

HYBRID BULK BEVERAGE CONTAINER STORAGE SYSTEM MVE MODEL SSM-80G HYBRID

Place this chapter in the Beverage section
of the *Equipment Manual*.

MANUFACTURED
FOR
McDONALD'S®
BY
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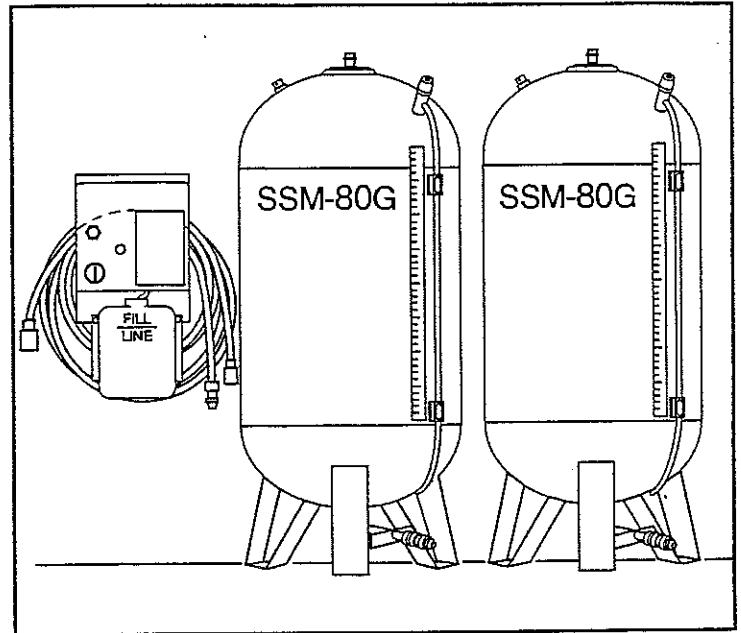


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WARRANTY

MVE, Inc. (MVE) warrants to McDonald's Restaurants (the Purchaser) the hybrid SSM-80G bulk syrup equipment for one (1) year from MVE invoice date, 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 repair by others or operation of such equipment in a manner inconsistent with MVE accepted practices and all operating instructions, unless preauthorized 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:

MVE, Inc.

Telephone/electronic approval may be obtained by contacting Technical Services at:

Telephone: 952-882-5000
Facsimile: 952-882-5185

or by writing to the Technical Services Manager at:

MVE, Inc.
3505 County Road 42 West
Burnsville, MN 55306-3803 USA

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

INTRODUCTION

The Hybrid Bulk Syrup System (Hybrid McBulk Syrup System) is designed for the sanitary storage and continuous supply of beverage syrup. The Hybrid McBulk System consists of two or more stainless steel bulk syrup tanks. Each tank holds 75 gallons of beverage syrup and replaces the equivalent of fifteen figals (5-gals). The Hybrid system also features the semi-automatic InterBulk clean-in-place panel (CIP) for sanitizing the tanks before refilling.

The Hybrid system works with a standard beverage machine and low pressure CO₂ gas. Syrup is pushed from the tanks to the beverage machine by CO₂ pressure upon demand from the beverage dispenser. Prior to going empty a tank is "jumpered" to another full tank. Jumpering the tanks ensures a continuous supply of syrup without changing 5-gals or wasting syrup.

Before refilling an empty syrup tank, it must be sanitized. The empty tank is connected to the InterBulk clean-in-place panel (CIP), which sanitizes and rinses the tank and jumper hose.

Refilling an empty tank is part of the store's regular delivery service. The

sanitized empty syrup tank is connected by a delivery hose to a 75 gallon bulk syrup delivery tank located on the delivery truck. A full 75 gallons of beverage syrup is provided for each ordered delivery.

There are two models of Hybrid McBulk syrup tanks. The first is the permanently installed, non-mobile model SSM-80G, which is the most commonly used model. The second model is the SSM-80G CB, which is a mobile tank mounted on casters with a handle bar. The portable SSM-80G CB operates the same as the SSM-80G, except it can be moved within the store for refilling, sanitizing, or syrup dispensing.

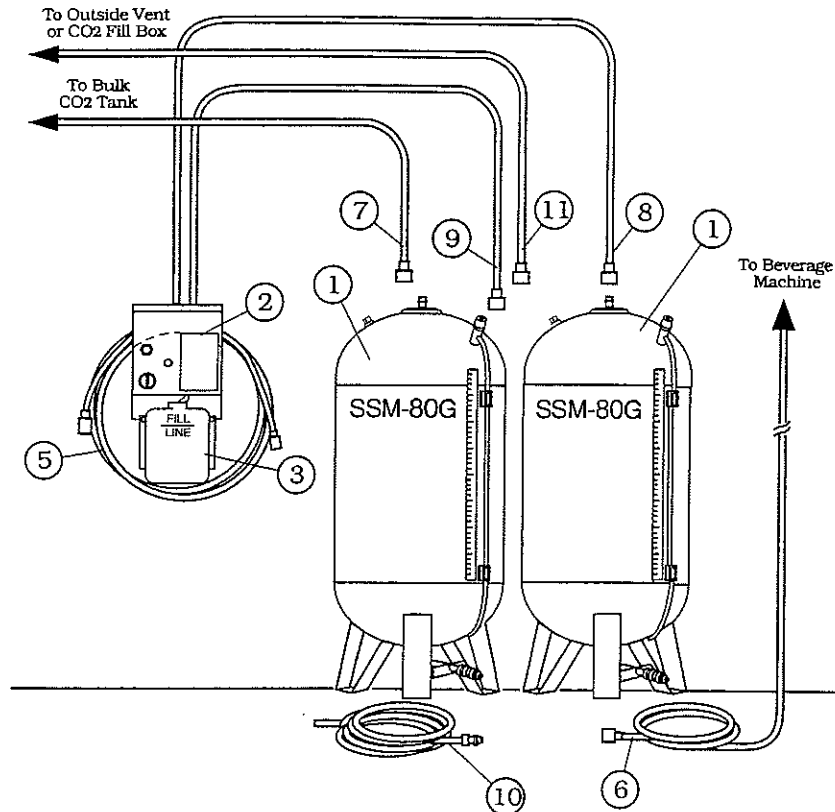
Hazard Communication Standard (HCS)

