unit requires a 115 VAC, single phase, 60 Hertz power circuit.

Circuit Ampacity .....9.2 Amps  
 Condensing Unit.....2.5 Amps  
 Glycol/Water Pump Motor .....6.7 Amps

REFRIGERATION 1/5 H.P. capillary, air cooled.





INTERNATIONAL CARBONIC INC.	TITLE <b>LF-MS-GLY</b> LIL' FELLA MID SIZE GLYCOL
	DATE 1/15/01 REVISED 7/17/01
ADELANTO, CALIFORNIA	DRN BY GLW
	CHK BY GLW
	APPR. BY GLW

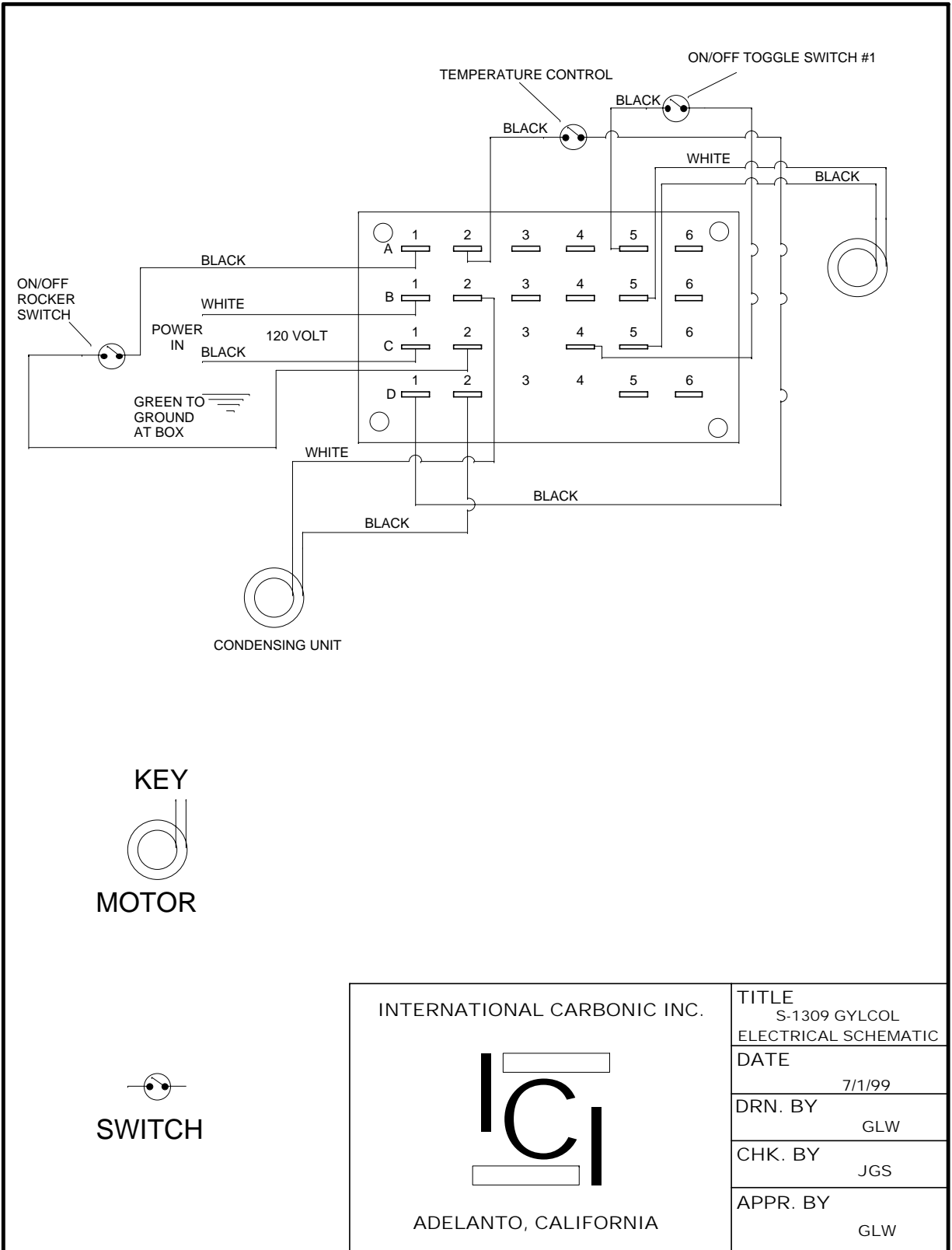


# LF-MS-GLY


SYM	QTY	PART NO.	DESCRIPTION	
1	1	S-1340	LID	
2	1	S-1338	SERVICE PANEL, LEFT SIDE	
2A	1	S-1338-A	SERVICE PANEL, LEFT SIDE, AWNING, NOT SHOWN	
3	1	S-1337	SERVICE PANEL, REAR	
3A	1	S-1337-A	SERVICE PANEL, REAR, AWNING, NOT SHOWN	
4	1	S-1340	SERVICE PANEL, RIGHT SIDE	
4A	1	S-1340-A	SERVICE PANEL, RIGHT SIDE, AWNING	
5	1	S-1379	MOTOR PANEL	
6	1	S-1380	SERVICE PANEL, 1/2 FRONT	
7	1	S-1377	GYLCOL RETURN	
8	1	S-1378	GYLCOL INTAKE	
9	S-665	3	S-665-S	INSULATION KIT STRAP
10		1	S-665-I	INSULATION KIT INSULATOR
11		1 SET	S-665-J	INSULATION KIT JACKET
12	2	S-170	HALF UNION BRASS, 3/8 MF X 3/8 MP	
13	1	S-500	PUMP, 50 GPH	
14	2	A-45	5/16 X 18 FLANGE WHIZ LOCK SCREW, 1/2"	
15	1	S-106	CLAMP, V BAND	
16	1	S-167	BULKHEAD FITTING, S.S. 3/8MF X 3/8MF 1 1/8 TO 1 1/8	
17	6	A-20	SCREW, 8-32 X 3/8 T.H., S.S.	
18	1	S-866	TOGGLE SWITCH	
19	9	A-51	RIVETS, AAP4-4, BLACK	
20	1	S-783	UNIT ON OFF SWITCH	
21	1	S-96	MOTOR	
22	11	A-14	SCREW, #10 X 1/2, TH, S.S.	
23	1	S-1381	ACCESS PANEL	
24	1	S-1382	GLYCOL BATH COVER	
25	1	.....	GLYCOL BATH COVER, INSULATION	
26	5	S-661	EVAPORATOR COIL RETAINER	
27	5	S-662	EVAPORATOR COIL BRACKET	
28	1	S-657	STANDPIPE, 7 3/4", WHITE	
29	1	S-658	OVERFLOW, 8", GRAY	
30	1	S-1333	EVAPORATOR, COMPLETE	

