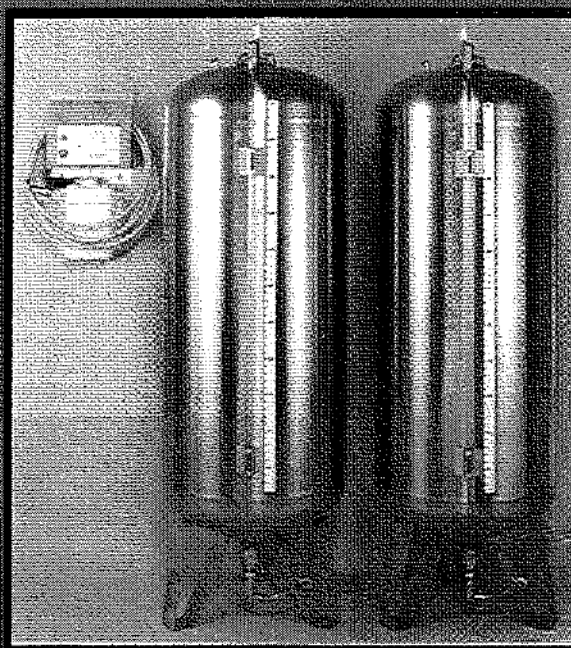

Installation Manual



INTERNATIONAL
BULK SYRUP



I PREFACE

This manual covers the installation of the Minnesota Valley Engineering International Bulk Syrup System, "InterBulk". The specific components of the InterBulk system described in this manual include:

- ◆ SPS-300L Bulk Syrup Tank (Part Number 99-2257-9)
- ◆ SPS-300L CB Mobile Bulk Syrup Tank (Part Number 99-2332-9)
- ◆ International Bulk Syrup Clean-In-Place Panel (Part Number 97-2310-9)
- ◆ International Bulk Syrup Label Kit
- ◆ Miscellaneous Installation Components Supplied By MVE

In addition, this manual also describes installation criteria and details for components associated with or connected to the InterBulk system, but not supplied by MVE. These associated components include:

- ◆ The beverage machine
- ◆ Bag-In-Box Pumps (Lancer or SHURflo)
- ◆ Automatic Selector Valve (SHURflo)
- ◆ Reverse Flow Inhibitors (SHURflo)
- ◆ The step-down voltage transformer

For further details regarding the installation or service of these components consult the manufacturers' installation and service manuals.

This manual is intended for use by experienced personnel only.

No attempt should be made to install or use this equipment until both this manual and the store operation manual have been read and fully understood.

To assure proper operation and reliability of the InterBulk system, it must be installed in accordance with these instructions. Failure to do so may void the manufacturer's warranty. Deficiencies in the installation are the responsibility of the install agent and/or other store owner or management.

PREFACE I

ABBREVIATIONS

The following abbreviations are used throughout this manual:

A.C.	Alternating Current	ASV	Automatic Selector Valve
BIB	Bag-In-Box	m	Meters
CIP	Clean-In-Place Panel	ml	Milliliters
CO ₂	Carbon Dioxide	mm	Millimeters
CRA	Customer Return Authorization	MPT	Male Pipe Thread (tapered thread)
ESJH	Emergency Syrup Jumper Hose	OD	Outside Diameter
F	Female	ppm	Parts Per Million
ft (or ')	Feet	psi	Pounds per Square Inch
FL	Flare	RFI	Reverse Flow Inhibitor
FPT	Female Pipe Thread (tapered thread)	SS	Stainless Steel
gal	U.S. Gallons	SSH	Syrup Supply Hose
HZ	Hertz (electrical cycles per second)	UNC	Unified National Course (straight thread)
ID	Internal Diameter	UNF	Unified National Fine (straight thread)
in (or ")	Inches	V	Volts
kg	Kilograms	VA	Volt-Amps
l	Liters	kPa	Kilopascals
M	Male	<	Less Than
		>	Greater Than

AMERICAN SIZES

This equipment is made in the United States and has American sizes of hardware. All hardware metric conversions are approximate and can vary in size.

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INTRODUCTION III

The International Bulk Syrup System, InterBulk, is designed to provide sanitary storage and continuous supply of Coca-Cola® syrup in conjunction with a bag-in-a-box (BIB) pump and automatic selector valve (ASV) system. InterBulk consists of two or more stainless steel bulk syrup tanks. Each tank holds 300 liters of Coca-Cola® syrup and replaces the bag-in-a-box (BIB) boxes or other syrup packages. The InterBulk system also features an automated clean-in-place panel (CIP) for sanitizing the syrup tanks before refilling.

InterBulk works with the BIB pumps and the automatic selector valve (ASV). Syrup is withdrawn from one syrup tank at a time and fed to the beverage machine upon demand by the BIB pumps. When one tank empties, the system automatically switches to the next full tank. The supply of syrup is continuous and requires no changing of empty boxes or tanks.

Before refilling an empty syrup tank, it must be sanitized. The empty tank is connected to the clean-in-place panel (CIP), which automatically rinses and sanitizes the tank, preparing it for the next bulk syrup delivery.

InterBulk syrup deliveries are part of the store's regular delivery service. The sanitized InterBulk tank is connected by a syrup delivery hose to a 300 liter bulk delivery tank located on the delivery truck. The InterBulk tank is automatically refilled with 300 liters of Coca-Cola® syrup during each bulk syrup delivery.

There are two models of InterBulk tanks. The first is the permanently installed, nonmobile, model SPS-300L, which is the most commonly used model. The second model is the SPS-300L CB, which is a mobile tank mounted on a caster base with a handle bar. The portable SPS-300L CB operates exactly the same as the SPS-300L, except it can be moved within the store for filling, sanitizing, or syrup dispensing.

To assure proper operation and reliability of the InterBulk system, it must be installed in accordance with these instructions. Failure to do so may void the manufacturer's warranty. Deficiencies in the installation are the responsibility of the installer and/or the store owner or management.

IV PARTS LIST

INTERBULK SYSTEM

The following components are part of an InterBulk System:

- ◆ Two or more: SPS-300L (or SPS-300L CB) Bulk Syrup Tank
MVE Part Number 99-2257-9 (or 99-2332-9)
- ◆ One International Bulk Syrup Installation Kit
With Clean-In-Place Panel
MVE Part Number 97-2309-9
- ◆ One InterBulk Label Kit
(Part number dependent upon language)

INTERBULK TANK

The following parts are included with each InterBulk Syrup Tank
(MVE part number 99-2257-9 or 99-2332-9)

PART NO.	DESCRIPTION	QTY	FUNCTION
49-1051-6	Air Intake Filter	1	Filters air inhaled into tank during syrup use
17-1924-1	Air Intake Check Valve	1	Protects filter against syrup contamination
34-1204-6	Hose Support Loop, Plastic*	1	Supports syrup supply hose on tank leg
29-1097-1	Round Head Machine Screw, SS (10/32 x 1/2" long, 18-8)*	1	Attaches hose support loop to tank leg
29-1099-1	Flat Washer (#10, SS)*	2	Part of hose support loop attachment
29-1107-1	Split Lock Washer (#10, SS)*	1	Part of hose support loop attachment
29-1064-1	Hex Nut (10/32, 18-8, SS)*	1	Part of hose support loop attachment
	User's Manual	1	Provides user information
	Sanitation Placard, Plastic	1	Record of sanitation procedures

* Parts not included with the portable syrup tank (MVE part number 99-2332-9)

PARTS LIST IV

INTERBULK INSTALLATION KIT

The following parts are included in the InterBulk Installation Kit (MVE part number 97-2309-9)

PART NO.	DESCRIPTION	QTY	FUNCTION
12-1004-2	Brass Hex Bushing (1/4" FPT x 3/4" MPT)	1	Component in the 3/4" Brass Sanitizer Coupling Assembly
16-1132-2	Brass Hose Barb (1/4" MPT x 1/4" ID barb)	1	Component in the 3/4" Brass Sanitizer Coupling Assembly
65-1177-2	3/4" Brass Quick Connect Coupling	1	Component in the 3/4" Brass Sanitizer Coupling Assembly
39-1160-6	3/4" Rubber Dust Plug	1	Sanitary dust plug for the 3/4" Brass Sanitizer Coupling
16-1142-1	Barbed Hose Cross, SS (1/2" x 3/8" x 3/8" x 3/8")	1	Connects tubing between BIB pumps and ASV (automatic selector valve)
16-1155-2	3/8" Barbed Hose Tee (3/8" x 3/8" x 3/8")	1	Inserts into 3/8" water line in beverage machine for 3/8" water supply line to the CIP
16-1160-2	90° Brass Elbow with hose barb (3/8" MPT x 3/8" barb)	1	Component in the Brass Drain Hose Coupling Assembly
65-1229-2	3/8" Brass Quick Connect Coupling	1	Component in the Brass Drain Hose Coupling Assembly
39-1161-6	3/8" Rubber Dust Plug	1	Sanitary dust plug for the 3/8" brass drain coupling
16-1161-2	1/4" Barbed Hose Tee (1/4" x 1/4" x 1/4")	1	Inserts into 1/4" 90 psi (6.2 bar) CO ₂ line to supply CO ₂ to CIP
16-1211-1	SS 3/8" Barbed Hose Pump Elbow w/ double O-ring	3	Connects 3/8" tubing to BIB pumps (1 per pump)
16-1212-6	1/2" Plastic Barbed Hose Elbow for ASV and RFI	3	Connects 1/2" tubing to ASV outlet and RFI inlet ports
16-1216-2	3/8" Hose Barb (1/4" MPT x 3/8" ID barb)	2	Connects to water isolation valve and water supply line to CIP
17-1492-2	Isolation/Shut-off Valve 3/8" ID (1/4" FPT x 1/4" FPT)	1	Isolates 3/8" water supply line to CIP

IV PARTS LIST

INTERBULK INSTALLATION KIT (continued)

PART NO.	DESCRIPTION	QTY	FUNCTION
16-1132-2	1/4" Hose Barbs (1/4 MPT x 1/4" barb)	2	Connects CO ₂ isolation valve and CO ₂ supply line to CIP.
17-1697-2	Isolation/Shut-off Valve, 1/4" ID (1/4" FPT x 1/4" FPT)	1	Isolates 1/4" CO ₂ supply line to CIP
28-1213-6	1/2" Clear Beverage Tubing (1/2" ID x 3/4" OD)	5 ft	Tubing to connect ASV outlet to SS barbed hose cross (Cut tubing as needed-minimize total tubing length from ASV to BIB pumps)
28-1214-6	3/8" Clear Beverage Tubing (3/8" ID x 5/8" OD)	20 ft.	Tubing to connect SS barbed hose cross to BIB pump inlets (Cut as needed – minimize total tubing length from ASV to BIB pumps)
34-1133-1	3/8" ID Stepless Hose Clamp (Oetiker)	28	Clamps 3/8" clear beverage tubing to barbs
34-1134-1	1/2" ID Stepless Hose Clamp (Oetiker)	10	Clamps 1/2" clear beverage tubing to barbs
38-1883-9	Label: Number "1"	1	Attaches to syrup tank #1
38-1884-9	Label: Number "2"	1	Attaches to syrup tank #2
38-1885-9	Label: Number "3"	1	Attaches to syrup tank #3, if store has a third tank.
46-1037-9	Cable Tie	10	Secures hose labels to hoses and miscellaneous line connections
46-1340-9	Cable Tie -12"	40	Miscellaneous line connections
46-1574-6	Cable Tie Holders w/adhesive & screw hole (1-1/8" x 1-1/8")	10	Miscellaneous line connections
65-1170-6	Female 2-pin Beverage Coupling w/ 1/4" barb	1	Coupling for 1/4" vent line
65-1230-6	Female 2-pin Beverage Coupling w/ 3/8" barb	1	Coupling for 3/8" sanitize line from CIP
97-2316-9	Syrup Supply Hose (1/2" ID) with 3/8" SS female coupling and rubber dust plug (initial length 20 feet)	2	Connects syrup tanks to ASV inlet (Cut tubing as needed-minimize overall length)
10526786	Reverse Flow Inhibitor (RFI), SHURflo	2	Prevents cross or back flow of syrup through ASV. Two RFI's required per ASV
97-2310-9	Clean-in-Place Panel (CIP)	1	Cleans syrup tanks

PARTS LIST IV

INTERBULK LABEL KIT (Part number dependent upon language)

The following parts are included in the InterBulk Label Kit (MVE part number dependent upon language).

