



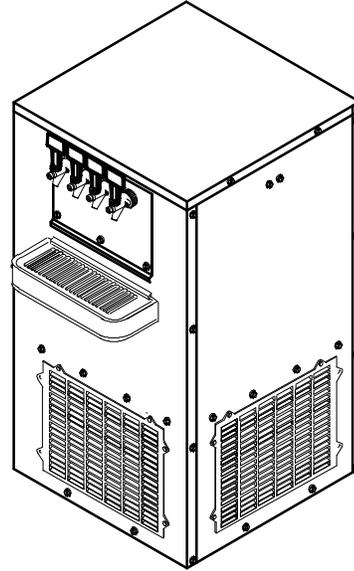
C - 1550XR UNIVERSAL PRE-MIX DISPENSER Installation Manual

IMPORTANT:

TO THE INSTALLER.

It is the responsibility of the Installer to ensure that the water supply to the dispensing equipment is provided with protection against backflow by an air gap as defined in ANSI/ASME A112. 1.2-1979; or an approved vacuum breaker or other such method as proved effective by test.

Water pipe connections and fixtures directly connected to a potable water supply shall be sized, installed, and maintained according to Federal, State, and Local laws.



Manual Part No. 309989000

SAFETY

SAFETY INFORMATION

recognize safety information

This is the safety-alert symbol. When you see this symbol on our machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



understand signal words

A signal word - *DANGER*, *WARNING*, OR *CAUTION* is used with the safety-alert symbol. *DANGER* identifies the most serious hazards.

Safety signs with signal word *DANGER* or *WARNING* are typically near specific hazards.

General precautions are listed on *CAUTION* safety signs. *CAUTION* also calls attention to safety messages in this manual.



follow safety instructions

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Learn how to operate the machine and how to use the controls properly. Do not let anyone operate the machine without instructions. Keep your machine in proper working condition. Unauthorized modifications to the machine may impair function and/or safety and affect the machine life.

Claims: In the event of shortage, notify the carrier as well as IMI Cornelius immediately. In the event of damage, notify the carrier. **IMI Cornelius is not responsible for damage occurring in transit, but will gladly render assistance necessary to pursue your claim. Merchandise must be inspected for concealed damage within 15 days of receipt.**

Warranty Registration Date (to be filled out by customer)
Unit Part Number:
Serial Number:
Install Date:
Local Authorized Service Center:

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GENERAL INFORMATION

This Manual is a guide for installing and operating this equipment. Refer to Table of Contents for page location of detailed information pertaining to questions that may arise during installation or operation of this equipment. A Service Manual (P/N) for this equipment is available upon request.

Table 1. Design Data	
Model Numbers:	
Universal C-1550XR Four-Flavor with Manual Dispensing Valves	284974-102 -120
Overall Dimensions:	
Height	39- 1/2 inches
Width	22-inches
Depth (with drip tray)	37- 1/2 inches
Weights:	
Shipping (1 Carton)	189 pounds
Dry Weight	170 pounds
With Water Tank Full of Water	403 pounds
Ice Bank Weight	120 pounds
Capacities:	
Unit Water Bath (no ice bank) approx.	28 gallons
Dispensing Rate:	
12-oz. drinks 4/minute	N/A*
12-oz. drinks 6/minute	N/A*
Recovery Rate	drinks/minute
NOTE: *Number of 12-oz. drinks that can be dispensed at 40°F or below with 75°F product inlet temperature and 75°F ambient.	
Ambient Operating Temperature	40F to 100F
Electrical Requirements:	
Operating Voltage	115VAC, 60HZ
Current Draw	16 amps

The unit (see Figure 1) is equipped with manually operated self-closing dispensing valves. The unit may be installed free standing or under a counter or bar. The refrigeration system is equipped with a 3/4 H.P. compressor that is accessible for service and maintenance.

Installation of LOOSE-SHIPPED PARTS (see Table 2-1), filling water tank with water, connection to product tanks with regulated CO pressure, and connection to electrical outlet with proper electrical requirements is all that is required to set unit up for operation. CAUTION: Before shipping, relocating, or storing unit, product coils must be flushed with potable water, all water purged from coils, ice bank melted, and water drained from water tank. A freezing ambient environment will cause residual water remaining inside unit to freeze resulting in damage to internal components.

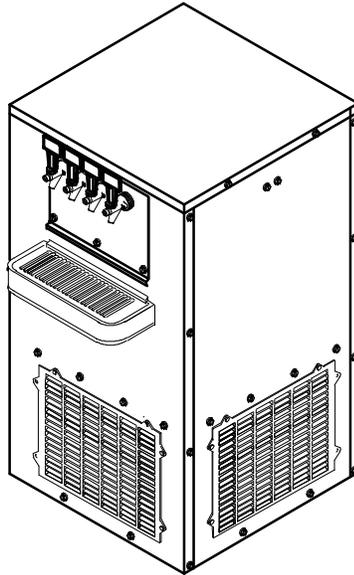


FIGURE 1. UNIVERSAL C-1550XR

INSTALLATION KITS

LEG KIT

A leg kit which elevates the Unit six inches from the floor is available as P/N 311370-000. When installed, legs relieve the user from the NSF International (NSF) requirements for sealing the Unit to the floor (USA only).

CASTER KIT

A caster kit (P/N 310340) is available which when installed, gives the Unit mobility.

THEORY OF OPERATION (see Figure 2)

A CO₂ cylinder delivers carbon dioxide (CO₂) gas through adjustable CO₂ regulators to the product tanks. When dispensing valve is opened, CO₂ pressure exerted upon product tank pushes product from tank, through unit cooling coil, to dispensing valve resulting in a cold dispensed drink.

When unit power cord has been plugged into the electrical outlet and power switch on back of unit has been positioned to "ON" (up) position, compressor, condenser fan motor, and agitator motor will start and begin forming an ice bank. When a full ice bank has been formed, the compressor and condenser fan motor will stop but agitator motor will continue to operate, circulating ice water bath in water tank. Water tank ice bank sensing bulb will cycle compressor and condenser fan motor on and off as required to maintain full ice bank.

