SSM 80G BULK SYRUP SYSTEM SERVICE MANUAL

MVE®

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SECTION ONE

SAFETY INFORMATION

CARBON DIOXIDE HANDLING PRECAUTIONS

Carbon dioxide is an asphixiant. Concentrations of 10% or more can produce unconsciousness or death. Lower concentrations can cause headache, sweating, rapid breathing, increased heart rate, shortness of breath, or dizziness. Carbon dioxide is an odorless gas and should be treated as a material with poor warning properties.

It is heavier than air, so high concentrations may be found in low areas such as basements.

RESCUE AND FIRST AID CONSIDERATIONS

Do not attempt to remove an individual without utilizing proper rescue equipment or you may also become a casualty.

If the exposed person is unconscious, obtain assistance and put into effect the established emergency procedures.

If a person has inhaled large amounts of carbon dioxide and is exhibiting adverse effects, move the exposed individual to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible.

More information can be obtained by contacting your CO_2 supplier or the Compressed Gas Association, 1235 Jefferson Davis Highway, Arlington, VA 22202.

SECTION TWO

INTRODUCTION

The Bulk Syrup Tank System is designed for the sanitary storage and supply of beverage syrup. This container, incorporated with its accessories is designed for filling from an external connection and a complete sanitizing between syrup transfers. The complete system provides a reliable, convenient and economical method of bulk syrup storage and continuous dispensing of soft drink products.

The Bulk Syrup Tank is designed with operating connections situated at the top for ease in filling, sanitizing, pressurizing, and venting. The only connection at the bottom of the tank is for syrup dispensing and draining sanitizing solution.

Every tank includes an elliptical quick actuating center closure complete with tank sanitizing spray head.

The tank is constructed of stainless steel. To protect the tank from accidental over pressurization, the unit includes a relief valve (located on the CO_2 tank) and a burst disc as fail-safe relief devices.

The Clean-In-Place (CIP) Control Panel contains a multi-port valve assembly which controls the sanitizing process. Complete sanitation is required between fills. In addition, the CIP supplies CO_2 pressure to the bulk syrup tanks.

WARRANTY

Minnesota Valley Engineering (MVE) warrants the McDonald's Bulk Syrup Tank System (SSM-80G Tank and Clean-In Place Panel) to be free from defects in workmanship and materials, for one (1) year from date of purchase. MVE will also maintain all performance standards for the Bulk Syrup Tank system for five (5) years from date of installation, as published by MVE at time of purchase.

MVE shall, at its option, repair or replace any defective equipment or component within the warranty period, or refund the net purchase price. MVE shall not be liable for damages or delays caused by any defective materials or workmanship, or by the failure of any parts due to normal wear and tear, fire, or explosion.

MVE specifically makes no warranties or guarantees, expressed or implied, on equipment used for purposes other than that for which it was intended.

SECTION THREE

DEFECTIVE OR MISSING PARTS

Defective parts should be returned to the factory as soon as possible. Prior to returning the part, contact MVE 407 Seventh Street N.W. New Prague, Minnesota 56071 - 800-247-4446 for a Customer Return Authorization number.

Missing parts should be reported to the CO_2 Division of Minnesota Valley Engineering.

ORDERING PARTS/SERVICE

How to Order

For prompt service and shipment contact Minnesota Valley Engineering (MVE) at 1-800-247-4446 or one of its authorized distributors. To insure prompt processing of your orders, list each item separately, taking care to specify quantity, the MVE part number and description of each item ordered.

Terms

Terms of NET 30 days will be extended to those customers of known and acceptable financial standing. All other orders must be accompanied by a check or will be shipped C.O.D. Customers desiring to purchase on an open account should direct its inquiries to the credit department. All sales taxes are the responsibility of the buyer. Prices quoted do not include sales tax. MVE at its option may charge for and collect sales taxes. Prices and terms, designs materials, specifications, weights and dimensions for equipment or parts are subject to change without notice.

Method of Shipment

All merchandise is priced F.O.B. factory. All shipments are carefully packed and labeled to prevent damage or loss. Crates, boxes and cartons used are of approved weight and strength. Orders not routed by the purchaser will be shipped at our discretion via the best method possible without any liability on our part for such selection.

Purchaser Pick-Up

Service parts, and orders must be received at least 24 hours prior to personal pick-up. Equipment orders must be received at least 7 days prior to personal pick-up.

