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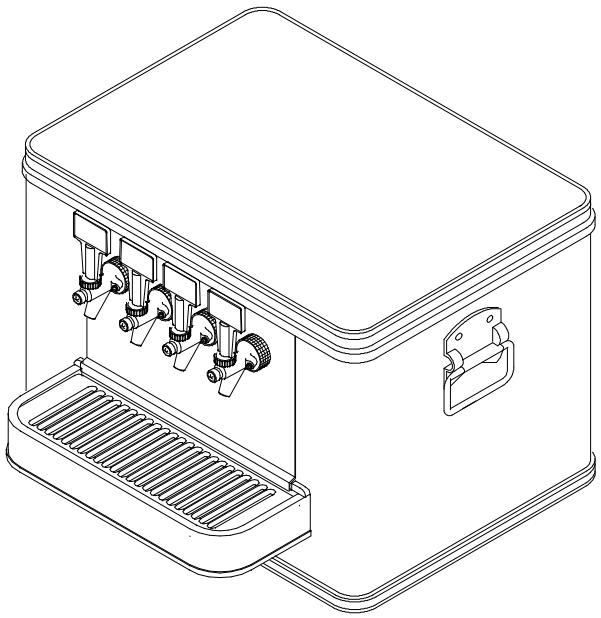
Installation Manual
DISPENSING CHEST



Part No. 160628000
November 20, 1967
Revised: October 3, 1994

THIS DOCUMENT CONTAINS IMPORTANT INFORMATION
This Manual must be read and understood before installing or operating this equipment

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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 potentially of 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.

CO_2 (Carbon Dioxide) Warning

CO_2 Displaces Oxygen. Strict Attention *must* be observed in the prevention of CO_2 (carbon dioxide) gas leaks in the entire CO_2 and soft drink system. If a CO_2 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 CO_2 gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

Shipping, Storing, Or Relocating Unit

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 temperature will cause residual water remaining inside the Unit to freeze resulting in damage to internal components of the Unit.

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GENERAL DESCRIPTION

IMPORTANT: To the user of this manual – This manual is a guide for installing, operating, and maintaining this equipment. Refer to Table of Contents for page location of detailed information pertaining to questions that arise during installation, operation, service and maintenance, or troubleshooting this equipment.

GENERAL DESCRIPTION

This section gives the description, theory of operation, and design data for the Pre-Mix Four-Flavor Dispensing Chest.

UNIT DESCRIPTION

The Dispensing Chest is compact and is easily set up on a countertop or it may be used as a portable dispenser for special events. The Dispensing Chests each contain an 18 x 24 cold plate which is easily moved to facilitate cleaning the cold plate and inside of the Dispensing Chest. Models described in this instruction are identical except for the external wrap.

NOTE: A Stand (P/N 264375000) is available to set the Dispensing Chest on and place product tanks, CO_2 cylinder, and waste container inside. Also available is a Caster Base (P/N 160376000) for the stand to make the Dispensing Chest mobile.

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

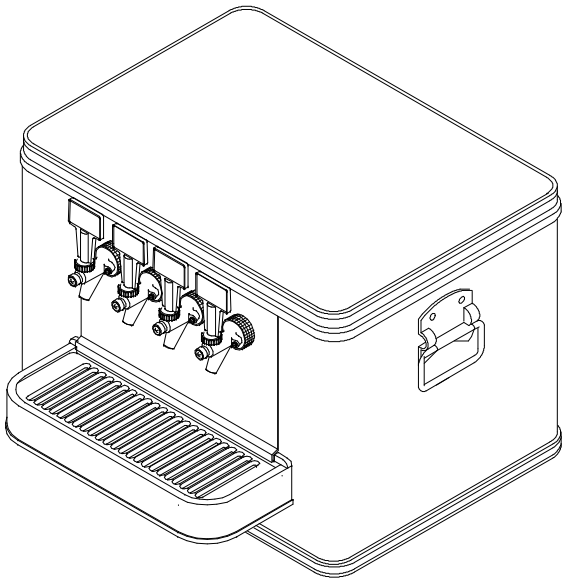

FIGURE 1. DISPENSING CHEST

Table 1. Design Data	
Part Numbers:	
Dispensing Chest	264324102
	264324220
Overall Dimensions:	
Width	28-15/16 inches
Height	15-5/8 inches
Depth	22-7/8 inches
Shipping Weight (approx)	152 pounds
Cooling Capacity (approx)	*1460
NOTE: *Figure represents number of 6-oz. drinks that can be dispensed per hour below 38°F assuming a product inlet temperature of 75°F.	

THEORY OF OPERATION

(see Figure 2)

A CO_2 cylinder delivers carbon dioxide (CO_2) gas through adjustable CO_2 regulators to the product tanks. When dispensing valves are opened, CO_2 gas pressure exerted upon the product tanks forces product from the tanks, through the cooling coils of the ice-cooled cold plate, and on to the dispensing valves resulting in a cooled dispensed drink being dispensed. Depending upon rate of drinks dispensed and product inlet temperature to the cold plate, dictates amount of ice required to cool the cold plate. Periodically inspect amount of ice on the cold plate and replenish as necessary.