# LF-MS-GLY Cont.

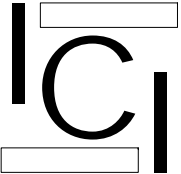
SYM	QTY	PART NO.	DESCRIPTION
31	1	S-509	ACCUMULATOR
32	1	.....	12' - .042 CAP TUBE,
33	1	.....	BUCKET COMPLETE WITH INSULATION
34	1	.....	INSULATION, REAR
35	1	.....	INSULATION, FRONT
36	1	.....	INSULATION, LEFT
37	1	.....	INSULATION, BOTTOM
38	1	.....	INSULATION, RIGHT
39	1	S-1308	CONTROL BOX COVER
40	4	S-1335	TERMINAL BOARD SPACER, NYLON, 3/8"
41	1	S-1310	CONTROL BOX, W/COVER
42	5	S-46	BUSHING
43	1	H0021	HOLE PLUG 7/8
44	1	S-1309	TERMINAL BOARD
45	2	A-49	SCREW, 8-32 X 3/8 PHIL, PH, S.S. TYPE F.
46	1	E-664	STRAIN RELIEF
47	1	S-86	TEMPERATURE CONTROL
48	11	S-1325	SQUARE GROMMET NUT, PLASTIC
49	1	S-1331	FRAME, COMPLETE
50	1 SET	S-765	LEGS
51	2	A-46	5/16 X 18 FLANGE WHIZ LOCK SCREW, 3/4"
52	1	AEA1360YXAXA	CONDENSING UNIT, 1/5 H.P.
53	1	AEA1360YXA	COMPRESSOR ONLY
54	1	E-141-12	CORD



KEY  
  
 MOTOR

  
 SWITCH

INTERNATIONAL CARBONIC INC.

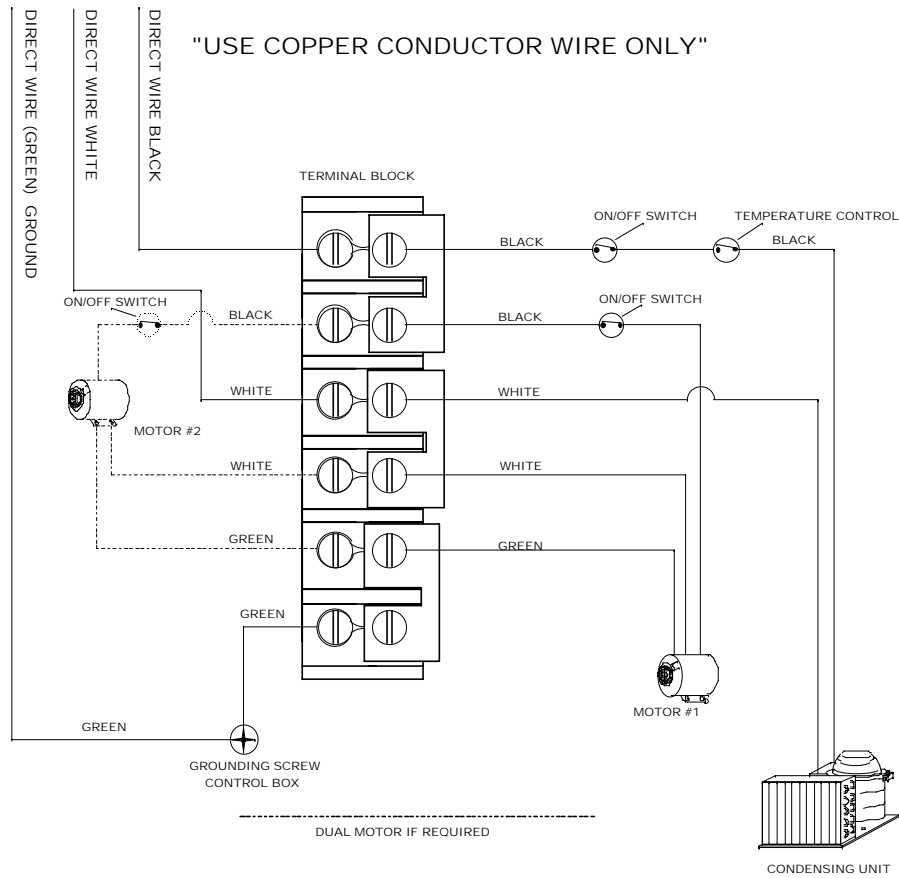


ADELANTO, CALIFORNIA

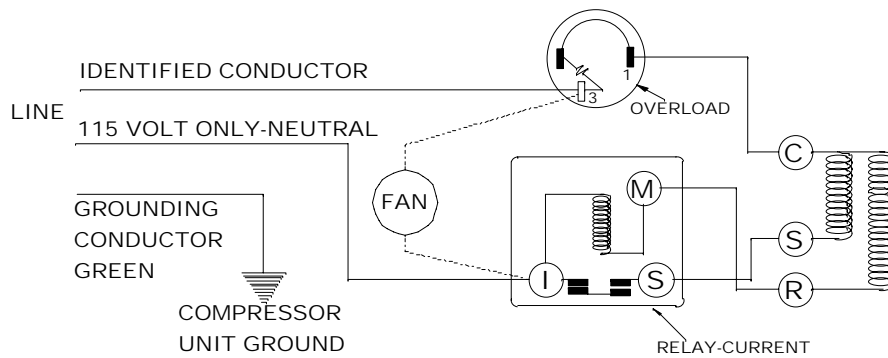
TITLE	S-1309 GYLCOL ELECTRICAL SCHEMATIC
DATE	7/1/99
DRN. BY	GLW
CHK. BY	JGS
APPR. BY	GLW

# DIRECT WIRING SCHEMATIC

## LF-GLY-D GLYCOL



### AEA1360YXAXA



1-7  
CHAPTER II  
INSTALLATION  
LF-MS-GLY

This chapter covers unpacking and inspection, selecting location, installing LIL FELLA MID SIZE GLYCOL, LF-MS-GLY and related components, and electrical requirements.