Damaged and Lost Shipments

The responsibility of Minnesota Valley Engineering ceases upon acceptance of its products being shipped in good condition by the carrier. Any damage or loss sustained in shipment should be reported to the delivering carrier immediately. The carrier is responsible for all shipments. If you receive a damaged shipment, ask the carrier's agent for a claim form and have the carrier prepare an inspection report for you. The completed claim inspection report, a copy of MVE's invoice, the freight bill, and a letter estimating the cost of repair or replacement must be submitted to the carrier before they can process your claim. Compare the number of cartons listed on our packing list or Bill of Lading. If they do not agree, be sure to note the shortage on the delivery receipt before accepting delivery and signing the delivery receipt. The carrier is responsible for delivery of the specified number of cartons. UPS shipments are insured individually and UPS will replace all merchandise that is lost. Notify us immediately if you wish to trace merchandise lost in transit.

Return of Merchandise

No merchandise is to be returned without our approval. The purchaser must prepay the freight for all returned goods. After receiving our approval, all merchandise must be returned to our factory, 407 Seventh Street N.W. New Prague, Minnesota 56071. Minnesota Valley Engineering is not responsible for merchandise returned to any location other than our factory.

The merchandise authorized to be returned must be in NEW, unused condition and its original carton with all original packing. A credit will be allowed amounting to the original selling price or current selling price, whichever is lower, less a 15% restocking charge, with a minimum charge of $20.00 for each return to cover cost of receiving, inspection. testing, repacking, and processing all documents.

Customer Return Authorization Procedure

1) Call MVE and ask for Restaurant Products Customer Service.

2) Indicate customer name, bill to address, ship to address, invoice number, and part number.

3) Indicate reason for return and any additional comments.

4) A Customer Return Authorization Number (CRA #) will be assigned. This number should be printed with black market on the package to be returned.

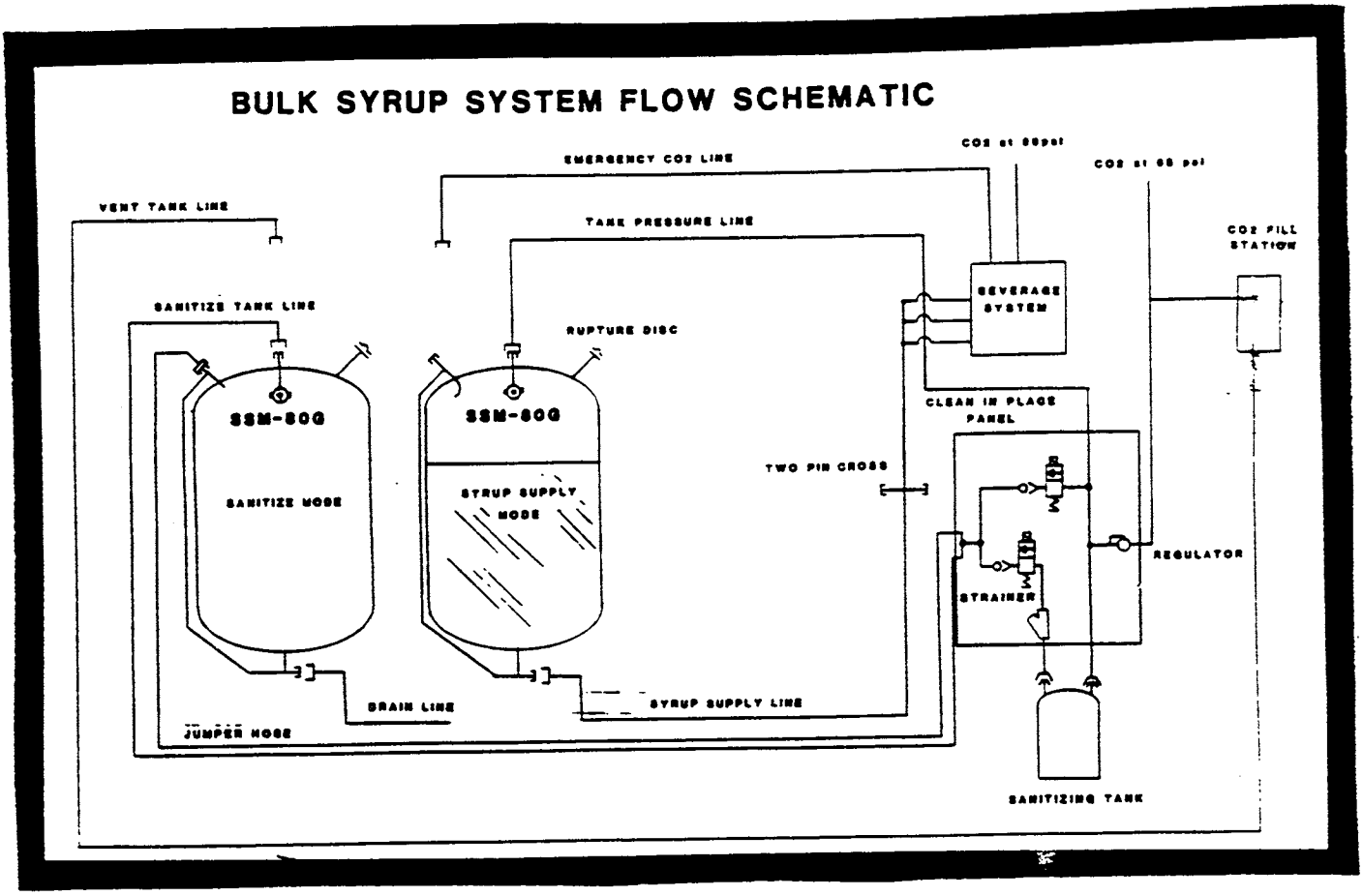
5) Credit will be issued to account upon receipt of returned part or tank.

