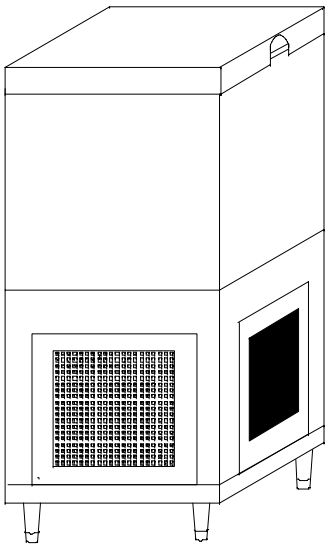
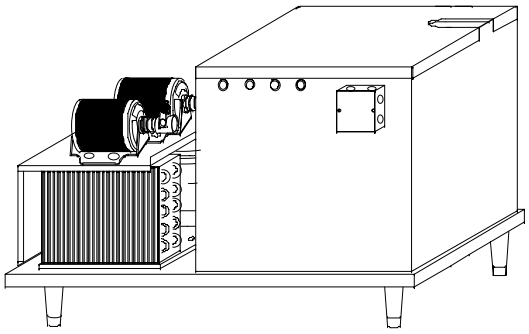
LE MONSTRE GLYCOL

INSTALLATION AND SERVICE MANUAL

VLM-GLY/ VLM-3/4-GLY
VLM-GLY-D/VLM-3/4-GLY-D



HLM-GLY/HLM-3/4-GLY
HLM-GLY-D/HLM-3/4-GLY-D



INTERNATIONAL CARBONIC INC.

16630 KOALA RD.

ADELANTO, CA. 92301

800-854-1177

11/99

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 trouble shooting 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.

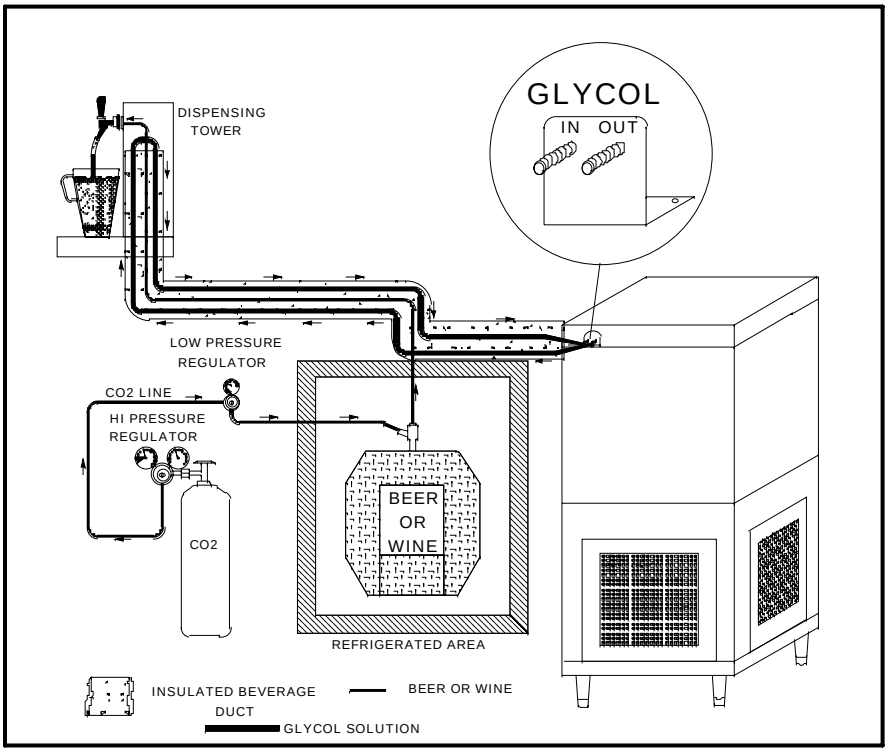
We hope you enjoy this product which has been produced to give many years of trouble free service. We thank you for your purchase and hope we may serve you in the future.

G L Y C 0 L

CRAPTER I

GENERAL DESCRIPTION

This chapter gives the description, theory of operation, and design data for the LE MONSTRE GLYCOL, LM-GLY, and related components.



SYSTEM DESCRIPTION

The LE MONSTRE GLYCOL, LM-GLY, is a completely self-contained remote cooling unit. The LM-GLY is a unit 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 condensing unit to a temperature of approximately 24 to 30 degrees. This temperature may very depending on requirements.

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/s and then back to the LM-GLY. This duct line will also consist of line/s to carry alcoholic based beverages to the dispensing station/s. 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 line/s will maintain the temperature of an already chilled product. With proper insulation a duct line of a ½ horse unit up to 250 feet may be ran to the dispensing station/s and back. Or 125 feet up and 125

feet back. With proper insulation a duct line of a 3/4 horse unit up to 350 feet may be ran to the dispensing station/s and back. Or 175 feet up and 175 feet back.

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 C02 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.

The LE MONSTRE GLYCOL may be configured in a horizontal, (HLM-GLY), or vertical configuration, (VLM-GLY). The LM-GLY is manufactured with an one half horse power condensing unit as a standard and may utilize a three quarter horse power condensing unit as an option.

DESIGN DATA

Overall dimensions:

	VLM-GLY	HLM-GLY	VLM-GLY 3/4	HLM-GLY 3/4
Height	42 5/8	29 1/8	44 5/8	29 1/8
Width	22	36 3/8	22	36 3/8
Depth	24 1/2	24 5/8	24 1/2	24 5/8

Weights:

Shipping	243 LBS	270 LBS	271 LBS	298 LBS
Dry weight	208 LBS	230 LBS	236 LBS	258 LBS
Operational Weight	312 LBS	334 LBS	340 LBS	362 LBS

Capacities:

Unit water/glycol bath	22 gallons		
Refrigerant requirement (R-134a)	1/2 H.P	12.5 ounces	341 grams
Refrigerant requirement (R-134a)	3/4 H.P	12.5 ounces	341 grams

Overall dimensions:

	VLM-GLY-D	HLM-GLY-D	VLM-3/4-GLY-D	HLM-3/4-GLY-D
Height	42 5/8	29 1/8	44 5/8	29 1/8
Width	22	36 3/8	22	36 3/8
Depth	24 1/2	24 5/8	24 1/2	24 5/8

Weights:

Shipping	268 LBS	295 LBS	296 LBS	323 LBS
Dry weight	233 LBS	255 LBS	261 LBS	283 LBS
Operational Weight	337 LBS	359 LBS	365 LBS	387 LBS

Capacities:

Unit water/glycol bath	22 gallons		
Refrigerant requirement (R-134a)	1/2 H.P	10.5 ounces	285 grams
Refrigerant requirement (R-134a)	3/4 H.P	12.5 ounces	341 grams