DESCRIPTION	QTY	FUNCTION
Label for InterBulk CIP	1	Identifies CIP parts and basic procedures.
Notice Label for InterBulk tanks	2	Contains operational notices.
Sanitize/Vent Label for tank sanitize/vent fitting	2	Identifies sanitize/vent fitting.
Syrup Fill Label for tank syrup fill/sanitize fitting	2	Identifies syrup fill/sanitize fitting.
Syrup Supply/Drain Label for tank syrup supply/drain fitting	2	Identifies syrup supply/drain fitting and special notices.
Syrup Supply Label for hoses	2	Identifies syrup supply hoses.
Sanitize Tank Label for sanitize lines	2	Identifies sanitizing lines.
Vent Tank Label for vent line	1	Identifies vent line.
Drain Tank Label for drain line	1	Identifies drain line.

IV PARTS LIST

SPECIAL INSTALLATION PARTS

PART NO.	DESCRIPTION	FUNCTION
	Syrup Delivery Hose Union, SS, 3/4" male x 3/4" male with displacement bars	Joins two (2) syrup delivery hoses together for extended distance deliveries.
	Emergency Syrup Jumper Hose (ESJH) Kit with quick coupler nipple, hose splicer, 3-pin coupling, 3/8" hose clamps, and depressurizer vent	Connects emergency syrup supply from BIB or 5 Gal into InterBulk syrup supply hose (SSH) coupling.
	ESJH 3/8" Q.C. Nipple without poppet and with displace bar	Part of ESJH which connects into SSH coupler.
	Barbed Hose Splicer, SS, 3/8" x 3/8"	Part of ESJH kit used to join pieces of 3/8" clear beverage tubing.
	Female 3-Pin Coupling with 3/8" barb	Part of ESJH kit used to connect liquid withdrawal fitting on 5 Gal.
	Depressurizer, Vent, Coca-Cola, 5 Gal.	Part of ESJH kit used to allow air into 5 Gal as syrup is withdrawn.
16-1168-1	Barbed Tee, SS, 3/8" x 1/2" x 3/8"	Joins 1/2" and 3/8" clear tubing between ASV and 2 BIB pumps only.
11-1157-2	Tee, 1/4" F Fl swivel x 1/4" M Fl x 1/4" M flare	Connects into CO2 line on some beverage machines at pressure sensor switch. Use with flared hose barb and swivel nut for CO2 supply line.
10-1406-2	Tee, 3/8" ID compression x 1/4" MPT x 1/4" M flare	Connects into CO2 line on some beverage machines at back of A-B switch over valve. Use with flared hose barb and swivel nut for CO2 supply line.
16-1148-1	Flared Hose Barb, 1/4" x F Fl, SS	Used with swivel nut and tee to connect CO2 line into beverage machine.
16-1147-1	Swivel Nut, 1/4" F Fl, SS	Used with flared hose barb and tee to connect CO2 line into beverage machine.
10528327	Tee, 3/4" compression x 3/4" MPT x 3/4" compression, brass	Connects into 3/4" OD water line in some beverage machines for water supply line to CIP. Use with reducer adapter and hose barb with pipe thread.
10528335	Reducer Adapter, 3/4" FPT x 1/2" MPT brass	Used with tee and hose barb to connect water supply line.
10528343	3/8" Hose Barb with 1/2" FPT	Used with tee and reducer adapter to connect water supply line.

REQUIRED TOOLS AND SUPPLIES V

SPECIAL INSTALLATION PARTS

In some international markets or for individually identified stores Minnesota Valley Engineering (MVE) may supply additional special installation parts in order for the installer to perform a proper installation. When such special installation parts are required they must be ordered either by the installer or by the market or store management. Special installation parts will be listed on the packing list which accompanies the InterBulk installation kit or the special installation parts. See the table of "Special Installation Parts" for a list of special parts that can be supplied by MVE.

DEFECTIVE OR MISSING PARTS

Minnesota Valley Engineering has a very rigorous quality assurance program; however, for a variety of reasons it may be that a tank or installation kit arrives at a store with defective or missing parts. When such an incident occurs MVE is anxious to know about it. Defective or missing parts should be reported to Minnesota Valley Engineering at the address or telephone/fax/telex numbers shown on this manual.

MVE will replace missing or defective parts which are shown to be the result of manufacturer related failures. MVE will not cover labor, transportation, or other secondary or indirect costs related to the installation of the replacement parts.

MVE will not cover missing or damaged parts which are the result of events that occur during shipping, in transit storage or at any time after the parts leave MVE's factory. In many cases in transit damages or losses are covered by either the carrier or an insurance policy. It is, therefore, important that installer or initial recipient inspect the parts immediately upon their arrival for damage or loss. If loss or damage is found or

suspected, the installer or initial recipient should note the facts on the carrier's documents, notify the carrier or insurer immediately, and follow the instructions outlined by the carrier, the insurance policy, or their representatives.

Defective parts should be returned to the MVE factory as soon as possible or as specifically directed by MVE. In markets where an "InterBulk rollout" is being organized or managed by a local beverage supplier or McDonald's corporate office, all inquiries for disposition of defective parts should be directed to the local market's rollout manager. In "rollout" markets return of parts should be consolidated and coordinated by the local manager. In all cases, prior to return any parts contact Minnesota Valley Engineering at the address and telephone/fax/telex number shown in the Warranty and Claims Procedure, Section XVII.

- ◆ Shipping Instructions
- ◆ A "Ship-To" Address
- ◆ A Customer Return Authorization Number (CRA)

Parts which are returned without following these instructions may not receive credit.

Note: See MVE's Warranty/Service Policy, Section XVII.

Common sense would suggest that the installer:

- ◆ Carry with them a supply of certain key installation parts, and/or
- ◆ Inspect the tanks and installation kit before arriving at the installation site, and/or
- ◆ Carry several installation kits on their service vehicle.

V REQUIRED TOOLS AND SUPPLIES

INSTALLATION TOOLS

The following tools and others may be required to perform an InterBulk System installation. These tools are not supplied by Minnesota Valley Engineering.

1. Industrial Hammer Drill (used to drill holes into concrete or brick for mounting tanks, CIP, beverage tubing/lines, and drain line stand pipe). Examples: Milwaukee Model 5351 or Hilti Model TE-10
2. 3/8 inch (9mm or 10mm) Carbide Drill Bit
3. Shop or Industrial Vacuum Cleaner or Other Cleaning Equipment
4. Level
5. Basic Set of Beverage Installation and Shop Tools
 - ◆ Screw Drivers (straight/flat and Phillips)
 - ◆ Tubing Cutter or Sharp Knife
 - ◆ Hammer
 - ◆ Wrenches or Spanners
 - ◆ Allen or hex-head Wrenches, including 1/8 inch (3mm metric equivalent) with approximately 4 inch long stem
 - ◆ Stop Watch or Watch with Seconds Indicator
 - ◆ Crimping Tool (for crimping or tightening hose clamps/Oetikers)
 - ◆ Pliers
 - ◆ Wire Cutter and Stripper
 - ◆ Hand Saw (for plastic or copper for drain stand pipe)
 - ◆ Small Soldering Torch (if needed to pre-prepare copper stand pipe)
6. Other Tools as Required

REQUIRED SUPPLIES AND PARTS

The following supplies and parts are not supplied by MVE, but will be required for an InterBulk System installation. The items shown below must either be provided locally by the installer, the McDonald's store, the local McDonald's corporate office, or the local beverage supplier. If any doubt exists as to who is to supply specific parts or supplies, check with the local McDonald's market manager or the store owner or manager.

1. Step-Down Voltage Transformer, which complies with local electrical codes and McDonald's approval (Voltage reduction from local voltage to 24 volts (+10%/-15%) A.C., 50/60 HZ, 30 VA or more output).
2. 1/4" ID Beverage Tubing (rated for 90 psi/ 6.2 bars or higher) for:
 - a. Vent Line
 - b. Sanitize Line from CIP to 3/4" brass sanitizer coupling
 - c. CO₂ Pressure Supply Line from CO₂ source to CIP
 - d. CO₂ Pressure Supply Line from CO₂ source to BIB pumps, if not already installed
3. 3/8" ID Beverage Tubing (rated for 60 psi/4.2 bars or higher) for:
 - a. Water Supply Line from beverage system to CIP
 - b. Drain Line from brass drain coupling to sanitary drain

REQUIRED TOOLS AND SUPPLIES V

- c. Sanitize Line from CIP to 2-pin beverage connector with 3/8" barb
- d. Syrup Lines from BIB pumps to beverage machine and tower dispensing valves
- 4. Stepless Stainless Steel Hose Clamps (Oetikers) for locally supplied 1/4" ID and 3/8" ID beverage tubing (Because the outside diameter of various brands and models of beverage tubing can be different, whenever locally supplied tubing is used locally supplied hose clamps, which properly match the local tubing OD, will also be used.)
- 5. Miscellaneous Parts and Supplies, including:
 - a. Anchor Bolts for syrup tanks (maximum bolt hole diameter in the tank legs is 3/8" (9mm))
 - b. Anchors or Screws for mounting the clean-in-place panel (CIP) and hoses or clamps
 - c. Conduit Straps or Brackets for securing tubing
 - d. Extra Wire Ties
 - e. Flat Washers with holes large enough for anchor bolts for leveling and securing tanks
 - f. Locally Approved Electrical Wire Connectors or Tape
 - g. Teflon Tape (Recommended Width: (3/8"/9mm to 3/4"/19mm))
 - h. Plastic or Copper Tubing/Pipe/Elbow (with ID large enough to hold drain line) for drain stand pipe
 - i. Solder or Adhesive/Cement to construct drain stand pipe
 - j. Some Additional Stainless Steel Barbed Tees and Swivel Connectors may also be required for some installations
- 5. Bag-in-Box (BIB) Pumps, either Lancer or SHURflo (Pumps are normally supplied by the store, McDonald's, or the local beverage supplier.)
- 6. Automatic Selector Valve (ASV), SHURflo (ASV is normally supplied by the store, McDonald's, or the local beverage supplier.)
- 7. Mounting Board or Panel for BIB pumps and ASV (Optional item which may or may not be supplied by the store, McDonald's, or the local beverage supplier).

V REQUIRED TOOLS AND SUPPLIES

RECOMMENDED PARTS AND COMPONENTS

The following items are recommended for inclusion into each InterBulk system for ease of store operations and/or for ease of service. In some markets the items listed below may already be supplied either by MVE as part of the InterBulk installation kit or by McDonald's or the local beverage supplier. Check with the local market manager or store manager.

1. Isolation or Shut-Off Valve in the line supplying CO₂ or air pressure to the BIB pumps
2. Stand pipe at the sanitary drain for the drain line

INSTALLATION RESPONSIBILITIES VI

1. The installer is responsible for:

- a. Proper installation of the InterBulk system in accordance with these instructions and the requirements of the store management.
- b. Communications with the store to coordinate the install schedule.
- c. Inspection of the InterBulk components for damaged or missing parts.
- d. Supplying the tools and supplies listed in Section Three.
- e. Communicating with the store during installation.
- f. Complying with all relevant local codes and McDonald's and store guidelines.
- g. Testing the InterBulk system for proper operation.
- h. Explaining and demonstrating the InterBulk system to the store management.
- i. Completing any required documentation, including the final inspection checklist.
- j. Cleaning the installation site before leaving.

2. The store is responsible for:

- a. Ordering the InterBulk system.
- b. Working with the installer to identify sites for the tanks, CIP, BIB pumps, and ASV, as well as, sources for CO₂, potable water, electricity, and sanitary drainage.
- c. Removing any installation site obstructions prior to the installation.
- d. Participating in InterBulk training and mastering system operations.
- e. Ordering bulk syrup deliveries.
- f. Maintaining user's manuals and any other required documentation.

VII GENERAL INSTALLATION GUIDELINES

1. Syrup supply lines from the InterBulk tanks to the dispensing valves should always be 3/8 inch ID or larger to minimize pressure drop.
2. Syrup supply lines should be kept as short as reasonably possible between all points within a beverage system to avoid undue pressure drop or flow restriction.
3. As a portion of the overall beverage system, InterBulk must be installed within the following limits in order to ensure proper operation of both InterBulk and the full beverage system.