The procedures in this equipment manual include the use of chemical products. These chemical products will be highlighted with bold face letters followed by the abbreviation (HCS) in the text of the manual. See the Hazard Communication Standard (HCS) Manual for the appropriate Material Safety Data Sheet(s) (MSDS).

PARTS IDENTIFICATION AND FUNCTION

HYBRID BULK SYRUP SYSTEM

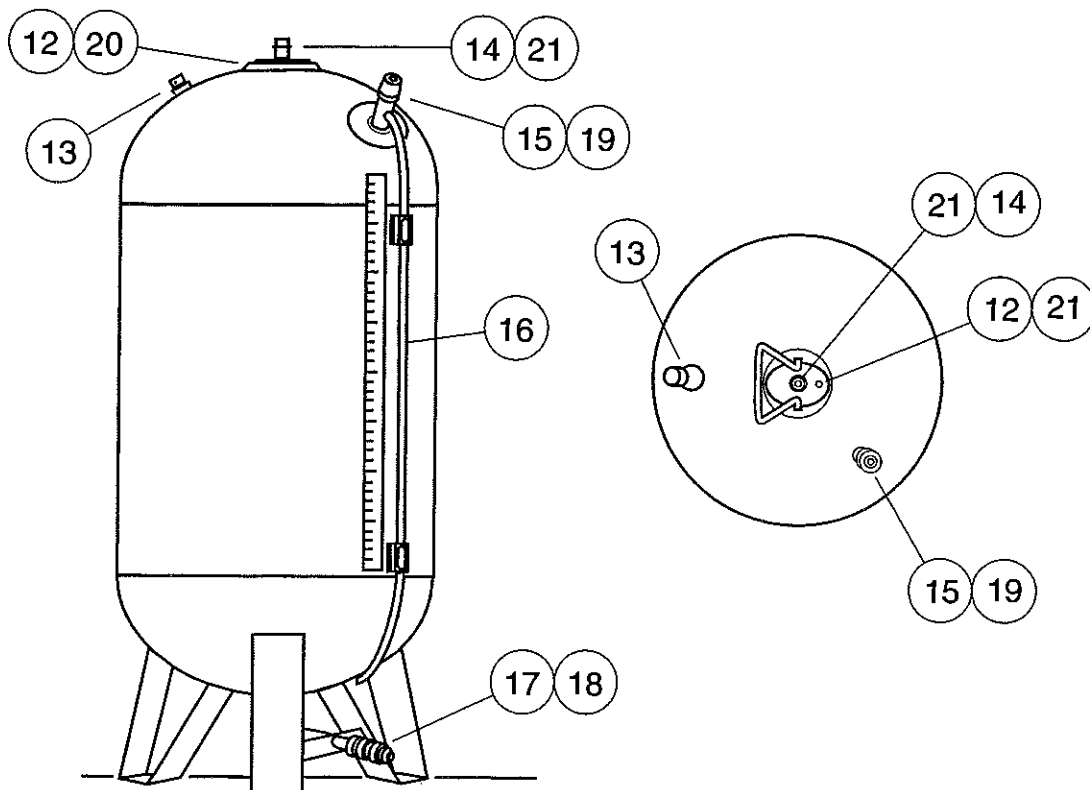
ITEM	PART NO.	DESCRIPTION	QTY.	FUNCTION
1	10667511 or 10667503	SSM-80G Hybrid Bulk Syrup Tank or SSM-80G Portable (not shown)	2 or more	Stores and dispenses 75 gallons of Coca-Cola® Classic Syrup.
2	97-2310-9	InterBulk Clean-In-Place Panel (CIP)	1	Used to sanitize syrup tank before each refill.
3	10526954	Sanitize Solution Container	1	Holds and dispenses sanitize solution.
4	46-1389-R	Transformer (not shown)	1	Supplies 24 volt power to CIP.
5	97-1057-9	Jumper Hose, 15 ft long	1	Used to jump tanks together and to drain tanks during sanitizing.
6	97-1968-9	Syrup Supply Hose with 1/2" Quick Coupler	1	Connects tanks to beverage machine for supply of syrup.
7		Tank Pressure Line	1	Pressurizes tanks to 60 psi.
8		Sanitize Line - Spray Head (3/8" ID Line)	1	Rinses and sanitizes inside of tanks.
9		Sanitize Line - Fill Fitting (1/4" ID Line)	1	Rinses and sanitizes syrup fill fitting and liquid level gauge.
10		Drain Line	1	Drains tanks during sanitizing via jumper hose.
11		Tank Vent Line	1	Depressurizes tanks during syrup delivery.