6) If a replacement part or tank is needed, place the order at this time.

SECTION FIVE

OPERATING INSTRUCTIONS

The following is a brief description of the various operating modes of the Bulk Syrup System. More complete information is found in the SSM-80G User Manual.



SANITIZING

NOTE: Syrup tank must be sanitized before every syrup delivery.

1. Connect Vent Tank line to Sanitize/Pressure/Vent connection on top of Bulk Syrup Tank. Prepare 10 gallons of approved sanitizer solution in the 10 Gallon Sanitizing Tank. Agitate water as you fill tank.

2. Connect Sanitize Tank (black connector) and Tank Pressure (gray connector) lines to the 10 Gallon Sanitizing Tank.

3. Disconnect Vent Tank line after Bulk Syrup Tank has depressurized.

4. Connect Drain line to Syrup Supply/Drain connection on bottom of Bulk Syrup Tank (run other end of Drain line to floor drain and secure).

5. Connect Sanitize Tank line to Sanitize/Pressure/Vent connection on top of Bulk Syrup Tank.

6. Connect Jumper Hose to Fill connection on Bulk Syrup Tank and Jumper Sanitize connection on Clean-In-Place Panel.

7. Start sanitizing cycle by turning Key Switch on Clean-In-Place Panel to ON position. The Rinse light will come ON and the timer will automatically cycle through the following sequence. (The flashing Timer light indicates the cycles are in progress).

SEQUENCE	CYCLE	TIME
One	Rinse	3 Minutes
Two	CO2 Purge	30 Seconds
Three	Sanitize	5 Minutes
Four	CO2 Purge	30 Seconds

NOTE: If cycle is interrupted by turning the key OFF or by a loss of electrical power, the Sanitizing Procedure must be restarted beginning with Step 1.

8. When sanitation cycle is complete depress the Manual CO2 Purge button until no further discharge is observed at the drain line. The Manual CO2 Purge button will only operate with the key switch in the ON position.

9. Turn key switch to the OFF position.

10. Remove Drain line from Syrup Tank, disconnect Jumper Hose from Clean-In- Place Panel and syrup tank and remove Sanitize line from top of Bulk Syrup Tank.

11. Wipe off all 3 connections and dust caps on Bulk Syrup with a clean sanitized towel and replace dust caps.

SYRUP DELIVERY INSTRUCTIONS

CAUTION: Drain line must be disconnected from tank during delivery of syrup.

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

1. Connect Vent line to Sanitize pressure Vent connection on top of an empty, sanitized Bulk Syrup Tank.

NOTE: A full delivery of syrup can only be accomplished if Sanitize/ Pressure/Vent connection is made.

2. Remove dust cap from Syrup Fill connection. Wipe off connection using a clean, sanitized towel.

3. Connect Syrup Delivery Hose to Syrup Fill connection.

   (At this time the delivery driver will connect the CO2 Pressurization line to the quick connect 2 pin in the Fill Station and the truck syrup tank).