LENGTHS / DISTANCES	MINIMUM	MAXIMUM
BIB Pumps to Beverage Machine		150ft / 45m*
Tanks to Dispensing Valves		250ft / 76m*
Syrup Supply Hose Coupler to BIB Pumps (longest path)	5ft/ 2m	30ft / 9m
Syrup Supply Hose Coupler to ASV (longest path)	4ft/ 1m	20ft / 6m
Tanks to Sanitary Drain		50ft / 15m
CIP to Tanks		20ft / 6m
24 Volt transformer to CIP		50ft / 15m
VERTICAL HEIGHTS		
Tanks to Dispensing Valves		45ft / 13m*
Floor to ASV **	3ft/ 1m **	5ft / 1.5m
ASV to BIB Pumps		2ft / 0.6m
Floor to CIP	4ft/1.2m	6ft / 1.8m
Floor to Top of Stand Pipe at Sanitary Drain		3ft / 0.9m

* The actual maximum distance that syrup can be pumped by BIB pumps is dependent upon a wide variety of interrelated factors, including: syrup line size, syrup temperature and thickness, changes in height/elevation from the tank to the dispensing valve, BIB pump pressure, flow rate of the syrup and several other lesser factors. In general, the maximum distance will decrease if: line size decreases, syrup temperature decreases, syrup thickness increases, elevation increases, BIB pump pressure decreases and the flow rate of the syrup increases.

GENERAL INSTALLATION GUIDELINES VII

The figures stated above represent the limits for a properly designed and installed beverage system. For example, the line size is 3/8 inch ID tubing; syrup temperature and thickness are based on room-temperature syrup; the maximum lengths are with no increase in elevation; the BIB pump pressure is up to 70 psi (4.83 bars); and the flow rate is at a maximum of 1.25 U.S. gallons (4.7 liters) / minute of syrup. For conditions other than these, see the installation and service manuals provided by the BIB pump manufacturers for more details.

As a guideline, for each 1 foot (1/3 meters) that the syrup must rise to get to the beverage machine or dispensing valves the maximum allowable length/distance it can be pumped is reduced by 3 feet (1 meter).

**** A height of less than the maximum height is only allowable when SHURflo Reverse Flow Inhibitors are used on both Syrup Supply Hoses just prior to the Automatic Selector Valve(ASV). If Reverse Flow Inhibitors are not used, then the ASV must be located at the height of the 300 liter level on the syrup tanks or approximately 5 feet.**

NOTE: In stores where excessive pressure drop occurs either in the syrup line from the BIB pumps or in the water supply line to the CIP, it is possible to install a BIB pump into a pressurized line to act as a boost pump. However, to do so, the BIB pump must be preceded by a SHURflo Vacuum Regulator (SHURflo part number 94-054-00) and have access to a source of compressed air or CO₂ for operation.

4. The following guidelines apply to making joints or connections:

- a. Threaded connections in contact with syrup shall be sealed by an approved food grade o-ring or gasket.

- b. Hose or tubing connections to a hose barb shall be sealed using two (2) stepless stainless steel hose clamps (Oetikers) or an approved ferrule of the correct diameter for the tubing .

- c. Threaded connections not in contact with syrup shall be sealed by using Teflon tape.

5. Many of the threaded connections in the InterBulk system are stainless steel to stainless steel (SS) joints. While many of these threaded parts have been electropolished, it is still possible for galling to occur. Use care when working with SS threaded joints.

VII GENERAL INSTALLATION GUIDELINES

6. The following guidelines apply to the installation of beverage tubing:
 - a. Whenever possible, tubing should be bundled with cable ties when it is routed from one location to another within the store.
 - b. Tubing routed along walls or ceilings should be adequately supported with cable ties and mounting blocks.
 - c. Wherever possible, tubing should be routed vertically up walls and horizontally across ceilings rather than diagonally.
 - d. Avoid routing tubing over or close to heat sources.
 - e. Avoid securing tubing to electrical lines, conduit, junction boxes, or fixtures.
 - f. Avoid sharp bends in the tubing which might obstruct or slow the flow of syrup, water or compressed air or gas.
7. At the completion of an installation, the install site and equipment should be cleaned to insure an image of professionalism.

LOCATING INTERBULK EQUIPMENT VIII

1. If a survey of the store has recently been completed to select the best site for the InterBulk equipment, refer to the survey for guidance, but also double check the details to insure that no changes have occurred in the store and that not important facts have been overlooked. Consult with the store management to insure the accuracy of information and acceptance.
2. If no recent store survey exists for locating InterBulk conduct one with the assistance of the store. It is strongly recommended that the survey be done before delivery of the equipment.
3. When selecting the best location for the syrup tanks consider that the tanks must:
 - a. Be located inside the store.
 - b. Be within 85 ft (26 m) of where the syrup delivery tank will be positioned when making a syrup delivery if they use a single delivery hose and within 180 ft (55 m) if they use two (2) hoses.
 - c. Be within 20 ft (6 m) of the BIB pumps.
 - d. Be generally co-located with the beverage machine, see Section VII, General Installation Guidelines, paragraph 3, in order to supply the syrup to the beverage machine, and to have access CO₂ and potable water for sanitizing.
 - e. Have access to a sanitary water drain.
 - f. Have adequate space for access and operations, see Section XVI, InterBulk Component Identification and Specifications, The following are recommended space allowances:

SPACE ALLOWANCE	SIZE
Tank Diameter	22 in/560mm
Clearance Around Tank	6 in/150mm *
Tank Height	67.5 in/1715mm
Clearance Above Tank	12 in/305mm *

* The clearances are minimum recommendations to allow for ease of cleaning and connection of hoses to the top of the tank. In some stores limitations on available space may prevail or local health, sanitation or safety codes may specify other standards which must be followed.

- g. Be sufficiently clear of aisles and exits to not create an obstruction or a hazard.
 - h. Have easy access to the liquid level gauge and the fittings at both the top and the bottom of the tank.
4. When selecting the best location for the BIB pumps and automatic selector valve (ASV), consider that these components must:
 - a. Be within 20 ft (6 m) of the furthest tank (20 ft is the maximum length of the syrup supply hose which links the tanks to the ASV and BIB pumps), see Section VII, General Installation Guidelines, paragraph 3 and the manufacturers' manuals for the ASV and pumps.
 - b. Be supplied with CO₂ or compressed air of not less than 60 psi (4.1 bar) and not more than 70 to 75 psi (4.8 to 5.2 bars), see the pump manufacturer's manual.

VIII LOCATING INTERBULK EQUIPMENT

c. Be within the following height limits:

(1) ASV with SHURflo Reverse Flow Inhibitors (RFI) can be as low as 3 ft (1 m) and as high as 5 ft (1.5 m).

(2) ASV without SHURflo RFI must be set at the level of the 300 liter mark on the syrup tanks (approximately 5 ft/1.5 m).

(3) BIB pumps should be mounted not more than 2 ft (0.6 m) above the ASV.

d. Be installed to reduce pressure drop by minimizing the distance from the tanks to the ASV and from the ASV to the BIB pumps.

5. When selecting the best location for the clean-in-place panel (CIP) consider that the CIP must:

a. Be mounted vertically.

b. Be mounted at a height of approximately 4 ft to 6 ft (1.2 m to 1.8 m) above the floor.

c. Be easily accessible to store personnel in order to perform the sanitize operations.

d. Be within 20 ft (6 m) of the furthest tank (usually the closer the CIP is to the tanks the better it is for store operations).

e. Be supplied with filtered potable water at no less than 40 psi (2.76 bar), but preferably at about 60 psi (4.1 bar), of

dynamic water pressure (i.e. pressure measured when the water is flowing).

f. Be supplied with clean CO₂ gas at 90 psi (6.2 bar).

g. Be supplied with electrical power rated at 24 volts A.C., minimum 30 volt-amps, and 50 or 60 hertz (cycles per second) from a step-down transformer located within 50 ft (15 m) of the CIP.

6. Look for a location for InterBulk which has easy access for the syrup delivery, good lighting, and good ventilation.

CAUTION: Ventilation is especially important. CO₂ is heavier than air and does not support life.

7. Ensure that the InterBulk components are not too close to sources of heat that might cause heating of the syrup or affect the materials used in the system's parts.

8. Ensure that the InterBulk system does not prevent access to other equipment, service panels, electrical junction boxes or panels, or sewer or water traps or access ports.

9. If the portable SPS-300L CB tanks are to be used, ensure there is adequate space to move and position the tanks; there are no steep slopes; the floors are smooth and unobstructed; and any lifts or elevators which must be used can support at least 1000 lbs (455 kg).

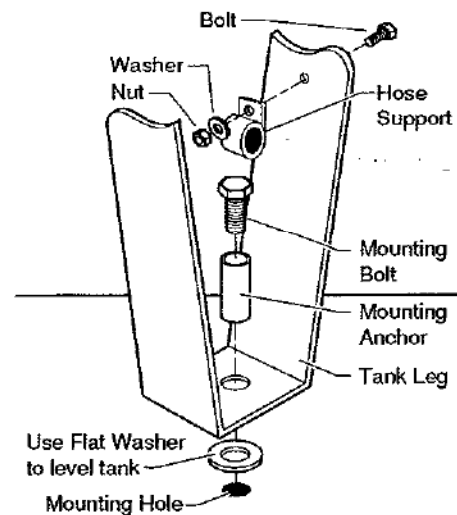
INSTALLATION OF SYRUP TANKS IX

1. Place the tanks in the proper position as indicated either on the survey form or as determined by the installer and store management's joint site selection. (Do not forget to allow the 6 inch (150 mm) clearance around the tanks whenever possible.)
2. Double check to ensure that space exists for all the other related components (CIP, ASV, BIB pumps) and that adequate access remains to all InterBulk components and surrounding equipment, storage, exits, etc.
3. Position the tanks so the Liquid Level Gauge is visible and the fittings at the top and bottom of the tank are easily accessible and do not protrude into an aisle way or exit.
4. Mark the location of the mounting holes of each leg on the floor.
5. Move the tanks and drill the holes for the anchor bolts.

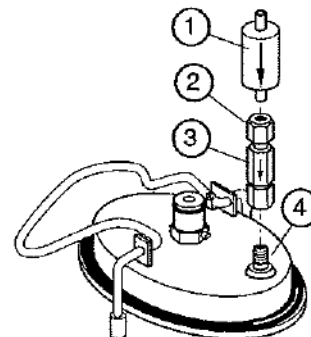
NOTE: Take care when drilling the holes in tile floors. Tile is brittle and can easily be cracked.

6. Vacuum or clean the dust from the holes.
7. Tap the anchors into the holes.
8. Set the tanks over the anchors.
9. Using a level, check to be sure the tanks are vertical (plumb). If necessary, use steel flat washers as shims to level the tanks. Failure to level tank will cause insufficient draining.

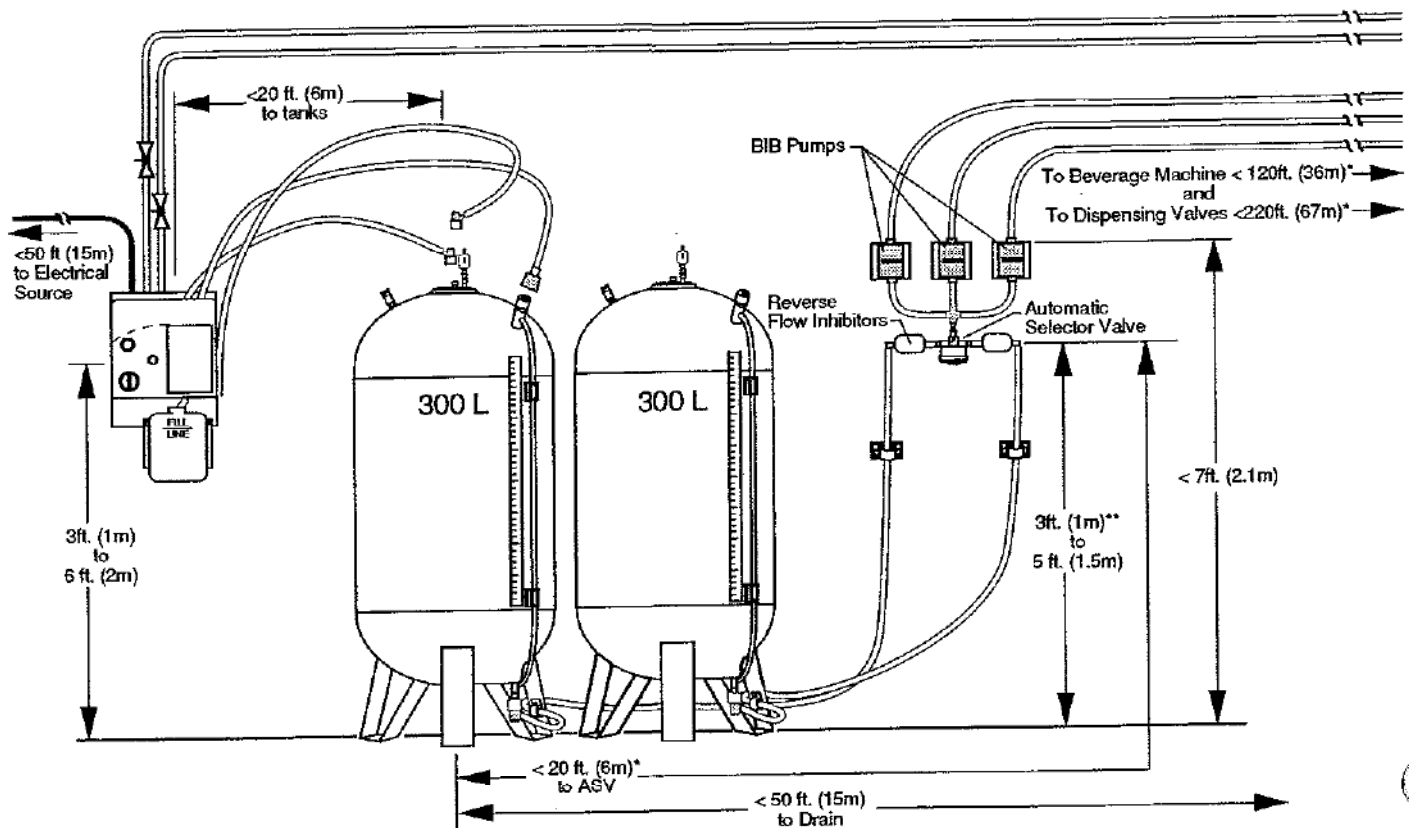
10. Bolt the tanks to the floor.