Ambient operating temperature 40 F to 100 F

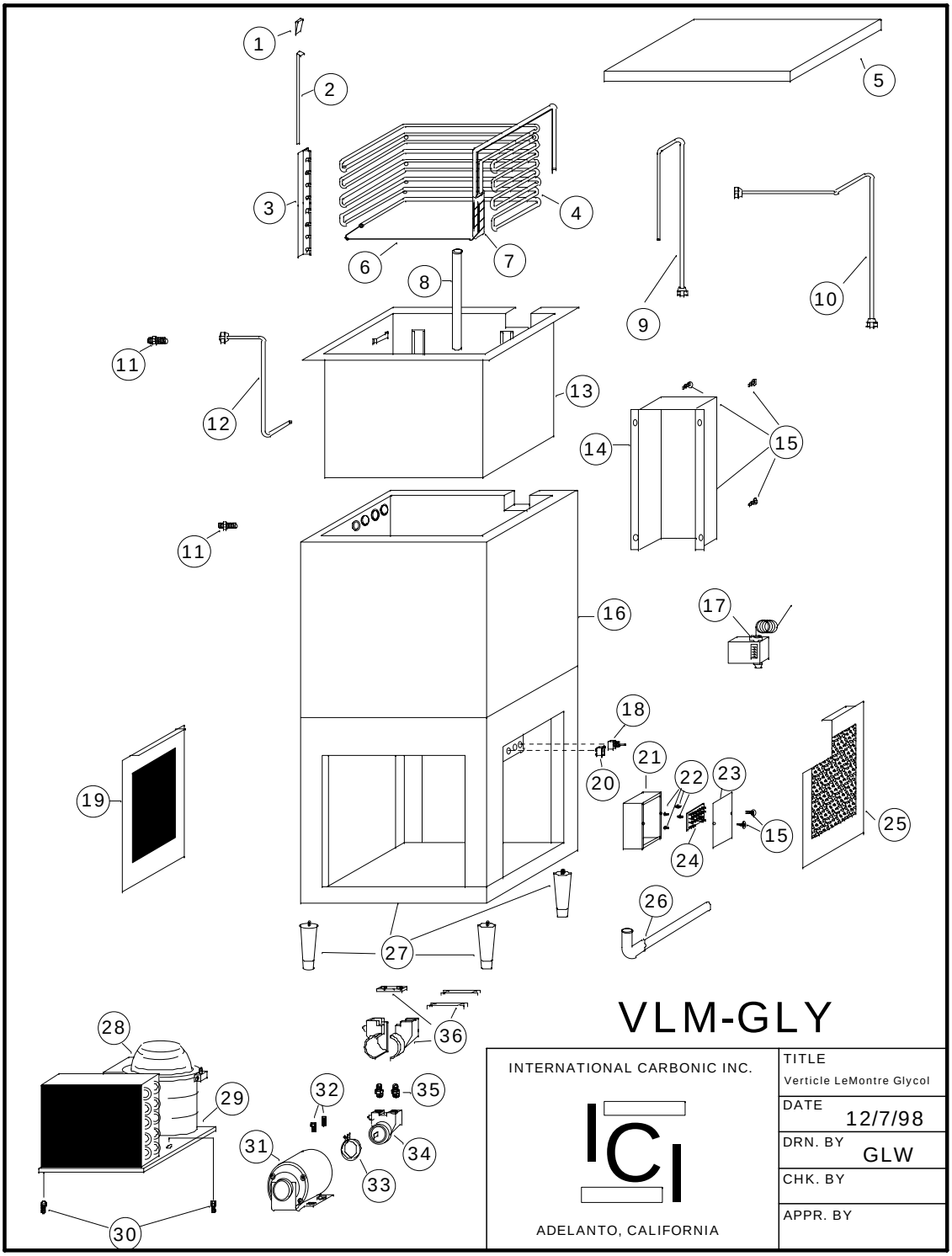
Electrical Requirements:
The cooling unit requires a 115 VAC, single phase,
60 Hertz power circuit.

Circuit Ampacity	1/2 H.P	15.5 Amps
Circuit Ampacity	3/4 H.P	16.8 Amps
Water/glycol Pump Motor		6.7 Amps
Condensing Unit 1/2 H.P		8.8 Amps
Condensing Unit 3/4 H.P		10.1 Amps

Running amperage:

VLM-GLY 15.5	HLM-GLY 15.5	VLM-GLY 3/4 16.8	HLM-GLY 3/4 16.8
VLM-GLY-D 22.2	HLM-GLY-D 22.2	VLM-3/4-GLY-D 23.5	HLM-3/4-GLY-D 23.5

REFRIGERATION 1/2 H.P. capillary air-cooled standard. Optional 3/4 H.P. capillary air-cooled.

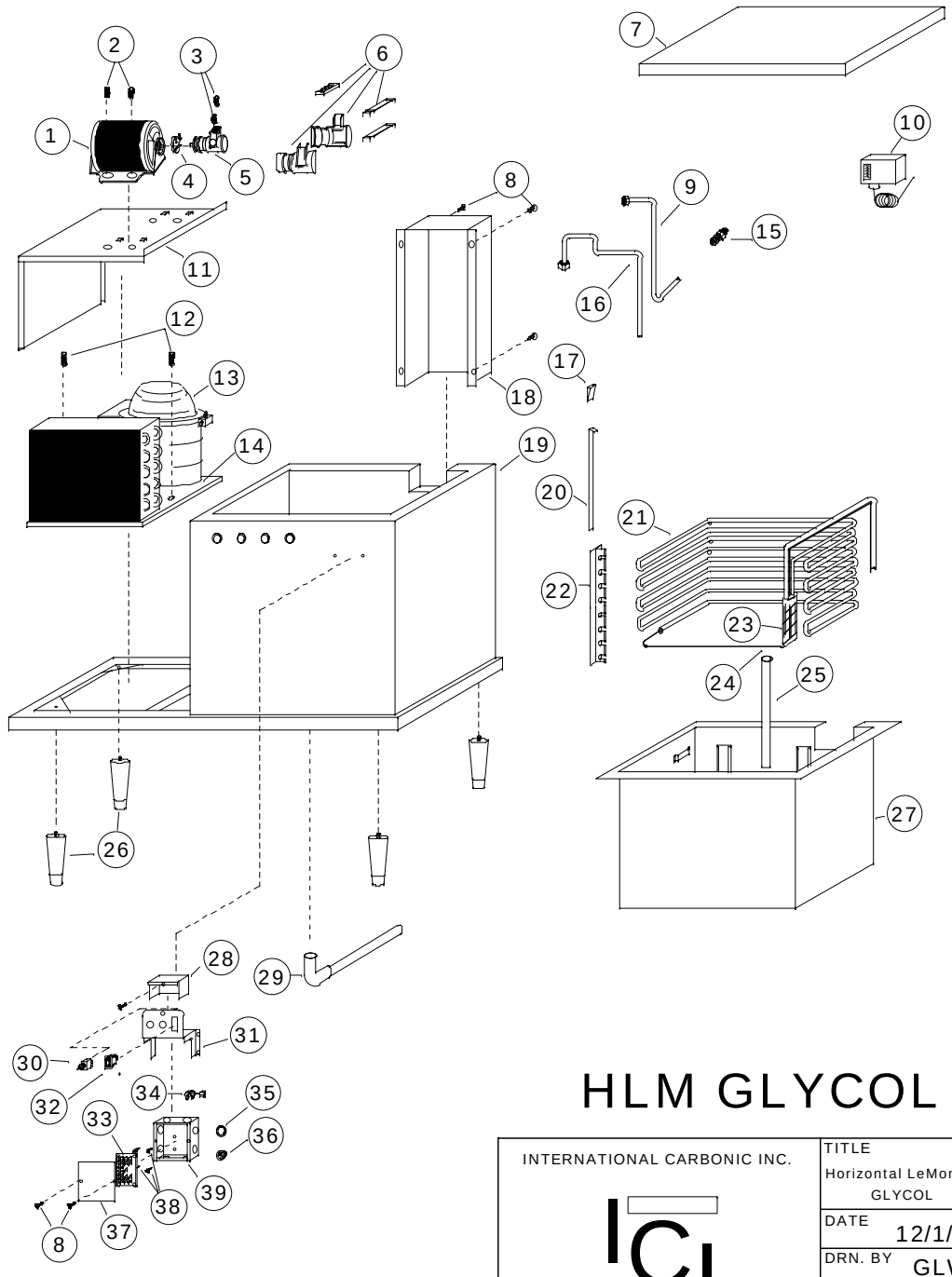


VLM-GLY

INTERNATIONAL CARBONIC INC.	TITLE: Verticle LeMontre Glycol
ICI	DATE: 12/7/98
	DRN. BY: GLW
	CHK. BY:
ADELANTO, CALIFORNIA	APPR. BY:

VLM GLYCOL

SYM	QTY	PART NO.	DESCRIPTION
1	4	S-1323	EVAPORATOR GUIDE WEDGE
2	4	S-499	EVAPORATOR COIL RETAINER
3	4	S-498	EVAPORATOR SUPPORT BRACKET
4	1	S-497	EVAPORATOR ASSEMBLY
**	1	S-497-3/4	EVAPORATOR ASSEMBLY, 3/4 HP
5	1	S-469	LID WITH INSULATION
6	1	. . . . .	1/8" CAP TUPE, 10.5'
**	1	. . . . .	1/8" CAP TUPE, 14'
7	1	S-409	9" ACCUMULATOR
8	1	S-487	STAND PIPE, 15"
9	1	S-477	GLYCOL INTAKE TUBE
**	1	S-477-3/4	GLYCOL INTAKE TUBE, 3/4 HP
10	1	S-476	GLYCOL CHARGING TUBE
**	1	S-476-3/4	GLYCOL CHARGING TUBE, 3/4 HP
11	2	S-168	CABINET FITTING, S.S., 3/8"MF X 3/8"MF 1-1/8 TO 2-7/8
12	1	S-478	GLYCOL DISCHARGE TUBE
13	1	S-496	BUCKET ASSEMBLY
14	1	S-491	REAR LINE COVER
15	14	A-20	SCREW, 8-32 X 3/8 T.H., S.S.
16	1	S-493	CABINET SHELL ONLY, VLM
**	1	S-493-3/4	CABINET SHELL ONLY, 3/4 HP, VLM
17	1	S-86	TEMPERATURE CONTROL, GLYCOL
18	1	S-866	TOGGLE SWITCH
19	2	S-492	SERVICE PANEL, LEFT AND FRONT
**	2	S-492-3/4	SERVICE PANEL, LEFT AND FRONT, 3/4 HP
20	1	S-783	ROCKER SWITCH
21	1	S-1308	CONTROL BOX W/COVER
22	4	S-1335	TERMINAL BOARD SPACER, NYLON, 3/8"
23	1	S-1310	CONTROL BOX COVER
24	1	S-1309	TERMINAL BOARD
25	1	S-468	SERVICE PANEL, RIGHT, W/NOTCH FOR SWITCHES
**	1	S-468-3/4	SERVICE PANEL, RIGHT, W/NOTCH FOR SWITCHES, 3/4 HP
26	1	S-489	WATER BATH DRAIN
27	1 SET	S-854	LEGS
28		AKA4476YXA	COMPRESSOR ONLY
**	1	AJA7461YXA	COMPRESSOR ONLY, 3/4 HP
29	1	AKA7437YXAXA	1/2 H.P. CONDENSING UNIT
**	1	AJA7465YXAXG	3/4 H.P. CONDENSING UNIT
30	2	A-46	5/16 X 18 FLANGE WHIZ LOCK SCREW, 3/4"
31	1	S-96	MOTOR
32	2	. . . . .	5/16 X 18 FLANGE WHIZ LOCK SCREW, 1/2"
33	1	S-106	CLAMP
34	1	S-500	GLYCOL PUMP, 50 GPH
35	2	S-170	HALF UNION, BRASS
36	1 SET	S-665	PUMP INSULATION KIT
** - DENOTES 3/4 HORSE POWER COMPONENTS			



HLM GLYCOL

INTERNATIONAL CARBONIC INC.	TITLE: Horizontal LeMonstre GLYCOL
	DATE: 12/1/98
	DRN. BY: GLW
	CHK. BY:
ADELANTO, CALIFORNIA	APPR. BY: GLW