UNPACKING AND INSPECTION

Upon receiving unit, immediately remove LF-MS-GLY from shipping carton and inspect for shipping damage.

NOTE: Before leaving the factory the LIL FELLA MID SIZE GLYCOL was carefully inspected and the carrier has accepted and signed for it. Any damage or irregularities should be noted at the time of delivery and immediately reported to delivering carrier. Request a written inspection report from claims inspector to substantiate any necessary claim. File claim with delivering agency, not International Carbonic Inc!

SELECTING LOCATION

IMPORTANT: Ambient temperature for cooling unit should not exceed 100 degrees "F". Operation of cooling unit in ambient above 100 degrees "F" can and will contribute to early failure of condensing unit and poor quality of finished product.

LOCATION RECOMMENDATIONS FOR LIL FELLA MID SIZE GLYCOL, LF-MS-GLY

1. Position unit as close as possible to proper electrical source, 115V 60Hz.
2. Position unit with a minimum of 2" space between bulkhead and cabinet for sufficient space for ventilation. Allow enough space between ceiling and unit for lid removal.
3. Position unit as close as possible to Cooler, within ten feet.
4. Position unit as close as possible to floor drain.
5. For best possible operation keep distance from LF-MS-GLY to dispensing station(s) as short as possible.

INSTALLATION

INSTALL COOLING UNIT

1. Make all connections:
2. Place COOLING UNIT in position. Make sure sufficient space between bulkheads, walls and overheads is available for proper ambient temperature and air circulation around cooling unit.

INSTALL HIGH PRESSURE CO2 REGULATOR, CO2 CYLINDER AND LINES

1. Install high pressure CO2 regulator, (S-101), on CO2 cylinder using a new seal gasket.

MAKE SURE NEW WASHER IS INSIDE REGULATOR ASSEMBLIES COUPLING NUT BEFORE CONNECTING TO CYLINDER.

WARNING: To avoid personal injury and/or property damage, always secure CO2 cylinder with safety chain, to prevent cylinder from falling. Should CO2 cylinder fall valve could become accidentally damaged or broken off. It is recommended that the CO2 cylinder be installed away from heavily traveled areas such as doors, passageways, corridors, etc..

2. Connect 1/4" inner braided plastic tubing from outlet of high pressure CO2 regulator, (S-101), on CO2 cylinder to Tee connection at secondary low pressure regulator using gas charging line.
3. From secondary regulator route a tube to keg or container.

#### INSTALL DRAIN LINE

1. Connect drain line on LF-MS-GLY unit with drain using 3/8" plastic tubing to nearest floor drain.
2. Do not reduce drain connection from cabinet outlet.
3. Be sure all connections are water tight.

#### INSTALL DISPENSING STATION

Installation Instructions for dispensing station provided with the dispensing station.

#### INSTALL DUCT TUBING

1. Route duct tubing to dispensing station(s) location using shortest route possible.
2. Connect dispensing station end of duct tubing to corresponding lines in dispensing station. See Installation Instructions for dispensing station.
3. It is imperative that after all connections are made secure and tested for leak integrity the assorted lines of tubing be bundled and then insulated. It is recommended that insulation tubing with 1/2" walls minimum be used for this purpose.
4. If duct tubing is routed through a chase or transite it is recommended to seal both ends of chase or transite with a sealing compound. It is important not to allow water or other contaminants in the chase. If this does occur it is possible and highly probable that an off taste will be imparted to all dispensed products. If the duct tubing is routed above ground the duct tubing should be installed above the floor level to facilitate cleaning.

## ELECTRICAL REQUIREMENTS

The LIL FELLA MID SIZE GLYCOL requires a 115 VAC, single phase, 60 Hertz power circuit & must be wired in accordance with N.E.C. or local ordinance.