11. Insert the air intake filter (Item 1) into the compression nut (Item 2) and plastic ferrule on the check valve with the arrow pointing towards the check valve (Item 3). Lightly tighten the compression nut by hand.
12. Thread the check valve (Item 3) onto the threaded nipple located on the tank closure. Tighten by hand only.
13. Using the small bolt, nut and washers provided with the tank, mount the white plastic hose support loop to the inside of the front tank leg closest to location of the ASV and pumps. The hose must be passed through the support loop prior to assembly. (For installations with 3 or more tanks, this step may be skipped as the hose support loop will not be used.)



X INSTALLATION OF BIB PUMPS AND ASV



* Minimum line size 3/8". See Section VII for complete details.

** With RFI installed. See Section VII for complete details.

NOTE: Many stores may already be equipped with BIB pumps and automatic selector valve (ASV) systems to dispense syrup from BIB boxes. However, this section must still be reviewed because some changes to the pumps and ASV will be required when installing an InterBulk system. Some of the changes that may be required to an existing BIB system will cause an interruption of syrup dispensing, so plan changes and their timing carefully and review Section XII, Installation of Lines.

1. Refer to installation and service manuals provided by the manufacturers of the BIB pumps (either Lancer Corp. or SHURflo) and the automatic selector valve (ASV) (SHURflo) for more detailed instructions.
2. Start by selecting a position for the ASV and mark the location of the mounting holes or slots while holding the ASV on the wall or other support.

INSTALLATION OF BIB PUMPS AND ASV X

NOTE: The ASV must not be more than 5 feet (1.52 meters) above the floor and must be kept as close to the tanks as possible.

3. Using one of the uncut syrup supply hoses verify that the distance from the ASV location to the supply/drain fitting on the furthest tank is within the hose's length without crossing any aisles or open working spaces.
4. Select and mark the positions of the BIB pumps or their mounting panel. The position should be a maximum of 2 ft (0.6 m) above the ASV.
5. After verifying proper fit and positioning of the ASV and pumps, drill the holes for the anchors or mounting screws.

NOTE: Take care when drilling into tile to avoid cracking.

6. If anchors are to be used, clean out the holes and tap in the anchors.
7. Bolt or screw the ASV and BIB pumps to the wall.
8. Assemble the 1/2" and 3/8" clear beverage tubing between the ASV and pumps.
 - a. Cut a piece of 1/2" clear tubing to a length roughly equal to the distance between the ASV and the nearest pump.
 - b. Attach the 1/2" tubing to the stainless steel 1/2" x 3/8" x 3/8" x 3/8" barbed cross using two 1/2" ID hose clamps.
 - c. Cut three pieces of 3/8" clear tubing. Each piece should be long enough to

reach from the expected location of the SS cross to one of the BIB pumps.

- d. Attach the 3 pieces of 3/8" clear tubing to the SS cross using double 3/8" hose clamps.
- e. Hold the cross and tubing between the pumps and ASV and then estimate and tentatively note or mark the required length of each piece of tubing so that the distance between the ASV and each pump allows for only a small amount of slack.

NOTE: When assembling tubing or hoses to barbed connectors, remember to place the hose clamps on the tubing before inserting the barb.

- f. Cut off excess 1/2" tubing after leaving about 1" (25 mm) of extra or slack tubing and attach the open end to a 1/2" plastic barbed hose ASV elbow using double hose clamps.

NOTE The length of the tubing from the ASV to each pump should be as short as possible to prevent undue pressure drop and premature activation of the ASV during syrup dispensing. Only a small amount of slack or extra tubing should be left on each piece of tubing to allow for easy assembly and any future service or replacement.

- g. Connect the 1/2" plastic ASV elbow to the outlet port of the ASV and secure with the screws.

X INSTALLATION OF BIB PUMPS AND ASV

- h. Select the piece of 3/8" tubing to be routed to the pump closest to the ASV, after leaving 2" to 3" (50mm to 75mm) of extra tubing, cut off the excess tubing, and attach the open tubing end to one of the SS 3/8" barbed hose pump elbows with the double o-rings using two hose clamps. (If necessary, be conservative about how much tubing is cut off, more can always be cut off later.)
 - i. Connect the 3/8" SS pump elbow to the inlet port of the pump and secure with the screws or swing lock provided.
 - j. Repeat steps h and i above for the remaining pumps.
9. Connect the syrup supply hoses and SHURflo reverse flow inhibitors (RFI) to the ASV.
- NOTE: SHURflo reverse flow inhibitors (RFI) are strongly recommended for all InterBulk installations to prevent the reverse or cross flow of syrup between tanks.
- a. Cut two pieces of 3/8" clear beverage tubing to a length of about 3" (75 mm).
 - b. Remove the 3/8" hose barb from the RFI inlet port. (It will be relocated to the ASV inlet in step e.)
 - c. Attach one end of the 3" tubing to the 3/8" hose barb from the RFI and secure with two hose clamps.
 - d. Place two more hose clamps on the tubing, attach the open tubing end to the 3/8" hose barb in the RFI outlet ports, and secure with the two hose clamps.
 - e. Insert the barbs into the ASV inlet and RFI outlet ports and secure them with the screws.
 - f. Repeat steps b, c, and d above for the second 3" piece of 3/8" tubing.
 - g. Install cable mounting blocks, anchors, or similar devices into the wall behind the RFIs and attach the RFIs to the mounting blocks for support.
- IMPORTANT NOTE: If only 2 tanks are to be installed follow the instructions in paragraphs g to k. If 3 or more tanks are to be installed follow the instructions in paragraphs gg to jj.
- h. Attach the SS coupler of the syrup supply hose to the supply/drain fitting on the syrup tank, route the hose through the hose support loop on the tank leg, then back to the wall behind the tank and finally up to the RFI (or ASV, if no RFI is used). Repeat for the second hose and tank.
 - i. Allow about 12" (300 mm) of extra hose or slack over the length needed to properly reach from the tanks to the RFI (or ASV) and cut off the excess hose from both syrup supply hoses. (If necessary, be conservative about how much is cut off, more can always be cut off later.)
 - j. Place two 1/2" hose clamps on the hose, insert a 1/2" plastic barbed hose

INSTALLATION OF BIB PUMPS AND ASV X

ASV elbow into the open hose end, and secure with the hose clamps. Repeat for the second hose.

- k. Insert the barbed elbows with the syrup supply hose attached into the inlet ports of the RFIs and secure with the screws provided.
- l. Using mounting blocks or other anchor secure the syrup supply hoses to the wall to provide support and strain relief and to keep the hose off the floor.

NOTE: Be careful not to crimp or obstruct the flow of syrup through the hose. Gradual radius bends in the hose are preferred to sharp bends.

NOTE: If 3 or more tanks are to be installed follow instructions in paragraphs gg to jj.

- gg. Attach the SS coupler of the one of the syrup supply hoses to the supply/drain fitting on the tank which is the furthest from the ASV. Route the hose behind the tank and over to the furthest RFI on the ASV via path which does not cross or obstruct aisles or work spaces.

- hh. Follow the instructions in step h above but cut both hoses to the same length as the first hose measured in step gg above.

- ii. Follow the instructions in steps i and j above.

- jj. Using mounting blocks or other anchors secure the syrup supply hoses to the wall at one or more positions to provide strain relief and support.

NOTE: When 3 or more tanks are installed both syrup supply hoses must be able to reach any InterBulk tank. See the note under paragraph k above.

NOTE: The BIB pumps are now ready to be connected to the beverage machine which will be described in Section XII.

XI INSTALLATION OF CLEAN IN PLACE PANEL

INSTALLATION OF THE CLEAN-IN-PLACE PANEL

1. Hold the clean-in-place panel (CIP) against the wall in the selected location. Use a level to ensure that the panel is vertical or plumb and mark the location of the 4 mounting holes.
2. Remove the CIP and drill the 4 holes for the anchors or screws.

NOTE: Take care when drilling into tile as it cracks easily.
3. Tap the anchors into the holes, if used.
4. Install the screws into the top two (2) holes or anchors and tighten half way.
5. Hang the CIP on the first two mounting screws and double check the position of the other holes and the level of the CIP. If everything is satisfactory, tighten the first mounting screws.
6. Install and tighten the remaining mounting screws.
7. Attach the sanitize solution container to the bottom of the CIP, being sure to place the sanitizer inlet tube into the open container.
8. Remove the screws from the front panel of the CIP (be careful not to misplace or lose the screws) and carefully lower panel to expose the internal operating components of the CIP.

9. Remove the curved top panel of the CIP cabinet by gently applying pressure to the panel to dislodge it from the sides of the cabinet.
10. Lift out the electrical conductor wire (be careful not to damage the wire's connections with the CIP circuit board or solenoids) and unroll it.
11. Install the 24 volt step-down transformer at the nearest usable electrical junction box or outlet, following the manufacturer's installation instructions and any local code requirements.
12. Route the CIP electrical wire to the transformer so that it is safely out of the way and firmly secured to the walls, ceiling and other supports.
13. Cut off any excess wire or splice in any additional wire needed, strip the insulation from the ends of the wire, and connect to the 24 volt contacts on the transformer.
14. Connect the transformer into the store's electrical circuit, carefully following the manufacturer's instructions and any local codes.

NOTE: The CIP is ready to be connected to the CO₂ and water supplies and to the sanitize and vent lines, which will be described in Section XII

INSTALLATION OF CLEAN IN PLACE PANEL XI

4 Mounting Holes
Anchors and Screws

CIP Electrical Wire

Sanitizer Inlet Tube

Sanitize Solution Container

FILL LINE



XII INSTALLATION OF LINES

NOTE: A total of 6 to 10 lines must be installed to connect all the components of the InterBulk and beverage systems together. Some of these lines may already be in place and can be used without any changes. Others either do not exist or may need to be replaced.

The following is a list of all the interconnecting lines. The installation of some of these lines will cause an interruption of the store's beverage service. These lines have been marked with an asterisk (*). If this portion of the installation is being performed during normal store hours, care should be taken to minimize interruption and timed to cause the least interference.