4. After syrup transfer the delivery driver will disconnect the CO2 Pressurization line from the 2 pin quick connect and truck syrup tank.

5. Walk any remaining syrup in the line from the truck syrup tank into the store Bulk Syrup Tank.

6. Remove Syrup Delivery Hose from Bulk Syrup Tank.

7. Remove Vent line from Bulk Syrup Tank.

8. Using a clean, sanitized towel, wipe off Syrup Fill connection and sanitize/Pressurize/Vent connection.

9. Replace dust caps.

SYRUP USE INSTRUCTIONS

1. Connect Tank Pressure line to Sanitize/Pressurize/Vent connection on the Bulk Syrup Tank.

2. Remove dust cap from Syrup Supply/Drain connection on bottom of Bulk Syrup Tank.

3. Connect Syrup Supply Line to Syrup Supply/Drain connection on bottom of Bulk Syrup System.

JUMPERING

When the level of syrup in a tank drops below 3 gallons, it is possible to "jump" syrup from one tank to another. This will insure an uninterrupted syrup supply without waste.

1. Disconnect Syrup Supply line from nearly empty tank and move it to full tank.

2. Connect large end of Jumper Hose to Syrup Fill connection on full tank.

3. Connect small end of Jumper Hose to Syrup Supply/Drain connection on bottom of nearly empty tank.

4. When first tank is empty (no syrup is seen in Jumper Hose) move Tank Pressure line to Sanitize/Pressurize/Vent connection on full tank.

5. Remove Jumper Hose.

6. Sanitize empty tank.

AUXILIARY SYRUP SUPPLY

NOTE: In the event all syrup tanks are empty it is possible to connect two figal syrup tanks to a special connection in the syrup supply line.