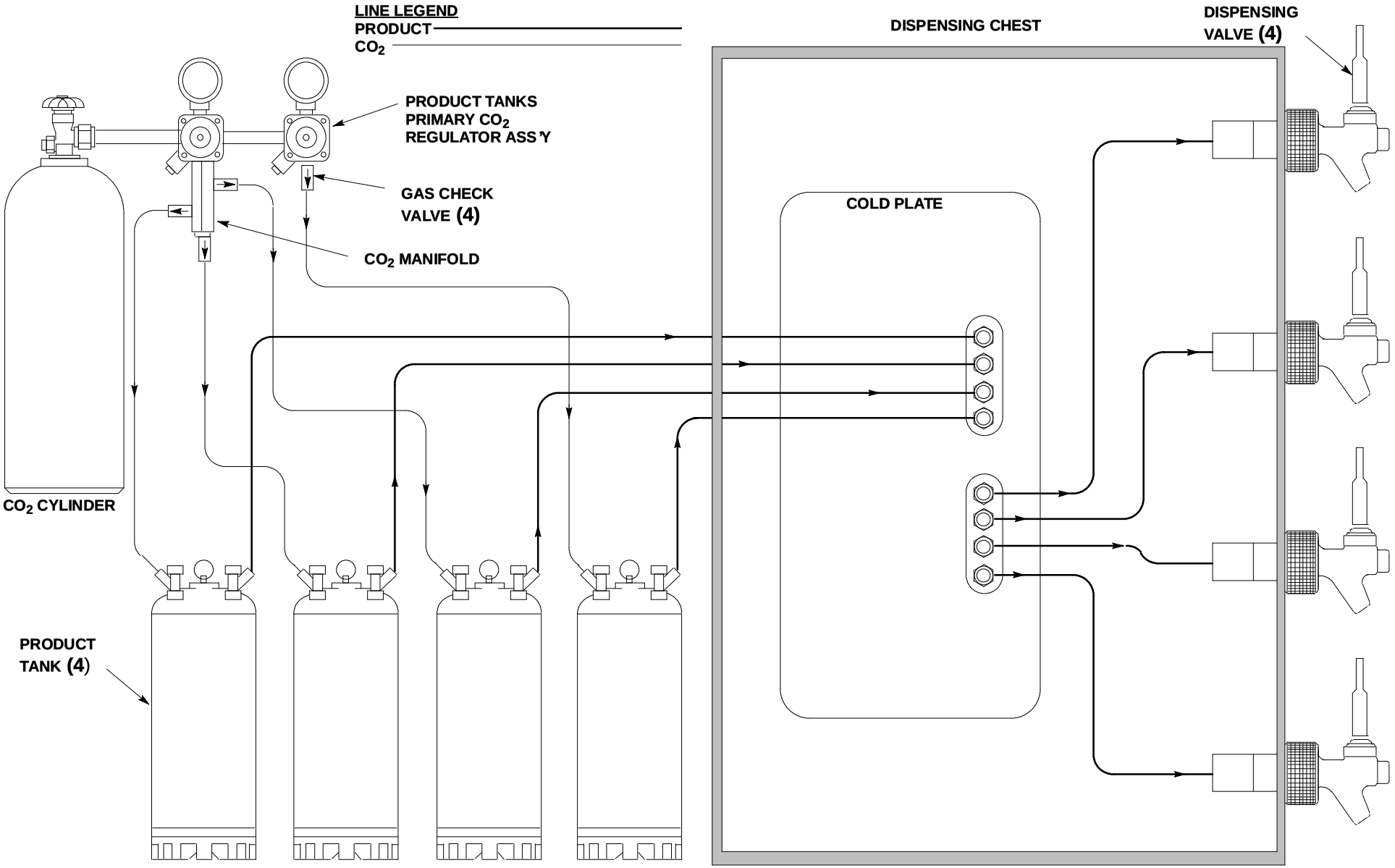

FIGURE 2. FLOW DIAGRAM

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INSTALLATION

This section covers unpacking and inspection, installation of LOOSE-SHIPPED PARTS, installing Dispensing Chest, preparing for operation, and operation.

Placing Dispensing Chest on countertop, installation of LOOSE-SHIPPED PARTS, sanitizing cold plate coils before connecting product tanks, connection of product tanks with regulated CO_2 pressure, and filling Dispensing Chest with ice is all that is required to set chest up for dispensing of product.

UNPACKING AND INSPECTION

NOTE: The Unit was thoroughly inspected before leaving the factory and the carrier has accepted and signed for it. Any damage or irregularities should be noted at the time of delivery (or not later than 15 days from date of delivery) and immediately reported to the delivering carrier. Request a written inspection report from Claims Inspector to substantiate any necessary claim. File claim with the delivering carrier, *not* with IMI Cornelius Inc.

1. After Dispensing Chest has been unpacked, remove shipping tape and other packing material.
2. Unpack LOOSE-SHIPPED PARTS. Make sure all items are present and in good condition.