**NOTE:** Check CHAPTER I for running amperage and connect to appropriate electrical circuit.

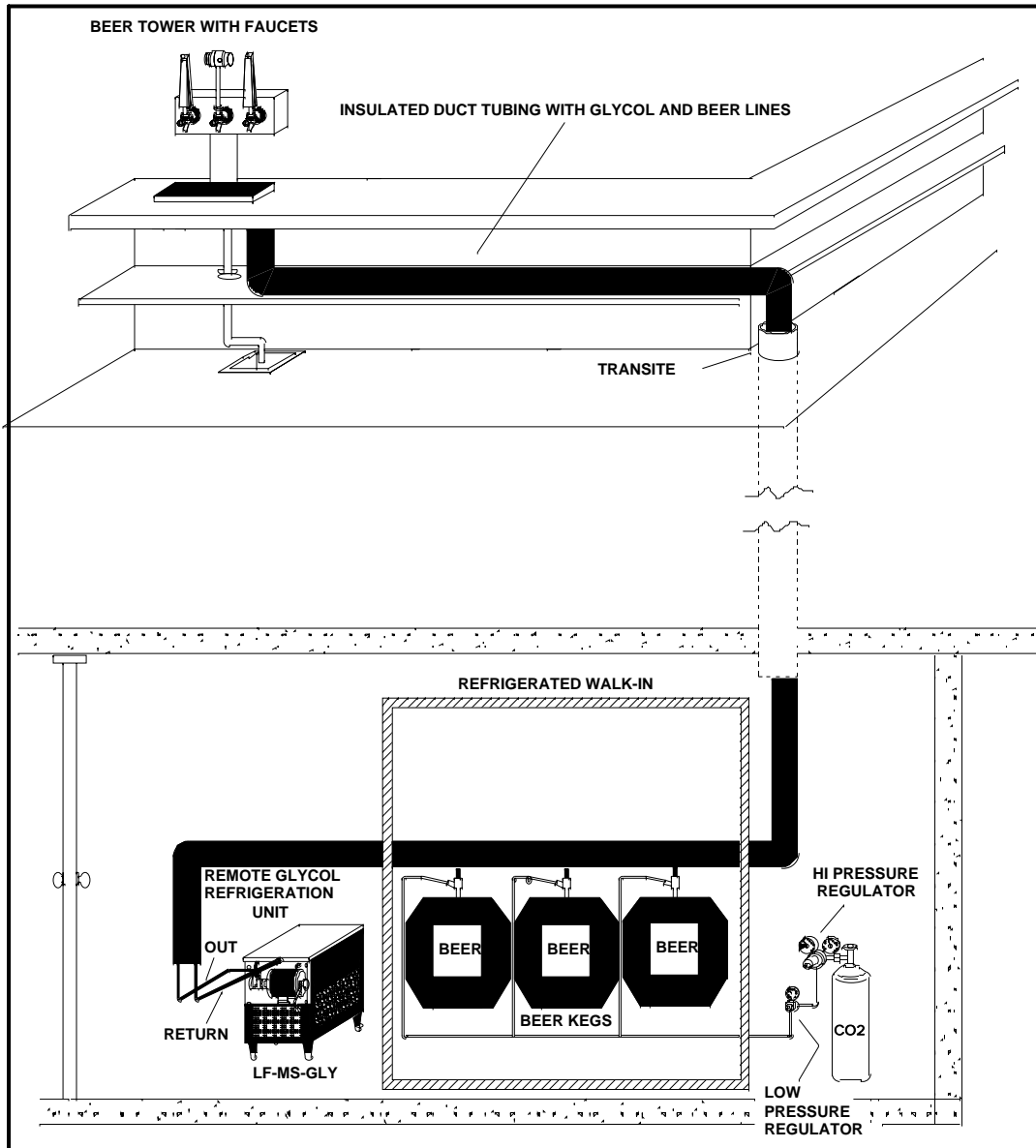


FIGURE 2 SAMPLE OF POSSIBLE INSTALLATION.

2-3  
CHAPTER III  
LF-MS-GLY  
PREPARATION

All steps in previous chapters should be understood and carried out before proceeding.

PREPARING SYSTEM FOR OPERATION

Be sure that electrical power is unplugged, valve on CO2 cylinder is closed, and relieve all CO2 pressure from system.

PREPARING AND STARTING REFRIGERATION UNIT

1. LIL FELLA MID SIZE GLYCOL refrigeration is pre-set at factory and ready to operate.
2. Remove lid.
3. Fill water bath with clean water and glycol until desired percentage of glycol is achieved. The average mixture of water to glycol is approximately 50%. Water bath should be filled until solution level reaches drain standpipe, (S-657), approximately 2 gallons of water and 2 gallons of glycol.

NOTE: IT IS RECOMMENDED LOW-MINERAL-CONTENT OR DISTILLED WATER BE USED IN WATER BATH. WITH A 20 PERCENT SOLUTION OF GLYCOL WITH WATER, ICE CRYSTALS WILL START FORMING AT APPROXIMATELY 19 DEGREES F. NORMAL PERCENTAGE OF GLYCOL WILL BE A 50% SOLUTION.

4. Plug LIL FELLA MID SIZE GLYCOL power cord into proper electrical outlet. Switch on power switch, and pump motor switch. Make sure compressor, condenser fan motor, circulating pump motor start. When pump motor is activated the solution in the water bath will fill tubing in duct line lowering the level of the solution bath. Once all tubing has been filled and lowest level is reached in solution bath, shut off pump motor. Refill water bath to proper level with correct percentage of solution.

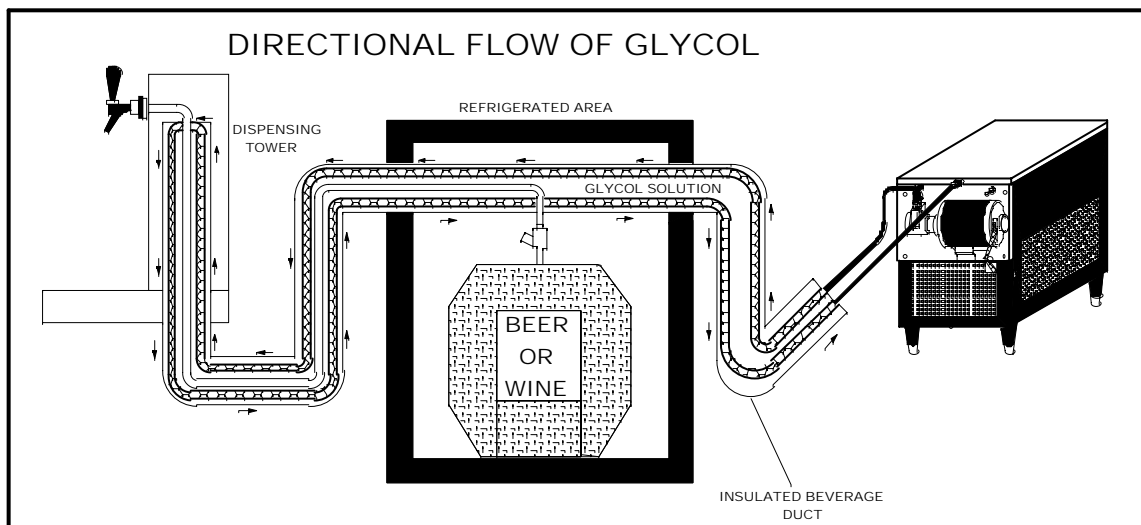
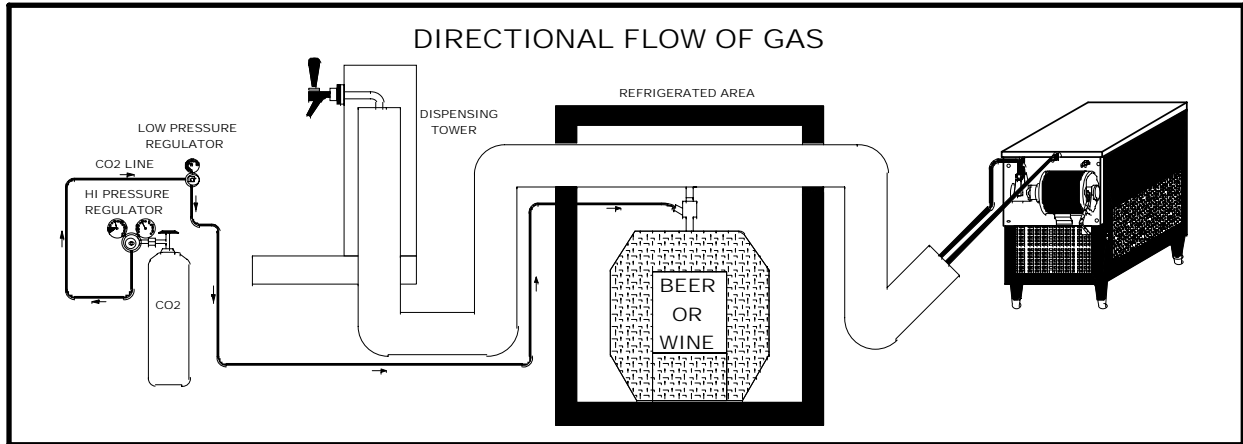