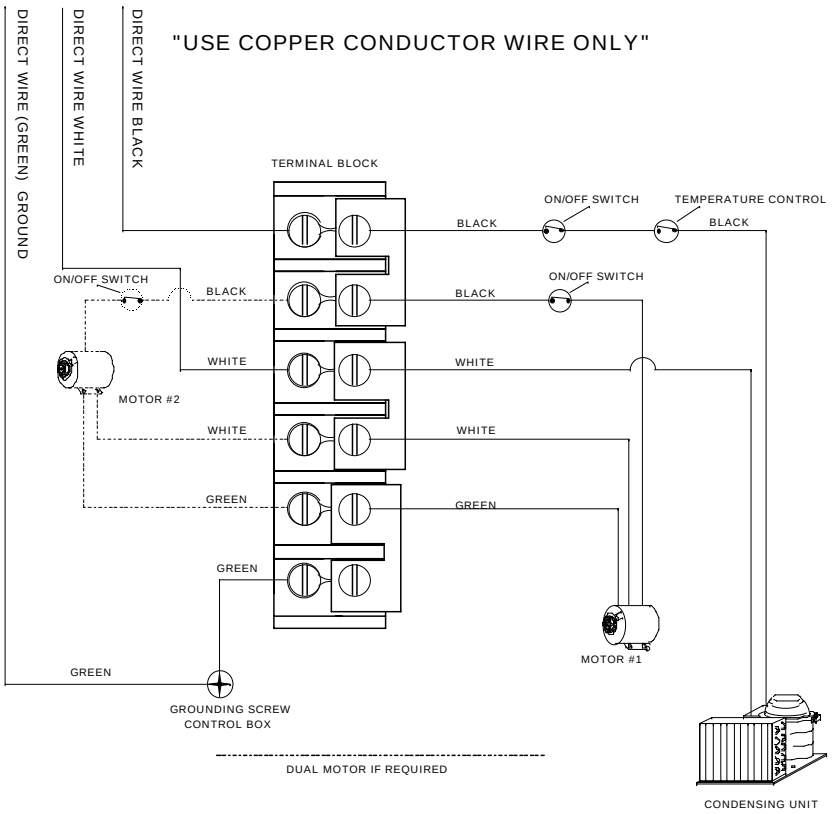
HLM GLYCOL

SYM	QTY	PART NO.	DESCRIPTION
1	1	S-96	MOTOR
2	2	A-45	5/16 X 18 FLANGE WHIZ LOCK SCREW, 1/2"
3	2	S-594	HALF UNION, BRASS
4	1	S-106	CLAMP
5	1	S-500	GLYCOL PUMP
6	1 SET	S-665	PUMP INSULATION KIT
7	1	S-469	LID
8	6	A-20	SCREW, 8-32 X 3/8 T.H., S.S.
9	1	S-470	GLYCOL DISCHARGE TUBE
10	1	S-86	TEMPERATURE CONTROL
11	1	S-466	MOTOR MOUNTING PANEL
**	1	S-466-3/4	MOTOR MOUNTING PANEL, 3/4 HP
12	2	A-46	5/16 X 18 FLANGE WHIZ LOCK SCREW, 3/4"
13	1	AKA4476YXA	COMPRESSOR ONLY, 1/2 H.P.
**	1	AJA7461YXA	COMPRESSOR ONLY, 3/4 H.P.
14	1	AKA7437YXAXA	1/2 H.P. CONDENSING UNIT
**	1	AJA7665YXAXG	3/4 H.P. CONDENSING UNIT
15	1	S-168	CABINET FITTING, S.S., 3/8"MPX3/8"MF
16	1	S-471	GLYCOL INTAKE TUBE
**	1	S-471-3/4	GLYCOL INTAKE TUBE, 3/4 HP
17	4	S-1323	EVAPORATOR GUIDE WEDGE
18	1	S-491	REAR LINE COVER
19	1	S-465	CABINET SHELL ONLY, HLM
20	4	S-499	EVAPORATOR COIL RETAINER
21	1	S-497	EVAPORATOR ASSEMBLY, HORIZONTAL
**	1	S-497-3/4	EVAPORATOR ASSEMBLY, HORIZONTAL, 3/4 HP
22	4	S-498	EVAPORATOR SUPPORT BRACKET
23	1	S-409	9" ACCUMULATOR
24	1	. . . . .	1/8 CAP TUBE, 10.5'
**	1	. . . . .	1/8 CAP TUBE, 14'
25	1	S-487	STANDPIPE
26	1 SET	S-854	LEGS
27	1	S-496	BUCKET COMPLETE
28	1	S-464	SWITCH PANEL COVER
29	1	S-489	WATER BATH DRAIN
30	1	S-866	TOGGLE SWITCH
31	1	S-467	SWITCH PANEL
32	1	S-783	ROCKER SWITCH
33	1	S-1309	TERMINAL BOARD
34	1	E-664	STRAIN RELIEF
35	10	S-7/8	HOLE PLUG
36	4	S-46	BUSHING
37	1	S-1310	CONTROL BOX COVER
38	4	S-1335	TERMINAL BOARD SPACER, NYLON, 3/8"
39	1	S-1308	CONTROL BOX W/COVER

** - Denotes 3/4 horse power components.

DIRECT WIRING SCHEMATIC

1/2 H.P.GLY



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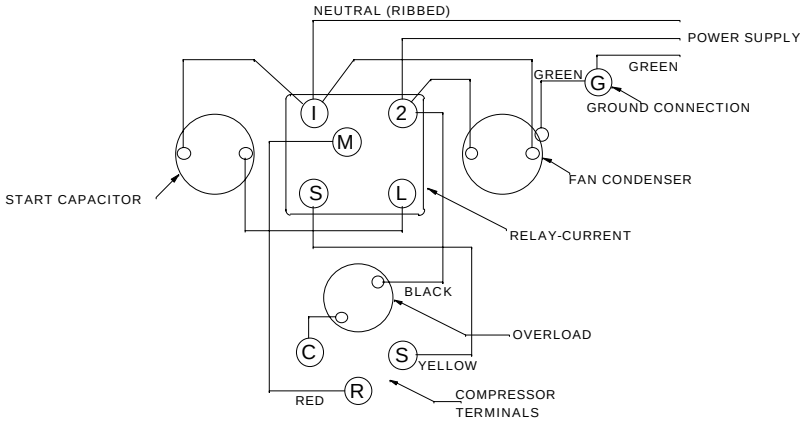

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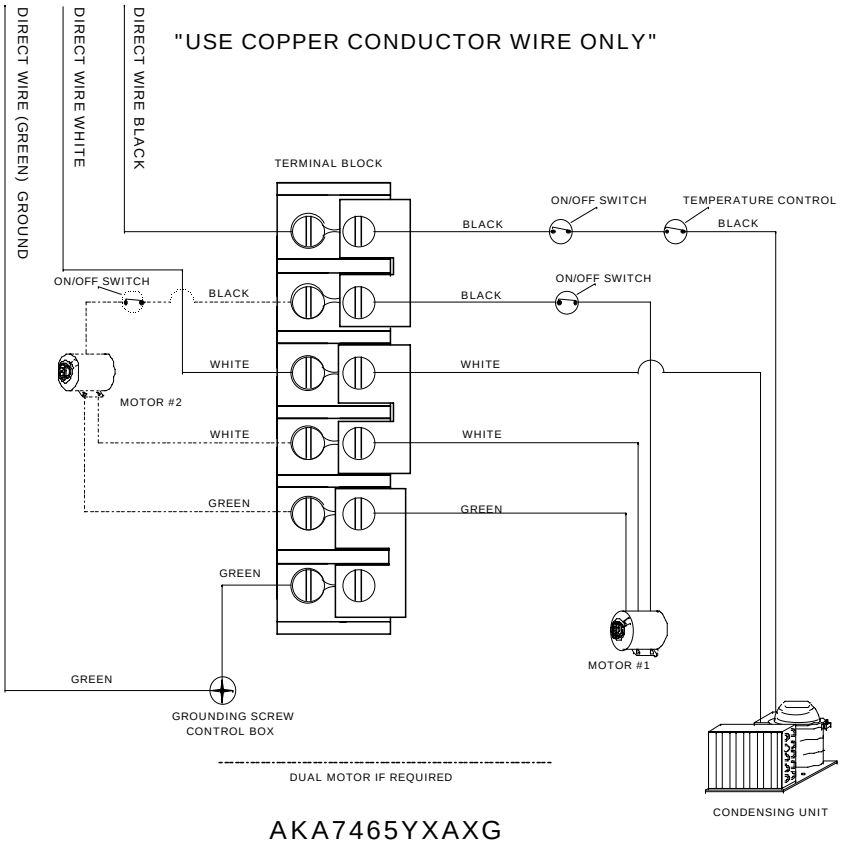
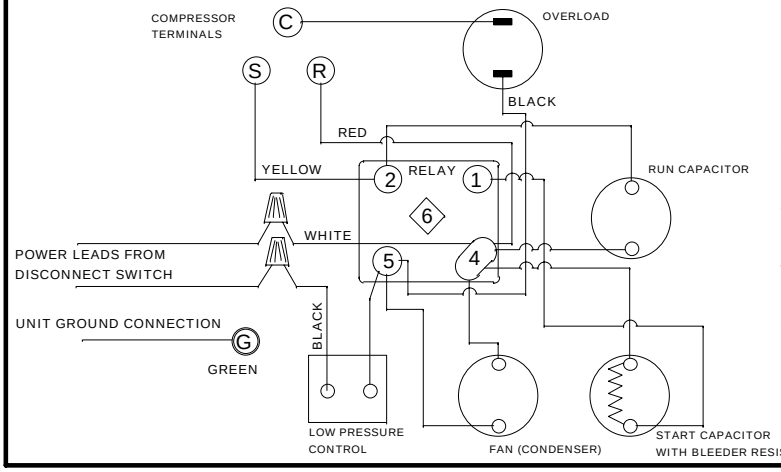
DIRECT WIRING SCHEMATIC

3/4 H.P.GLY



AKA7465YXAXG



ELECTRICIAN FIELD WIRING AND INSTRUCTIONS

1 SPLICE INCOMING POWER LEADS, FROM DISCONNECT SWITCH, TO STRIPPED LEADS IN THIS ENCLOSURE.

2 INCOMING POWER LEADS MUST BE COPPER CONDUCTORS ONLY.

3 CONNECT INCOMING GROUN LEAD TO GREEN SCREW.

4 WHEN T.P.CO. APPROVED ALTERNATE RELAY IS USED. CONNECT LEADS TO SAME NUMBERED TERMINALS, REGARDLESS OF LOCATION.

5 A JUMPER WIRE MAY BE CONNECTED BETWEEN #4 AND #6 TERMINALS T0 BE DISTRIBUTE WIRES FOR EASE OF WIRING. THE #4 AND #6 TERMINALS WITH NO INTERNAL CONNECTIONS TO RELAY.

3/01

CHAPTER II

INSTALLATION
LM-GLY

This chapter covers unpacking and inspection, selecting location, installing LE MONSTRE GLYCOL, LM-GLY and related components, and electrical requirements.