LINE DESCRIPTION	QTY	ID SIZE	FROM	TO
Syrup Lines *	3 or 2	3/8"	Pumps	Beverage Machine
Pump Gas Lines *	1	1/4"	Beverage Machine	Pumps
Water Supply Line*	1	3/8"	Beverage Machine	CIP
CO2 Supply Line *	1	1/4"	Beverage Machine	CIP
Sanitize Line	1	3/8"	CIP	Tanks
Sanitize Line	1	1/4"	CIP	Tanks
Vent Line	1	1/4"	Tanks	CIP **
Drain Line	1	3/8"	Tanks	Drain

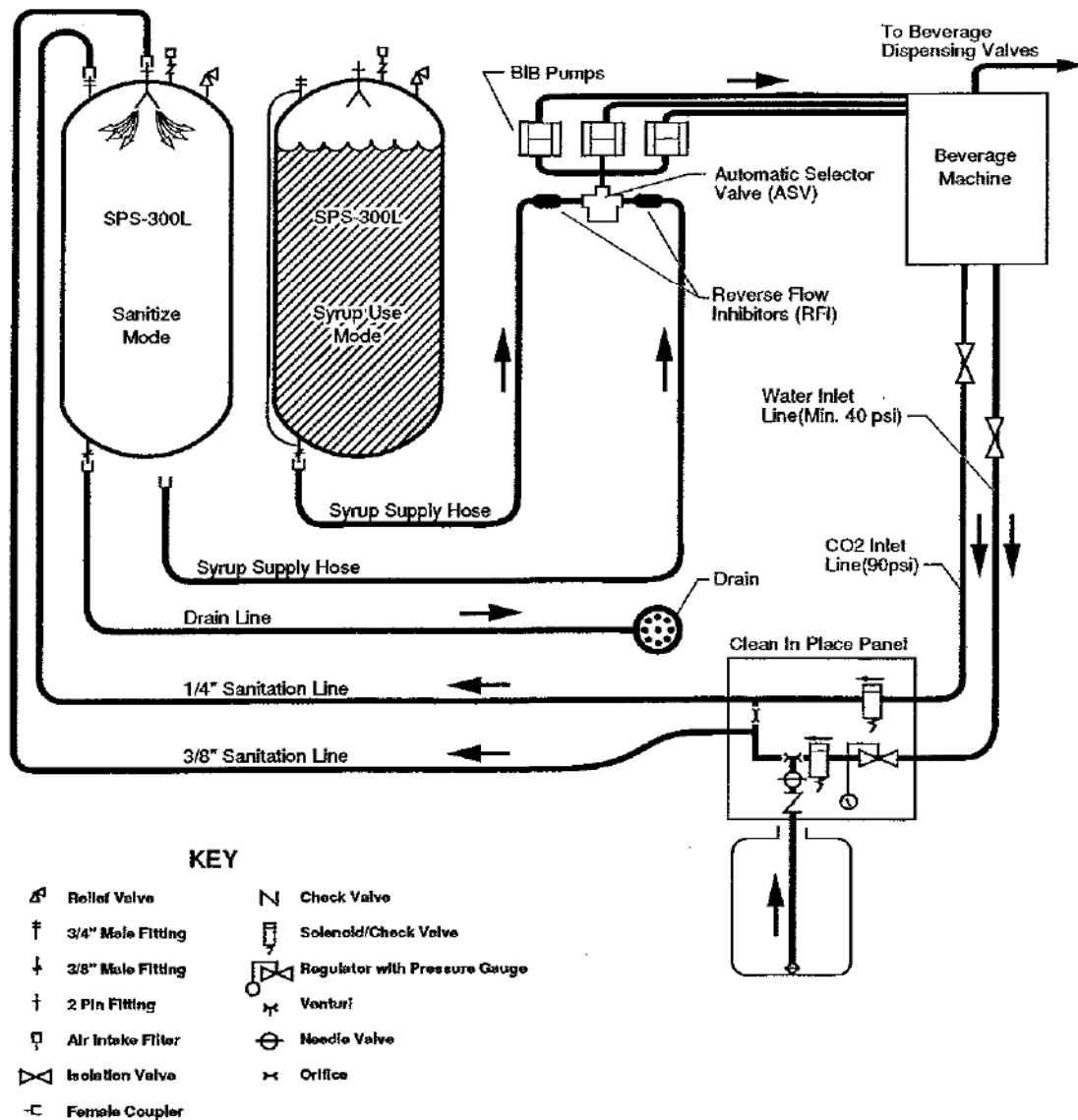
* *The installation of these lines will cause an interruption of the store's beverage service.*

** *In stores where syrup is being off-loaded from the syrup delivery tank using CO₂ gas, and especially if the store's tanks are located in a basement or very low ventilation room, then it is strongly recommended that the vent line be routed outdoors.*

CAUTION: CO₂ is heavier than air and does not support life.

NOTE: The installation instructions in this section are for a store which does not have an existing BIB system for Coca-Cola Classic® syrup. If the store has an existing BIB system for Coke® then some adjustments will have to be made to the installation steps to minimize the interruption to the store's operations.

INSTALLATION OF LINES XII



1. SYRUP LINES (2 or 3 lines, one for each BIB pump and Coke® syrup filter)

- Route 3/8\" beverage tubing from the first BIB pump along the walls, over the ceiling, and back down to the beverage machine to the first of the Coca-Cola Classic® syrup filters. Cut the tubing leaving about 3' (1 m) of extra tubing. Mark or tag each end of the tubing for easy identification.
- Repeat step 1 above for the other one or two BIB pumps and Coke® syrup filters. Be sure to mark the lines for easy identification at both ends.
- Insert a 3/8\" hose barb elbow (supplied with the pumps) into the pump end of each line and secure with double hose clamps.

XII INSTALLATION OF LINES

- d. Insert the o-ring portion of each barb into the outlet port of appropriate BIB pump and secure with the swing locks and/or screws.
- e. Attach the 3/8" syrup filter connector to the beverage machine ends of the tubing and secure with double hose clamps. Do NOT disconnect the existing syrup lines from the filters yet, as this would interrupt beverage dispensing.

NOTE: Perform the final step of connecting the InterBulk syrup lines to the beverage machine only after other final installation steps are complete and syrup is in the bulk tanks.

- f. Disconnect the existing syrup lines from the syrup filters and connect the new 3/8" syrup lines to each filter. Inspect for leaks.

2. PUMP GAS LINE

- a. Route a single 1/4" (3/8" line is also acceptable) from the BIB pumps to the beverage machine.
- b. Based on the instructions from McDonald's to use either compressed air or CO₂, locate the gas line connection point in the beverage machine.

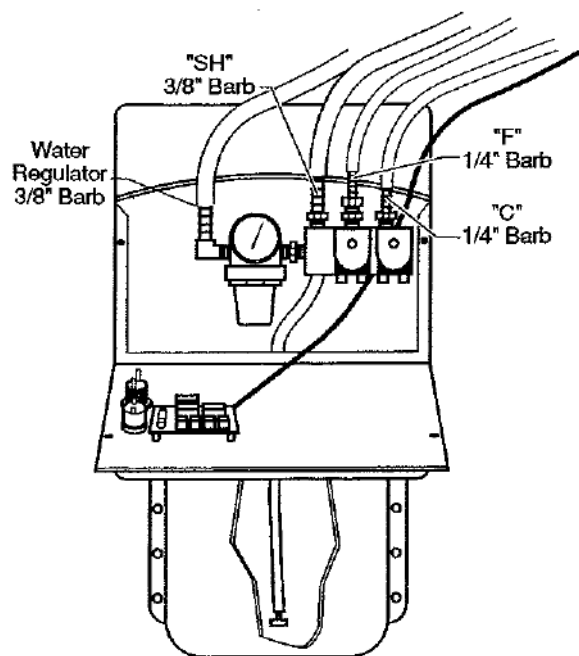
NOTE: Whether compressed air or CO₂ is used, a minimum pressure of 60 psi (4.15 bars) will be required. The connection point for the gas line to the

beverage machine will usually be downstream of the pressure regulator that supplies gas either for BIB pumps or the 5 gal tanks. If no such connection is available, then it will be necessary to splice into the appropriate pressure source with a "tee" and add a pressure regulator to control the gas pressure to the BIB pumps.

- c. Cut off the line leaving about 3' (1 m) of slack or extra line.
- d. At the beverage machine end of the gas line, connect the appropriate adapter needed to make the gas connection into the beverage machine.
- e. At the pump end of the line attach either a barbed cross or tee with 1/4" branches and secure the cross/tee with double hose clamps. (A cross is used if there are 3 pumps and a tee is used if there are only 2 pumps.)
- f. Cut and attach pieces of 1/4" tubing to each branch of the cross/tee with double hose clamps. The 1/4" tubing branches should be long enough to reach from the cross/tee to each BIB pump.
- g. Attach one 1/4" barbed gas inlet adapter or elbow to each gas line branch and secure with double hose clamps.

NOTE: DO NOT make the final connections to the BIB pumps or to the beverage machine until the store is ready to start dispensing syrup from the InterBulk system.

INSTALLATION OF LINES XII



- h. Insert the gas inlet adapters/elbows into the gas inlet ports on the BIB pumps and secure with the swing lock and/or screws.
- i. Connect the gas line to the beverage machine. Bubble test and inspect for leaks.

3. WATER SUPPLY LINE

- a. Route a 3/8" line from the CIP to the area of water boost pump and filter on the beverage machine.
- b. Cut the tubing leaving about 3' (1 m) of slack or extra tubing.

NOTE: Recommend that at this step a 1/4" line also be run from the CIP to the beverage machine for the CO₂ supply line.

- c. Attach the 3/8" line to the hose barb on the water regulator in the CIP and secure with double hose clamps.

- d. Assemble the 3/8" ID water isolation valve to the two 3/8" ID hose barbs sealing the threads with Teflon tape.
- e. Select a convenient location in the water supply line to insert the isolation valve and cut the water supply line.
- f. Insert the isolation valve hose barbs into each end of the just cut water supply line and secure both sides with double hose clamps.
- g. Close the water isolation valve until all the lines to and from the CIP have been fully installed.

NOTE: The next step will cause an interruption to the flow of water to the beverage system, so plan its timing and conduct carefully.

- h. Turn off the water supply to beverage machine.
- i. Carefully cut the beverage machine's water line at a convenient point after the boost pump and filters. Remember, the line will still be pressurized and have some water contents when it is cut.
- j. Insert the 3/8" x 3/8" x 3/8" barbed tee into the cut line and secure with double hose clamps on both barbs. (In some beverage machines the main water line may be a 3/4" OD tubing, instead of 3/8" ID beverage tubing. If this is the case, use the brass 3/4" x 3/4" MPT x 3/4" compression tee to splice into the main water line. The assembly of the compression tee also includes the 3/4" FPT x 1/2" MPT

XII INSTALLATION OF LINES

brass reducer adapter and the 1/2" FPT x 3/8" brass barb. Use teflon tape to seal the threaded joints in the assembly.)

- k. Attach the 3/8" water supply line to the 3/8" barb on the tee and secure with double hose clamps.
- l. Turn on the water supply to the beverage machine. Inspect for leaks.

4. CO₂ SUPPLY LINE

- a. If the 1/4" CO₂ line is not already in place, run a 1/4" line from the CIP to beverage machine. The connection will be made near the A-B gas switch-over valve.
- b. Cut the tubing leaving about 3' (1 m) of slack or extra tubing.
- c. Attach the CO₂ line to the 1/4" barb (marked "C") on the upper right side of the manifold block inside the CIP and secure with double hose clamps.
- d. Assemble the 1/4" ID CO₂ isolation valve to the two 1/4" ID hose barbs sealing the threads with Teflon tape.
- e. Select a convenient location in the CO₂ supply line to insert the isolation valve and cut the CO₂ supply line.
- f. Insert the isolation valve hose barbs into each end of the just cut CO₂ supply line and secure both sides with double hose clamps.
- g. Close the CO₂ isolation valve until all the lines to and from the CIP have been fully installed.

NOTE: The next steps will interrupt the flow of CO₂ to the beverage system, so plan their timing and conduct carefully.

- h. Turn off the CO₂ supply to the beverage machine and vent the gas pressure downstream of the A-B switch-over valve.
- i. Carefully cut the beverage machine's CO₂ line at a convenient point downstream of the A-B switch-over valve. Remember to ensure the line pressure is vented before cutting as this line carries 90 psi (6.2 bar) of gas when under pressure.
- j. Insert the 1/4" x 1/4" x 1/4" barbed tee into the just cut CO₂ line and secure both sides with double hose clamps. Some beverage machines may not have a CO₂ line that can be so easily cut and spliced, in which case use either alternative listed below.

Alternative No. 1:

For older models of Multiplex (1200, 2000, and 72) at the CO₂ tee to the pressure switch, insert a second tee (1/4" female flare swivel x 1/4" male flare x 1/4" male flare fitted with 1/4" hose barb and swivel nut) and attach the 1/4" CO₂ supply line to the barb.

Alternative No. 2:

For newer models of Multiplex (37 and 44) at the back or the A-B switch-over valve, remove the compression elbow and insert a tee (3/8" ODT compression x 1/4" MPT x 1/4" male flare fitted with 1/4" barb and

INSTALLATION OF LINES XII

swivel nut), and attach the 1/4" CO₂ supply line to the barb.

NOTE: MVE can supply the tees described above and the 1/4" barb and swivel nut. These alternatives solutions may also apply to a variety of other beverage machines.

- k. Attach the 1/4" CO₂ supply line to the 1/4" barb and secure with double hose clamps.
- l. Turn on CO₂ supply to the beverage machine. Bubble test and inspect for leaks.

5. SANITIZE LINES AND VENT LINE

- a. Run two sanitize lines and one vent line from the CIP to the furthest tank; two lines are 1/4" and the third is 3/8". Mark or tag the two 1/4" lines at both ends so they can be easily identified.