1. Disconnect syrup supply line from bulk syrup tank.

2. Using short jumpers connect a full figal to each side of the two pin cross.

3. Connect a pressure line from the medium pressure manifold of the beverage system to the gas connection of the figal.

4. Monitor syrup usage to prevent syrup from running out.

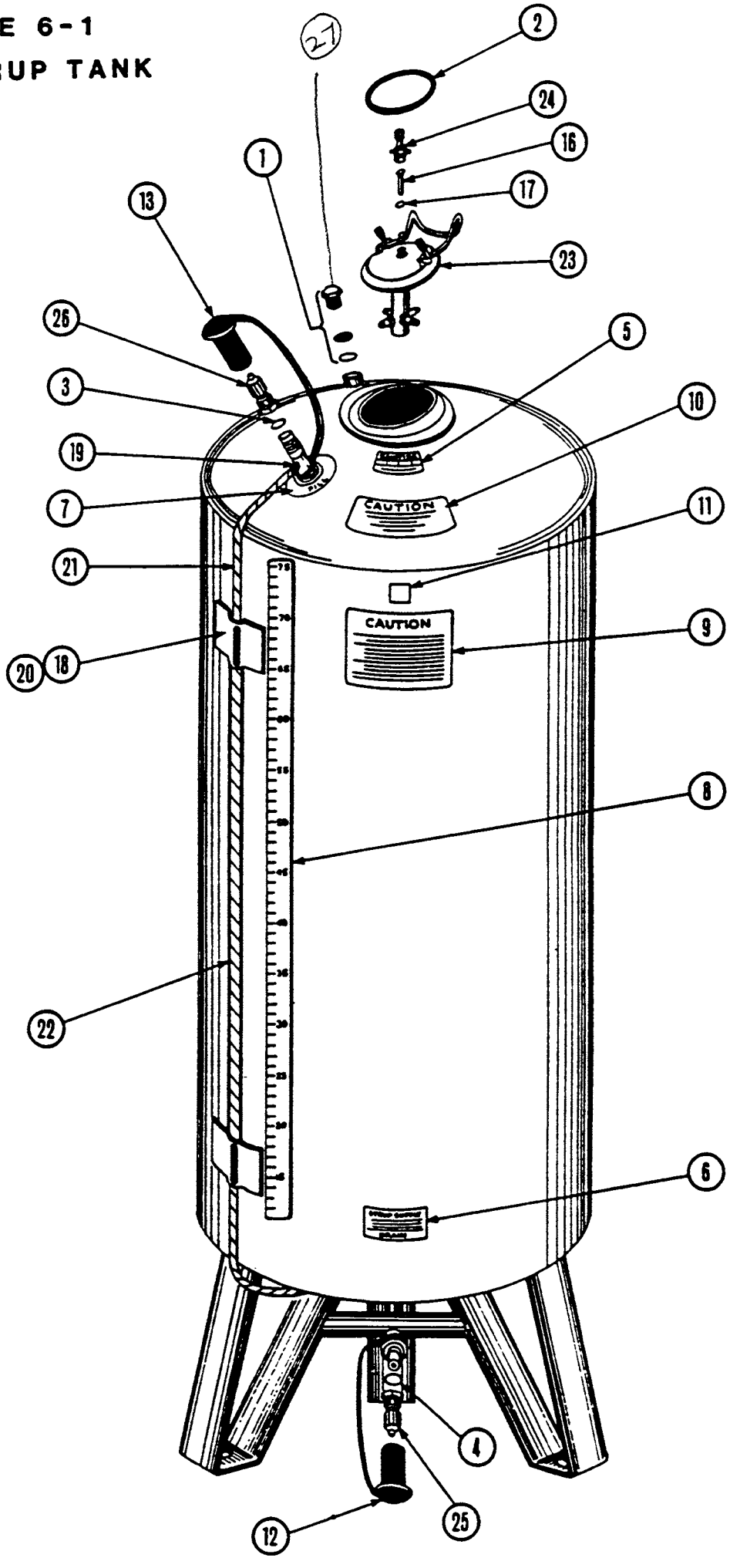
SECTION 6

SSM-80G BULK SYRUP TANK

PARTS IDENTIFICATION

ITEM	P/N	DESCRIPTION
		RUPTURE DISCS
1	19-1164-1	Rupture Disc 87 PSI max.
		O-RINGS
2	23-0001-1	O-Ring for cover
3	23-0002-9	O-Ring 0.812"ID X 0.937"OD (for fill connection)
4	23-0003-9	O-Ring 0.562"ID x 0.687"OD (for Drain Connection)
		LABELS
5	38-1611-9	Label, Sanitizer
6	38-1612-9	Label, Syrup Supply/Drain
7	38-1615-9	Label, Syrup Fill
8	38-1616-9	Label, Liquid Level
9	38-1617-9	Label, Caution
10	38-1698-9	Label, Caution Procedure
11	38-1737-9	Label, NSF Listing Mark
		DUST CAPS
12	39-1089-6	Dust Cap, Syrup Supply Connection
13	39-1090-6	Dust Cap, Syrup Fill Connection
14	39-1091-6	Dust Cap, Vent Connection
15	39-1115-6	Tevi-Cap, Brown, 2-Pin
		LEVEL TUBE FOR VENT CONNECTION
16	47-1060-9	Level Tube 1-.125" LG W/O O-Ring
17	47-1061-9	Gasket, .312 ID x .500" OD Buna-N
		LEVEL GAUGE PARTS
18	105026997	Tape, Double Stick, .750" Wide 36"
19	34-1090-4	Ferrule
20	54-1085-1	Bracket, Sight Gauge
21	28-1141-6	Inner Tube 0.25" ID (Order 60")
22	28-1142-6	Protector 0.625" ID (Order Qty 1)
		COVER (COMPLETE)
23	56-1490-9	Cover
		QUICK COUPLERS
24	65-1163-1	Quick Connect, Two Pin Lock
25	65-1165-1	Quick Connect, .500" Nipple
26	65-1166-1	Quick Connect, .750 Nipple
27	19-1158-1	Rupture Disc Holder