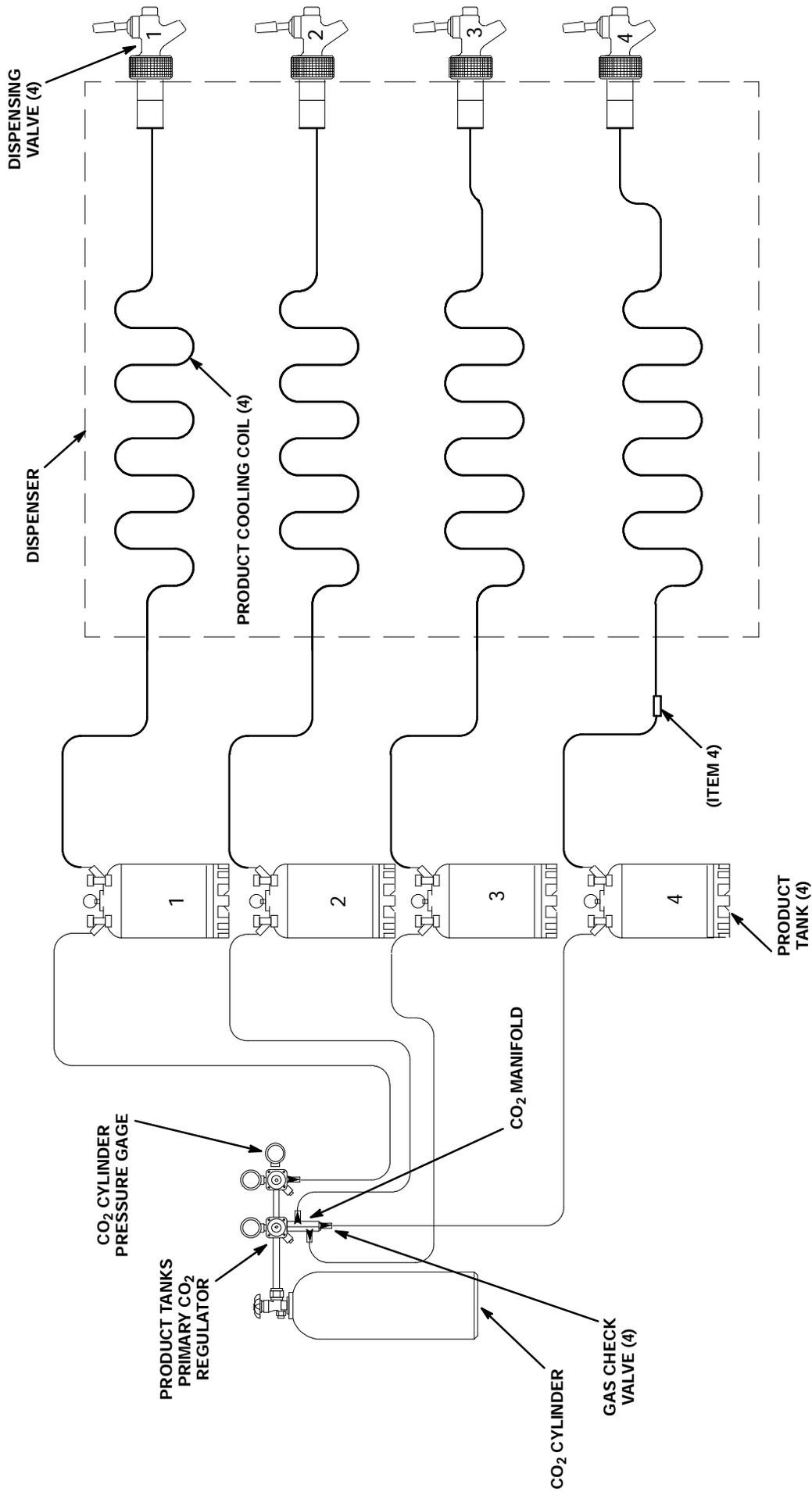


FIGURE 2. FLOW DIAGRAM

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INSTALLATION

This section describes receiving the Unit, unpacking and inspection, location selection, installation and preparation for operation.

RECEIVING

Each Unit is completely tested under operating conditions and thoroughly inspected before shipment. At time of shipment, the carrier accepts the Unit and any claim for damage in transit must be made with the carrier. Upon receiving Units from the delivering carrier, carefully inspect the carton for visible indication of damage. Any damage or irregularities should be noted at this time (not later than 15 days from date of delivery) and immediately reported to the delivering carrier. Request a written inspection report from the carrier's claims inspector to substantiate claim. File claim with the delivering carrier not with IMI Cornelius Inc.

UNPACKING AND INSPECTION

Unpack Unit as follows:

1. Cut two bands.
2. Lift carton wrap off Unit.
3. Remove four screws securing Unit top cover, then remove cover.
4. Remove loose-shipped items. Check each item against Table 2.
5. Carefully inspect Unit for evidence of damage. If evidence of damage is found, file a claim against the carrier.

Item No.	Part No.	Name	Qty. 102	Qty. 120
1	310392	Leveling Leg	4	-
2	186573-039	Drip Tray	1	1
3	186642	Cup Rest	1	1
4	150807-100	Adapter Fitting, 7/16-20 male by 1/2-16 male	4	8
5	180740	Reducer Fitting, 1/2-16 female by 7/16-20 male	-	4
6	178025-100	Tapered Gasket, White	-	4
7	151741-039	Knob, Dispensing Valve	4	4
8	322165	Electrical Outlet, 20-amp	1	1
9	1877130	Warranty Registration	1	1
10	309989	Instruction Manual	1	1

SELECTING LOCATION

This unit may be free standing or under a counter or bar. Locate unit so following requirements are satisfied.

IMPORTANT: Ambient operating temperature for Unit Must not exceed 90F. Satisfactory temperatures may be obtained using blowers, air conditioning etc. Check local codes.

Cooling air is drawn in through the front panel and exhausted through grilles on both sides and rear of the Unit.

1. Locate Unit to provide the following minimum clearance:
Over top of Unit 12 in.
Rear 12 in.
Sides 12 in.
Front Open



WARNING: All electrical wiring must conform to national and local electrical codes.



WARNING: CO₂ displaces oxygen. Strict attention *must* be observed in the prevention of CO₂ (carbon dioxide) gas leaks in the entire CO₂ and soft drink system. If a CO₂ gas leak is suspected, particularly in a small area, *immediately* ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentration of CO₂ gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

2. Locate Unit near a grounded electrical outlet having a dedicated circuit fused at 20 amps (slow-blow). Alternate protection using an equivalent HACR (US) circuit breaker may be used. Note: no other equipment should be connected to this circuit.
3. Locate the Unit close to a water inlet supply with pressure and flow as given in the listing of Physical Characteristics and Requirements.

INSTALLATION

SEALING REQUIREMENT

Outside United States (Canada, Europe, etc.) - Install LEVELING LEGS (item 1) in threaded holes on each corner of unit base. Adjust each leveling leg until unit sits level and stands solid. Make sure all leveling legs are in contact with floor.

Within United States - To comply with NSF International (NSF) requirements, unit must be sealed to floor and LEVELING LEGS (item 1) may not be used. Perform following procedure to install unit.

NOTE: An alternate arrangement for following installation method described would be to install available 6-inch leg kit or four caster kit. Kits are listed in General Information Section.

1. Slide unit into operating position.
2. Tilt unit up to expose bottom of base.
3. Liberally apply silastic sealant such as Dow Corning RTV 731 or equivalent around edges on bottom of base.

NOTE: Do not move unit after positioning or seal from unit base to floor will be broken.

4. Lower unit into operating position to complete seal from unit base to floor. Apply additional sealant around bottom of unit base. Seal must have a minimum radius of 1/2-inch to prevent crevices and to insure a complete seal.

FILL WATER TANK AND START REFRIGERATION SYSTEM (see Figure NO TAG)

NOTE: Use low-mineral-content water where a local water problem exists.

1. Make sure plug is secure in end of water tank drain hose inside cabinet.
2. Route water tank overflow tube out through hole in back of cabinet to a waste container.
3. Fill water tank with clean water until water starts flowing from overflow tube into waste container.
4. Install unit top cover and secure with four screws.

NOTE: ELECTRICAL OUTLET (item 8) is provided and must be installed at wall outlet to conform to unit power cord configuration.

5. Replace existing fused (20A), grounded outlet with electrical outlet (item 8).



WARNING: Unit must be electrically grounded to avoid possible fatal electrical shock or serious injury to operator. Unit power cord is equipped with a three-prong plug. If a three-hole (grounded) electrical outlet is not available, use an approved method to ground unit.

6. Make sure power switch located on back of unit is in "OFF" (down) position, then plug unit power cord into electrical outlet.
7. Position unit power switch to "ON" (up). Compressor, condenser fan motor, and agitator motor will start and begin forming an ice bank. When full ice bank has been formed, compressor and condenser fan motor will stop but agitator motor will continue to operate circulating ice water bath in water tank. Water will continue to drip from water tank overflow tube until full ice bank has been formed, then tube may be removed from waste container and stored inside unit.

DRIP TRAY DRAIN HOSE CONNECTION (see Figure NO TAG)

NOTE: Drip tray hose routed to waste container is not recommended due to sanitation and cleaning problems. Connection of drain hose to permanent drain is recommended.

The drip tray, as provided, is self-contained and must be emptied periodically. If permanent drain is desired, cut out center of drain connection on drip tray. Be sure to remove all plastic to open drain to its maximum inside diameter preventing any rough edges which will trap dirt. Install DRIP TRAY (item 2) by inserting rear edge of tray under lip of valve trim panel and lifting up until bottom tray supports are inserted in square holes provided in front panel. Lock drip tray in place by a slight downward pressure. Connect drain hose below drip tray to drain connection on drip tray. This drain hose runs to inside of unit and must be routed out through hole in back of unit. Drain hose then must be routed to a waste container or routed to and connected to a permanent drain.