FIGURE 3 DIRECTIONAL FLOW OF GLYCOL SOLUTION



5. Re-fill water bath with a 50/50 solution of glycol and water until solution level is just below S-657 stand pipe.
6. Activate pump motor.
7. The process of cooling the solution bath and duct tubing will commence at initial start up. With ambient and water temperature of 75 degree "F" initial pull down from 75 degrees to 32 degrees will take approximately 2 hours for the water bath only. When desired glycol/water bath temperature has been reached, compressor and condenser fan motor will stop. Circulating pump motor will continue to operate, circulating the glycol solution in bath and duct tubing. Pull down time will vary depending on length of duct tubing.



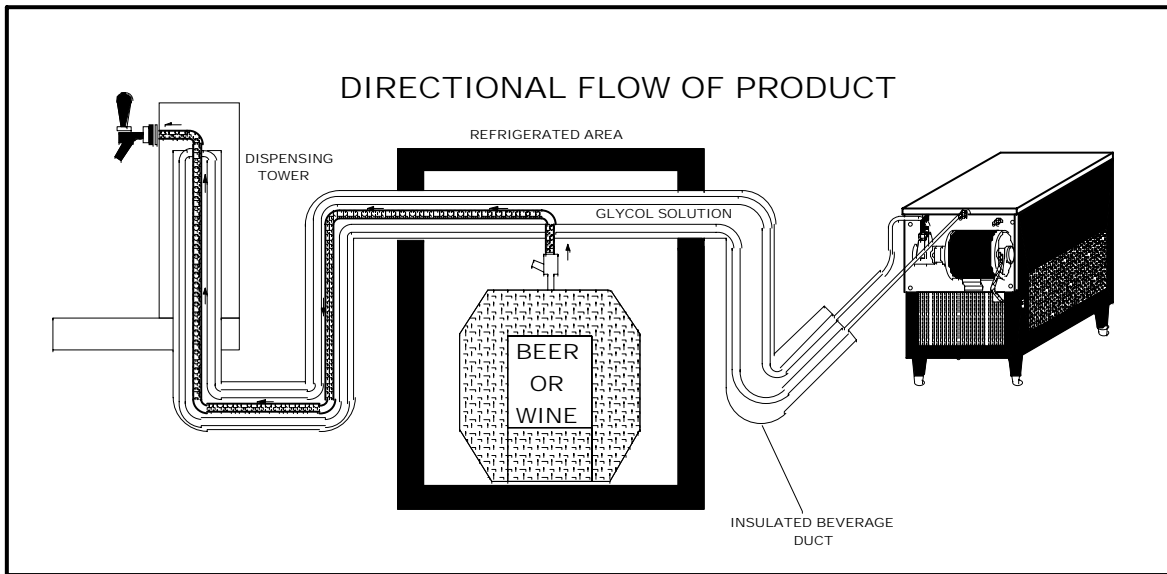
DIRECTIONAL FLOW OF CO2 GAS  
FIGURE 4

#### ACTIVATE HIGH PRESSURE CO2 SYSTEM

1. Open valve on the CO2 cylinder. Be sure to open valve completely or until valve is back seated.
2. Turn high pressure CO2 regulator, screw clockwise until the desired pressure is reached for applicable beverage.
3. Check all connections on high pressure CO2 system for leaks. Repair any leaks that are found.

#### ACTIVATE LOW PRESSURE CO2 GAS.

1. Make sure high pressure CO2 regulator pressure is set for applicable beverage.
2. Make sure All Q.C.D.'s are in an operational position.