PARTS IDENTIFICATION AND FUNCTION

BULK SYRUP TANK

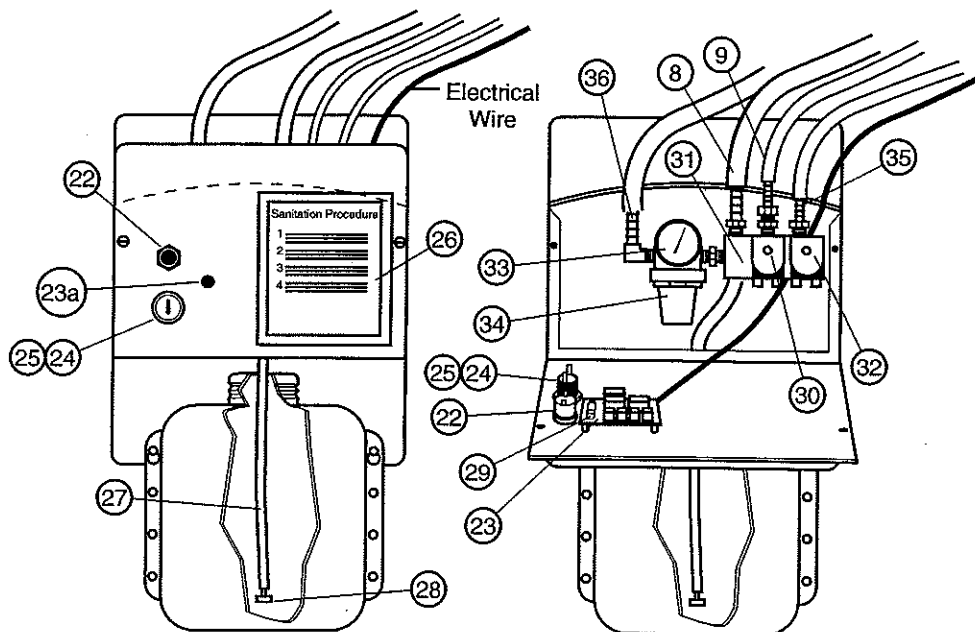
ITEM	PART NO.	DESCRIPTION	QTY.	FUNCTION
12	10648337	Tank Closure	1	Allows for tank inspection.
13	19-1164-1	Rupture Disc	1	Pressure safety device.
14	65-1163-1	Sanitize/Pressure/Vent Fitting (2-Pin)	1	Connection for sanitizing, pressurizing and venting tank.
15	65-1166-1	Syrup Fill/Sanitize Fitting, 3/4"	1	Connection for filling and sanitizing tank.
16	28-1141-6	Liquid Level Gauge Tube	1	Indicates the syrup level and contents in gallons.
17	65-1165-1	Syrup Supply/Drain Fitting, 1/2"	1	Connection for supplying syrup or draining sanitizing solution.
18	39-1089-6	Dust Cap, 1/2" (not shown)	1	Protects the syrup supply/drain fitting.
19	39-1090-6	Dust Cap, 3/4" (not shown)	1	Protects the syrup fill/sanitize fitting.
20	23-0001-1	O-Ring (not shown)	1	Seals the tank closure to tank.
21	39-1091-6	Dust Cap, 2-Pin Cover (not shown)	1	Protects the sanitize/pressure/vent fitting.



PARTS IDENTIFICATION AND FUNCTION

INTERBULK CLEAN-IN-PLACE PANEL

ITEM	PART NO.	DESCRIPTION	QTY.	FUNCTION
22	46-1422-R	Manual CO2 Purge Button	1	Purges remaining sanitizer from tank.
23	10526938	Electronic Circuit Board	1	Controls CIP functions.
23a		Timer Light	1	Indicates CIP operation (part of electronic circuit board).
24	46-1390-R	Key Switch Assembly	1	Turns power ON and OFF.
25	46-1391-R	Key for CIP (not shown)	1	Activates CIP operation.
26	10677285	Operation Decal	1	Abbreviated step by step operating procedures.
27	10526962	Sanitizer Inlet Tube	1	Adds sanitizer to the water supply.
28	10527025	Sanitizer Strainer	1	Eliminates particles from sanitizer system.
29	46-1506-9	5 Amp Fuse	1	Protects electronic circuit board.
30	10526920	Solenoid Valve, Water	1	Controls water flow.
31	10526911	Manifold Block	1	Routes the CO2, water and sanitizer.
32	10526920	Solenoid Valve, CO2	1	Controls CO2 flow.
33	10526903	Water Pressure Gauge (0-60 psi)	1	Indicates water pressure.
34	10526891	Water Regulator	1	Controls water pressure.
35	10526882	CO2 Supply Barb, 1/4"	1	Brings CO2 gas into CIP.
36		Water Supply Barb, 3/8"	1	Brings water into CIP (part of water regulator kit).



HYBRID BULK SYRUP SYSTEM OPERATING MODES

Sanitation Mode

NOTE: Empty syrup tanks must be sanitized before refilling with syrup.

1. Disconnect the Jumper Hose from the Syrup Fill/Sanitize Fitting on the top of the full or partially full syrup tank. Leave the Jumper Hose connected to the Syrup Supply/Drain Fitting on the bottom of the empty syrup tank.
2. Connect the Tank Vent Line to the Sanitize/Pressure/Vent Fitting (male 2-pin fitting) on top of the the syrup tank lid.
3. Prepare sanitizing solution by filling the Sanitize Solution Container to the "FILL LINE" with lukewarm potable water and then add one (1) packet of **McD Sink Pak Sanitizer (HCS)**. Close the container and shake it vigorously for one (1) minute until all the sanitizer is thoroughly dissolved. Open the container and connect it to the Clean- In-Place Panel (CIP) making sure the Sanitizer Inlet Tube is in the container.
4. Disconnect the Tank Vent Line after the syrup tank has depressurized.
5. Connect the Drain Line into the larger coupler of the Jumper Hose. Run the other end of Drain Line to the floor drain and secure it in the drain stand pipe. (If the Jumper Hose was previously

disconnected from the empty syrup tank, reconnect it to the Syrup Supply/Drain Fitting on the bottom of the tank.)