CONNECTING PRODUCT TANK SUPPLY LINES TO UNIT (see Figure 2)

NOTE: If 7/16-20 TANK QUICK DISCONNECTS are used, they may be connected directly to unit product inlet lines if desired. If connecting 1/2-16 TANK QUICK DISCONNECTS (items 11 and 12) directly to unit product inlet lines, REDUCER FITTINGS (item 5) and TAPERED GASKETS (item 6) must be used to make connections.

All unit product inlet line internal connections have been made at the factory. Perform the following to connect unit product inlet lines to product tank supply lines.

NOTE: The *numbered* unit product inlet lines are labeled to identify dispensing valve they serve. For example: The line labeled "1" is connected to system that provides product to be dispensed from NO. 1 dispensing valve. (NO. 1 dispensing valve is valve on right side when facing front of unit.)

1. Install applicable ADAPTERS (item 4) in ends of unit product inlet lines.

NOTE: Allow additional line length if Unit is provided with casters.

2. Cut lengths of tubing to reach from product tank location to unit product inlet lines.
3. Install applicable SWIVEL NUTS and NIPPLES on both ends of lengths of cut tubing. Secure connections with TUBING CLAMPS.
4. Connect made-up product tank supply lines to unit product inlet line adapter fittings.
5. Install applicable TANK QUICK DISCONNECTS, LIQUID on ends of product tanks supply lines. Product lines should be labeled for identification as to dispensing valves they serve.

INSTALLING PRIMARY CO₂ REGULATOR ASS'Y AND CONNECTING PRODUCT TANKS CO₂ LINES TO REGULATORS (see Figure 2)



WARNING: To avoid personal injury and/or property damage, always secure CO₂ cylinder in an upright position with safety chain to prevent it from falling over. Should the shutoff valve become accidentally broken off, CO₂ cylinder can cause serious personal injury.

1. Position CO₂ cylinder in upright position and secure with safety chain.
2. Install applicable PRIMARY CO₂ REGULATOR on CO₂ cylinder. MAKE SURE NYLON WASHER IS INSIDE REGULATOR ASSEMBLY COUPLING NUT BEFORE CONNECTING TO CYLINDER.
3. Using applicable TUBING, cut lengths of tubing to make up CO₂ lines to reach from primary CO₂ regulator assembly to product tank location.
4. Install applicable SWIVEL NUTS and NIPPLES on both ends of cut lengths of tubing. Secure connections with TUBING CLAMPS.
5. Connect made up CO₂ lines to check valves on CO₂ manifolds on primary CO₂ regulator assembly. Seal connections with TAPERED GASKETS.
6. Install applicable TANK QUICK DISCONNECTS, GAS on ends of CO₂ lines. CO₂ lines should be labeled for identification as to product tank they serve.

PREPARING UNIT FOR OPERATION

1. Install CUP REST (item 3) in drip tray.



CAUTION: Before opening CO₂ cylinder shutoff valve, turn primary CO₂ regulator adjusting screws to the left (counterclockwise) until all tension is relieved from adjusting screw springs.

2. Open (counterclockwise) CO₂ cylinder shutoff valve slightly to allow lines to slowly fill with gas, then open valve fully to back-seat valve. (Back-seating valve prevents leakage around valve shaft.)
3. Adjust product tanks CO₂ regulators as instructed.
4. Connect product tanks into product systems. Check for leaks and tighten loose connections.

UNIT OPERATION

1. Dispense from each dispensing valve until air is purged from systems and product is dispensed.
2. Check for leaks and tighten loose connections.
3. Adjust dispensing valves for dispensed product flow rate as instructed.

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OPERATORS INSTRUCTIONS

This section covers operating controls, daily pre-operation check, unit operation, adjustments, replenishing CO₂ and product supplies, cleaning and sanitizing unit, checking condenser coil for restrictions and checking ice water bath. A maintenance schedule is given in the Service and Maintenance Section.

OPERATING CONTROLS

DISPENSING VALVE

The dispensing valve lever (see Figure 6) need only be pulled forward to dispense product and released when cup or glass is full.

UNIT POWER SWITCH (see Figure NO TAG)

The Unit power switch, located on back of the unit, must be in the "ON" (up) position before unit will operate. POSITION UNIT POWER SWITCH IN "OFF" (DOWN) POSITION BEFORE PERFORMING INTERNAL SERVICE AND MAINTENANCE.

UNIT OPERATION

1. Make sure unit power switch, located on back of unit, is in "ON" (up) position.
2. Hold cup or glass under dispensing valve. Pull dispensing valve lever forward and dispense until cup or glass is full, then release lever.

DAILY PRE-OPERATION CHECK

1. Make sure CO₂ cylinder regulator assembly 1800-psi gage indicator is not in shaded ("change CO₂ cylinder") portion of dial. If so, CO₂ cylinder is almost empty and must be replaced as described in the Service and Maintenance Section.
2. Be sure of sufficient product supply in all product tanks. If not, replenish product supply as instructed in Service and Maintenance Section.

ADJUSTMENTS

ADJUSTING PRODUCT TANK CO₂ REGULATORS (see Figure 2)

Product tank CO₂ regulators should be periodically checked for proper pressure settings and if necessary, adjusted. Refer to the Service and Maintenance Section.

ADJUSTING DISPENSED PRODUCT FLOW RATE (see Figure 6 or 7)

Product flow rate of dispensed product should be periodically checked and if necessary, adjusted as instructed in the Service and Maintenance Section.

CLEANING AND SANITIZING

DAILY CLEANING OF UNIT

Daily cleaning of unit should be performed at end of daily operation.

SANITIZING UNIT

Product systems should be sanitized as instructed every 90 days. The procedure is given in the Service and Maintenance Section.

CHECKING CONDENSER COIL FOR RESTRICTIONS (see Figure 4)

NOTE: Air circulation through unit, required to cool condenser coil, is drawn in through air intake grille on front panel and is exhausted out through grilles on sides and back of unit. Restricting air circulation through unit will decrease its cooling efficiency.

Cooling unit condenser coil should be periodically cleaned to maintain cooling efficiency.

CHECKING ICE WATER BATH

A “gurgle” heard from unit indicates water level in water tank is low and more water should be added as instructed in the Service and Maintenance Section.

CLEANING GAS CHECK VALVES (see Figure 2)

The gas check valves must be inspected and serviced at least once a year under normal conditions and after any CO₂ system servicing or disruption.

SERVICE AND MAINTENANCE

This section describes service and maintenance procedures to be performed on unit.

IMPORTANT: Only qualified personnel should service internal components or electrical wiring.

MAINTENANCE SCHEDULE

The following maintenance schedule lists items to be performed by either an operator or a qualified maintenance technician in order to keep the system in good operating condition.

Responsibility Key:

O- Operator

M- Maintenance Technician

Daily

- O Empty drip tray, wash drip tray, cup rest and drip tray cavity.
- O Clean exterior of Unit.
- O Change CO₂ cylinder if required.
- O Change syrup tank as required.

Weekly

- O Taste each product for off-taste.
- O Wash dispensing valves.

Monthly

- M Check syrup-to-water ratio.

Three Months

- M Sanitize system.

Yearly

- M Clean refrigeration system, condenser and coils.
- M Clean and fill water tank.
- M Clean water strainer.
- M Inspect CO₂ check valves and replace ball seats.

When Occurring

- M Adjust CO₂ pressure.
- M Sanitize for flavor change.
- M Add water to water tank if "gurgle" is heard.
- M Relocate or ship Unit to new location.

PREPARING UNIT FOR SHIPPING, RELOCATING, OR STORING



CAUTION: Before shipping, storing, or relocating this Unit, the syrup systems *must* be sanitized and all sanitizing solution *must* be purged from the syrup systems. All water *must* also be purged from the plain and carbonated water systems. A freezing ambient environment will cause residual water in the Unit to freeze resulting in damage to internal components.

TOP COVER, ACCESS GRILLES, AND DRIP TRAY REMOVAL (see

Figure NO TAG)

TOP COVER REMOVAL

Remove four screws securing unit top cover, then lift cover straight up and off.

ACCESS GRILLE REMOVAL

Remove four screws securing access grille on unit, then remove grille.