FIGURE 6-1
BULK SYRUP TANK

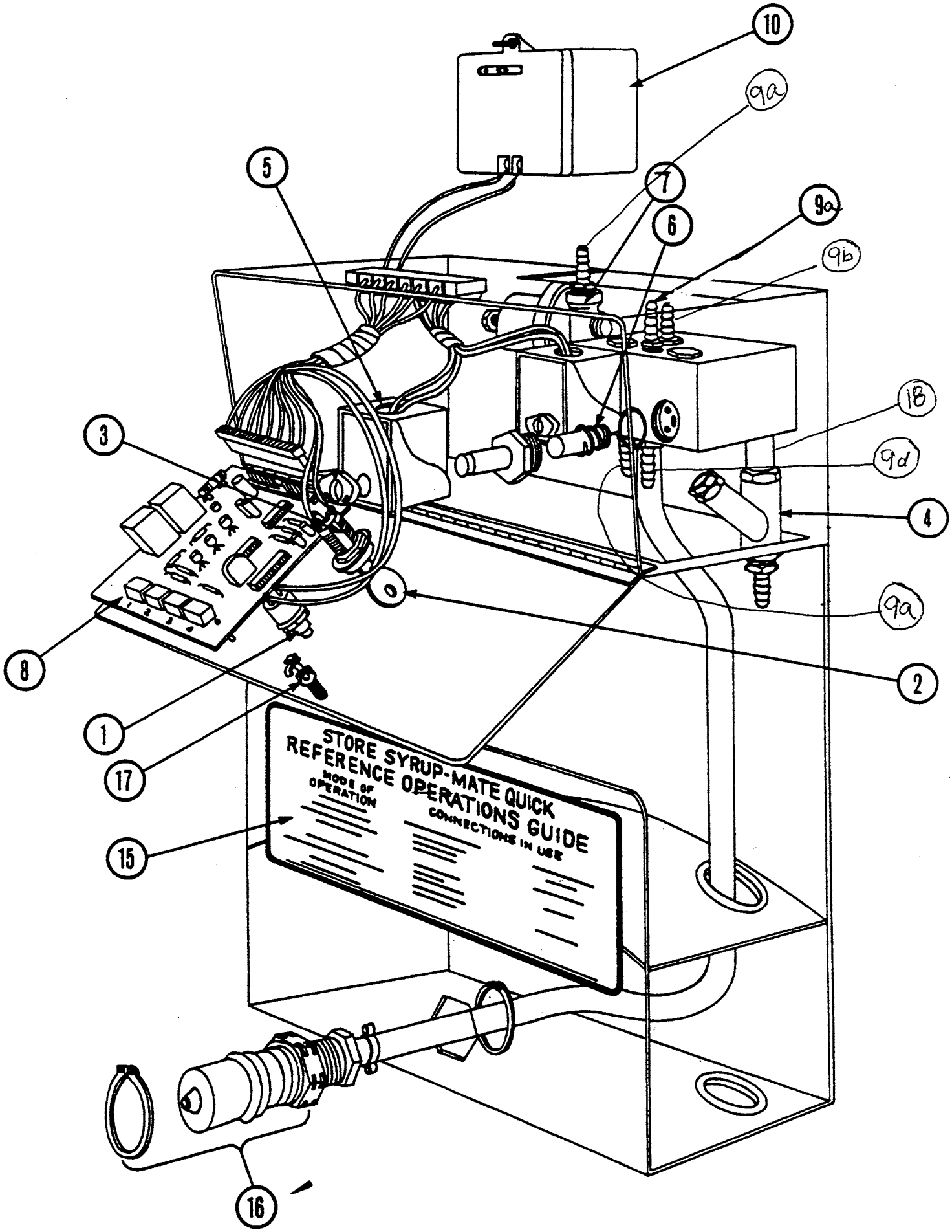


CLEAN IN PLACE PANEL

ITEM	PART NUMBER	DESCRIPTION
1	46-1422-R	Purge Button
2	46-1391-R	Key
3	46-1390-R	Key, Switch
4	49-1052-6	Strainer
5	46-1393-R	Solenoid Coil
6	46-1394-R	Solenoid Repair Kit (includes solenoid & seals)
7	21-1130-2	Syrup Regulator 60 psi
8	46-1392-R	Circuit Board
9a	16-1132-2	Hose barb- 1/4" MPT x 1/4"
9b	10661540	1/4" barb x SAE-6 O-Ring & ball
9c	16-1133-2	1/4" barb x 3/8" MPT
9d	16-1216-2	3/8" barb x 1/4" MPT
10	46-1389-R	Transformer
11	65-1187-6	Liquid Ball Lock Connector
12	65-1186-6	Gas Ball Lock Connector
13	38-1844-9	Label, Tank Pressure (BLUE)
14	38-1831-9	Label, Sanatize Tank (BLUE)
15	38-1614-9	Label Operation
16	46-1406-R	Quick Connect.500" Nipple w/ Snap ring
17	46-1404-R	Door Latch
18	13-1026-2	Nipple, 3/8" x 3", brass