6. Connect the Sanitize Line with the female 2-pin connector to the the Sanitizer Pressure/Vent Fitting (male 2-pin fitting) on the syrup tank lid.
7. Connect the Sanitize Line with the 3/4 inch quick connect coupling to the Syrup Fill/Sanitize Fitting (3/4 inch male fitting) on the syrup tank.
8. On the Clean-In-Place Panel (CIP) start a sanitizing cycle by turning the Key Switch **CLOCKWISE** to turn the power ON. The red Timer Light should begin to flash/blink indicating the sanitation mode is in progress.

NOTE: If the sanitation mode is interrupted by turning OFF the key or by loss of electrical power, the sanitizing procedure must be restarted beginning with step 1.

9. When the sanitation mode is complete (red Timer Light is OFF), verify the syrup tank is empty by briefly pressing the Manual CO2 Purge Button. Check the discharge end of the Drain Line for additional drainage of sanitizer.

WARNING: Limit the use of CO2 purge because carbon dioxide displaces oxygen and does not support life.

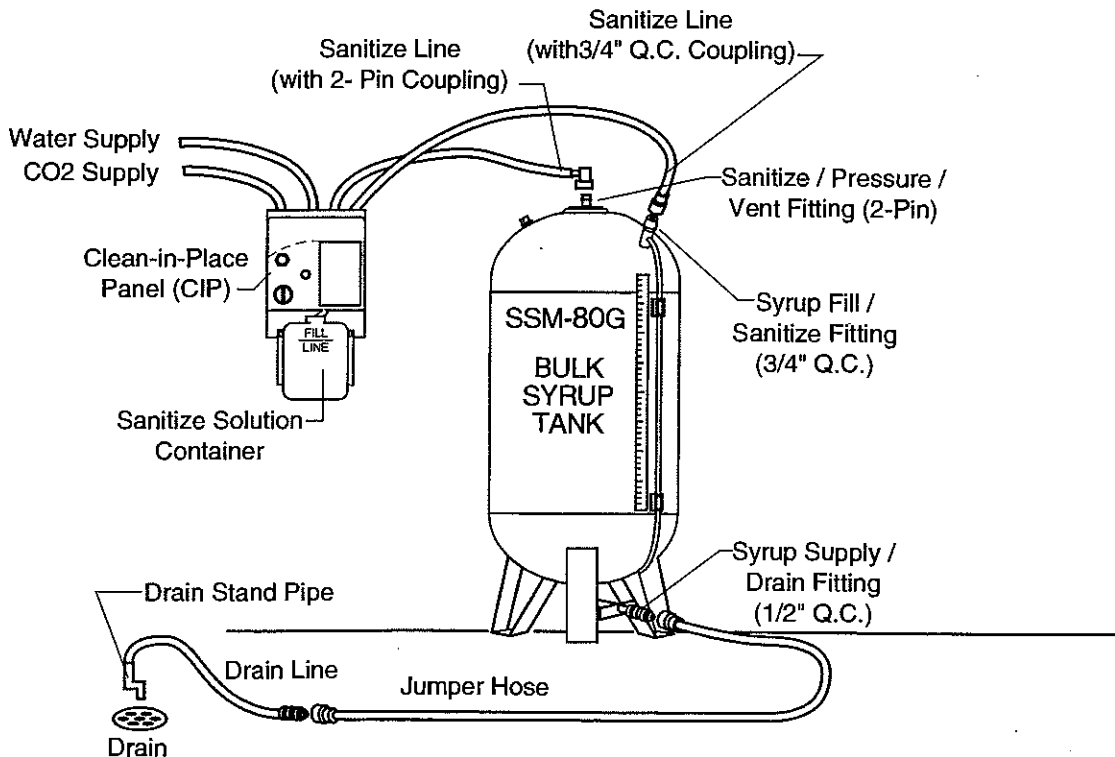
HYBRID BULK SYRUP SYSTEM OPERATING MODES

Sanitation Mode (Continued)

10. Turn the Power OFF, remove the key, and disconnect the two Sanitizing Lines, the Jumper Hose, and the Drain Line from the syrup tank.
 11. Wipe off all three tank fittings, sanitize, jumper, and drain line connections and the dust caps with a clean sanitized towel. Replace the dust caps on the tank fittings line connections.
 12. Store the Jumper Hose and the Drain Line on the CIP.
 13. Record details of the sanitation on the Sanitation Placard.
 14. Place an order for bulk syrup delivery if not already done.
- NOTE:** Do not place an order for bulk syrup until the syrup tank is completely empty.

Sanitation Mode

SEQUENCE	CYCLE	TIME
1	Rinse	4 Minutes
2	CO2 Purge	3/4 Minutes
3	Drain	6 1/2 Minutes
4	Sanitize	4 Minutes
5	CO2 Purge	3/4 Minutes
6	Drain	6 1/2 Minutes
Total		22 1/2 Minutes



HYBRID BULK SYRUP SYSTEM OPERATING MODES

Syrup Delivery Mode

CAUTION: The Drain Line must be disconnected from the tank during delivery of syrup

NOTE: Syrup must only be delivered into an empty, sanitized Bulk Syrup Tank.

1. Connect the Vent Line to the Sanitize/Pressure/Vent Fitting on top of an empty, sanitized Bulk Syrup Tank.

NOTE: A full delivery of syrup can only be accomplished if Vent Line is connected to the 2-pin vent fitting on the empty syrup tank.