DRIP TRAY REMOVAL

3. If drip tray drain hose is used, disconnect drain hose from bottom of drip tray.
4. Lift drip tray up slightly, and at same time, tip front of drip tray up to disengage its bottom supports from square holes in unit front panel. Slide drip tray down to disengage its upper rear edge from under valve trim panel lip.
5. Install drip tray on unit by reversing removal procedure.

PERIODIC INSPECTION

1. Check unit condenser coil for accumulation of dust, lint, and grease. Restriction of air flow through coil will decrease unit cooling efficiency.
2. Check area in front, sides, and back of unit for obstructions. These areas must be kept clear at all times to allow air flow in and out of the unit.
3. Check dispensing valves for dripping. Refer to DISPENSING VALVE ASSEMBLY heading in this section for repair information.

ADJUSTMENTS

ADJUSTING PRODUCT TANK CO₂ REGULATORS (see Figure 2)

NOTE: To adjust CO₂ regulator to provide a lower pressure, loosen adjusting screw lock nut, then turn screw to the left (counterclockwise) until pressure gage reads 5-psi lower than new setting will be. Turn adjusting screw to the right (clockwise) until gage registers new setting. Then tighten lock nut.

Set product tank CO₂ regulators, using Cornelius PRE-MIX COMPUTER slide rule or bottling room chart. Enter equilibrium pressure for highest temperature encountered between product tank storage area and cooling unit plus 5 psig operating pressure for lines 10 feet in length or less and no vertical lift. Add one pound for every 10 feet over initial 10 feet of product tank to cooling unit line length and one pound for every 2 feet of vertical lift. Add one pound for every product tank on line over three tanks. **MAXIMUM UNIT INLET PRESSURE MUST NOT EXCEED 100 psig.** Loosen lock nut on CO₂ regulator adjusting screw, then turn adjusting screw to the right (clockwise) until gage registers desired pressure. Tighten adjusting screw lock nut.

ADJUSTING DISPENSED PRODUCT FLOW RATE (see Figure 6)

Rotate dispensing valve Compensator Adjusting Screw to the left (counterclockwise) for higher product flow rate or to the right (clockwise) for lower product flow rate.