UNPACKING AND INSPECTION

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

NOTE: Before leaving the factory the LE MONSTRE 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 'IF". Operation of cooling unit in ambient temperatures above 100 degrees 'IF" can and will contribute to early failure of condensing unit and poor duality of finished product.

LOCATION RECOMMENDATIONS FOR LE MONSTRE GLYCOL, LM-GLY

1. Position unit as close as possible to proper electrical source, 115V 6OHz.

2. Position unit with a minimum of 211 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 LM-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.

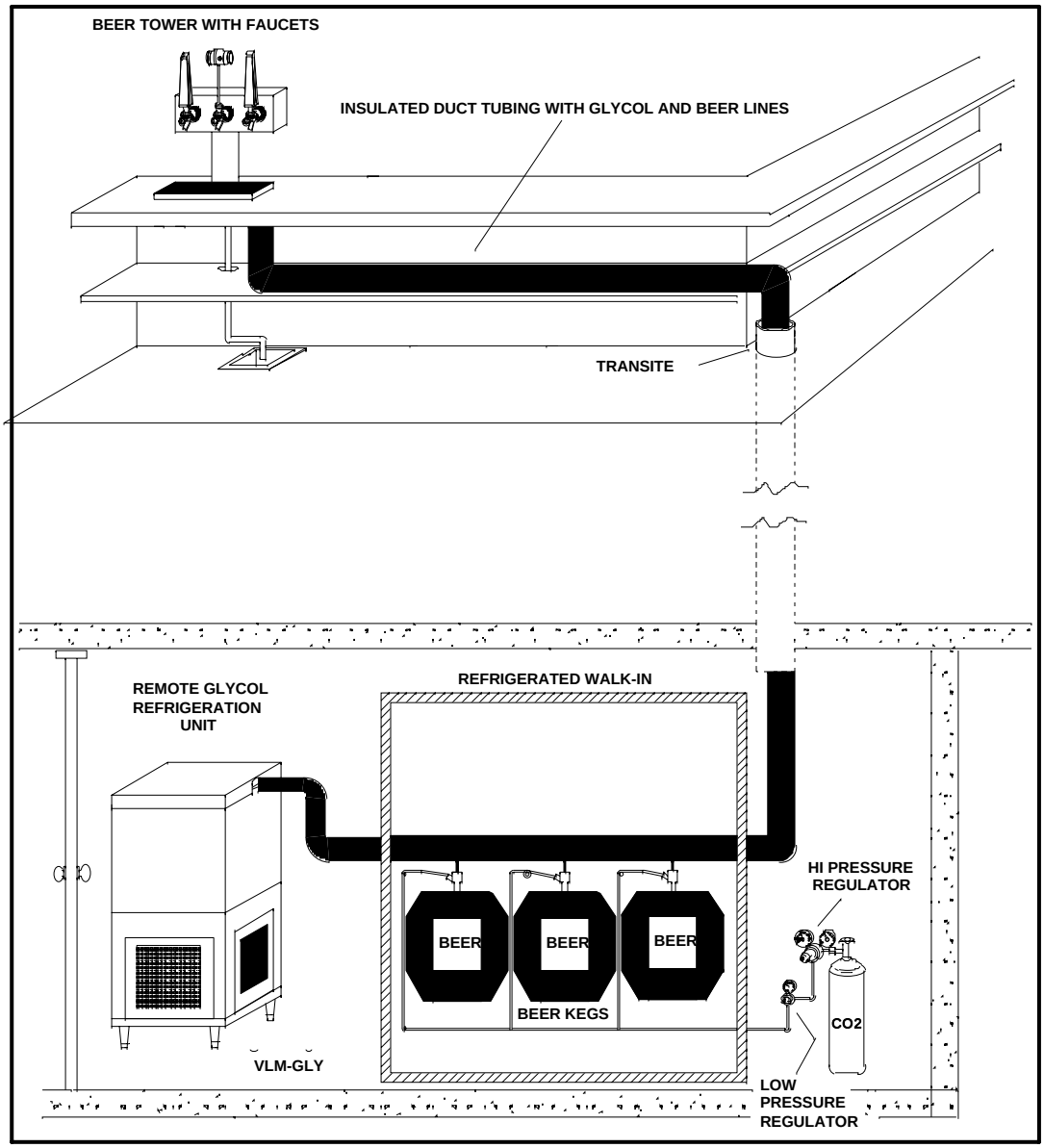


FIGURE 6 SAMPLE OF POSSIBLE INSTALLATION.

INSTALL C02 PRESSURE REGULATOR, C02 CYLINDER AND LINES

1. Install high pressure C02 regulator, (S-101), on C02 cylinder using a new seal gasket.

NOTE: 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 C02 cylinder with safety chain, to prevent cylinder from falling. Should C02 cylinder fall, valve could become accidentally damaged or broken off. It is recommended that the C02 cylinder is 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 C02 regulator, (S-101), on C02 cylinder to Tee connection at secondary low-pressure regulator.

3. From low pressure regulator route plastic tubing to connection keg or container.

NOTE: If only installing high-pressure regulator connect plastic tubing from outlet on high-pressure regulator to connection on keg or container

INSTALL DRAIN LINE

1. Connect drain line on LM-GLY unit with drain using 3/4" PVC tubing to nearest floor drain.

2. Do not reduce drain connection from cabinet outlet.

3. Be sure all connections are watertight.

INSTALL DISPENSING STATION/S

Installation Instructions for dispensing station provided with the dispensing station.

INSTALL DUCT TUBING

6. Route duct tubing to dispensing station(s) location using shortest route possible.

7. Connect dispensing station end of duct tubing to corresponding lines in dispensing station. See Installation Instructions for dispensing station.

8. 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 an insulation tubing with 1/21, walls minimum be used for this purpose.

9. 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 or transit. 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 in a manor that it is above the floor level to facilitate cleaning.

ELECTRICAL REQUIREMENTS

The LE MONSTRE 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.

CHAPTER III

PREPARATION
LM-GLY

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 C02 cylinder is closed, and release pressure of C02 gas.

PREPARING AND STARTING REFRIGERATION UNIT

1. LE MONSTRE GLYCOL refrigeration is pre-set at factory and ready to operate.

2. Remove lid.

3. Fill glycol bath with clean water and glycol until desired percentage of glycol is achieved. The average mixture of water to glycol is approximately 50%. Glycol bath should be filled until solution level reaches drain standpipe, (S-487). 6.5 gallons of water and 6.5 gallons of glycol.

NOTE: IT IS RECOMMENDED THAT A LOW-MINERAL-CONTENT OR DISTILLED WATER BE USED IN BATH. WITH A 20% SOLUTION OF GLYCOL, ICE CRYSTALS WILL START FORMING AT APPROXIMATELY 19 DEGREES “F”. NORMAL GLYCOL SOLUTIONS WILL BE 1 PART GLYCOL TO 1 PART WATER, WHICH WILL RESULT IN A 50% GLYCOL SOLUTION.