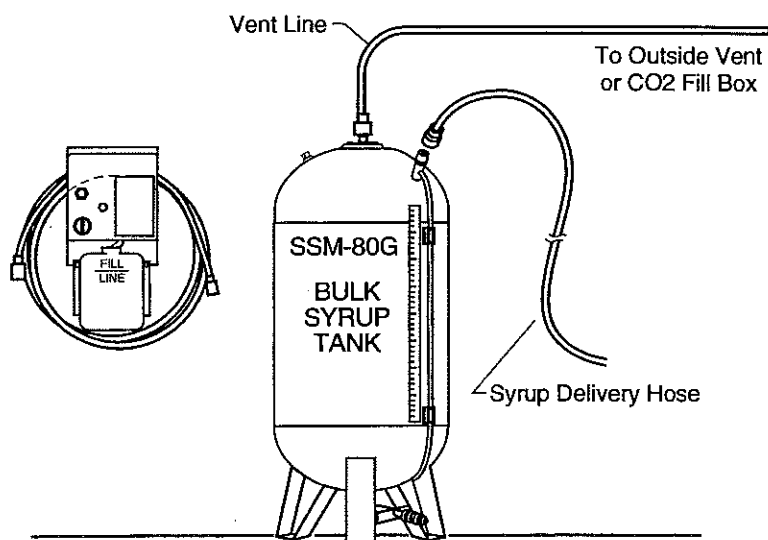
2. Remove the dust cap from the Syrup Fill Fitting. Wipe off the fitting using a clean, sanitized towel.
3. Connect the Syrup Delivery Hose to the Syrup Fill Fitting.

(At this time the delivery driver will connect a CO2 pressurization line to the 2-pin quick-connect in the

CO2 Fill Box and to the truck's syrup delivery tank.)

(After syrup transfer, the delivery driver will disconnect the CO2 pressurization line from the 2-pin quick-connect and from the truck's syrup delivery tank.)

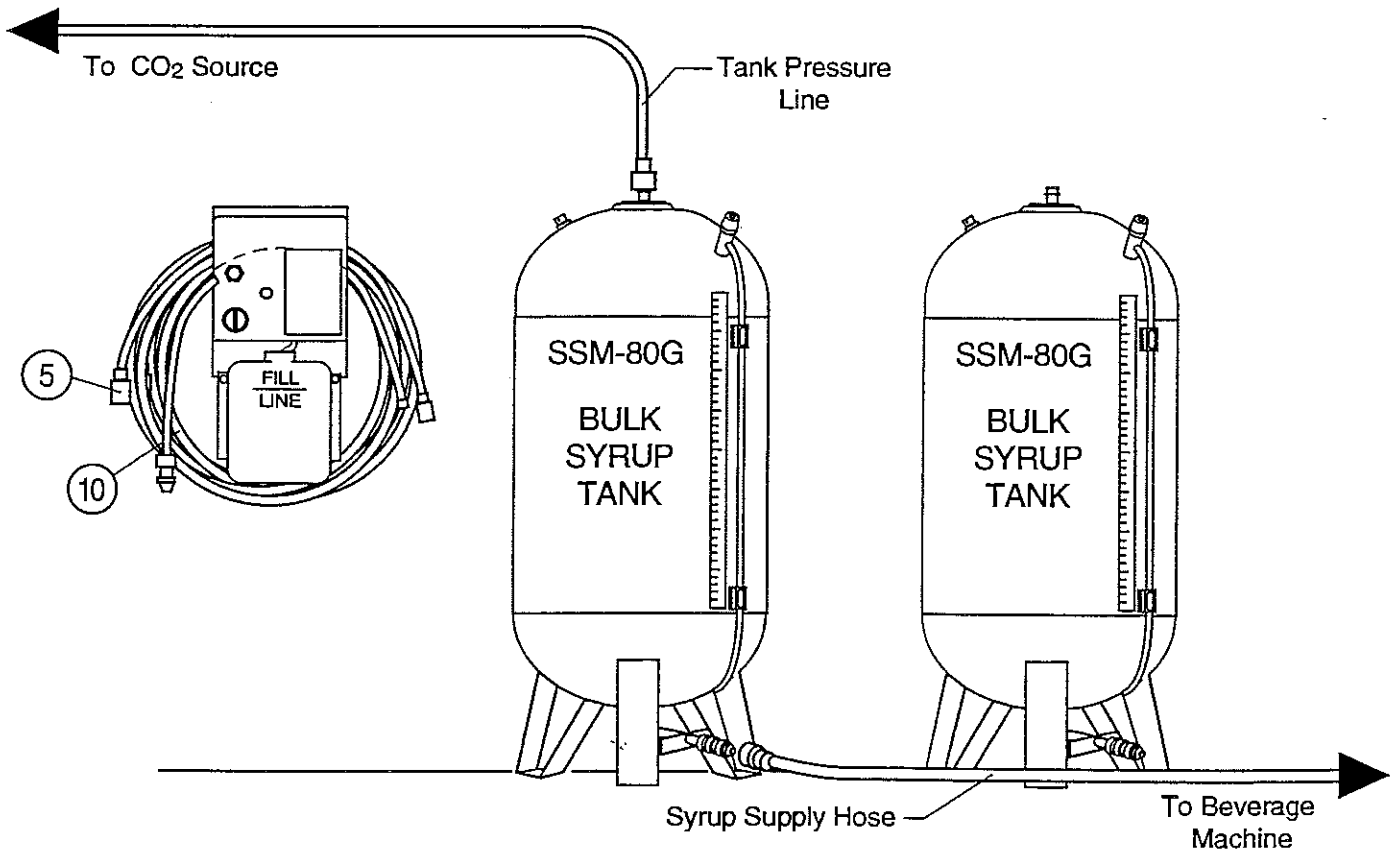
4. When the flow of syrup has slowed or stopped, "walk" any remaining syrup in the Syrup Delivery Hose from the truck syrup tank into the store's Bulk Syrup Tank.
5. Remove the Syrup Delivery Hose from the Bulk Syrup Tank and return it to the driver.
6. Remove the Vent Line from the Bulk Syrup Syrup Tank.
7. Using a clean, sanitized towel, wipe off the Syrup Fill Fitting and the Sanitize/Pressurize/Vent Fitting.
8. Replace the dust caps.