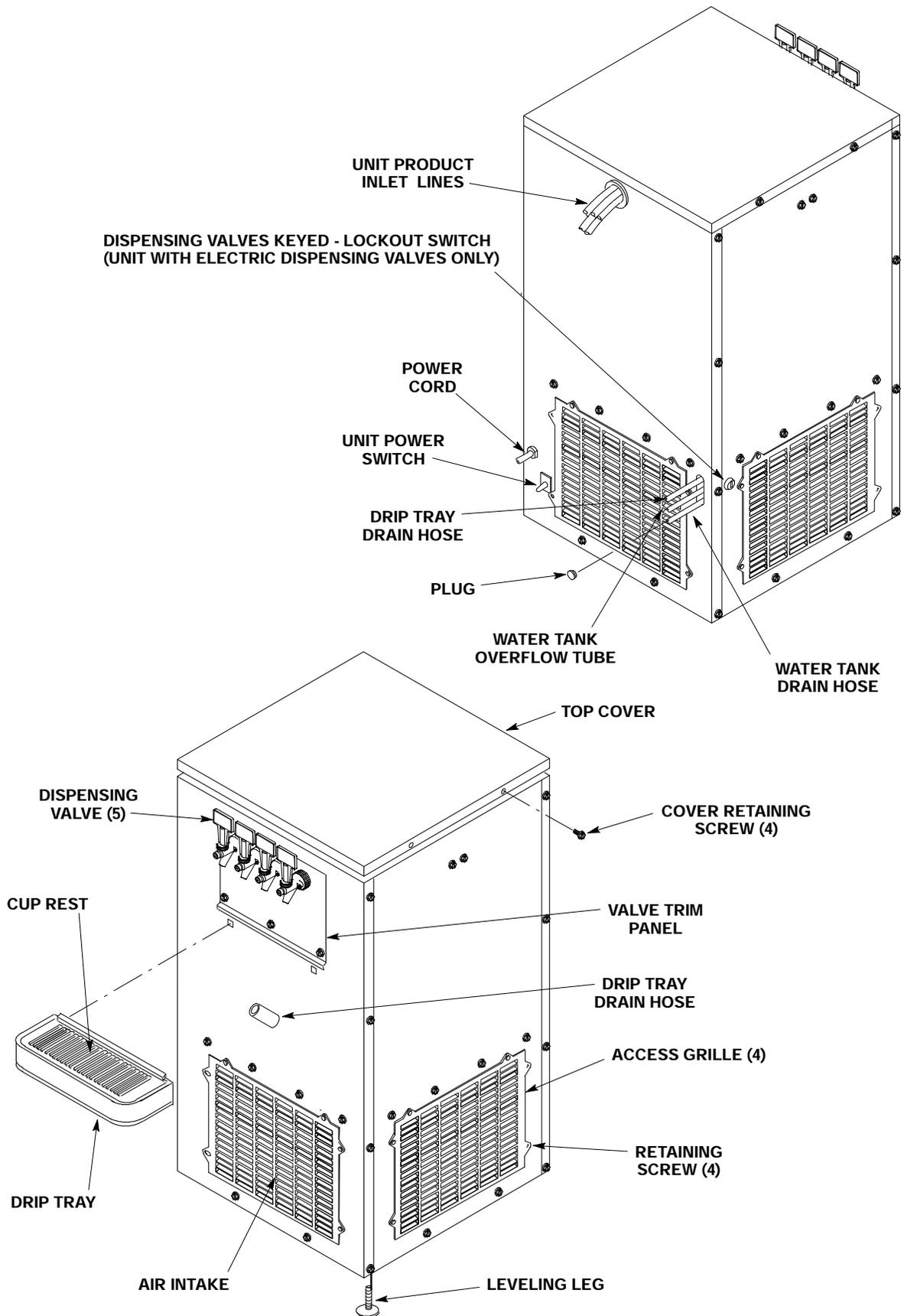


FIGURE 3. DISPENSER COMPONENTS

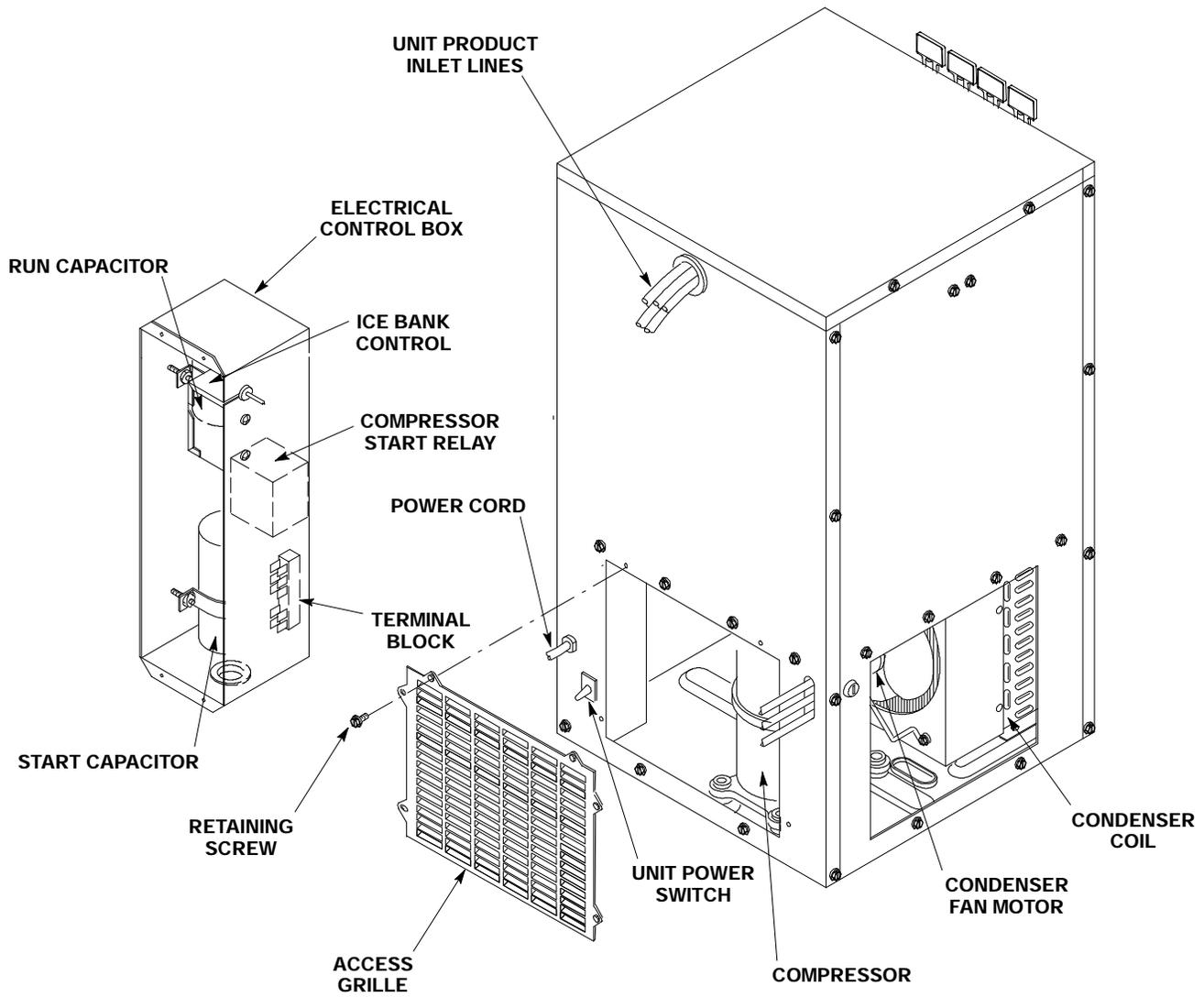


FIGURE 4. PARTS IDENTIFICATION

REPLENISHING CO₂ SUPPLY

NOTE: When indicator on CO₂ cylinder regulator assembly 1800-psi gage is in shaded (“change CO₂ cylinder”) portion of dial, CO₂ cylinder is almost empty and should be replaced.



WARNING: Wear protective eyewear to avoid injury from gas-driven particles.

1. Fully close (clockwise) CO₂ cylinder valve.
2. Slowly loosen CO₂ regulator assembly coupling nut allowing CO₂ pressure to escape, then remove regulator assembly from empty CO₂ cylinder.
3. Unfasten safety chain and remove empty CO₂ cylinder.



WARNING: To avoid personal injury and/or property damage, always secure CO₂ cylinder in an upright position with safety chain to prevent it from falling over. Should the shutoff valve become accidentally broken off, CO₂ cylinder can cause serious personal injury.

4. Position CO₂ cylinder and secure with safety chain.
5. Make sure gasket is in place inside CO₂ regulator coupling nut, then install regulator on CO₂ cylinder.
6. Open (counterclockwise) CO₂ cylinder valve slightly to allow lines to slowly fill with gas, then open valve fully to back-seat valve. (Back-seating valve prevents leakage around valve shaft).
7. Check CO₂ connections for leaks.

REPLENISHING PRODUCT SUPPLY

1. Remove inlet (CO₂) disconnect (grey) and outlet disconnect (black) from empty product tank, then remove tank.
2. Place full product tank in position, then connect inlet (CO₂) disconnect (grey) and outlet disconnect (black) to tank.

PRODUCT FLAVOR CHANGE

Sanitize applicable system as instructed, then install full tank of new flavor product.

CLEANING CONDENSER COIL (see Figure 4)

NOTE: Air circulation through condenser coil, required to cool coil, is drawn in through grille on front panel and is exhausted out through grilles on sides and back of unit. Restricting air circulation through unit will decrease its cooling efficiency.

Excessive accumulation of dust, lint, and grease on condenser coil will restrict air flow through coil and cause a loss of cooling efficiency. Perform following procedure to clean condenser coil.

1. Position unit power switch, located on back of unit, to “OFF” (down) position.
2. Remove four screws securing grille on front panel, then remove grille.
3. Vacuum or use a soft brush to clean condenser coil. If available, use low-pressure compressed air.
4. Install air intake grille on unit and secure with four screws.

5. Position unit power switch to "ON" (up) position.

CHECKING ICE WATER BATH (see Figures NO TAG and 5)

A "gurgle" heard from unit indicates water level in water tank is low and more water should be added for maximum product cooling. Before adding more water, ice water bath and ice bank should be checked for cleanliness and water tank components checked for excessive mineral deposit build-up.

1. Position unit power switch to "OFF" position.
2. Remove four screws securing unit top cover, then remove cover.
3. Check condition of ice water bath and ice bank. Ice water bath should be clear and ice bank free of foreign particles.
4. Check agitator motor shaft and ice bank sensing bulb for excessive mineral deposit build-up.
5. If cleaning of water tank is necessary, refer to CLEANING WATER TANK in this section.
6. Make sure end of water tank overflow tube is placed in waste container. Fill water tank with clean water until water starts flowing from overflow tube into waste container. USE LOW-MINERAL- CONTENT WATER WHERE A LOCAL WATER PROBLEM EXISTS.
7. Install unit top cover and secure with four screws.
8. Position unit power switch to "ON" (up) position. After water has stopped dripping from water tank overflow tube, remove tube from waste container and place back inside unit.

**UNIT PRODUCT
INLET LINES**

**ELECTRICAL
RECEPTACLE**

**AGITATOR
MOTOR**

**ICE BANK
SENSING BULB**

WATER TANK

TOP VIEW WITH COVER REMOVED

FIGURE 5. WATER TANK

CLEANING WATER TANK (see Figure NO TAG and 5)

NOTE: Ice water bath should be changed as often as necessary to keep water tank clean. A convenient time to perform this operation is at time unit is being sanitized. To save time, water can be drained from water tank while unit is being sanitized.

1. Position power switch, on back of unit, to "OFF" (down) position.
2. Remove four screws securing unit top cover, then remove cover.
3. Remove four screws securing either side or back access grille, then remove grille.
4. Route water tank drain hose out hole in back of unit to waste container or drain.
5. Remove plug from end of drain hose and allow water to drain from water tank.

NOTE: If ice bank is clear and contains no foreign particles, it does not have to be melted down. Skip steps 6 and 7 and proceed with step 8.

6. If ice bank is dirty, allow it to melt. Tap water may be used to speed melting. DO NOT USE HOT WATER.



CAUTION: Never use an ice pick or other instrument to remove ice from evaporator coil. Such practice can result in punctured refrigerant circuit or damage to water tank.

7. Wash inside of water tank with a mild soap solution.
8. Use fiber brush and carefully clean mineral deposit build-up from agitator motor shaft, and ice bank sensing bulb.
9. Rinse all parts and flush water tank with clean water.
10. Install plug in water tank drain hose, then place drain hose back inside unit.
11. Place end of unit water tank overflow tube in waste container.
12. Fill water tank with clean water until water starts flowing from overflow tube into waste container. USE LOW-MINERAL-CONTENT WATER WHERE A LOCAL WATER PROBLEM EXISTS.
13. Install unit top cover and secure with four screws.
14. Flip unit power switch on back of unit to "ON" (up) position. Make sure compressor condenser fan motor, and agitator motor are operating.
15. After water has stopped dripping from water tank overflow tube, remove tube from waste container and place hose back inside unit.
16. Install access grille on unit and secure with four screws.

CLEANING AND SANITIZING

DAILY CLEANING OF UNIT

NOTE: Drip tray that is connected to drain hose routed to waste container or permanent drain need not be removed from unit to be cleaned. Remove cup rest, then wash out and rinse drip tray in place on unit allowing water to escape through drain hose to waste container or drain. Wash and rinse cup rest, then install cup rest in drip tray. If drip tray is not connected to drain, proceed as follows:

1. Lift drip tray up slightly and at the same time, tip front of drip tray up to disengage its bottom supports from square holes in unit front panel. Slide drip tray down to disengage its upper rear edge from under valve trim panel lip.