CAUTION: If the syrup is being delivered to the store using CO₂ gas, and if the tanks are in the basement or a poorly ventilated room, then the vent line should be routed outside rather than to the CIP.

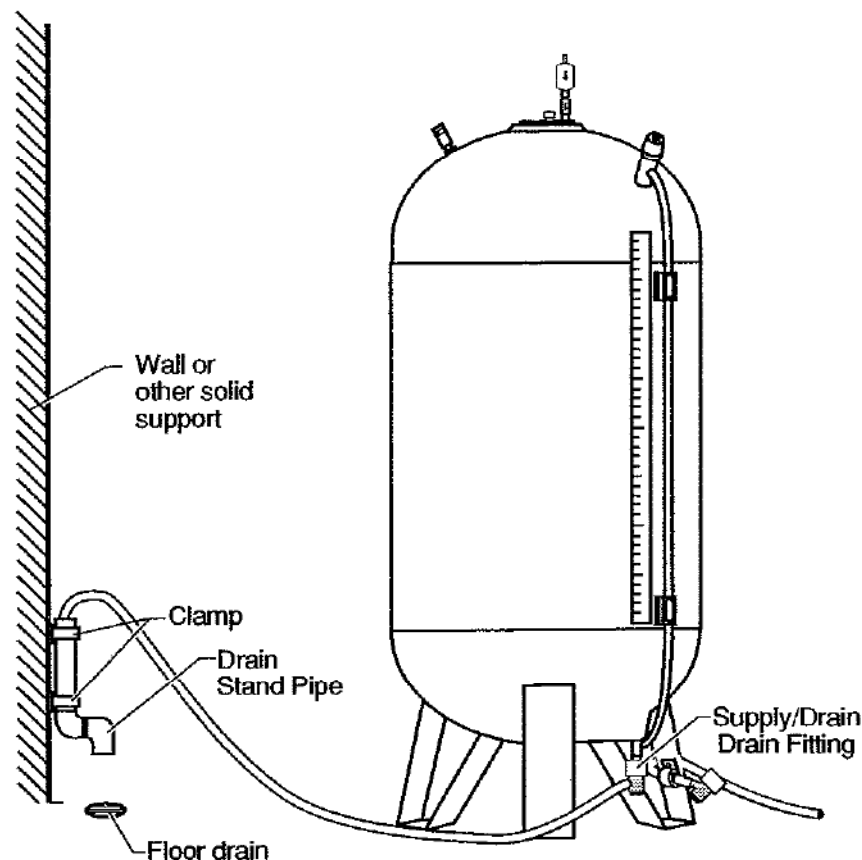
- b. Cut the tubing so that there is 3' to 5' (1m to 1.5m) of slack or extra tubing at the tanks.
- c. Attach the female 2-pin beverage coupling with the 3/8" barb into the 3/8" line (this is now the first sanitize line) and secure with double hose clamps.

- d. Attach the female 2-pin beverage coupling with the 1/4" barb into one of the 1/4" lines (this is now the vent line) and secure with double hose clamps.
- e. Assemble the 3 piece brass 3/4" sanitize quick connect coupling assembly, making sure to seal the threaded joints with Teflon tape. (The 1/4" MPT x 1/4" barb connector screws into the 1/4" FPT x 3/4" MPT hex bushing which screws into the 3/4" FPT quick connect coupling.)
- f. Attach the 3/4" black sanitary plug onto the quick connect coupling assembly.
- g. Attach the last 1/4" line to the 1/4" barb on the 3/4" coupling assembly (this is now the second sanitize line) and secure with double hose clamps.
- h. Attach the 1/4" sanitize line to the 1/4" barb (marked "F") on the top center of the manifold block in the CIP and secure it with double hose clamps.
- i. Attach the 3/8" sanitize line to the 3/8" barb (marked "SH") on the top left of the manifold block in the CIP and secure it with double hose clamps.
- j. Attach the 1/4" vent line to the CIP using cable ties and the slots in the right side of the CIP cabinet.

XII INSTALLATION OF LINES

- k. Reassemble the CIP cabinet by replacing the curved top panel (making sure the 4 panel tabs are fully inserted into the slots on the cabinet sides) and by carefully raising the front panel into position and then securing it with the screws which were previously removed.
 6. Open the isolation valves on the CO₂ and water supply lines.
 7. Inspect all lines for leaks and bubble test and inspect the CO₂ and compressed air line and connections for leaks.
 8. Bundle and secure all permanent lines to the walls, ceiling, or other appropriate supporting structures. Lines should not have sags or loops and should be provided with adequate strain relief to prevent damage to connection, joints, couplings or equipment.
-

DRAIN LINE INSTALLATION



INSTALLATION OF LINES XII

9. DRAIN LINE

- a. Assemble the 3/8" brass quick connect coupling to the brass 3/8" MPT x 3/8" OD barbed elbow using Teflon tape to seal the threads.
- b. Attach the 3/8" black sanitary dust plug to drain assembly.
- c. Connect the 3/8" tubing to the 3/8" barb on the drain assembly and secure it with double hose clamps.
- d. Connect the drain assembly to the supply/drain fitting on the tank which is the furthest from the sanitary or floor drain the store will use during sanitizing.
- e. Run the tubing over to the drain via a path which avoids any high traffic areas.
- f. Cut the tubing leaving 3' to 6' (1 m to 2 m) of extra or slack line.
- g. Disconnect the drain coupling from the tank, insert the dust plug into the

coupling, coil the drain line, and hang it over the CIP cabinet.

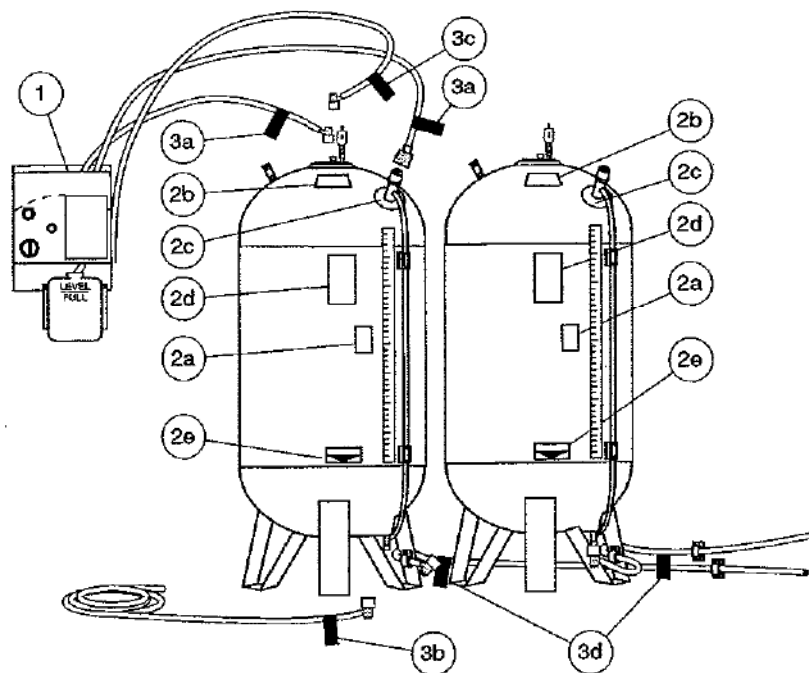
NOTE: The drain line should not be permanently installed, attached, or mounted to walls or equipment.

NOTE: The installation of a stand pipe for the drain line is recommended for most stores.

- h. Install a copper or rigid plastic pipe with an ID large enough to receive the end of the drain line over the floor drain.
- i. Leave a 2" to 4" (50 mm to 100 mm) air gap between the pipe and the drain.
- j. Fasten the pipe to a wall, the beverage machine or other solid support using clamps or mounting blocks.
- k. If the floor drain is in a hard to reach place (eg. behind or under the beverage machine) route the stand pipe's "drain line end" out to a location where it can be easily reached by store personnel when sanitizing their tanks.

XIII INSTALLATION OF LABELS

1. Attach the "Automatic Clean-In-Place Control" label with the sanitize instructions to the CIP. Make sure to carefully position the label over the front of the panel so the key switch, purge button, and timer light are all clearly visible.
2. Attach the following labels to the InterBulk tanks:
 - a. Affix a number label to each tank for easy identification and reference. Recommend that the tanks be numbered from left to right.
 - b. Affix "Sanitize/Vent" label on the top of the tank near the tank closure.
 - c. Affix "Syrup Fill" label around the syrup fill/sanitize fitting.
 - d. Affix "Notice" label on the upper half of the tank where it is easily visible.
 - e. Affix "Syrup Supply/Drain" label at the bottom of the tank's cylindrical body so that the large arrowhead is pointing to the supply/drain fitting.
3. Attach the following labels to the appropriate lines. To hold the labels more securely in place, run a small cable tie through the holes in the label (after it is attached to the line), tighten the cable tie and cut off any excess.
 - a. Affix a "Sanitize Line" label to each sanitize line about 6" (150 mm) from the connectors.
 - b. Affix the "Drain Line" label to the drain line about 6" (150 mm) from the coupling.
 - c. Affix the "Vent Line" label to the vent line about 6" (150 mm) from the connector.
 - d. Affix a "Syrup Supply Line" label to each of the syrup supply hoses in a visible location between the ASV and the hose support loop on the tank leg.



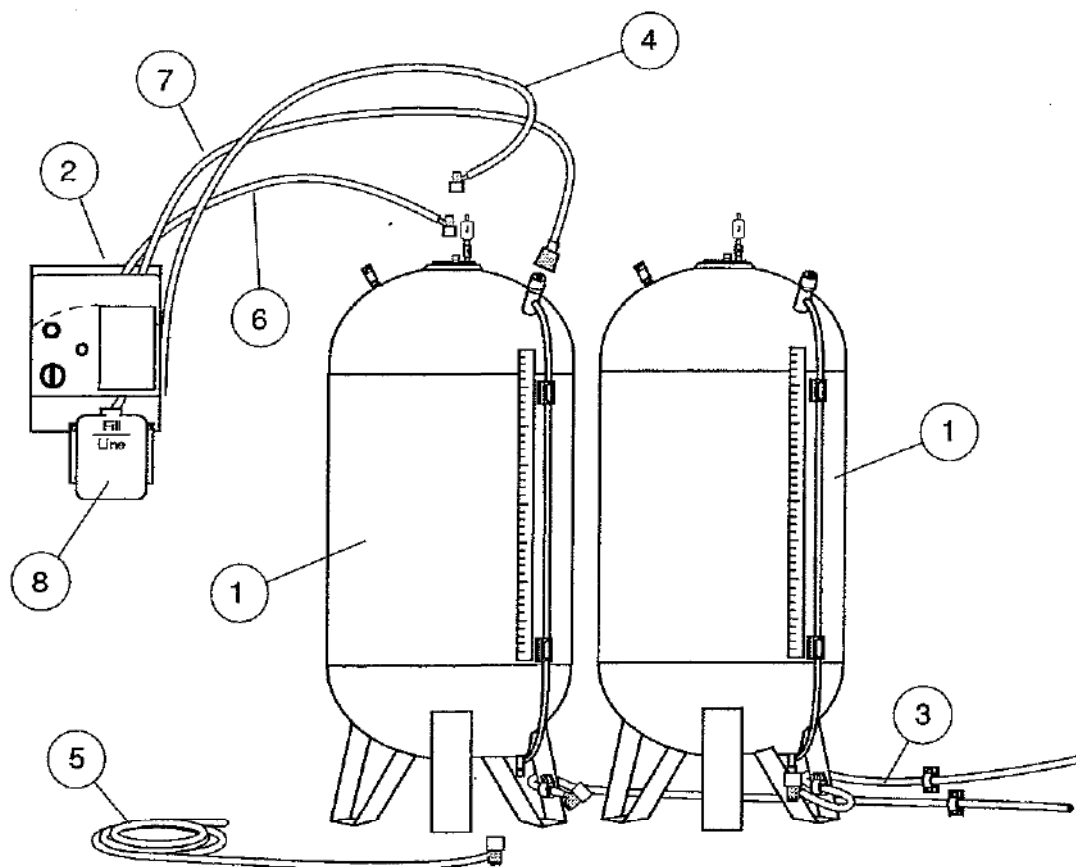
SYSTEM INSPECTION AND TEST XIV

1. Verify water and CO₂ to the beverage machine and the CIP are turned on.
2. Verify the tanks contain no syrup.
3. Open the front panel of the CIP, if it is not still open, and verify that the static water pressure (the pressure when the water is not flowing) is at 40 psi as indicated on the water pressure gauge.
4. Perform a sanitize procedure on one tank following the instructions in the store's user's manual.
 - a. Using a stop watch or a watch with a second hand, check the time for the first 3 sequences/ cycles. (It is not necessary to time the last 3 sequences/ cycles as they are repetitions of the first three.)
 - ♦ Rinse (sequence 1)
4 minutes (± 10 seconds)
 - ♦ CO₂ Purge (sequence 2)
3/4 minutes (± 10 seconds)
 - ♦ Drain/Idle (sequence 3)
6.5 minutes (± 15 seconds)
 - b. Check to ensure the timer light is blinking during the sanitize process.
 - c. Verify that the dynamic water pressure (pressure when the water is flowing) during either the rinse or sanitize sequence is about 35 psi to 40 psi on the water pressure gauge. Close and secure the front panel of the CIP.
 - d. Check to ensure that after completion of the sanitize process about 200 ml of sanitizer solution remains in the sanitize solution container.
 - e. Verify by manually purging that all the sanitizer has been drained from the tank at the completion of the sanitizing process, i.e. when the timer light has stopped blinking.
5. Inspect for leaks and bubble test CO₂ and compressed air lines and connections.
6. Inspect lines to ensure they are bundled, properly supported, and away from heat and electrical fixtures.
7. Verify that the installation site has been cleaned and any scraps and garbage have been disposed of.