FIGURE 6-2

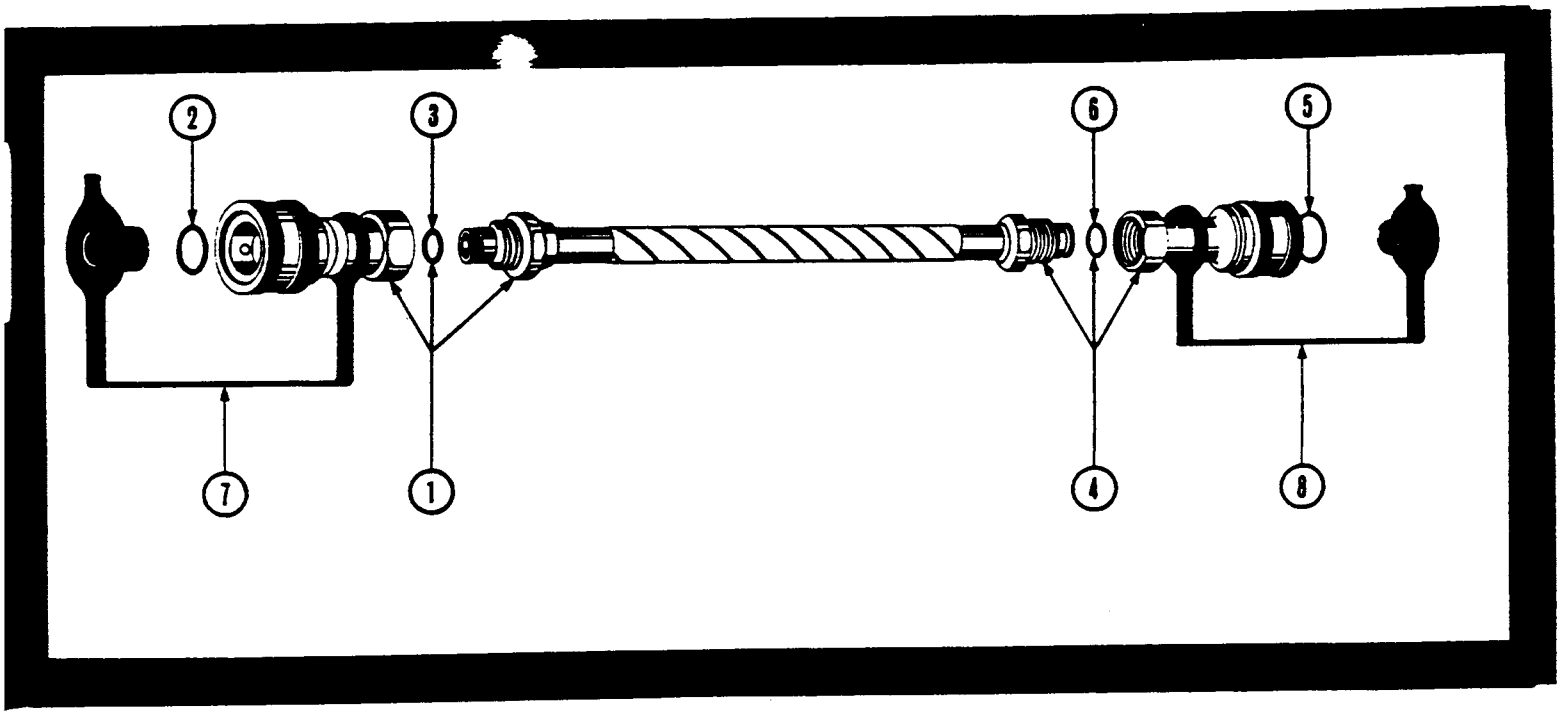
CLEAN IN PLACE PANEL



JUMPER HOSE PARTS

ITEM NO.	MVE P.N.	DESCRIPTION
1	65-1178-1	0.75" Female Ball Conn 0.5" Hose Barb
2	23-0006-R	O-Ring for inside 0.75" Conn. Above
3	23-0002-9	O-Ring for Hose Barb End
4	65-1167-1	0.5" Female Lock Ball Conn 0.5" Hose Barb
5	23-0007-R	O-Ring for Inside 0.50" Conn. Above
6	23-0003-9	O-Ring for Hose Barb End
7	39-1095-6	3/4" plug.