2. Remove cup rest from drip tray. Wash cup rest and drip tray, then rinse with potable water.
3. Install cup rest in drip tray, then install drip tray on unit by reversing removal procedure.
4. Rinse out sponge with clean water, then wring excess water out of sponge. Wipe off external surfaces of unit, then wipe unit dry with a clean soft cloth. **DO NOT USE ABRASIVE TYPE CLEANERS.**

SANITIZING UNIT

NOTE: An alternate to the preferred sanitizing procedure outlined below would be to remove dispensing valves, then make necessary connections to circulate sanitizing solution through product systems. After systems have been sanitized, dispensing valves may then be disassembled (see Figure 6) and cleaned before re-installing on unit.

The system must be sanitized at 90 day intervals, when changing flavors, or if Unit is to be relocated. Chlor-Tergent (Oakite Products, Inc.) or equivalent sanitizer is required.

IMPORTANT: Only qualified personal should perform sanitizing procedures.

IMPORTANT: If it is necessary to disassemble and clean dispensing valve syrup flow regulators, do not intermix pistons and cylinders as they are precision matched sets.

Sanitize tank-type syrup systems

1. Remove quick disconnect syrup line end connectors from syrup tanks and rinse them in water.
2. Using a clean empty syrup tank, prepare a full tank of sanitizing solution by filling with 70° F. to 100° F. (max) water and adding 0.68 ounce per gallon of Chlor-Tergent, or equivalent sanitizer. This mixture will provide 200-ppm of chlorine.
3. Shake sanitizer tank to thoroughly mix contents.
4. Connect sanitizer tank to syrup line of the system to be sanitized.
5. Place a waste container under the related dispensing valve.
6. Open dispensing valve to permit sanitizer to purge syrup from the system.
7. Continue to draw from the dispensing valve until only sanitizing solution issues, the close valve.



CAUTION: Do not allow sanitizing solution to remain in syrup system longer than 10 to 15 minutes to avoid damage to metallic parts of the system.

8. Allow sanitizing solution to remain in syrup system for not less than 10 or more than 15 minutes (max).
9. Disconnect syrup line from sanitizing tank.
10. Reconnect syrup line to tank containing syrup.



WARNING: Flush sanitizing solution from system as instructed. Residual solution left in system could create a health hazard.

11. Place waste container under dispensing valve.
12. Open dispensing valve to permit syrup to purge sanitizing solution from the syrup system. Continue to draw from the valve until only product is dispensed.
13. Repeat steps 4 through 12 for remaining syrup systems.

14. Rinse sanitizer from syrup tank and from waste container into sanitary system, not in storm drain.

REPAIR AND REPLACEMENT

DISPENSING VALVE ASSEMBLY (see Figure 6).

Removal.

1. Disconnect product line from applicable product tank outlet fitting.
2. Open dispensing valve to relieve pressure on system.
3. Remove dispensing valve knob by pulling knob up and off valve.
4. Using spanner wrench, loosen and remove coupling nut from dispensing valve, then remove valve from unit.

Installation.

5. Install dispensing valve on unit by reversing removal procedure. Tighten coupling nut using spanner wrench.
- 6.
7. Install knob on dispensing valve by reversing removal procedure.

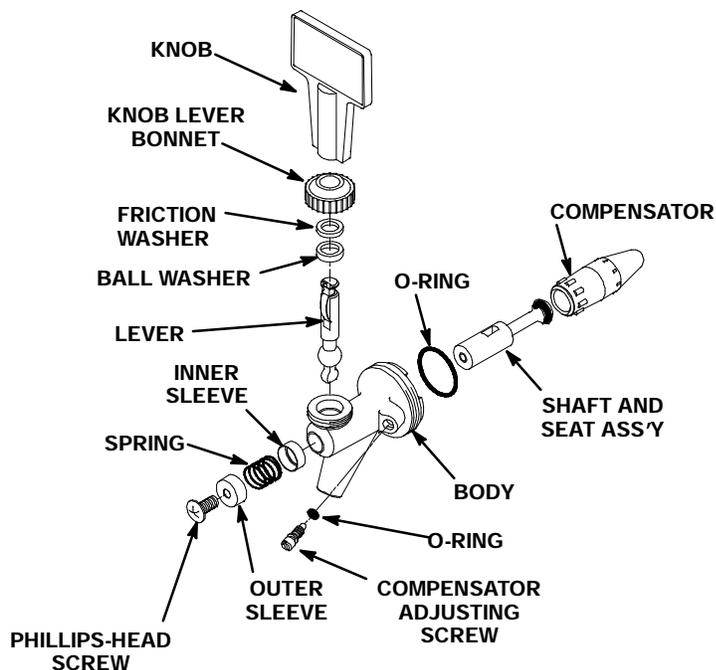


FIGURE 6. DISPENSING VALVE PARTS IDENTIFICATION

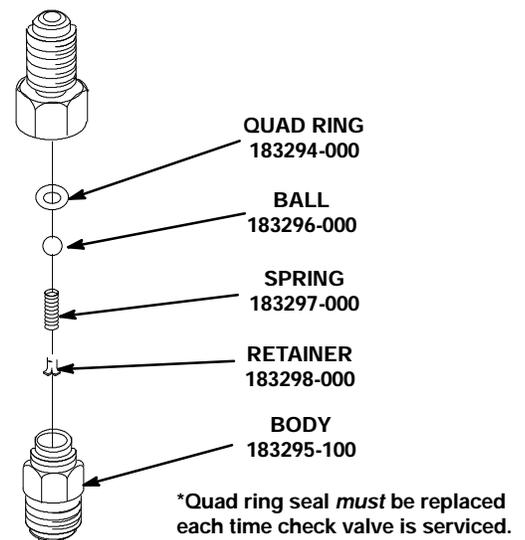


FIGURE 7. GAS CHECK VALVE

CLEANING CO₂ GAS CHECK VALVES (see Figures 2 and 7)

The CO₂ gas check valves must be inspected and serviced at least once a year under normal conditions and after any servicing or disruption of the CO₂ system. ALWAYS REPLACE QUAD RING SEAL EACH TIME GAS CHECK VALVES ARE SERVICED.

To service the CO₂ gas check valve, proceed as follows:



WARNING: Wear protective eyewear to avoid injury from gas-driven particles.

1. At CO₂ cylinder, close the cylinder shut off valve.
2. Using two wrenches, slowly loosen the CO₂ gas check valve from the regulator assembly to allow gas to escape, then remove the check valve from the system.
3. Disassemble the CO₂ gas check valve following Figure 7.
4. Discard quad ring seal.
5. Rinse parts in warm water and dry with a soft lint free cloth.
6. Inspect each part for burrs, nicks, etc.
7. Reassemble parts using new quad ring seal.
8. Install CO₂ gas check valve on the regulator assembly.

COMPRESSOR OVERLOAD PROTECTOR (see Figure 8)

Removal.

1. Unplug unit power cord from electrical outlet.
2. Remove four screws securing back (facing dispensing valve side of unit) panel access grille, then remove grille for access to refrigeration compressor.
3. Remove bale strap and terminal cover from compressor.
4. Label overload protector electrical wires for identification of terminals they are connected to, then disconnect wires from protector.
5. Remove overload protector from metal holder.

Installation.

1. Install new overload protector by reversing removal procedure.
2. Make sure electrical wiring is correct (see Figure 8).
3. Make sure overload protector metal holder is properly positioned so it will not short out electrical terminals, then install terminal cover.

COMPRESSOR START RELAY (see Figures 4 and 8)

Removal.

1. Unplug unit power cord from electrical outlet.
2. Remove four screws securing back (facing dispensing valve side of unit) panel access grille, then remove grille for access to electrical control box.

3. Remove four screws securing control box to back panel. Move control box to the right for access to start relay inside box. **BE CAREFUL WHEN MOVING CONTROL BOX NOT TO BREAK OR KINK ICE BANK CONTROL CAPILLARY TUBE PROTRUDING OUT OF CONTROL BOX.**



WARNING: To avoid electrical shock even after electrical power has been disconnected from unit, run and start capacitors must be discharged by momentarily touching both capacitor terminals at same time using an insulated screwdriver.