XV OPERATING INSTRUCTIONS

1. If Coca-Cola Classic® syrup has been placed into one or more InterBulk tanks, then make the final syrup and/or compressed air or CO₂ connections, prime the BIB pumps and syrup lines with syrup and bleed out any air in the syrup lines.
2. Present the store's User's Manual to the manager.
3. Verbally explain the InterBulk system and point out its components and lines.
4. Demonstrate the sanitizing procedure to the store manager and his/her staff.
 - a. Refer to the user's manual to highlight the steps.
 - b. Have the manager/store staff sanitize any remaining tanks.
5. If syrup is not available to fill a tank, discuss when and how the system can be commissioned. If necessary, set an appointment to return to commission the system into full operation.

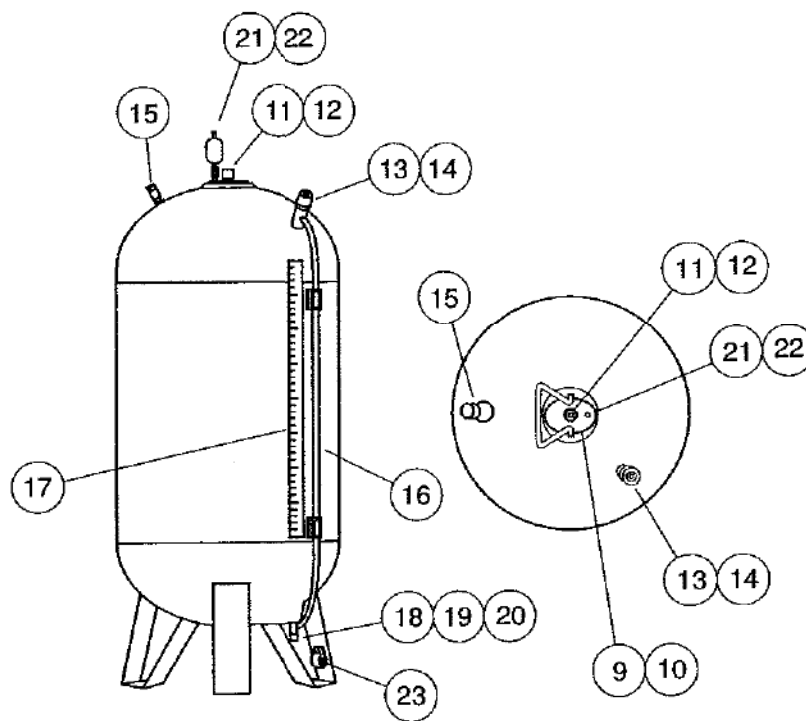
COMPONENT IDENTIFICATION SPECIFICATIONS XVI



INTERBULK SYSTEM

ITEM	PART NO.	DESCRIPTION	QTY	FUNCTION
1	99-2257-9 or 99-2332-9	SP-300L Bulk Syrup Tank or SPS-300L CB Portable Bulk	2 or more	Stores and dispenses 300 L (79.26 gal) of Coca-Cola® syrup.
2	99-2310-9	Clean-In-Place Panel (CIP)	1	Sanitizes the tank before refilling.
3	97-2316-9	Syrup Supply Hose	2	Connects tank to BIB system to supply syrup to beverage machine.
4	—	Tank Vent Line	1	Depressurizes tank during syrup filling.
5	—	Drain Line	1	Drains tank during sanitizing.
6	—	Sanitizer Line for Spray Head, 3/8" line	1	Rinses and sanitizes inside of tank.
7	—	Sanitizer Line for Fill Fitting, 1/4" line	1	Rinses and sanitizes fill fitting and liquid level gauge.
8	10526954	Sanitize Solution Container	1	Holds and dispenses sanitizer solution

XVI COMPONENT IDENTIFICATION SPECIFICATIONS

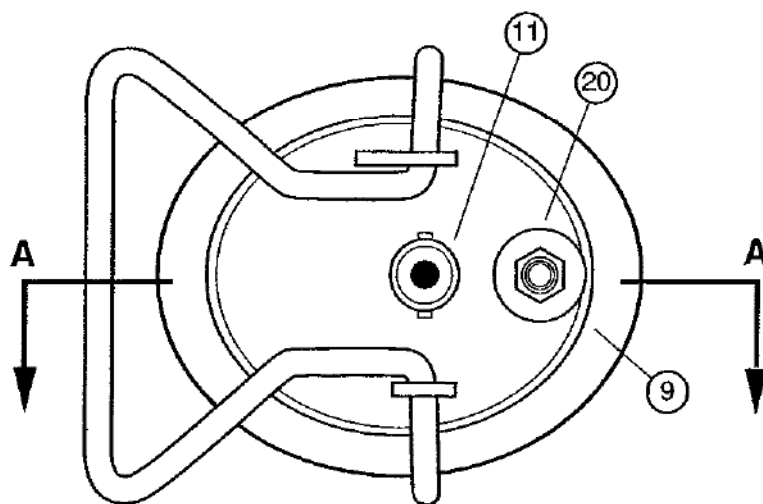
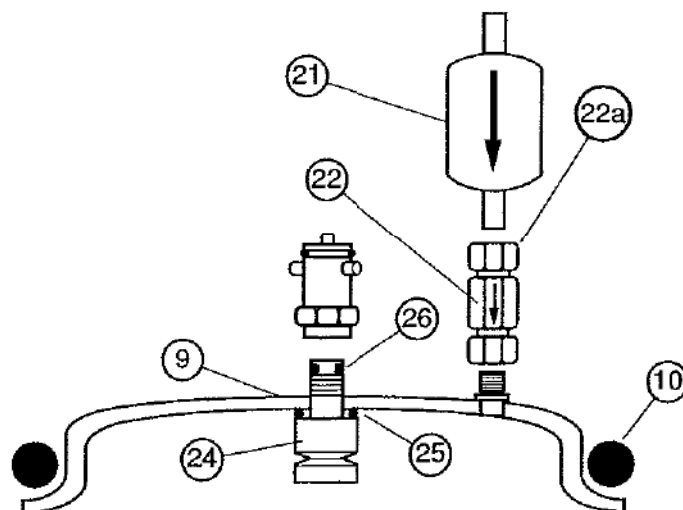


INTERBULK TANK

ITEM	PART NO.	DESCRIPTION	QTY	FUNCTION
9	56-1858-9	Tank Closure	1	Allows for tank inspection.
10	23-0001-1	O-Ring	1	Seals the closure to tank.
11	65-1163-1	Sanitize/Vent Fitting, 2-Pin	1	Connection for sanitizing and venting the tank.
12	39-1091-6	Dust Cap, 2-Pin Cover	1	Protects the sanitize/vent fitting.
13	65-1166-1	Syrup Fill/Sanitize Fitting, 3/4"	1	Connection for filling and sanitizing the syrup tank.
14	39-1090-6	Dust Cap	1	Protects the syrup fill/sanitize fitting.
15	18-1286-9	Relief Valve	1	Safety device set at 3.5 psi (0.24 bar).
16	28-1216-6	Liquid Level Gauge	1	Indicates syrup level and contents.
17	38-3537-9	Liquid Level Label	1	Indicates syrup contents in liters.
18	65-1227-1	Supply/Drain Fitting, 3/8"	1	Connection for supplying syrup or draining sanitizing solution.
19	12-1423-1	Shut-off Device	1	Stops the flow of syrup when tank is empty.
20	39-1167-6	Dust Cap	1	Protects the supply/drain fitting.
21	49-1051-6	Air Intake Filter	1	Filters air inhaled during syrup use.
22	14-1924-1	Air Intake Check Valve	1	Protects air filter from syrup contamination.
23	34-1204-6	Hose Support Loop	1	Supports syrup hose and coupler.

COMPONENT IDENTIFICATION SPECIFICATIONS XVI

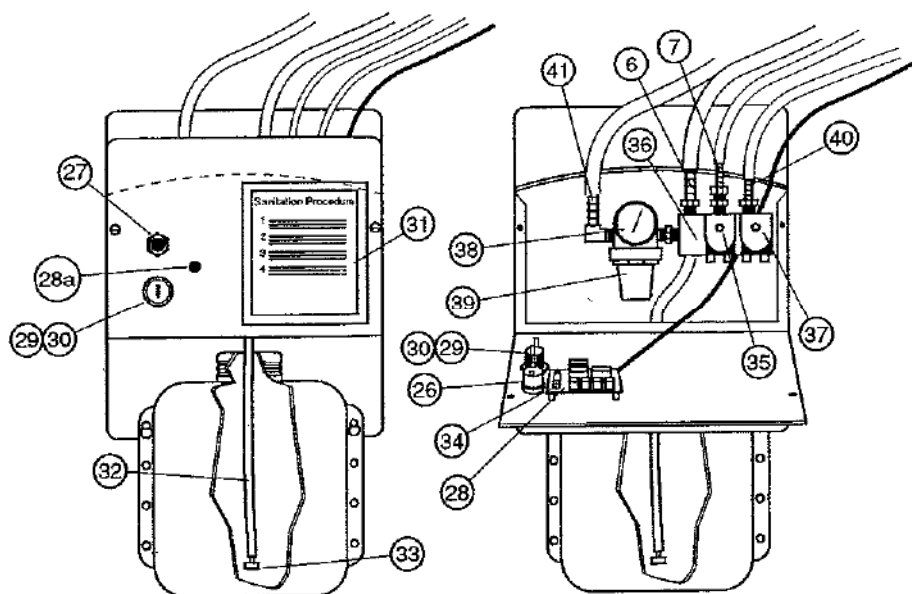
TANK CLOSURE ASSEMBLY



TANK CLOSURE

ITEM	PART NO.	DESCRIPTION	QTY	FUNCTION
22a		Compression Nut	1	Holds air intake filter firmly to check valve (part of check valve)
24	85-1352-1	Spray Head	1	Rinses and sanitizes inside of the tank
25	10526971	Gasket/O-Ring	1	Seals spray head to the closure.
26	47-1061-9	O-Ring	1	Seals spray head to 2 pin fitting at threads.