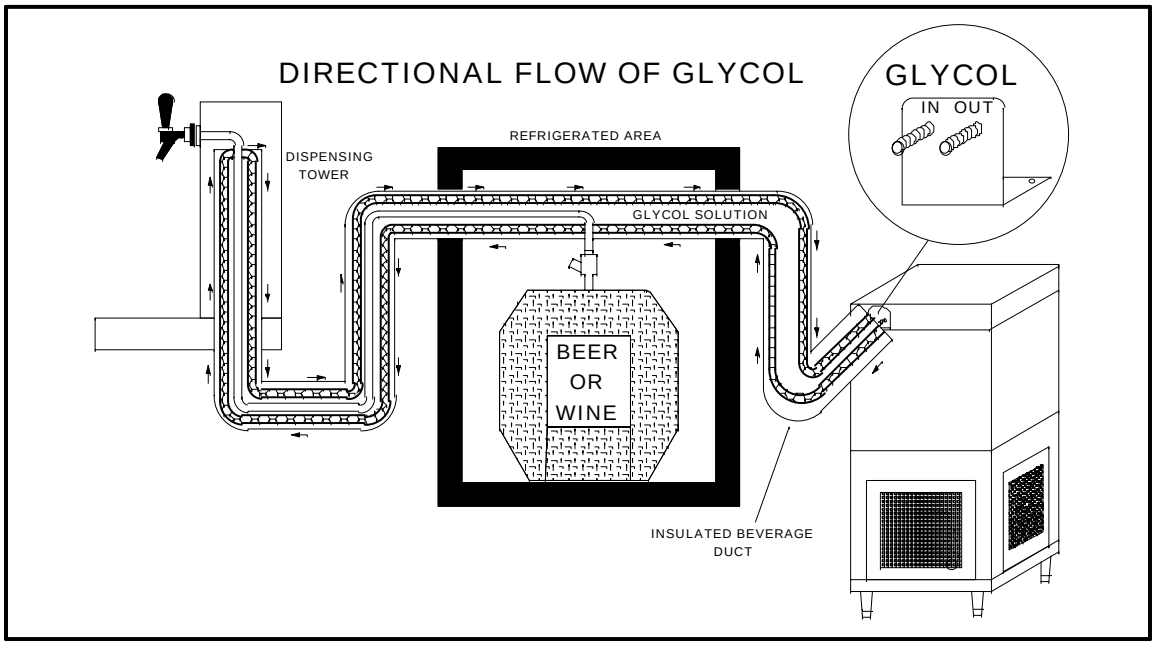
4. Make sure all power switches are switched off. Plug LM-GLY power cord into appropriate electrical outlet. Make sure nothing on LM-GLY comes on. Switch on condensing unit (rocker) switch. Make sure compressor and condenser fan motor start. Switch on pump motor (toggle) switch. Make sure pump motor starts. When pump motor is activated the solution in the glycol 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.

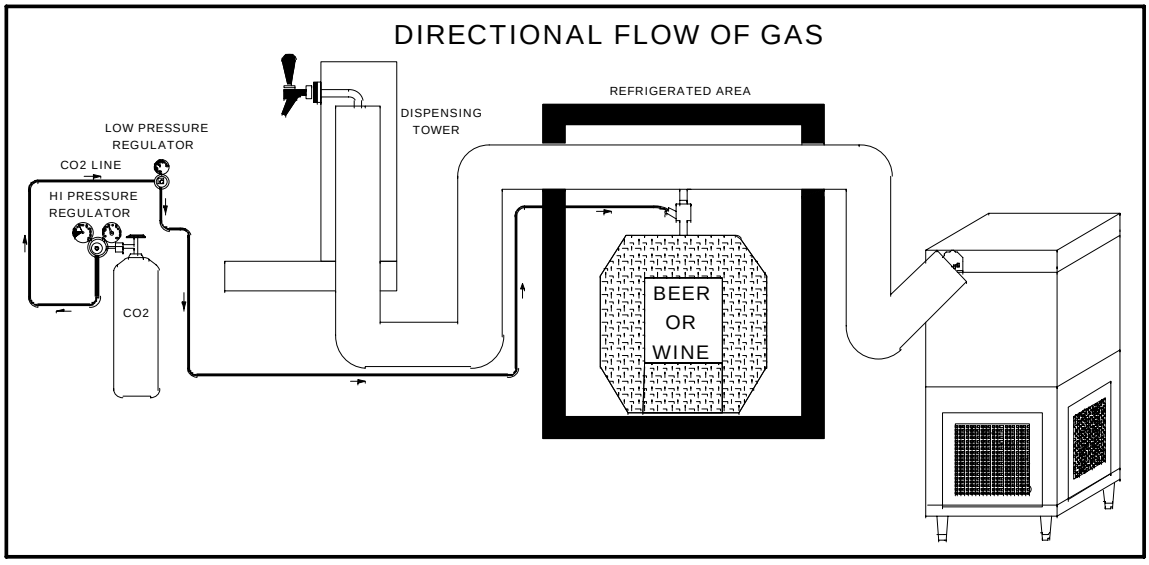
NOTE: IF ABOVE ITEMS DID NOT FUNCTION PROPERLY UNPLUG UNIT. OPEN ELECTRICAL CONTROL BOX AND COMPARE WIRING WITH FIGURE 5 GLYCOL WIRING SCHEMATIC. CORRECT WIRING AND REPEAT ABOVE STEP NUMBER 4. IF STILL NOT FUNTIONING PROPERLY CONTACT YOU’RE LOCAL SERVICE AGENCY.

5. Re-fill glycol bath with a 50/50 solution of glycol and water until solution level is just below S-487 standpipe.

6. Activate pump motor.

7. The process of cooling the solution bath and solution in duct tubing will commence at initial start up. With ambient and glycol temperature of 75 degree 'IF", initial pull down from 75 degrees to 32 degrees, will take approximately 2 to 3 hours for the glycol bath only. When desired glycol 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.





ACTIVATE HIGH PRESSURE C02 SYSTEM

1. Open valve on the C02 cylinder. Be sure to open valve completely or until valve is back seated.

2. Turn high pressure C02 regulator, screw clockwise until the desired pressure is reached for applicable beverage.

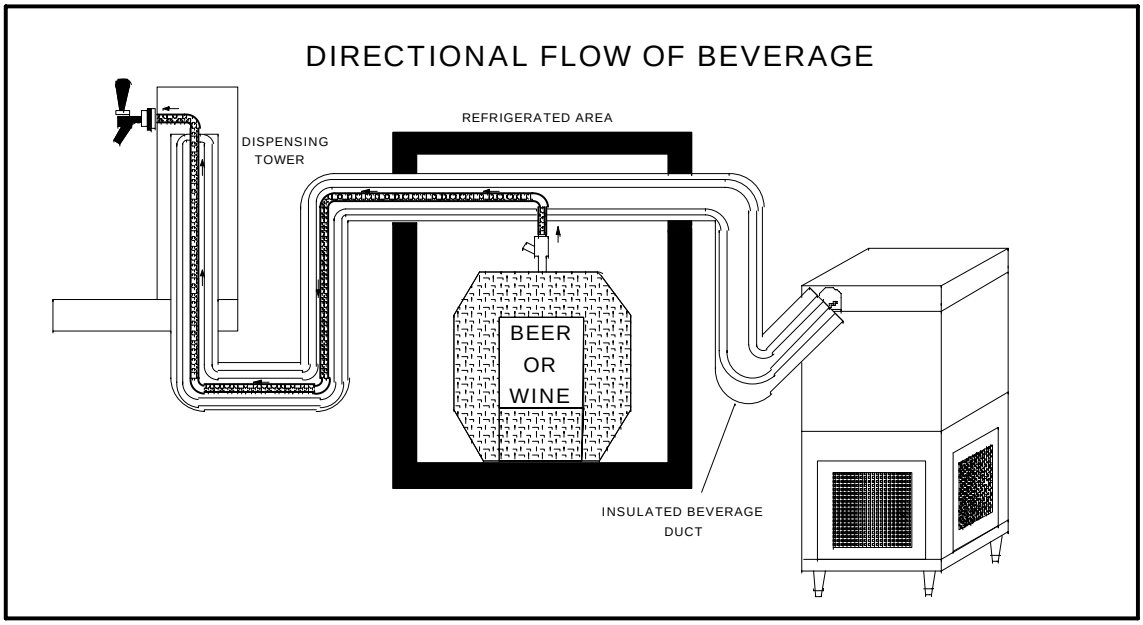
3. Check all connections on high pressure C02 system for leaks.
   Repair any leaks that are found.