4. Label electrical wiring connected to start relay for identification, then disconnect wires from relay.
5. Remove old start relay from inside control box.

Installation.

1. Install new compressor start relay by reversing removal procedure.
2. Make sure electrical wiring is correct (see Figure 8).

COMPRESSOR RUN CAPACITOR (see Figures 4 and 8)

Removal.

1. Unplug unit power cord from electrical outlet.
2. Remove four screws securing back (facing dispensing valve side of unit) panel access grille, then remove grille for access to electrical control box.
3. Remove four screws securing control box to back panel. Move control box to the right for access to run capacitor inside box. **BE CAREFUL WHEN MOVING CONTROL BOX NOT TO BREAK OR KINK ICE BANK CONTROL CAPILLARY TUBE PROTRUDING OUT OF CONTROL BOX.**



WARNING: To avoid electrical shock even after electrical power has been disconnected from unit, run and start capacitors *must* be discharged by momentarily touching oth capacitor terminals at same time using an insulated screwdriver.

4. Remove old run capacitor from inside control box.
5. Label electrical wiring connected to run capacitor for identification, then disconnect wires from capacitor.

Installation.

1. Install new run capacitor by reversing removal procedure.
2. Make sure electrical wiring is correct (see applicable wiring diagram).

COMPRESSOR START CAPACITOR (see Figures 4 and 8)

Removal.

1. Unplug unit power cord from electrical outlet.
2. Remove four screws securing back (facing dispensing valve side of unit panel access grille, then remove grille for access to electrical control box.
3. Remove four screws securing control box to back panel. Move control box to the right for access to start capacitor inside control box. **BE CAREFUL WHEN MOVING CONTROL BOX NOT TO BREAK OR KINK ICE BANK CONTROL CAPILLARY TUBE PROTRUDING OUT OF CONTROL BOX.**



WARNING: To avoid electrical shock even after electrical power has been disconnected from unit, run and start capacitors must be discharged by momentarily touching both capacitor terminals at the same time using an insulated screwdriver.

4. Remove old start capacitor from inside control box.
5. Label electrical wiring connected to start capacitor for identification, then disconnect wires from capacitor.

Installation.

1. Install new start capacitor by reversing removal procedure.
2. make sure electrical wiring is correct (see applicable wiring diagram).

CONDENSER FAN MOTOR (see Figure 4)

Removal.

1. Unplug unit power cord from electrical outlet.
2. Remove four screws each securing both side panels (facing dispensing valve side of unit) access grilles, then remove grilles for access to condenser fan motor.
3. Remove four screws securing back panel access grille, then remove grille for access to electrical control box.
4. Remove screws securing control box to back panel. Move control box to the right for access to components inside box.



WARNING: To avoid electrical shock even after electrical power has been disconnected from unit, run and start capacitors must be discharged by momentarily touching both capacitor terminals at same time using an insulated screwdriver.

5. Tag condenser fan motor power cord electrical wires for identification of terminals they are connected to, then disconnect wires from relay.
6. Pull condenser fan motor power cord out of control box.
7. Remove four screws securing condenser fan motor to condenser coil shroud, then remove motor assembly from inside unit.
8. Transfer mounting brackets and fan blade from old condenser fan motor to new motor.

Installation.

1. Install new condenser fan motor in unit by reversing removal procedure. **MAKE SURE CONDENSER FAN MOTOR POWER CORD IS FASTENED SO IT DOES NOT INTERFERE WITH FAN BLADE.**
2. Make sure electrical wiring is correct (refer to wiring diagram).

AGITATOR MOTOR ASSEMBLY (see Figure 5)

Removal.

1. Unplug unit power cord from electrical outlet.
2. Remove unit top cover for access to agitator motor assembly.
3. Unplug agitator motor power cord from electrical receptacle.
4. Remove four screws (two on top of each unit side panel) securing agitator motor assembly in unit, then lift motor assembly up and out of water tank.

Installation.

1. Install new agitator motor assembly by reversing removal procedure.

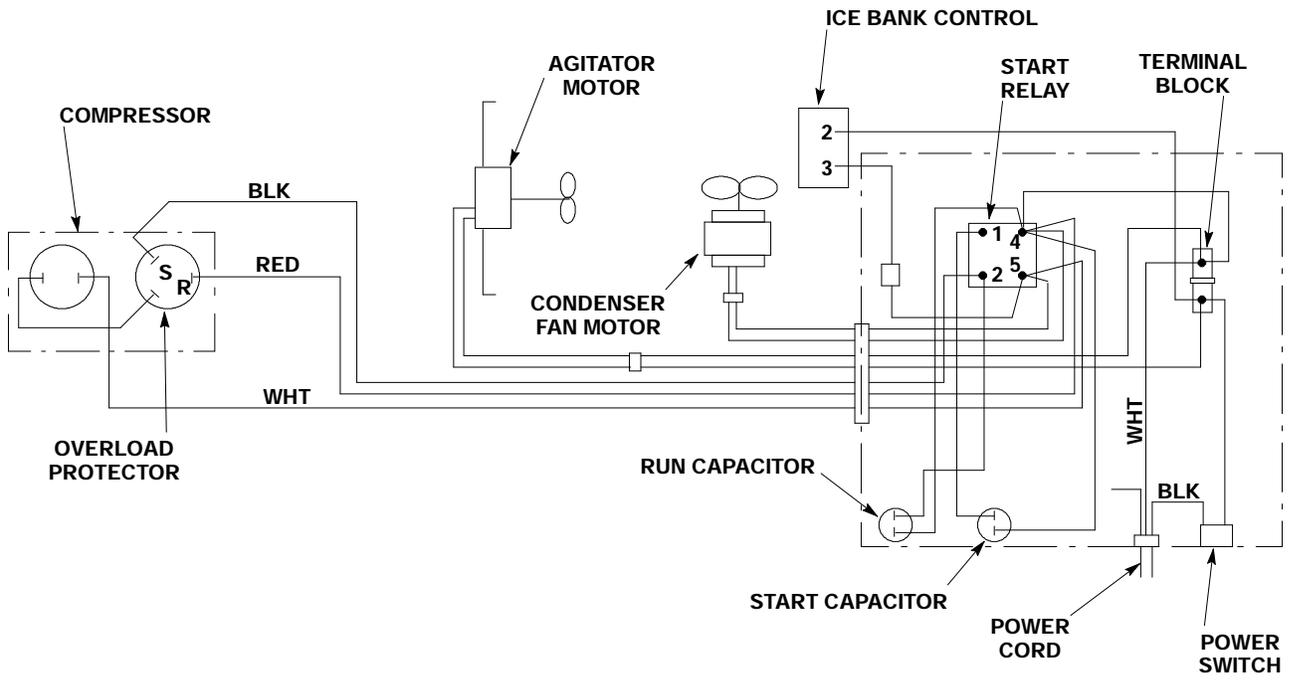
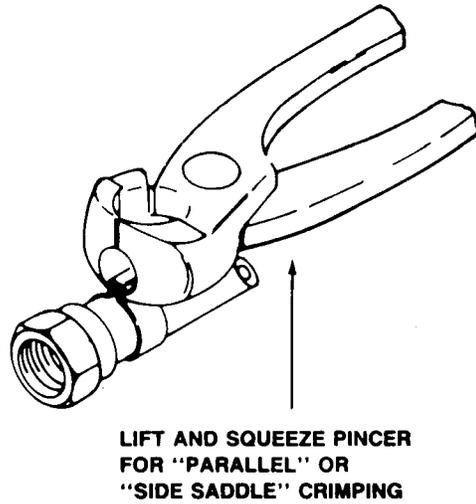
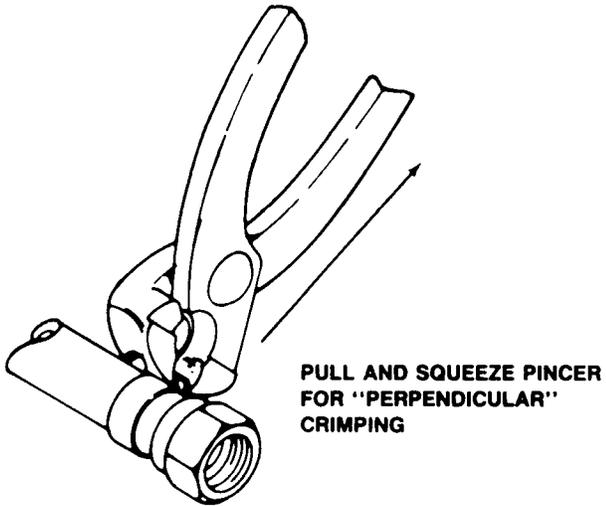
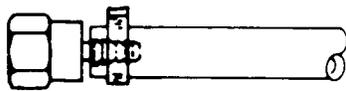