**DIRECTIONAL FLOW OF PRODUCT**  
FIGURE 5

### ADJUST FLOW RATE

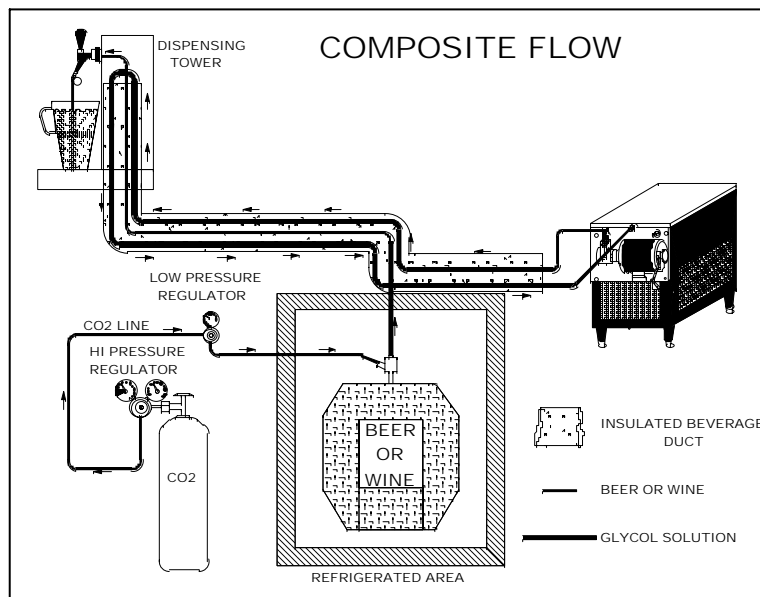
Adjust, dispensing valve, flow rate as instructed in, dispensing station, Installation Instructions.

### ADJUST SIZE OF DRINK DISPENSED

Adjust size of drink dispensed as instructed in, dispensing station, Installation Instructions.

### PURGE DISPENSING STATION

Dispense product from dispensing station until all air is purged from duct beverage lines.



**COMPOSITE FLOW DIAGRAM**

FIGURE 6  
3-3  
CHAPTER IV  
LF-MS-GLY  
OPERATORS INSTRUCTIONS

This chapter covers operators' responsibilities for daily pre-operation check, adjustments, replenishing CO<sub>2</sub> and cleaning, and sanitizing.

DAILY PRE-OPERATION CHECK

1. Make sure high pressure CO<sub>2</sub> regulator's pound per square inch indicator is not in shaded portion of dial. If so, CO<sub>2</sub> cylinder is almost empty and must be replaced.

NOTE: This reading should be carried out at normal room temperature.

2. Make sure there is a sufficient beverage supply refrigerated and ready to dispense.

REPLENISHING CO<sub>2</sub> SUPPLY

NOTE: When pound per square inch indicator of high pressure CO<sub>2</sub> regulator on CO<sub>2</sub> cylinder is in shaded portion of the dial, CO<sub>2</sub> cylinder is almost empty and should be changed.

CO<sub>2</sub> supply must be checked daily and if necessary, replenished as instructed (see CHAPTER II).

COOLING UNIT MAINTENANCE

NOTE: Air circulation through the condenser coil required to cool the condenser coil/compressor, is drawn in through grills on cooling unit, through condenser coil and is exhausted out grills on the other side of the unit. Restricting air circulation through the cooling unit will decrease its cooling capacity.

To avoid needless and sometimes costly repairs, it is imperative to keep condenser fins clean. This may be accomplished by one of three methods. One method is use of a condenser brush (a longhaired, soft bristle brush) to gently sweep fins of condenser clean. Second method is to use a strong vacuum. The third method is to use CO<sub>2</sub> or an air hose to blow out condenser. The latter method should only be attempted after normal business hours to avoid dust contamination.

CHECKING WATER BATH

Periodically check solution level in water bath. If solution level is low a combination of water/glycol should be added as instructed for maximum product cooling. This dehydration will normally not occur in normal temperate climate zones. With normal humidity the opposite will occur therefore it is paramount that the condensate drain be installed.

## CHANGING WATER BATH

Drain water bath a minimum of twice a year. This can be accomplished by locating the standpipe in the water bath area and removing by twisting and pulling up. Once water is drained water bath, water coils, bath walls, tank(s), etc. should be cleaned. Replace standpipe and refill with desired proportion of water and glycol. Fill water bath to top of standpipe, (S-657).

### AJDJUSTMENTS

Periodically CO2 regulators should be checked for proper pressure settings and if necessary, adjusted as instructed. These settings can be recorded in NOTE section of this manual.

### ADJUSTING WATER RATE

If adjustment of flow rate should be necessary, adjust as instructed by beverage manufacturer recommendations.

### TESTING FOR LEAKS

1. Completely back off adjusting screw on low pressure CO2 regulator.
2. Close valve on top CO2 cylinder.
3. Wait for 5 minutes or more. If pressure on high pressure gauge decreases excessively, there is leak in the carbonator circuit.
4. All connections including cylinder valve should be coated with a soap solution. If bubbles appear a leak is apparent.
5. Always be sure that the low pressure adjusting screw is completely backed off before testing carbonator circuit for leaks. Otherwise, gas going into syrup tanks would cause this high pressure gauge needle to balance with pressure in syrup tanks, which would be a false indication of a leak in the carbonator circuit.
6. After it has been determined that there are no leaks in the carbonator circuit, open CO2 cylinder valve and adjust low pressure regulator to 15 psi. Allow enough time for the syrup tanks to fill completely with gas. (5 minutes or longer).
7. Next, completely back off low-pressure regulator adjusting screw, and if gauge needle of low-pressure regulator commence to move downward, there is leak in the low-pressure circuit. Check all connections with a soap solution, paying particular attention to syrup tank covers. If low pressure gauge needle remains stationary, there is no leak.



## CHAPTER V

### SERVICE AND MAINTENANCE

This chapter describes service and maintenance procedures to be performed on LIL FELLA MID SIZE GLYCOL remote systems and related components.

#### PERIODIC INSPECTION AND CLEANING

##### Daily:

1. Clean any storage tanks/B.I.B. racks, connecting sockets/Q.C.D.'s and general storage area with warm water.
2. Check the CO<sub>2</sub> gas supply. If cylinder pressure is below 500 P.S.I., replace the cylinder.  
NOTE: Readings should be taken at normal room temperature, approximately 70 degrees "F" and above. If CO<sub>2</sub> cylinder is stored in a walk-in refrigerator, the P.S.I. indicator will read below 500 psi even when cylinder is full.
3. Check the CO<sub>2</sub> gas pressure supplying cooled beverage. These pressures should not change. If a change occurs repeatedly, contact your local service agency. It is suggested to make a comment about this occurrence in NOTE SECTION of manual.
4. Clean the beverage dispensing area.
5. Remove and clean nozzles and all exposed areas on valves.
6. Wipe exterior of unit with moist towel. Stainless cleans well with carbonated water.