HYBRID BULK SYRUP SYSTEM OPERATING MODES

Syrup Use Mode

1. Remove the dust cap from the Syrup Supply/Drain Fitting on the bottom of the Bulk Syrup Tank.
2. Connect the Syrup Supply Line to the Syrup Supply/Drain Fitting on the bottom of the Bulk Syrup System.
3. Connect the Tank Pressure Line to the Sanitize/Pressurize/Vent Fitting on the Bulk Syrup Tank.



HYBRID BULK SYRUP SYSTEM OPERATING MODES

Jumpering Mode

NOTE: When the level of syrup in a tank drops to approximately one day's syrup usage, but no less than 3 gallons (11 liters), it is possible to "jump" syrup from one tank to another. This will ensure an uninterrupted syrup supply without waste.

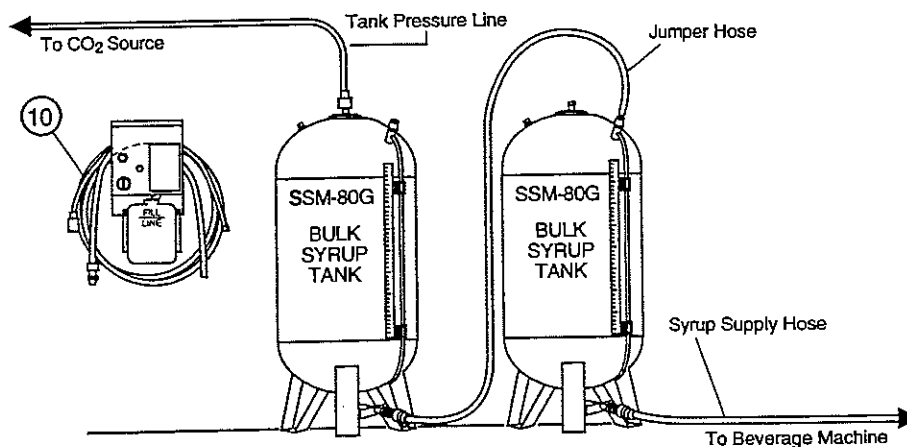
1. Disconnect the Syrup Supply Line from the nearly empty tank and connect it to the Syrup Supply / Drain Fitting on a full tank.
2. Connect the large end of the Jumper Hose to the Syrup Fill Fitting on the full tank.
3. Connect the small end of the Jumper Hose to the Syrup Supply/Drain Fitting on the bottom of the nearly empty tank.
4. When the first tank is empty (no syrup is seen in Jumper Hose) move the Tank Pressure Line to the Sanitize/Pressure/Venture/Vent Fitting on the full tank.
5. Remove the Jumper Hose from both tanks.
6. Sanitize the empty tank and place an order for bulk syrup delivery.

NOTE: Order bulk syrup only after the syrup tank is empty, not before.

Auxiliary Syrup Supply

NOTE: In the event all syrup tanks are empty it is possible to connect 5-gal or figal (19 liter) syrup tanks to a special 2-pin cross fitting in the Syrup Supply Line.

1. Disconnect Syrup Supply Line from the bulk syrup tank.
2. Using the short 5-gal jumper connect a full figal to one side of the 2-pin cross located on the Syrup Supply Line at the beverage system.
3. Connect a pressure line from the medium pressure manifold of the beverage system to the gas fitting of the figal.
4. To connect more than one figal, join the figals in series using short jumpers and connect the pressure line to the last figal in the series.
5. Monitor syrup usage to prevent syrup from emptying



EQUIPMENT SET-UP AND CLOSE PROCEDURES

Set-Up

1. Check the level of syrup in the bulk tanks to be sure there is enough to satisfy the day's business volume. If needed, jumper tanks together.
2. Check to be sure the CO2 Tank Pressure Line is connected to the syrup tank.

3. Check the tank and lines for syrup or CO2 leaks.

Close

1. None.

TROUBLESHOOTING GUIDE

BULK SYRUP TANK

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION	
No syrup or insufficient syrup in finished drink.	Syrup tank empty.	Change to full syrup tank.	
	Tank pressure line not connected or fully engaged on syrup tank.	Inspect and clean quick disconnect coupling and re-connect.	
	Syrup supply line not connected.	Connect line.	
	Syrup supply isolation valve on bulk CO2 tank closed.	Open valve.	
	Kinked syrup lines.	Straighten lines.	
	Empty or inoperative bulk CO2 tank		Connect full 20 or 50 lb. (22.7 kg) CO2 cylinder to "A" side of drink system and switch "A-B" valve to "A".
			Connect line marked "Emergency CO2 Supply" to top 2-pin fitting on bulk syrup tank.
			Call service agent.
	Rupture disc failed		Connect full syrup tank.
			Call service agent.
No bulk syrup in inventory.		Locate 5 gallon (19 liter) tanks of syrup.	
		Connect 5 gallon tank to one side of 2-pin cross on syrup supply line.	
Inoperative bulk syrup system.		Locate 5 gallon tank of syrup.	
		Connect 5 gallon tank to one side of 2-pin cross on syrup supply line.	
Bulk syrup tank is leaking at syrup supply/drain fitting.	Syrup supply/drain fitting is not sealing.	Go to jumper mode or syrup use mode on leaking tank.	
		When leaking tank is empty, call service agent to remove obstruction in fitting or to replace leaking syrup supply/drain fitting.	
Bulk syrup tank is leaking at syrup fill/sanitize fitting.	Syrup fill/sanitize fitting is not sealing.	Connect large end of jumper hose onto syrup fill/sanitize fitting (only).	
		When leaking tank is empty, call service agent to remove obstruction in fitting or to replace leaking syrup fill/sanitize fitting.	