Table 2. Loose-Shipped Parts

Item No.	Part No.	Name	Qty. 102	Qty. 220
1	775128000	Cold Plate	1	–
	775128020	Cold Plate	–	1
2	151741039	Knob, Dispensing Valve	4	4
3	160422000	Drain Hose Assy	1	1
4	186642000	Cup Rest	1	1
5	151202039	Dispensing Valve Assy	4	4
6	186573039	Drip Tray	1	1
7	178025100	Tapered Gasket, for 7/16 ”fitting	8	–
	178025200	Tapered Gasket, for 1/2 ”fitting	–	8
8	770702	Stainless Steel Adapter, 7/16-20 by 1/2-16	8	–
	770703	Stainless Steel Adapter, 1/2-16 by 1/2-16	–	8
9	140133000	Drain Hose Clamp	1	1
10	150058000	O-Ring	4	4
11	318049000	Tube Assy, Product Inlet, 72-in. lg	4	–
	174062272	Tube Assy, Product Inlet, 72-in. lg	–	4
12	160823000	Tube Assy, 12-in. lg, Cold Plate No. 1 Fitting to No. 1 Disp Valve	1	–
	174042212	Tube Assy, 12-in. lg, Cold Plate No. 1 Fitting to No. 1 Disp Valve	–	1
13	174041108	Tube Assy, 8-in. lg, Cold Plate No. 2 Fitting to No. 2 Disp Valve	3	–
	174042208	Tube Assy, 8-in. lg, Cold Plate No. 2 Fitting to No. 2 Disp Valve	–	3
14	150792100	Elbow, 7/16-20 by 1/2-16	1	–
	150792200	Elbow, 1/2-16 by 1/2-16	–	1
15	151664702	Plaque	1	–
	151664920	Plaque	–	1

INSTALLING UNIT

1. Wipe interior of Dispensing Chest with a clean cloth.
2. Install TAPERED GASKETS, (item 7) and applicable STAINLESS STEEL ADAPTERS (item 8) in COLD PLATE (item 1) as shown in Figure 3.
3. Place cold plate inside Dispensing Chest. Make sure cold plate fittings are positioned at front (dispensing valve side) of chest.
4. Seat O-RINGS (item 10) in threaded holes of lock shank and sleeve assembly as shown in Figure 3.
5. Install ELBOW (item 14) in threaded holes of each shank and sleeve assembly as shown in Figure 3. Tighten elbows until they make tight contact with O-rings. DO NOT OVERTIGHTEN ELBOWS.
6. Using TAPERED GASKETS (item 7) to seal connections, connect product inlet TUBE ASSEMBLIES (item 11) to cold plate inlet stainless steel adapters as shown in Figures 3 and 4.
7. Using TAPERED GASKETS (item 7) to seal connections, connect TUBE ASSEMBLIES (items 12 and 13) to cold plate outlet stainless steel adapters as shown in Figures 3 and 4.
8. Connect cold plate outlet tube assemblies to elbows on backs of applicable dispensing valves shank and sleeve assemblies.
9. Position DISPENSING VALVE ASSEMBLIES (item 5) in each shank and sleeve assembly so valve nozzles are down. Hold dispensing valve assemblies in place and secure by tightening coupling nuts.
10. Install plaque (item 15) on Dispensing Chest on long side opposite dispensing valves.
11. Install KNOBS (item 2) on dispensing valves.
12. Install DRIP TRAY (item 6) on Dispensing Chest by hooking back edge of tray under lip of faucet trim panel and positioning tabs on back of tray in holes in front of cold chest.
13. Place CUP REST (item 4) in drip tray.
14. Slide DRAIN HOSE CLAMP (item 9) up on short piece of hose on DRAIN HOSE ASS'Y (item 3) that will connect to fitting on bottom of drip tray (see Figure 3). Connect drain hose assembly to fitting extending from bottom front of Dispensing Chest and to drip tray fitting. Slide drain hose clamp up and secure drain hose to drip tray fitting.
15. Connect product tanks product lines to Dispensing Chest product inlet lines as shown in Figure 2. Seal metal-to-metal connections with tapered gaskets.
16. Install product tank liquid (outlet) quick disconnects on ends of product tanks product lines.

WARNING: To avoid personal injury and/or property damage, always secure CO_2 cylinder with safety chain to prevent it from falling over. Should the valve become accidentally damaged or broken off, CO_2 cylinder can cause serious personal injury.

17. Install CO_2 regulator assembly on CO_2 cylinder as shown in Figure 2. MAKE SURE CO_2 CYLINDER IS SECURELY FASTENED WITH SAFETY CHAIN.

WARNING: CO_2 displaces oxygen. Strict attention *must* be observed in the prevention of CO_2 (carbon dioxide) gas leaks in the entire CO_2 and soft drink system. If a CO_2 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 CO_2 gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

18. Install CO_2 lines from CO_2 regulator check valves to product tanks location.
19. Install product tank gas (inlet) quick disconnects on ends of product tanks CO_2 lines.
20. Route drip tray and Dispensing Chest drain hose to waste receptacle.