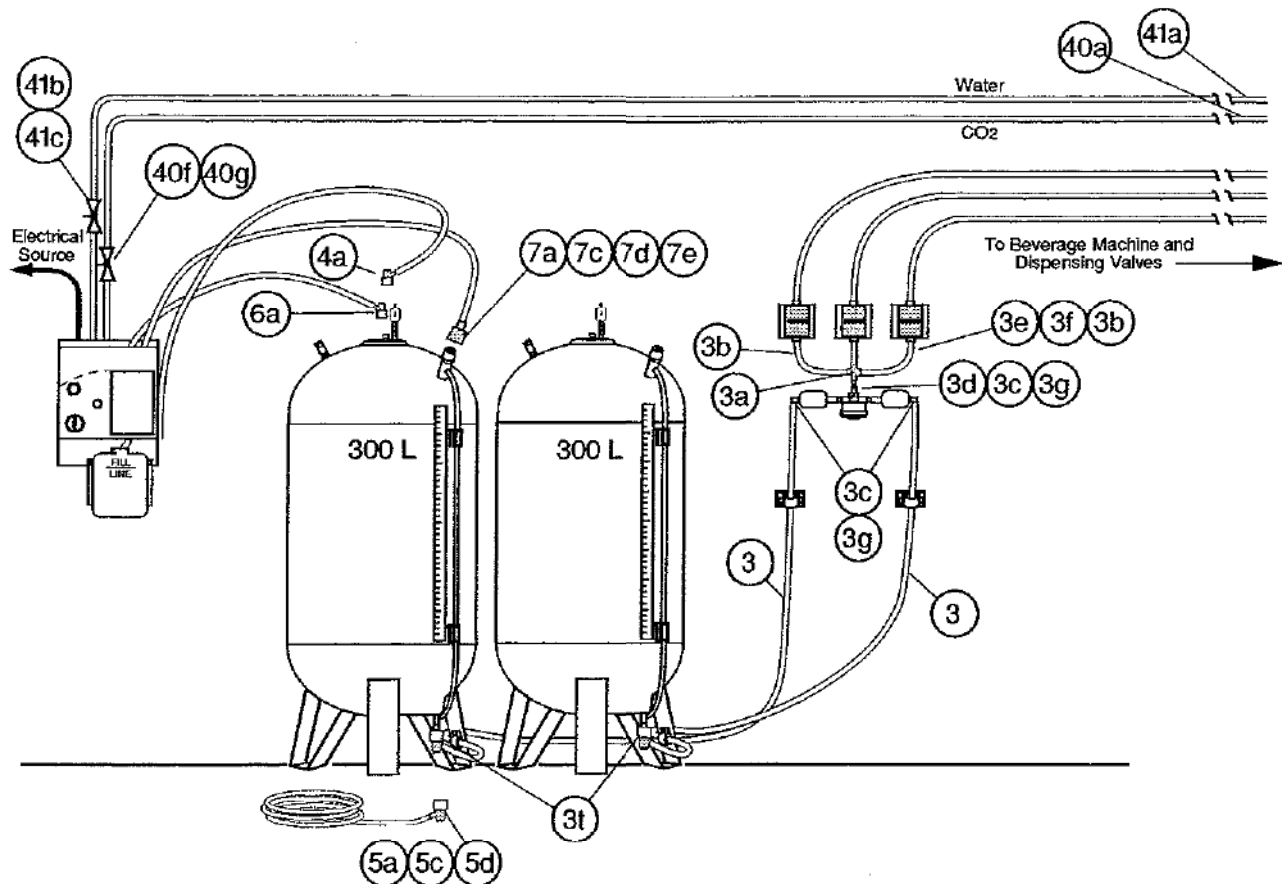
XVI COMPONENT IDENTIFICATION SPECIFICATIONS



CLEAN -IN-PLACE PANEL (CIP)

ITEM	PART NO.	DESCRIPTION	QTY	FUNCTION
27	46-1422-R	Manual CO ₂ Purge Button	1	Purges remaining sanitizer from tank.
28	10526938	Electronic Circuit Board	1	Holds the electronics for the switches and timers.
28 a		Timer Light	1	Indicates CIP operation (part of electronic circuit board).
29	46-1390-R	Key Switch Assembly	1	Turns power ON and OFF.
30	46-1391-R	Key for CIP	1	Controls CIP sanitize operation.
31		Operation Decal	1	Step by step operating procedures
32	10526962	Sanitizer Inlet Tube	1	Adds sanitizer to the water supply.
33	10527025	Sanitizing Strainer	1	Eliminates particles from the system.
34	46-1506-9	5 Amp Fuse	1	Protects electronic circuit board.
35	10526920	Solenoid Valve	1	Valve for the water supply
36	10526911	Manifold Block	1	Routes the CO ₂ , water and sanitizer.
37	10526920	Solenoid Valve	1	Valve for the CO ₂ supply
38	10526903	Water Pressure Gauge (0-60 psi)	1	Indicates water pressure.
39	10526891	Water Regulator	1	Controls water pressure.
40	10526882	CO ₂ Inlet Barb, 1/4"	1	Brings CO ₂ gas into CIP.
41		Water Inlet Barb, 3/8"	1	Brings water into CIP (part of water regulator kit).

COMPONENT IDENTIFICATION SPECIFICATIONS XVI



Installation Kit

ITEM NO.	PART NO.	DESCRIPTION	QTY	FUNCTION
7a	65-1177-2	3/4" Female Brass Quick Connector Coupling	1	Primary component in 3/4" sanitizer coupling assembly.
7c	12-1004-2	Bushing, Brass Hex (3/4" MPT x 1/4" FPT)	1	Component in sanitizer coupling assembly.
7d	16-1132-2	Hose Barb Connector, Brass (1/4" MPT x 1/4" barb)	1	Component in sanitizer coupling, assembly to which 1/4" ID sanitize line from CIP attaches.
7e	39-1160-6	3/4" Dust Plug, Rubber	1	Protects 3/4" female sanitize assembly quick connector.
3a	16-1142-1	S.S. Barbed Hose Cross (1/2" x 3/8" x 3/8" x 3/8")	1	Connects between 3 BIB pumps and automatic selector valve (ASV)
41a	16-1155-2	3/8" Barbed Hose Tee (3/8" x 3/8" x 3/8")	1	Inserts into 3/8" water line of beverage machine to supply water to the CIP.
5a	65-1229-2	3/8" Female Brass Quick Connect Coupling	1	Primary component in 3/8" drain coupling assembly.

XVI COMPONENT IDENTIFICATION SPECIFICATIONS

Installation Kit (continued)

ITEM NO.	PART NO.	DESCRIPTION	QTY	FUNCTION
5c	16-1160-2	90° Brass Elbow with hose barb (3/8" MPT x 3/8" ID)	1	Component in brass drain coupling assembly to which 3/8" drain line attaches.
5d/3t	39-1161-6	3/8" Dust Plug, Rubber	3	Protects 3/8" female quick connectors.
40a	16-1161-2	1/4" Barbed Hose Tee (1/4" x 1/4" x 1/4")	1	Inserts into 1/4" 90 psi (6.2 bar) CO ₂ line to supply CO ₂ to CIP.
3b	16-1211-1	3/8" S.S. Barbed Hose Elbow with double o-ring for BIB pumps	3	Connects 3/8" tubing to BIB pumps (1 per pump).
3c	16-1212-6	1/2" Plastic Barbed Hose Elbow for ASV and RFI's	3	Connects 1/2" tubing to Automatic Selector Valve (ASV) inlets and outlet
41b	16-1216-2	3/8" Hose Barb Connectors (1/4" MPT x 3/8" barb)	2	Connects water isolation valve into water supply line to CIP.
41c	17-1492-2	Isolation/Shut-off Valve, 3/8" ID (1/4" FPT x 1/4" FPT)	1	Shuts off water flow to CIP in water supply line.
40f	16-1132-2	1/4" Hose Barb (1/4" MPT x 1/4" barb)	2	Connects CO ₂ isolation valve into CO ₂ supply line to CIP.
40g	17-1697-2	Isolation (Shut off) Valve, 1/4" ID (1/4" FPT x 1/4" FPT)	1	Shuts off CO ₂ flow to CIP in CO ₂ supply line.
3d	28-1213-6	1/2" Clear Beverage Tubing (1/2" ID x 3/4" OD)	5ft	Tubing to connect ASV outlet to SS barbed hose cross located between ASV and BIB pumps.
3e	28-1214-6	3/8" Clear Beverage Tubing (3/8" ID x 5/8" OD)	20ft	Tubing to connect SS barbed cross to BIB pump inlets.
3f	34-1133-1	3/8" Stepless Hose Clamp (Oetiker)	28	Clamps 3/8" clear beverage tubing to barbs.
3g	34-1134-1	1/2" Stepless Hose Clamp (Oetiker)	10	Clamps 1/2" clear beverage tubing to barbs.
1a	38-1883-9	Label: Number "1"	1	Attaches to syrup tank #1.

COMPONENT IDENTIFICATION SPECIFICATIONS XVI

Installation Kit (continued)

ITEM NO.	PART NO.	DESCRIPTION	QTY	FUNCTION
1b	38-1884-9	Label: Number "2"	1	Attaches to syrup tank #2.
1c	38-1885-9	Label: Number "3"	1	Attaches to syrup tank #3, if store has a third tank.
	46-1037-9	Cable Tie	10	Secures hose labels to hoses and miscellaneous line attachments.
	46-1340-9	Cable Tie - 12"	40	Miscellaneous line attachments.
	46-1574-6	Cable Tie Holders with adhesive and screw hole (1-1/8" x 1-1/8")	10	Miscellaneous line attachments.
4a	65-1170-6	Female 2-Pin Beverage Coupling with 1/4" barb	1	Coupling for 1/4" vent line.
6a	65-1230-6	Female 2-Pin Beverage Coupling with 3/8" barb	1	Coupling for 3/8" sanitize line from CIP.
3	97-2316-9	Syrup Supply Hose (1/2") with 3/8"SS female quick coupling and rubber dust plug (initial uncut length 20 ft)	2	Connects syrup tanks to ASV inlet and BIB pump system.
3q	10526786	Reverse Flow inhibitor (RFI), SHURflo	2	Prevents cross or back flow of syrup through ASV. Two RFIs required per ASV.
2	97-2310-9	Clean-in-Place Panel (CIP)	1	Cleans syrup tanks between refills.

XVI COMPONENT IDENTIFICATION SPECIFICATIONS

INTERBULK SPECIFICATIONS

The InterBulk Syrup System includes:

- ◆ Two or more Bulk Syrup Tanks (the number of tanks depends upon syrup usage)
- ◆ Installation Kit w/Clean-in-Place Panel (CIP)
- ◆ InterBulk Label Kit

Technical Data	Bulk Syrup Tank	
	Model SPS-300L	SPS-300L CB *
Capacity (net):	300 liters	300 liters
Capacity (gross):	316 liters	316 liters
Tank Diameter:	560 mm	560 mm
Overall Width:	560 mm	746 mm
Height:	1714 mm	1689 mm
Weight (empty):	48 kg	76 kg
Weight (full):	425 kg	452 kg
Working Pressure:	non-pressurized	non-pressurized
Construction:	stainless steel	stainless steel
Design:	NSF-Std 18	NSF-Std 18
Type:	stationary	portable (w/casters)

* Optional portable unit for stores in which tanks must be moved to receive syrup delivery.

Technical Data for Clean-in-Place Panel	
Height with Reservoir	560 mm
Width	280 mm
Depth	125 mm
Capacity of Reservoir (net)	3.2 liters
Capacity of Reservoir (gross)	3.78 liters
Power Requirements	
• Electrical	24V, 30VA, 50/60 Hz
• Potable Water	minimum 2.8 bars
• CO ₂	6.2 bars
Construction	stainless steel
Installation	wall mounted

WARRANTY AND CLAIMS PROCEDURE XVII

MINNESOTA VALLEY ENGINEERING (MVE) warrants to McDonald's Restaurants (the Purchaser) the international bulk syrup (Inter-Bulk) equipment for one (1) year after purchase, that said equipment shall be free from any defects in workmanship and materials.

Purchaser agrees that as a pre-condition to any MVE liability hereunder, Purchaser or its appointed agents shall fully inspect all goods immediately upon delivery and shall give MVE written notice of any claim or purported defect within ten (10) days after discovery of such defect. As a further pre-condition to any MVE liability hereunder, both part replacement and labor must be supplied by an approved MVE service company. MVE may elect to repair or replace such equipment or any defective component or part thereof which proves to be defective, or to refund the purchase price paid by the original Purchaser. Alterations or repairs by others or operation of such equipment in a manner inconsistent with MVE accepted practices and all operating instructions, unless pre-authorized in writing by MVE, shall void this Warranty. MVE shall not be liable for defects caused by the effects of normal wear and tear, erosion, corrosion, fire, explosion, misuse, or unauthorized modification.

MVE's sole and exclusive liability under this Warranty is to the Purchaser and shall not exceed the lesser of the cost of repair, cost of replacement, or refund of the net purchase price paid by the original Purchaser. MVE is not liable for any losses, damages, or costs of delays, including incidental or consequential damages. MVE specifically makes no warranties or guarantees, expressed or implied, including the warranties of merchantability or fitness for a particular purpose or use, other than those warranties expressed herein.

WARRANTY CLAIMS PROCEDURE

1. All warranty claims must be previously authorized by Minnesota Valley Engineering. Telephone/electronic approval may be obtained by contacting Technical Service at:

Telephone Numbers: 800-253-1769

612-882-5000

Fax Number: 612-882-5185

or by writing to the Technical Service Manager at:

MVE, Inc.

3505 Country Road 42 West

Burnsville, MN 55306-3803 USA

612-882-5000 • Fax: 612-882-5185

2. Authorization must be obtained from MVE prior to shipment of any equipment to our facilities.



MVE, Inc.
3505 County Road 42 West
Burnsville, MN 55306-3803 U.S.A.
® (612) 882-5000 ♦ Fax: (612) 882-5185