TROUBLESHOOTING GUIDE

BULK SYRUP TANK

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Syrup tank fills slowly or will not fill.	Vent line not properly connected to syrup tank.	Connect vent line firmly to 2-pin vent fitting on top of syrup tank.
	Syrup delivery hose not properly connected to syrup tank.	Connect syrup delivery hose to syrup fill/sanitize fitting on top of syrup tank.
	Syrup delivery hose bent or compressed.	Straighten delivery hose or remove the obstruction.
	Truck's delivery system or delivery hose not operative or properly connected.	Notify delivery driver.
Syrup and/or sanitizer coming from vent line or CO2 fill box during syrup delivery.	Syrup tank being filled is not empty at time of filling. (It contained more than 5 gallons / 19 liters of syrup.)	Immediately disconnect syrup delivery hose from full tank and deliver remaining syrup into another sanitized empty bulk tank, if available.
		Notify distribution center so syrup can be tested for contamination.
	Syrup tank being filled still contains sanitizer solution.	Immediately disconnect syrup delivery hose from full tank and deliver remaining syrup into another sanitized empty bulk tank, if available.
		Notify distribution center so syrup can be tested for contamination.

TROUBLESHOOTING GUIDE

CLEAN-IN-PLACE PANEL

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Timer light and solenoids on CIP fail to operate.	24 volt transformer is not properly connected.	Ensure transformer is plugged in and that no wires have been broken or disconnected. Call service agent.
	Electrical fuse or circuit breaker in store's electrical system has failed.	Replace fuse or reset circuit breaker. Repeat sanitation mode.
	CIP is inoperative.	Call service agent.
More than 1/4 gallon (1 liter) of sanitizer left in container after sanitation mode is complete.	Sanitize solution container was over-filled at the beginning of the sanitize cycle.	No action required. (In the future fill sanitize solution container only to "FILL LINE" with sanitizer solution.)
	Strainer on sanitizer inlet tube is plugged.	Remove container and clean strainer with warm water and soft brush.
		Replace strainer.
		Insure McD Sink Pak Sanitizer (HCS) is thoroughly dissolved before starting sanitation cycle. Repeat sanitation mode.
	Sanitizing inlet tube was either bent, damaged, obstructed, or not placed in sanitize solution container.	Inspect inlet tube for damage or obstructions. If tube is functional, repeat sanitation mode, making sure inlet tube is in sanitation container.
		Call service agent.
	Power to CIP was interrupted.	See troubleshooting section above on Timer Light and repeat sanitation mode.
	One or both sanitize lines was not properly connected to syrup tank.	Remove sanitize lines from tank fittings, inspect, and firmly reconnect. Check both connections by giving a light pull on couplers. Repeat sanitation mode.
Sanitize line(s) is bent or obstructed.	Check lines and eliminate any obstructions, bends, or crimping. Repeat sanitation mode.	
Spray head in syrup tank is damaged or plugged.	Call service agent.	
Timing for rinse/sanitize cycles is too short.	Repeat steps 1 to 7 of sanitation mode instructions. Turn key switch ON and start timing rinse cycle. Stop timing when CO2 purge begins. If time is less than 3 minutes, 45 seconds, call service agent to adjust CIP time.	

TROUBLESHOOTING GUIDE

CLEAN-IN-PLACE PANEL

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
More than 1/4 gallon (1 liter) of sanitizer left in container after sanitation mode is complete (continued).	Insufficient water flow or pressure to CIP.	Open water isolation/shut-off valve from beverage system to CIP.
		Inspect water pressure gauge inside CIP. Insure at least 40 psi (2.8 bars) of water pressure is coming from beverage machine when water is not flowing and at least 35 psi (2.5 bars) when the water is flowing into CIP during rinse and sanitize cycles.
	CIP is inoperative.	Call service agent.
Sanitize solution container empties before end of sanitation cycle.	Container was not filled to the "FILL LINE".	Repeat sanitation mode making sure to properly fill the sanitize solution container.
	Timing for rinse/sanitize cycles is too long.	Repeat steps 1 to 7 of sanitation instructions. Turn key switch ON and start timing the rinse cycle. Stop timing when CO2 purge begins. If time is more than 4 min. 15 seconds, call service agent to adjust the CIP timer.
	Siphon rate of sanitize solution into CIP is too high.	Call service agent.
	Water flow or inlet pressure is too high.	If water pressure gauge inside the CIP reads above 40 psi (275 kPa) during rinse/sanitize cycles (when water is flowing), call service agent to adjust water regulator Call service agent.
Sanitize solution not draining or purging from syrup tank.	Jumper hose and drain line not connected to tank during sanitation mode.	Connect jumper hose and drain line to supply/ drain fitting on tank. Push manual purge button several times until tank purges dry. Repeat sanitation mode instructions starting with step 9.
		NOTE: Do not disconnect jumper hose or drain line until tank is thoroughly drained and checked using manual purge procedure.

TROUBLESHOOTING GUIDE

CLEAN-IN-PLACE PANEL

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Sanitize solution not draining or purging from syrup tank (continued).	No CO2 pressure for purging.	Open CO2 isolation/shut-off valve to CIP.
		Change CO2 cylinder or switch to back-up CO2 cylinder.
		Call CO2 supplier or service agent.
	Jumper hose or drain line are obstructed.	Clear obstruction.
	Rupture disc in syrup tank is burst.	Call service agent or replace with MVE approved rupture disc.
	Tank closure OPEN.	CLOSE tank closure.
		Replace tank closure o-ring if missing or damaged.
	CIP is inoperative	Call service agent.