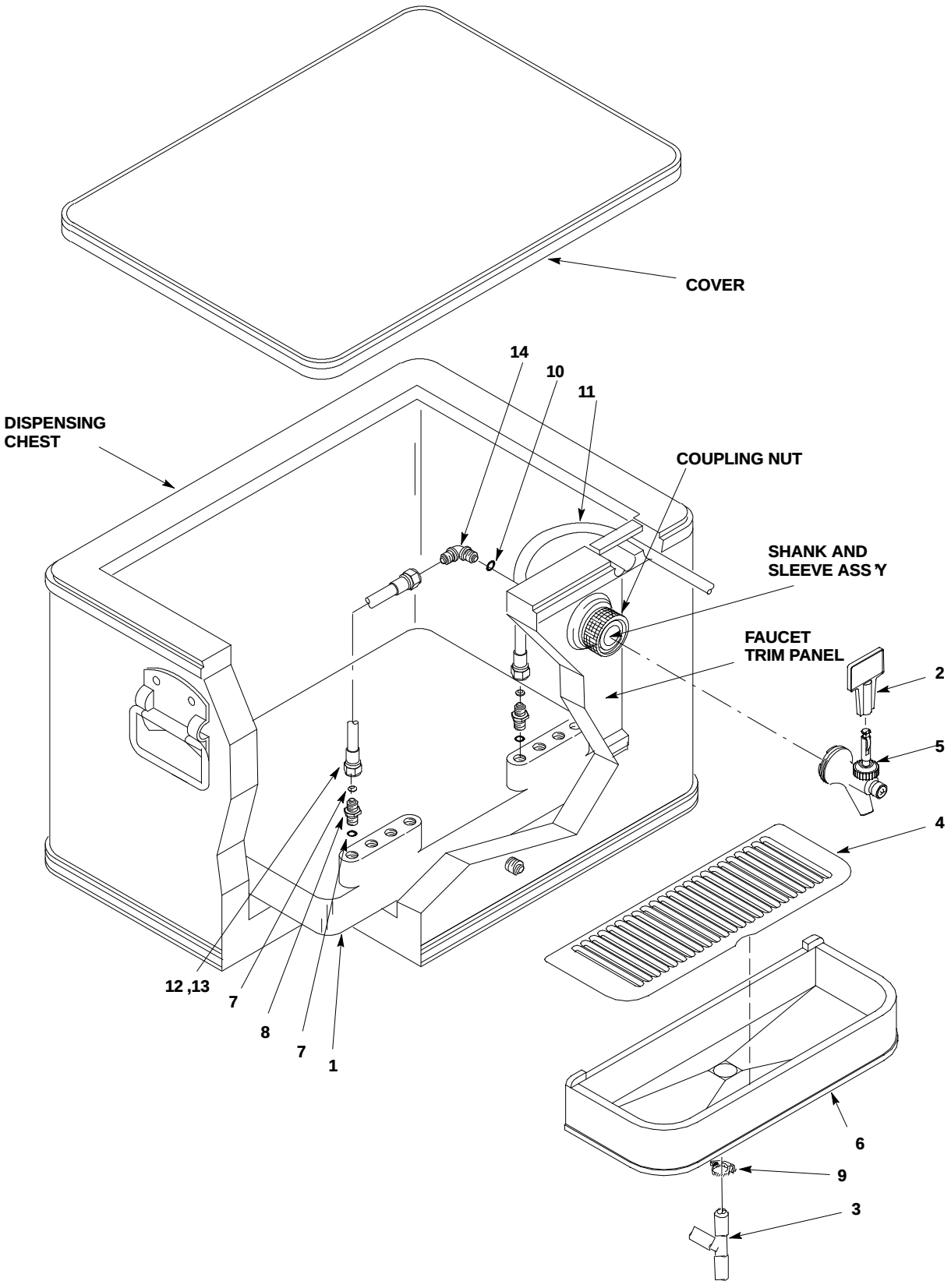

FIGURE 3. PARTS IDENTIFICATION

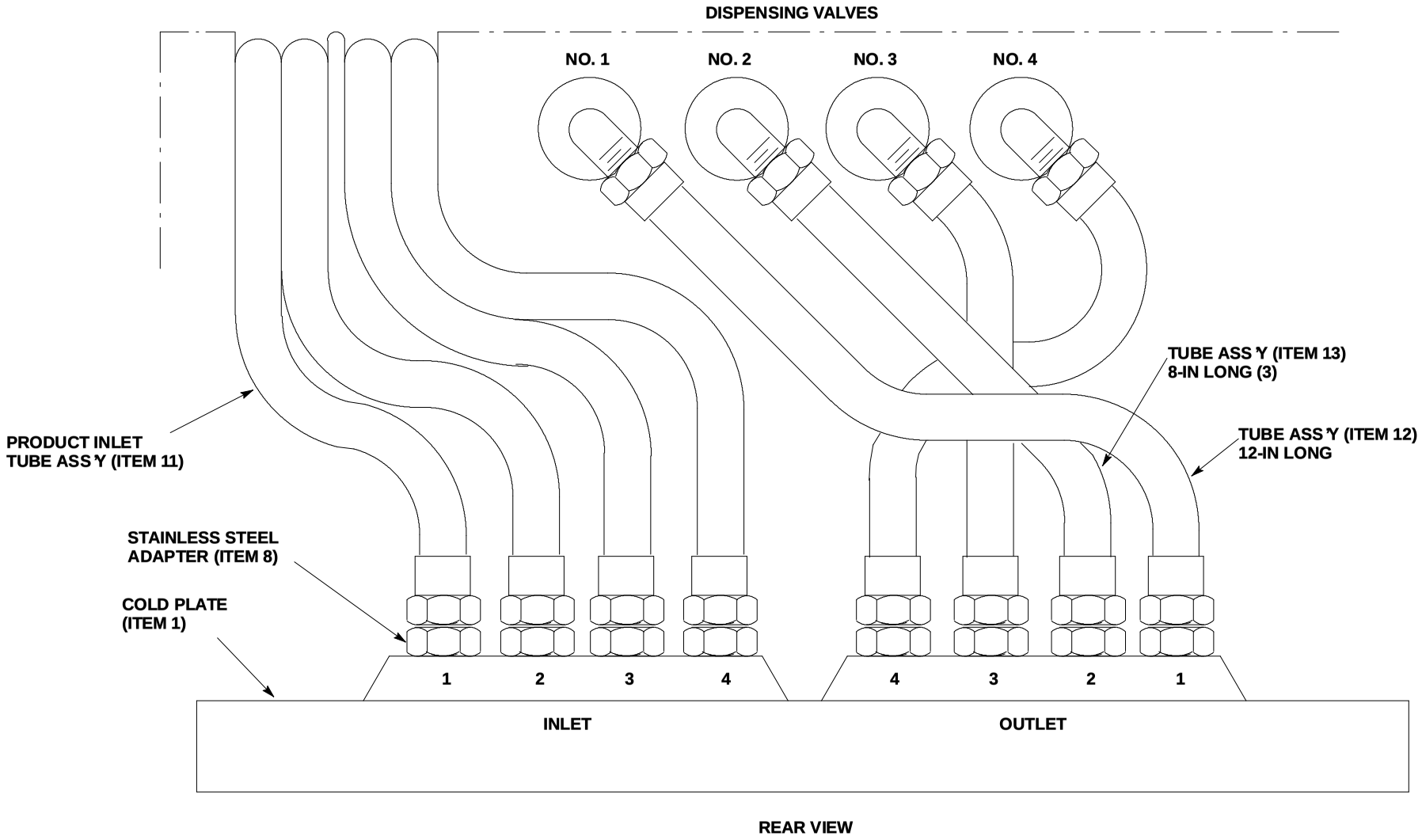

FIGURE 4. PRODUCT LINES INTERNAL CONNECTIONS

PREPARING DISPENSING CHEST FOR OPERATION

1. Adjust product tanks CO_2 regulators to specified pressure as instructed in Service and Maintenance section.
2. Sanitize Dispensing Chest as instructed before connecting and dispensing product.
3. Fill Dispensing Chest with clean ice.
4. Connect full product tanks into product systems.

OPERATION

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

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OPERATOR'S INSTRUCTIONS

This section covers operators instructions for operating controls, daily pre-operation check, adjustments, replenishing CO_2 and product supplies, cleaning, sanitizing, and checking Dispensing Chest ice supply.

OPERATING CONTROLS

(see Figure 5)

DISPENSING VALVE

Place cup or glass under dispensing valve nozzle. Pull dispensing valve knob forward until cup or glass is full, then release knob.

COMPENSATOR ADJUSTING SCREW

Compensator adjusting screw (located on side of dispensing valve) is used to adjust product dispensing flow rate.

DAILY PRE-OPERATION CHECK

1. Make sure CO_2 cylinder primary CO_2 regulator assembly 1800-psi gage indicator is not in shaded (CHANGE CO_2 CYLINDER) portion of dial. If so, CO_2 cylinder is almost empty and must be replaced.
2. Sufficient product supply in all product tanks. If not, replenish product supply.