ACTIVATE LOW PRESSURE C02 GAS (If applicable).

1. Make sure high pressure C02 regulator pressure is set for application.
2. Adjust low-pressure regulator clockwise until the desired pressure is reached for applicable beverage.

3. Check all connections on low pressure C02 system for leaks. Repair any leaks that are found.

4. Make sure all Q.C.D.1s, are in an operational position.



PURGE DISPENSING STATION

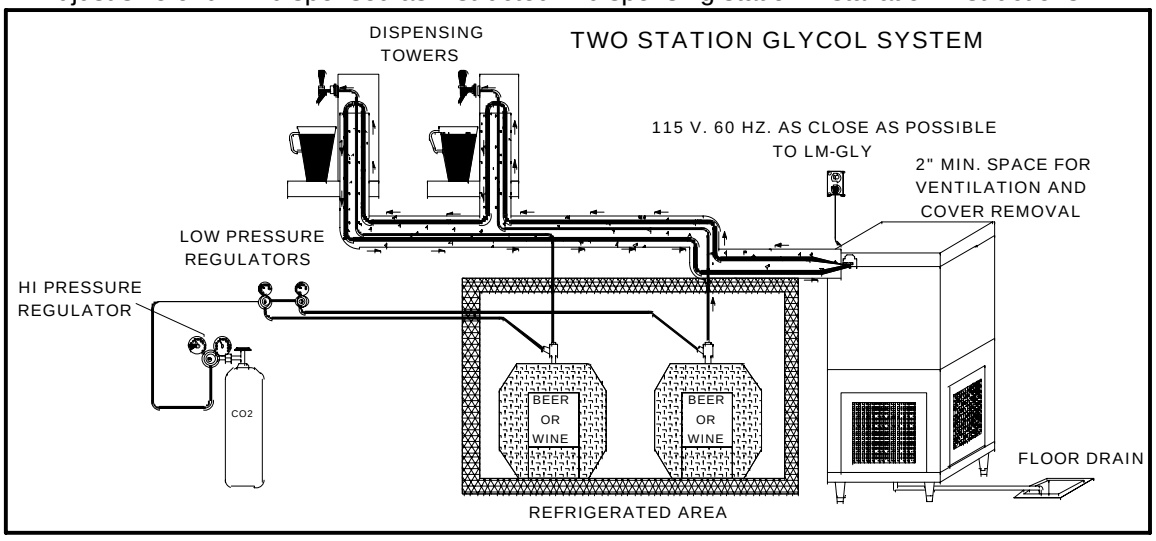
1. Dispense product from dispensing station until all air is purged from duct beverage lines.

ADJUST DISPENSING VALVE FLOW RATE

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

ADJUST SIZE OF DRINK DISPENSED

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



CHAPTER IV

OPERATORS INSTRUCTIONS
LM-GLY

This chapter covers operator's responsibilities for daily pre-operation check, adjustments, replenishing C02 and cleaning, and sanitizing.

DAILY PRE-OPERATION CHECK

1. Make sure high pressure C02 regulator's pound per square inch indicator is not in shaded portion of dial. If so, C02 cylinder is almost empty and must be replaced.

   NOTE: Readings should be taken at normal room temperature, approximately 70 degrees 'IF" and above. If C02 cylinder is stored in a walk-in refrigerator, the P.S.I. indicator will read below 500 psi even when cylinder is full.

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

REPLENISHING C02 SUPPLY

C02 supply must be checked daily and if necessary, replenished as instructed (see CHAPTER II).

NOTE: When pound per square inch indicator of high-pressure C02 regulator on C02 cylinder is in shaded portion of the dial, C02 cylinder is almost empty and should be changed.

COOLING UNIT MAINTENANCE

To avoid needless and sometimes costly repairs, it is imperative to keep condenser fins clean. See cleaning condenser coil section in chapter 5.

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

CHECKING GLYCOL BATH

Periodically check glycol solution level in bath. If it 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 GLYCOL BATH

Drain glycol bath a minimum of twice a year. This can be accomplished by locating the standpipe (S-487) in the glycol bath area and removing by twisting and pulling up. Once glycol solution has been drained, replace standpipe and refill with water. Turn on glycol pump to flush out glycol lines. Wait 30 minutes. Turn off glycol pump. Clean inside of bath area, walls, glycol intake and

discharge tubes, evaporator coil, etc. Pull stand pipe and allow water to drain. Once water has been drained, replace standpipe and refill with desired proportion of water and glycol. Fill glycol bath to top of standpipe (S-487).

ADJUSTMENTS

Periodically C02 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.

TESTING FOR LEAKS

1. Completely back off adjusting screw on low pressure C02 regulator.

2. Close valve on top C02 cylinder.

3. Wait for 5 minutes or more. If pressure on high pressure gauge decreases excessively, there is leak in the high-pressure 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 high-pressure circuit for leaks. Otherwise, gas going into tanks would cause this high pressure gauge needle to balance with pressure in tanks, which would be a false indication of a leak in the circuit.

6. After it has been determined that there are no leaks in the high pressure circuit, open C02 cylinder valve and adjust low pressure regulator to 15 psi. Allow enough time for the 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 product tank fittings. 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 LE MONSTRE 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 C02 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 'IF" and above. If C02 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 C02 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 of dispensing valves.

6. Wipe exterior of unit with moist towel.

Weekly:

1. Order product to maintain product inventory.

2. Check all C02 gas connections for leaks.

3. Check condenser coil for obstructions or dirt.

Monthly:

1. Clean condenser fins or filter to ensure the refrigeration unit has adequate airflow.

2. Inspect components of cooling unit glycol bath for cleanliness.

3. Check entire system for leaks or damaged components. Repair as necessary.

COOLING UNIT MAINTENANCE

PERIODIC CLEANING

Periodically wash all external surfaces of LM-GLY unit, rinse with clean water, and then wipe dry with a clean soft cloth. DO NOT USE ABRASIVE TYPE CLEANERS.

CLEANING CONDENSER COIL

IMPORTANT: Air circulation through the condenser coil is required to cool the condenser coil/compressor. Air is drawn in through grills on the VLM-GLY unit, through condenser coil and exhausted out grills on the other side of unit. On HLM-GLY unit air is drawn in through condenser coil and exhausted over compressor. Restricting air circulation through the cooling unit will decrease its cooling capacity, and shorten the life of the compressor.

NOTE: Cleaning condenser coil should be done during non-use periods.

1. Unplug LM-GLY unit power cord from electrical socket.

2. Remove 8 screws securing service panels (VLM-GLY only), 2 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 C02 gas to blow through condenser fins. This should only be performed after normal business hours to prevent dust contamination. A damp cloth on backside of condenser coil will prevent some dust contamination.

4. Replace service panels and secure with screws, 2 per panel.

S. Plug LM-GLY unit power cord in proper electrical socket.

CHECKING GLYCOL BATH

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

1. Unplug LM-GLY unit power cord from electrical socket.

2. Lift lid up and off unit.

3. Look down into glycol bath (use flashlight, if necessary) and inspect glycol bath, and all components for cleanliness. Glycol bath and all components should be clear and free of foreign particles.

4. If cleaning of glycol bath or its components is necessary, do it as outlined in "CHANGING GLYCOL BATH" in this chapter.