ORDERING PARTS/SERVICE

For parts and service contact your local authorized equipment service agent for MVE. To ensure prompt processing of your order, list each item separately, taking care to specify the quantity, the MVE part number, and the description of each item ordered.

To contact MVE for the names of local authorized service agents, technical support or information about parts, service, equipment, or procedures or to order parts, contact:

MVE, Inc.
3505 County Road 42 West
Burnsville, MN 55306-3803 USA
800-247-4446 952-882-5000
Fax: 952-882-5185

NON-SCHEDULED MAINTENANCE

- 1. This equipment has no user serviceable parts. Call an authorized service agent for all work.

NOTE: Any attempt to service this equipment by any unauthorized person will void the warranty.

Installation Information

Date System Installed: _____

Installation Company: _____

Serial Numbers of Bulk Tanks (data plate on tank leg) & CIP: _____

Local Service Companies

Primary

Alternate

Company Name: _____

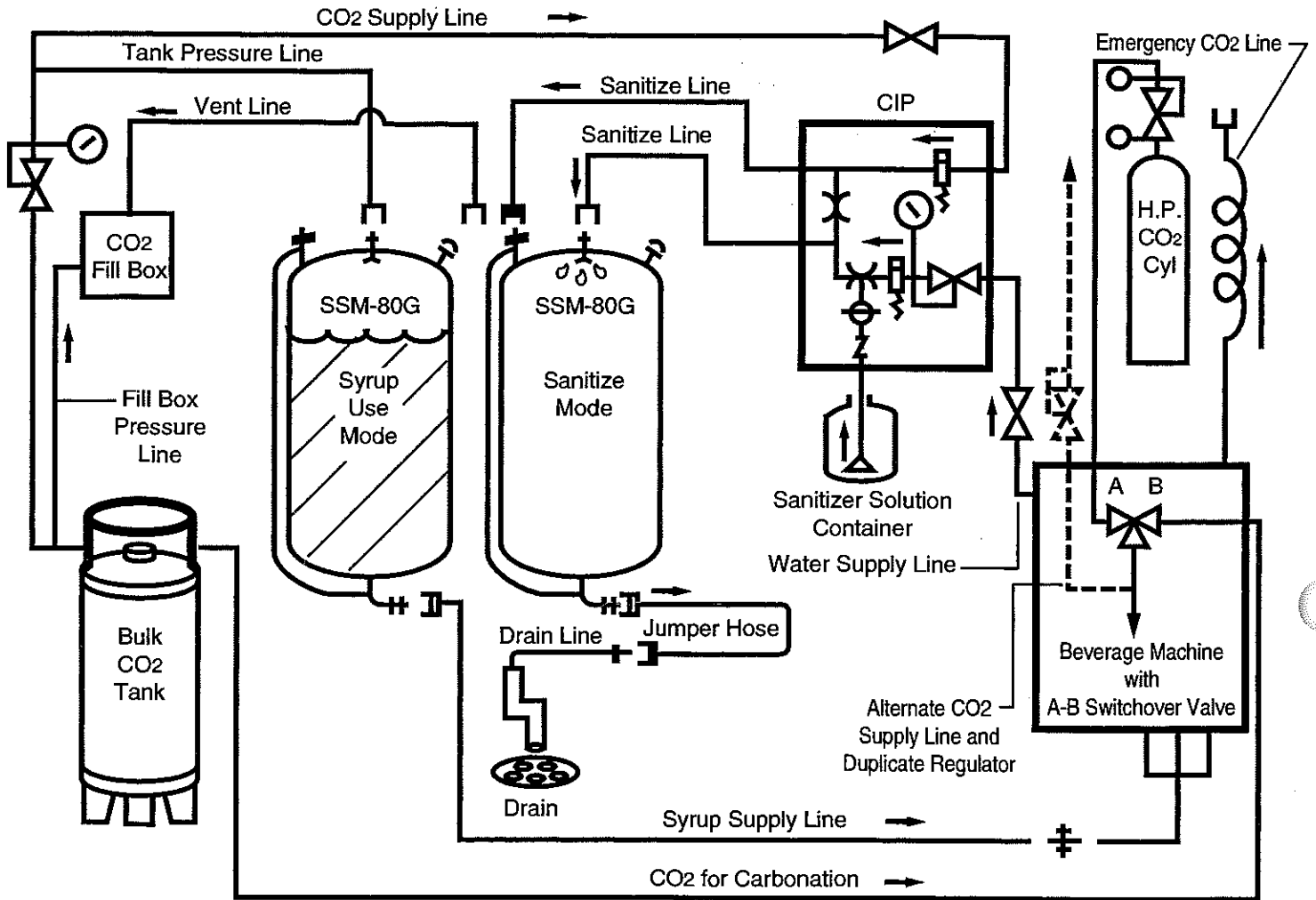
Contact Person: _____

Address: _____

Telephone Numbers: _____

Facsimile Number: _____

HYBRID SYSTEM FLOW SCHEMATIC



KEY

- | | | | | | |
|--|-----------------------|--|-------------|--|-----------------|
| | 2-Pin Connections | | Regulator | | Burst Disc |
| | 1/2" Q.C. Connections | | 2-Pin Cross | | Isolation Valve |
| | 3/4" Q.C. Connections | | Venturi | | Solenoid Valve |
| | Switchover Valve | | Orifice | | Needle Valve |