3. Sufficient ice supply on cold plate. If not, replenish ice supply.

ADJUSTMENTS

PRODUCT TANKS CO_2 REGULATORS

Product tank CO_2 regulators should be checked periodically for proper pressure settings and if necessary, adjusted as instructed in SERVICE AND MAINTENANCE section.

DISPENSED PRODUCT FLOW RATE ADJUSTMENTS

If necessary to adjust dispensed product flow rate for a lower or higher flow rate, adjust dispensing valve compensator screw as instructed in SERVICE AND MAINTENANCE section.

REPLENISH CO_2 SUPPLY

CO_2 supply should be checked daily and if necessary, replenished as instructed in SERVICE AND MAINTENANCE section.

REPLENISHING PRODUCT SUPPLY

Product supply should be checked daily and if necessary, replenished as instructed in SERVICE AND MAINTENANCE section.

PRODUCT FLAVOR CHANGE

Product system *must* be sanitized as instructed in SERVICE AND MAINTENANCE section before installing new flavor product into the system.

REPLENISHING ICE SUPPLY

Periodically check and make sure sufficient amount of ice is maintained on cold plate for proper cooling of dispensed product.

CLEANING AND SANITIZING

CLEANING

Daily Cleaning.

Daily cleaning of Dispensing Chest should be performed at the end of daily operation as instructed in SERVICE AND MAINTENANCE section.

Periodic Cleaning.

Periodically clean cold plate and inside of Dispensing Chest as instructed in SERVICE AND MAINTENANCE section.

SANITIZING

Product systems should be sanitized every 90-days as instructed in SERVICE AND MAINTENANCE section.