##### Weekly:

1. Order syrup to maintain product inventory.
2. Check all CO<sub>2</sub> gas connections for leaks.
3. Check condenser coil for obstructions or dirt.

##### Monthly:

1. Clean condenser fins or filter to make sure the refrigeration unit has adequate air flow.
2. Inspect components of cooling unit water bath for cleanliness.
4. Check entire system for leaks or damaged components. Repair as necessary.

## COOLING UNIT MAINTENANCE

### PERIODIC CLEANING

Periodically wash all external surfaces of cooling unit, rinse with clean water, then wipe dry with a clean soft cloth.

DO NOT USE ABRASIVE TYPE CLEANERS.

### CLEANING CONDENSER COIL

**IMPORTANT:** Air circulation through the condenser coil required to cool the condenser coil/compressor, is drawn in through grills on cooling unit, through condenser coil and exhausted out grills on the other side of unit. Restricting air circulation through the cooling unit will decrease its cooling capacity.

**NOTE:** Cleaning condenser coil should be done during non-business hours.

1. Unplug refrigeration unit power cord from electrical socket.
2. Remove 9 screws securing service panels, (S-1337, S-1338 & S-1340), 3 screws per service panel. Remove panels in preparation for service.
3. Vacuum or use a soft brush to clean fins of condenser coil. Use low pressure compressed air or CO<sub>2</sub> gas to blow through condenser fins. This should only be performed after normal business hours to prevent dust contamination. A damp cloth on back side of condenser coil will prevent some dust contamination.
4. Plug refrigeration unit power cord in electrical socket.

### CHECKING WATER BATH

Periodically check solution level in water bath. If it is low, more solution should be added for maximum product cooling. Before adding more solution, water bath and evaporator should be checked for excessive mineral deposit build up.

1. Unplug refrigeration unit power cord from electrical socket.
2. Lift lid up and off unit.
3. Look down into water bath (use flashlight, if necessary) and inspect water bath, and all components for cleanliness. Water, bath and all components should be clear and free of foreign particles.
4. If cleaning of water bath or its components is necessary, do it as outlined in "CHANGING WATER BATH" in this chapter.
5. Fill water bath to top of stand pipe, (condensate drain), with desired percentage of solution.

IT IS RECOMMENDED LOW-MINERAL-CONTENT OR DISTILLED WATER BE USED TO FILL WATER BATH.

6. Install lid.
7. Plug refrigeration unit power cord in proper electrical socket.

#### CHANGING WATER BATH

NOTE: The solution in water bath should be changed and all components in water bath should be cleaned as often as necessary to keep it clean. A convenient time to perform this operation is when the system is being sanitized.

1. Unplug refrigeration unit power cord from electrical socket.
2. Remove lid from water bath.
3. Look down into water bath (if necessary, use flashlight) and inspect water bath, evaporator and all components for cleanliness. Solution, evaporator and all components should be clear and free of foreign particles.
4. Pull out stand pipe and allow solution to drain.
5. Use fiber brush and carefully clean mineral deposit from all components.
6. Wash evaporator coil with a mild soap solution. Copper cleans well with mild solution of citric acid (1 cup of citric acid for 2 gallons of water). Stainless steel cleans well with carbonated water. Then rinse with clean water.
7. Rinse out water bath with clean water until water running out of drain hose is clean.
8. Install stand pipe in drain hose.
9. Fill water bath to top of stand pipe, (condensate drain), with proper proportion of glycol/water solution.

IT IS RECOMMENDED LOW-MINERAL-CONTENT OR DISTILLED WATER BE USED TO FILL WATER BATH.

10. Install lid.
11. Plug LF-MS-GLY unit power cord in electrical socket.

#### WATER PUMP MAINTENANCE

1. Unplug LF-MS-GLY power cord from electrical socket.
2. Remove lid.
3. Remove 9 screws securing service panels, (S-1337, S-1338 & S-1340), 3 screws per service panel. Remove panels in preparation for service.



4. Remove inlet and outlet lines from 50 GPH pump. It may be necessary to cap inlet and outlet lines to prevent a siphon effect for the glycol solution in the duct lines.
5. Loosen and remove S-106 "V" band clamp holding pump to motor.
6. Replace defective S-500 pump.
7. Reassemble SCR-G.

## LUBRICATION

Water pump motor bearings must be oiled periodically. Refer to oiling instruction on motors. DO NOT OVER OIL.

## ADJUSTMENTS

### HIGH PRESSURE CO2 REGULATOR

The high-pressure CO2 regulator will have two gauges which extend above and to the side of the bell housing screw area. The P.S.I. gauge will show graduated indications up to 3000 psi and be the gauge the farthest from the CO2 cylinder connection. This gauge will normally have a Red area indicating 500 psi to 0 psi. This gauge will be used to check volume of liquid in the CO2 cylinder. The other gauge will show regulated pressure which will be delivered to our SPACE CADET GLYCOL Is low pressure regulator. This gauge can be indicated from 0-160 psi up to 0-300 psi. By turning the high pressure regulator adjustment screw clockwise we will increase pressure supplied to our carbonator which will be indicated on this gauge. When adjusting CO2 high pressure regulator a setting of approximately 60 PSI is recommended for beer and wine.

### LOW PRESSURE CO2 REGULATOR

The low pressure CO2 regulator setting can and will vary dramatically from one installation to the next. Variables such as distance from product containers to point of serving, horizontal or vertical runs, baume of products will influence where the low pressure regulator is adjusted.

A good starting point as an adjustment is a few pounds higher than that of the racked pressure of your dispensed product. Example the racked setting for Coors is 14 lbs. psi where the racked pressure of Budwieser is 18 lbs. psi.

NOTE: After primary adjustment on low pressure regulator always go to farthest serving station from product storage area and adjust for flow. If adjustment can be made proceed with all other flavors.