FIGURE 8. UNIT WIRING DIAGRAM

**INSTRUCTIONS
for
CRIMPING TUBE CLAMPS**



**SLIDE CLAMPS ON
TUBING BEFORE INSTALLING
TUBING ON FITTING**



**POSITION CLAMP BEHIND
FIRST BARB FITTING
FOR CRIMPING**

DO

**PROPER
CRIMPING**



DON'T

**IMPROPER
CRIMPING**



ONE-SIDED



TWISTED



**OVER-
CRIMPED**

TROUBLESHOOTING

IMPORTANT: Only qualified personnel should service internal components or electrical wiring.



WARNING: If repairs are to be made to carbonated water system, disconnect electrical power to Cooling Unit, shut off plain water and CO₂ supplies, and relieve the carbonated water system pressure before proceeding. If repairs are to be made to syrup system, remove quick disconnects from applicable syrup tank, then relieve the system pressure before proceeding. If repairs are to be made to CO₂ system, stop dispensing, shut off CO₂ supply, then relieve the system pressure before proceeding. If repairs are to be made to an existing Remote Condensing unit, disconnect the power to the condensing unit before proceeding

TROUBLESHOOTING PRODUCT SYSTEM

Trouble	Probable Cause	Remedy
NO PRODUCT DISPENSED.	A. Product tank quick disconnects not attached properly.	A. Attach quick disconnects securely.
	B. No product supply (product tank empty).	B. Replenish product supply as instructed.
	C. No CO ₂ supply.	C. Replenish CO ₂ supply as instructed.
DISPENSED PRODUCT COMES OUT OF DISPENSING VALVE CLEAR BUT FOAMS IN CUP OR GLASS	A. Oil film or soap scum in cup or glass.	A. Use clean cups and glasses.
	B. Ice used for finished drink is sub-cooled.	B. Do not use ice directly from freezer. Allow ice to become "wet" before using. (Refer to following NOTE)
NOTE: Crushed ice also causes dispensing problems. When dispensed drink hits sharp edges of ice, carbonation is released from dispensed drink.		
DISPENSED PRODUCT FOAMS AS IT LEAVES DISPENSING VALVE.	A. Recovery rate of unit exceeded (ice bank depleted).	A. Allow ice bank to recover.
	B. Product tanks CO ₂ regulator adjusted too high.	B. Adjust product tanks CO ₂ regulator to proper equilibrium pressure as instructed, then replace product supply.
	C. Dispensing valve restricted or dirty.	C. Sanitize product system as instructed in the Service and Maintenance Section.
	D. Tapered nylon washer inside tube swivel nut connection distorted from being overtightened restricting product flow.	D. Replace nylon washer. Make sure it is properly seated.
	E. Oil, water, or dirt in CO ₂ supply.	E. Remove contaminated CO ₂ . Clean CO ₂ system (lines, regulators, etc.). Install clean CO ₂ supply.

Trouble	Probable Cause	Remedy
TROUBLESHOOTING REFRIGERATION SYSTEM		
COMPRESSOR DOES NOT OPERATE.	A. Ice bank sufficient.	A. Refrigeration not called for.
	B. Unit power cord unplugged or unit power switch in "OFF" (down) position.	B. Plug in power cord or place power switch in "ON" (up) position.
	C. No power source (blown fuse or tripped circuit breaker).	C. Replace fuse or reset circuit breaker. (Note: Fuse or circuit breaker are not part of unit.)
	D. Low voltage at compressor terminals.	D. Voltage must be at least 103 volts at compressor terminals when compressor is trying to start.
	E. Loose, disconnected, or broken wiring.	E. Tighten connections or replace broken wiring.
	F. Overload protector cut out; over-heated compressor. Condenser fan motor not operating as required.	F. Compressor will cool enough to restart. Do not overdraw cooling capacity of unit. Refer to "CONDENSER FAN MOTOR NOT OPERATING" in this section.
	G. Inoperative overload protector or start relay.	G. Replace inoperative part.
	H. Inoperative ice bank control.	H. Replace ice bank control.
	I. Inoperative compressor.	I. Replace compressor.
COMPRESSOR WILL NOT STOP AFTER SUFFICIENT ICE BANK IS FORMED. (NOTE-ICE BANK SHOULD JUST COVER CONTROL BULB).	A. Ice bank control cap tube kinked or broken.	A. Replace ice bank control.
	B. Ice bank control stuck in closed position.	B. Replace ice bank control.
COMPRESSOR OPERATES CONTINUOUSLY BUT DOES NOT FORM SUFFICIENT ICE BANK.	A. Cooling capacity is exceeded by over-drawing.	A. Reduce amount of drinks drawn per given time.
	B. Unit located in excessively hot area or air circulation through condenser coil is restricted.	B. Relocate unit or determine and correct condenser coil restriction.
	C. Refrigeration system leak.	C. Repair refrigeration system.
NOTE: Ice bank freezes from bottom of evaporator upward. A refrigerant leak or insufficient charge might show an ice bank at bottom and not at top of evaporator.		
NOTE: If overload protector cuts out compressor, condenser fan motor will continue to operate; otherwise; troubleshooting condenser fan motor problems is same as for "COMPRESSOR DOES NOT OPERATE" paragraph plus the following:		
CONDENSER FAN MOTOR NOT OPERATING.	A. Jumper cord loose or disconnected from motor or terminal block. Broken wire in cord.	A. Tighten connections or replace cord.

Trouble	Probable Cause	Remedy
CONDENSER FAN MOTOR NOT OPERATING. (cont'd)	B. Fan blade obstructed.	B. Remove obstructions.
	C. Inoperative condenser fan motor.	C. Replace condenser fan motor.
AGITATOR MOTOR NOT OPERATING.	A. Unit power cord or agitator motor power cord disconnected or unit power switch in "OFF" position.	A. Plug in power cords or place unit power switch in "ON" position.
	B. No power source (blown fuse or tripped circuit breaker).	B. Replace fuse or reset circuit breaker. (Note: Fuse or circuit breaker are not part of unit.)
	C. Agitator motor propeller obstructed.	C. Remove obstruction.
	D. Low voltage.	D. Voltage must be at least 103 volts at compressor terminals when compressor is trying to start.
	E. Loose, disconnected, or broken wiring.	E. Tighten connections or replace broken wiring.
	F. Inoperative agitator motor.	F. Replace agitator motor as instructed.

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WARRANTY

IMI Cornelius Inc. warrants that all equipment and parts are free from defects in material and workmanship under normal use and service. For a copy of the warranty applicable to your Cornelius, Remcor or Wilshire product, in your country, please write, fax or telephone the IMI Cornelius office nearest you. Please provide the equipment model number, serial number and the date of purchase.

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SEE DOCUMENT P/N 309989-003 FOR ILLUSTRATED PARTS LIST FOR DISPENSER DOCUMENTED IN THIS MANUAL.

This manual 309989-000 (obsolete) and illustrated parts list 309989-003 Parts Mnl (obsolete) represents the old Dispenser which is now obsolete. See new 309989-001 Instl Mnl, 309989-002 Oprs Mnl, 309989-006 Parts Mnl, and 309989-004 Serv Mnl for new revised dispenser.