CLEANING SYSTEM GAS CHECK VALVES

(see Figure 2)

The system gas check valves must be inspected and serviced at least once a year under normal conditions and after any CO_2 system servicing or disruption as instructed in SERVICE AND MAINTENANCE section.

SERVICE AND MAINTENANCE

This section describes service and maintenance procedures to be performed on the Dispensing Chest.

PREPARING DISPENSING CHEST FOR STORING, SHIPPING, OR RELOCATING

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

REMOVING COVER AND DRIP TRAY FROM DISPENSING CHEST

COVER

Lift cover straight up off Dispensing Chest to remove.

DRIP TRAY

1. Disconnect drip tray drain hose from fitting on bottom of Dispensing Chest.
2. Remove drip tray from Dispensing Chest by lifting front of tray up to disengage its tabs from holes in chest, then pull tray down.
3. Install drip tray on Dispensing Chest by reversing removal procedure.

PERIODIC INSPECTION

Check for loose dispensing valves and tighten as necessary using spanner wrench.

4. Check dispensing valves for dripping that indicates leaking. Repair as necessary.

ADJUSTMENTS

ADJUSTING PRODUCT TANK CO_2 REGULATORS

(see Figure 2)

Set product tank CO_2 regulators, using Cornelius PRE-MIX COMPUTER slide rule or bottling room chart, at equilibrium pressure for highest temperature encountered between product tank storage area and Dispensing Chest 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 Dispensing Chest line length and one pound for every 2-feet of vertical lift. Add one pound for every product tank on line over three tanks.

ADJUSTING DISPENSED PRODUCT FLOW RATE

(see Figures 5 and 7)

Rotate dispensing valve compensator adjusting screw (located on side of dispensing valve) to the left (counterclockwise) for higher product flow rate or to the right (clockwise) for lower product flow rate.

CLEANING

DAILY CLEANING

At end of daily operation, wash all external surfaces of Dispensing Chest, then wipe dry with a clean soft cloth. DO NOT USE ABRASIVE-TYPE CLEANERS. Remove cup rest from drip tray. Wash cup rest and inside of drip tray, then replace cup rest in drip tray.

Cleaning Cold Plate Exterior and Dispensing Chest Interior.

MATERIALS NEEDED (suggested)

1. Nylon or bristle brush (DO NOT USE WIRE BRUSH).
2. Pail.
3. Detergent soap solution.
4. Plain water.
5. Clean wash cloth.

A. Remove quick disconnects from product tanks. Rinse quick disconnects in warm water.

B. Using warm water, melt ice on cold plate.

CAUTION: When removing cold plate, be careful not to twist, kink, or stretch lines which may weaken and cause them to burst.

C. Very carefully, lift cold plate up and out or tilt cold plate up on edge.

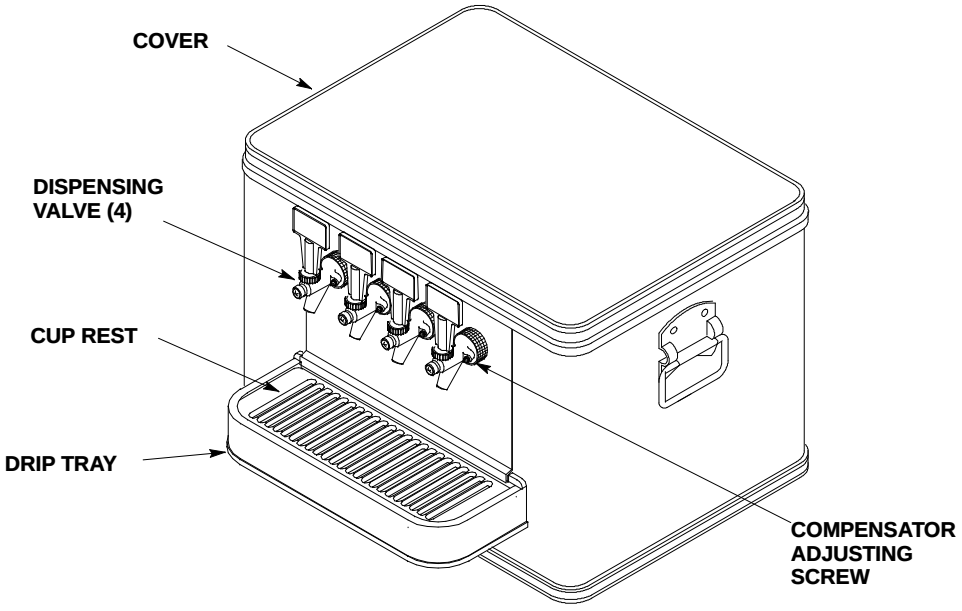

FIGURE 5. DISPENSING CHEST PARTS IDENTIFICATION

CAUTION: DO NOT USE CHLORINE CLEANSING POWDERS FOR CLEANING PURPOSES. Use of chlorine cleansing powder will cause corrosive action on cold plate and dispensing chest interior.

NOTE: Lime and scale deposits may be removed from ice bin walls and metal components inside chest by using cleaner such as Calgon Liquid Ice Machine Cleaner.