### REPLENISHING CO2 SUPPLY

1. Close empty CO2 cylinder shutoff valve.
2. Disconnect high pressure CO2 regulator, then remove empty CO2 cylinder.
3. Install full CO2 cylinder and connect high pressure CO2 regulator. See installation procedure in CHAPTER II.

MAKE SURE CO2 CYLINDER IS POSITIONED IN UPRIGHT POSITION AND FASTENED WITH SAFETY CRAIN. ALWAYS OPEN CO2 VALVE COMPLETELY OR UNTIL BACK SEATED DURING OPERATION. WHEN BOTTLE IS EMPTY ALWAYS CLOSE VALVE ASSEMBLY COMPLETELY.

### CLEANING AND SANITIZING

Your local Health Department rules and general area cleanliness should determine the frequency of which the unit should be sanitized.

## TROUBLE SHOOTING

**IMPORTANT:** Only qualified personnel should service LF-MS-GLY unit and components.

**WARNING:** To avoid personal injury and or property damage, always disconnect electrical power, shut off plain water and CO2 supplies before starting any repairs. If repairs are to be made to the carbonated water system, bleed carbonated water system pressure before proceeding. If repairs are to be made to syrup system, remove quick disconnects from syrup tanks, or remove QCD from BIB, then bleed system pressure before proceeding.

### COOLING UNIT

Trouble		Probable Cause		Remedy
Water/Glycol pump motor will not operate	1. 2. 3. 4.	1. Inoperable water pump/motor. 2. Overheated motor (cut off by thermal overload protector). 3. Loose electrical connection and/or open electrical circuit. 4. Bad glycol pump	1. 2. 3. 4.	1. Replace water pump/motor. 2. Check for proper line voltage. Allow motor time to cool. 3. Tighten connection and/or repair open circuit. Check line voltage. 4. Replace glycol pump
Water/Glycol pump capacity to low	1. 2. 3. 4.	1. Inlet water volume supply to low. 2. Water motor/pump worn out. 3. Kinked or restricted water supply line. 4. Foreign object in water pump or restriction to water pump.	1. 2. 3. 4.	1. Increase diameter of supply line, install holding tank. 2. Replace water pump. 3. Clear or replace restricted water supply line. 4. Clear restrictions and check pump strainer for debris.
Frozen water bath	1. 2. 3.	1. Bad temperature control. 2. Temperature control set to low 3. Percentage of glycol to light	1. 2. 3.	1. Replace bad temperature control. 2. Adjust temperature control 3. Add more glycol

Cooling or condensing unit non-operational	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> <li>7.</li> <li>8.</li> </ol>	<ol style="list-style-type: none"> <li>1. No electrical power.</li> <li>2. Defective Temp. control.</li> <li>3. Dirty condenser unit.</li> <li>4. Improper voltage/amperage</li> <li>5. Loss of refrigerant.</li> <li>6. Bad overload and relay.</li> <li>7. Compressor bad.</li> <li>8. Restriction (pinched or crimped line).</li> </ol>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> <li>7.</li> <li>8.</li> </ol>	<ol style="list-style-type: none"> <li>1. Plug power cord into electrical box. Check on/off switch.</li> <li>2. Replace Temp. control.</li> <li>3. Clean condenser unit w/vacuum cleaner.</li> <li>4. Check for proper voltage/amperage.</li> <li>5. Repair leak and replenish refrigerant.</li> <li>6. Replace overload and relay</li> <li>7. Replace compressor.</li> <li>8. Repair, straighten or replace defective line.</li> </ol>
Compressor does not operate	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> <li>7.</li> <li>8.</li> </ol>	<ol style="list-style-type: none"> <li>1. No power source.</li> <li>2. Electrical power to cooling unit turned off.</li> <li>3. Low voltage.</li> <li>4. Loose, disconnected, or broken wire.</li> <li>5. Inoperative ice bank control.</li> <li>6. Inoperative overload protector or start relay.</li> <li>7. Inoperative compressor.</li> <li>8. Full ice bank.</li> </ol>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> <li>7.</li> <li>8.</li> </ol>	<ol style="list-style-type: none"> <li>1. Plug power cord to electrical box. Check line voltage.</li> <li>2. Turn on power switch to unit.</li> <li>3. Voltage must be at least 110 V at compressor terminals at start.</li> <li>4. Tighten connection or replace broken wiring.</li> <li>5. Replace ice bank control.</li> <li>6. Replace defective part.</li> <li>7. Replace compressor.</li> <li>8. Refrigeration not called for.</li> </ol>
Compressor works continuously but does not cool sufficiently	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> </ol>	<ol style="list-style-type: none"> <li>1. Cooling capacity is exceeded by over drawing.</li> <li>2. Cooling unit located in excessively hot area.</li> <li>3. Air circulation through condenser coil is restricted</li> <li>4. Loss of refrigerant or insufficient charge.</li> </ol>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce amount of drinks taken per given time of install higher volume unit.</li> <li>2. Relocate cooling unit.</li> <li>3. Check and if necessary, clean condenser coil.</li> <li>4. Repair leak and/or recharge with sufficient refrigerant.</li> </ol>
Compressor will not stop after cooling water/glycol solution	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> </ol>	<ol style="list-style-type: none"> <li>1. Ice bank control capillary tube kinked or broken.</li> <li>2. Ice bank control stuck in closed position.</li> </ol>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace ice bank control.</li> <li>2. Replace ice bank control.</li> </ol>

Note: During overload protector shut off condenser fan motor will continue to work. Otherwise, troubleshooting condenser fan motor problems is the same as "Compressor does not operate", paragraph in addition to the following.

Condenser fan motor not operating	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> </ol>	<ol style="list-style-type: none"> <li>1. Electrical cord loose or disconnected from condenser fan motor or compressor terminals.</li> <li>2. Fan blade obstructed.</li> <li>3. Inoperative condenser fan motor.</li> </ol>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten connections or replace cord.</li> <li>2. Remove obstruction.</li> <li>3. Replace condenser fan motor.</li> </ol>
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