5. Fill glycol bath to top of standpipe (S-487), with desired proportion of glycol solution.

NOTE: IT IS RECOMMENDED LOW-MINERAL-CONTENT OR DISTILLED WATER IS USED TO FILL GLYCOL BATH IN ADDITION TO PROPER RATIO OF GLYCOL.

6. Install lid.

7. Plug LM-GLY unit power cord in proper electrical socket.

CHANGING GLYCOL BATH

NOTE: The glycol solution in bath should be changed and all components in 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 LM-GLY unit power cord from electrical socket, and switch off all switches on unit.

2. Remove lid from glycol bath.

3. Look down into glycol bath (if necessary, use flashlight) and inspect bath, evaporator and all components for cleanliness. Glycol solution, evaporator, and all components should be clear and free of foreign particles.

4. Pull out standpipe and allow solution to drain.

5. Once glycol solution has drained, replace stand pipe and refill bath with water (no glycol).

6. Plug LM-GLY unit power cord into proper electrical socket.

7. Switch on pump motor/s and allow water to flush out glycol lines, repeat until solution appears clean.

8. Switch off pump motor/s, and unplug LM-GLY unit.

9. Use fiber brush and carefully clean mineral deposit from all components in bath.

10. Pull standpipe and allow solution to drain.

11. 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.

12. Rinse out bath with clean water until water running out of drain is clean.

13. Install standpipe in drain.

14. Fill bath to top of standpipe (S-487) with proper proportion of glycol/water solution.

NOTE: IT IS RECOMMENDED LOW-MINERAL-CONTENT OR DISTILLED WATER IS USED TO FILL GLYCOL BATH.

15. Plug LM-GLY unit power cord in proper electrical socket.

16. Switch on pump motor/s

17. Wait approximately 10 minutes for glycol lines to fill completely with Glycol solution.

18. Refill bath to top of standpipe (S-487) with proper proportion of glycol/water solution

19. Install lid.

20. Switch on condensing unit.

GLYCOL PUMP REPLACEMENT

1. Unplug LM-GLY unit power cord from electrical socket.

2. Remove lid.

3. Remove 8 screws securing service panels (VLM-GLY only), 2 screws per service panel. Remove panels in preparation for service.

4. Remove inlet and outlet lines from 50 gph pump (S-500). 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 "VI' band clamp holding pump to motor.

6. Replace defective S-500 pump.

7. Secure with "VI' band clamp.

8. Install inlet and outlet lines to pump.

9. Plug LM-GLY Unit power cord in proper electrical socket.

10. Switch on pump motor/s and ensure they are functioning properly with no leaks.

11. Switch on condensing unit.

12. Secure service panels with 2 screws per panel (VLM-GLY only).
Replace lid on glycol bath.

LUBRICATION

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

ADJUSTMENTS

C02 PRESSURE REGULATOR

The high-pressure C02 regulator will have two gages, 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 C02 cylinder connection. This gauge will normally have a Red area indicating 0 psi to 500 psi. This gauge will be used to check volume of liquid in the C02 cylinder. The other gauge will show regulated pressure, which will be delivered, to a low-pressure 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 the high-pressure circuit which will be indicated on this gauge. By turning the low-pressure regulator adjustment screw clockwise we will increase pressure supplied to the low pressure circuit (supplies product containers), which will be indicated by the gauge on the low-pressure regulator.

NOTE: When adjusting C02 pressure regulator a setting of approximately 60-PSI is recommended for beer and wine.

LOW PRESSURE C02 REGULATOR

The low pressure C02 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.

NOTE: These pressures could be recorded in the note section of this manual.

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 Budweiser is 18 lbs. psi.

NOTE: After primary adjustment on low-pressure regulator has been performed always go to farthest serving station from product storage area and adjust for flow. If adjustment is necessary proceed with all other serving stations.

REPLENISHING C02 SUPPLY

1. Close empty C02 cylinder shutoff valve.

2. Disconnect high pressure C02 regulator, and then remove empty C02 cylinder

3. Install full C02 cylinder and connect high pressure C02 regulator. See installation procedure in CHAPTER II.

NOTE: 1 MAKE SURE C02 CYLINDER IS POSITIONED IN UPRIGHT POSITION AND FASTENED WITH SAFETY CHAIN. ALWAYS OPEN C02 VALVE COMPLETELY OR UNTIL BACK SEATED DURING OPERATION. WHEN BOTTLE IS EMPTY ALWAYS CLOSE VALVE ASSEMBLY COMPLETELY.

CHAPTER VI

TROUBLE SHOOTING

IMPORTANT: Only qualified personnel should service LM-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
GLYCOL PUMP MOTOR WILL NOT OPERATE	1. 2. 3.	Inoperable glycol pump/ motor. Overheated motor (cut off by thermal overload protector). Loose electrical connection and/or open electrical circuit.	1. 2. 3.	Replace glycol pump/ motor. Check for proper line voltage. Allow motor time to cool. Tighten connection and/or repair open circuit. Check line voltage.
GLYCOL PUMP CAPACITY TO LOW	1. 2. 3. 4.	Volume to low in glycol supply line. Glycol pump worn out. Kinked or restricted glycol supply line. Foreign object in glycol pump or restriction to glycol pump.	1. 2. 3. 4.	Increase diameter of supply line. Replace glycol pump. Clean restricted or straighten glycol supply line. Clear restrictions and check pump for debris.
Frozen Glycol bath	1. 2.	Bad temperature control. Glycol solution has become diluted due to condensation.	1. 2.	Replace bad temperature control. Replenish w/proper portion of glycol.
Cooling or condensing unit non-operational	1. 2. 3. 4. 5. 6. 7. 8.		1. 2. 3. 4. 5. 6. 7. 8.	Plug power cord into electrical box. Check on/off switch. Replace temperature control. Clean condenser unit w/vacume cleaner. Check for proper voltage/ amperage. Repair leak and replenish refrigerant. Replace overload and relay Replace compressor. Repair, straighten or replace defective line.

Compressor does not operate	1.	No power source.	1.	Plug power cord to electrical box. Check line voltage.
	2.	Electrical power to cooling unit turned off.	2.	Turn on power switch to unit.
	3.	Low voltage.	3.	Voltage must be at least 110 V at compressor terminals at start.
	4.	Loose, disconnected, or broken wire.	4.	Tighten connection or replace broken wiring.
	5.	Inoperative temperature control.	5.	Replace temperature control.
	6.	Inoperative overload protector or start relay.	6.	Replace defective part.
	7.	Inoperative compressor.	7.	Replace compressor.
	8.	Glycol temp satisfied.	8.	Refrigeration not called for.

Compressor works continuously but does not cool sufficiently	1.	Cooling capacity is exceeded by over drawing.	1.	Reduce amount of drinks taken per given time of install higher volume unit.
	2.	Cooling unit located in excessively hot area.	2.	Relocate cooling unit.
	3.	Air circulation through condenser coil is restricted	3.	Check and if necessary, clean condenser coil.
	4.	Loss of refrigerant or in-sufficient charge.	4.	Repair leak and/or recharge with sufficient refrigerant.

Note: Ice bank freezes from bottom of evaporator upward. A refrigerant leak or insufficient charge might show ice at bottom and not at top of evaporator.

Compressor will not stop after sufficiently cooling glycol solution	1.	Ice bank control capillary tube kinked or broken.	1.	Replace ice bank control.
	2.	Ice bank control stuck in closed position.	2.	Replace ice bank control.

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	1.	Electrical cord loose or disconnected from condenser fan motor or compressor terminals. Fan blade obstructed.	1.	Tighten connections or replace cord.
	2.	Inoperative condenser fan motor.	2.	Remove obstruction.
	3.		3.	Replace condenser fan motor.

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.