D. Using nylon or bristle brush (DO NOT USE WIRE BRUSH) and detergent soap solution, scrub entire surface (particularly the bottom) of cold plate and dispensing chest interior.

E. Rinse cold plate and Dispensing Chest interior with plain water.

F. Position cold plate in bottom of Dispensing Chest.

G. Wipe Dispensing Chest exterior with clean damp wash cloth.

H. Proceed to Sanitizing Product Systems and sanitize product systems as instructed.

SANITIZING THE UNIT

IMPORTANT: Only qualified personnel should perform sanitizing procedure.

The Unit must be sanitized every 90 days: every time a flavor change is made and at any time an off-flavor is noted in the product. To sanitize a Unit, proceed as follows:

1. Disconnect product line quick disconnects from product tanks, and rinse them in warm potable water.
2. Using a clean empty product tank, prepare a full tank of sanitizing solution by filling the tank with 70°F to 100°F (max) water and add 0.67 ounce per gallon of Chlor-Tergent (Oakite Products, Inc.) or equivalent sanitizer. This provides 200 PPM of chlorine.
3. Install lid on product tank, then shake tank to thoroughly mix the sanitizing solution.
4. Connect pressurizing line to the sanitizer tank.
5. Connect product line to the sanitizer tank.
6. Place waste container under the applicable dispensing valve.
7. Operate the dispensing valve until only sanitizing solution is dispensed, then close the valve.

CAUTION: Do not allow sanitizing solution to remain in product system longer than 15-minutes (max) to avoid damage to metallic parts of the system.

8. Allow the sanitizing solution to remain in the system for not less than 10 or more than 15-minutes (max) contact time.
9. Disconnect product line from the sanitizer tank.
10. Connect full product tank into the system.

WARNING: Flush sanitizing solution completely from the product system. Residual sanitizing solution remaining in the system could create a health hazard.

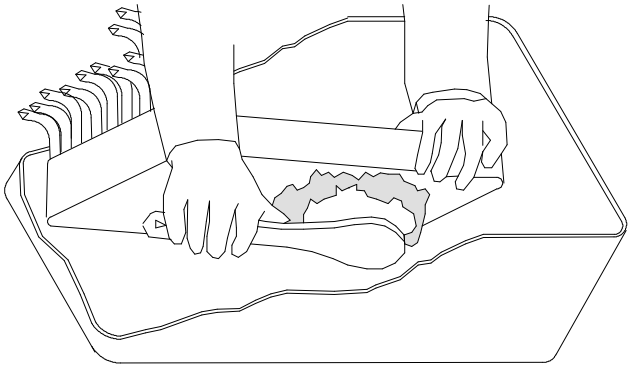

FIGURE 6. CLEANING COLD PLATE

11. Open dispensing valve to permit product to purge sanitizing solution from the system. Continue to draw from the valve until only product is dispensed.

12. Repeat steps 5 through 11 to sanitize remaining product systems.

13. Dispose of used sanitizing solution in a safe manner.

14. Thoroughly rinse inside and outside of product tank that was used for sanitizing solution to remove all solution residue.

PREPARE UNIT FOR SHIPPING, RELOCATING OR STORING.

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

Flush out lines and valves with potable water following the same plan as for sanitizing the Unit, then, using CO_2, blow all water from each system.

FILLING DISPENSING CHEST WITH ICE

1. Remove dispensing chest cover.

2. Fill dispensing chest with ice.

3. Install dispensing chest cover.

REPLENISHING CO_2 SUPPLY

NOTE: When indicator on CO_2 cylinder regulator assembly 1800-psi gage is in shaded (CHANGE CO_2 CYLINDER) portion of dial, CO_2 cylinder is almost empty and should be changed.

1. Fully close (clockwise) CO_2 cylinder valve.

2. Slowly loosen CO_2 regulator assembly coupling nut allowing CO_2 pressure to escape, then remove regulator assembly from empty CO_2 cylinder.

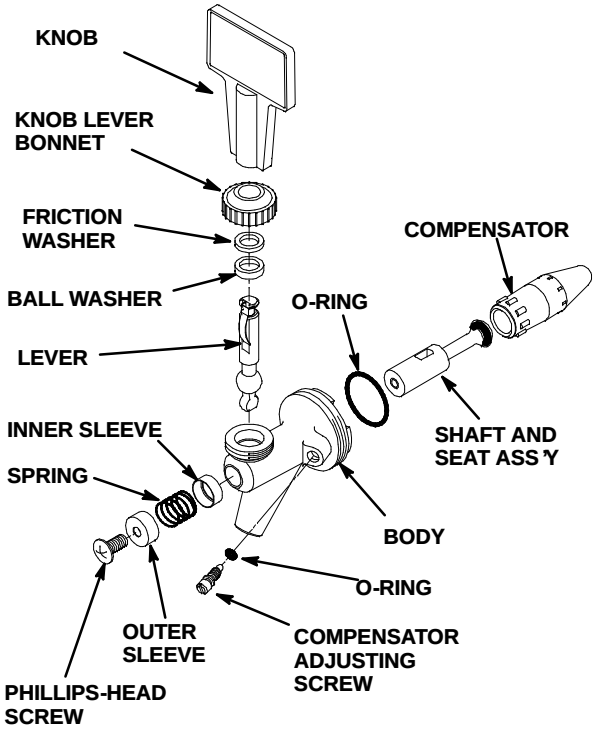

FIGURE 7. DISPENSING VALVE PARTS IDENTIFICATION

3. Unfasten safety chain and remove empty CO_2 cylinder.

WARNING: To avoid personal injury and/or property damage, always secure CO_2 cylinder with safety chain to prevent it from falling over. Should the valve become accidentally damaged or broken off, CO_2 cylinder can cause serious personal injury.

4. Position CO_2 cylinder in an upright position and secure with a safety chain.
5. Make sure gasket is in place inside CO_2 regulator coupling nut, then install regulator on CO_2 cylinder.
6. Open (counterclockwise) CO_2 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.)

REPLENISHING PRODUCT SUPPLY

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

SYRUP FLAVOR CHANGE

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

CLEANING CO_2 SYSTEM GAS CHECK VALVES (See Figures 2 and 8)

The CO_2 system gas check valves must be inspected and serviced at least once a year under normal conditions and after any servicing or disruption of the CO_2 system. ALWAYS REPLACE QUAD RING SEAL EACH TIME GAS CHECK VALVES ARE SERVICED.

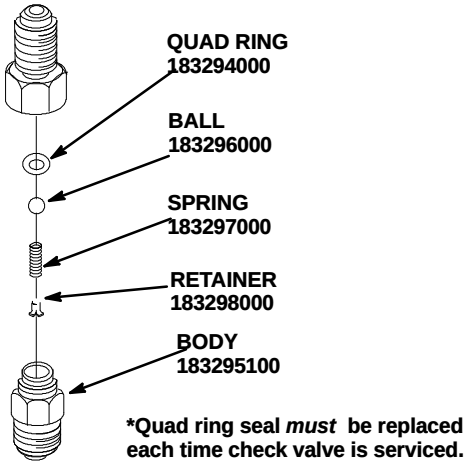

FIGURE 8. CO_2 GAS CHECK VALVE

TROUBLESHOOTING

IMPORTANT: Only qualified personnel should service Unit internal components.

WARNING: If repairs are to be made to the product systems, shut off CO_2 supply, disconnect product tanks, and bleed systems pressures before proceeding.

Trouble	Probable Cause	Remedy
DISPENSING STATION		
NO PRODUCT DISPENSED.	A. Product tank quick disconnects not properly attached to tank.	A. Attach quick disconnects properly.
	B. No product supply (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 causes dispensing problems. When dispensed product hits sharp edges of ice, carbonation is released from product.	
DISPENSED PRODUCT FOAMS AS IT LEAVES DISPENSING VALVE.	A. Cold plate ice supply depleted.	A. Replenish ice supply as instructed.
	B. Product tanks CO_2 regulator improperly adjusted.	B. Adjust product tanks CO_2 regulator as instructed.
	C. Dispensing valve restricted or dirty.	C. Sanitize product system as instructed.
	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, regulator, etc.). Install a clean CO_2 supply.

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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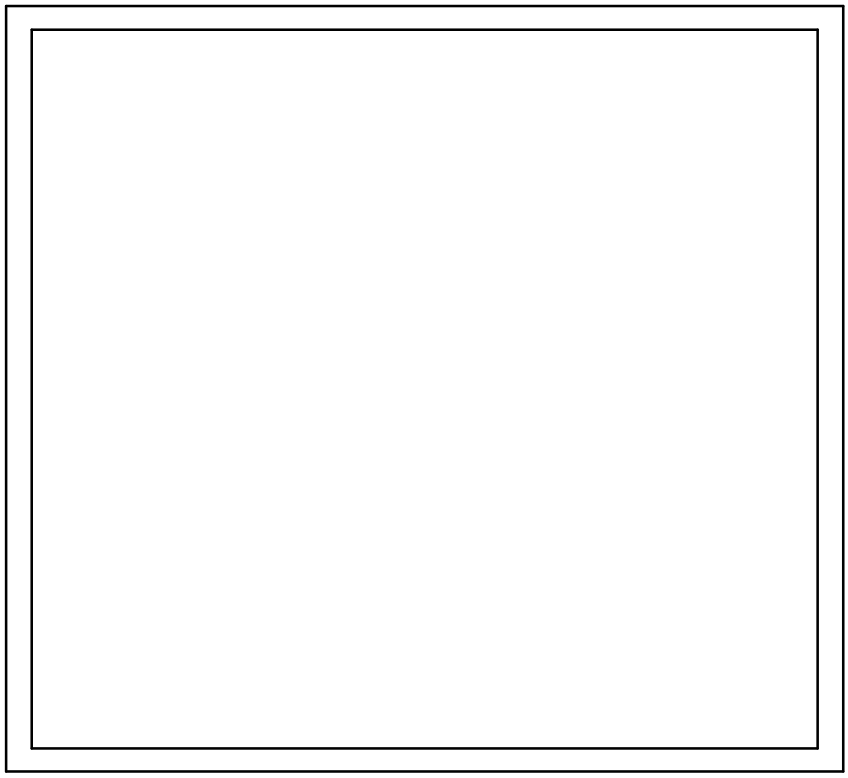

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