FIGURE 6-3
JUMPER HOSE



Miscellaneous Accessories

P/N	DESCRIPTION	FUNCTION
97-2089-9	10 Gallon Sanitizing Container	Used for mixing and holding sanitizing solution.
97-1057-9	Jumper Hose	Used for sanitizing and jumping between tanks.
65-1171-2	Drain Quick Coupling (Brass)	Allows connection of drain line to bottom of syrup tank.
65-1167-1	Syrup Coupling (Stainless Steel)	Allows connection of syrup tank to beverage system.
65-1186-6	Gas Ball Lock Connection	Connects pressurization hose to 10 gallon tank.
65-1187-6	Liquid Ball Lock Connection	Connects drain hose to 10 gallon tank.
65-1170-6	Two-Pin Connection	Used to connect tank vent or pressurization hose to syrup tank.
16-1150-9	Two Pin Cross	Provides hookup point for using figals
16-1142-1	Tee 0.5" x 0.375" x 0.375" Barb	Used to connect syrup supply line to syrup filters
38-1833-9	Label, Tank Vent	Identifies vent line
38-1332-9	Label, Tank Pressure (Red)	Identifies tank pressure line
38-1844-9	Label, Tank Pressure (blue)	Identifies Sanitize Pressure Line
38-1975-9	Label, Emergency CO2 Supply	Identifies emergency CO2 Line
38-1979-9	Label, Sanitize Supply	Identifies Sanitizer Supply Line
38-1834-9	Label, Drain	Identifies drain line
38-1831-9	Label, Sanitize Tank	Identifies Sanitizing Line
38-1835-9	Label, Syrup Supply	
97-1968-9	0.50" Syrup Supply Coupler with 85' Hose	

SECTION SEVEN

BULK SYRUP TANK SSM-80G TROUBLESHOOTING GUIDE

To assist the technician in diagnosing and solving problems the following trouble shooting list is provided. Repair procedures are explained in Section 8.

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Frost spot on bottom of bulk CO_2 tank.	This is normal during the sanitizing cycle / syrup transfer.	None.
	Normal during rush hour.	None.
	Leaks in fittings or CO_2 supply line.	1. Use soap solution to check for leaks. 2. Leaks are present if bubbles appear. 3. Refer to index and Figures 1 & 2 after leak is isolated to find repair procedure.
Liquid level gauge is illegible.	Gauge tube or gauge protector needs replacement.	Refer to Procedure 4 or 6 for instructs.
No syrup or insufficient syrup in finished drink.	Rupture disc open.	Refer to Procedure 2. Check syrup supply regulator for proper operation. Refer to Procedure 18.
	Syrup tank empty.	Change to full syrup tank. If no other tanks are available then use the following procedures: 1. Obtain at least two syrup figals. 2. Disconnect syrup supply line from bottom of bulk tank

BULK SYRUP TANK SSM-80G TROUBLESHOOTING GUIDE

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
No syrup or insufficient syrup in finished drink (cont. from previous page).	Syrup tank empty.	3. Connect one figal to each plug connection located under the drink machine above the syrup tank. Try using a short jumper hose. 4. Connect an unused gas quick disconnect from the medium pressure manifold of the beverage system to the gas plug on each figal.
	Kinked syrup lines.	Check lines.
	Syrup Use Isolation Valve (V-6) on bulk CO_2 tank closed.	Open valve.
	Tank pressure line not fully engaged on syrup tank.	Inspect and clean Quick Disconnect and re-engage.
	Syrup supply line not connected.	Connect line.
	Regulator on bulk CO2 tank set incorrectly.	1. Check syrup supply pressure gauge on MCDST-160B 2. Adjust if necessary (See CO2 tank manual)

	Regulator on CIP panel set incorrectly	1. Use accurate pressure gauge connected to Tank Pressure disconnect. To check output pressure of clean in place panel. 2. Pressure should be 60 psi. 3. Adjust regulator by turning adjustment bolt clockwise to increase setting. 4. Re-check setting using gauge.
Syrup Supply/Drain leaking at bottom use fitting after syrup fill was made.	Defective Fitting	1. Either connect syrup supply line to tank and use till tank is empty or follow jumpering procedure to transfer syrup from leaking tank into an empty tank. 2. Refer to Procedure 5. Repair when leaking tank is empty.

CLEAN-IN-PLACE PANEL TROUBLESHOOTING GUIDE

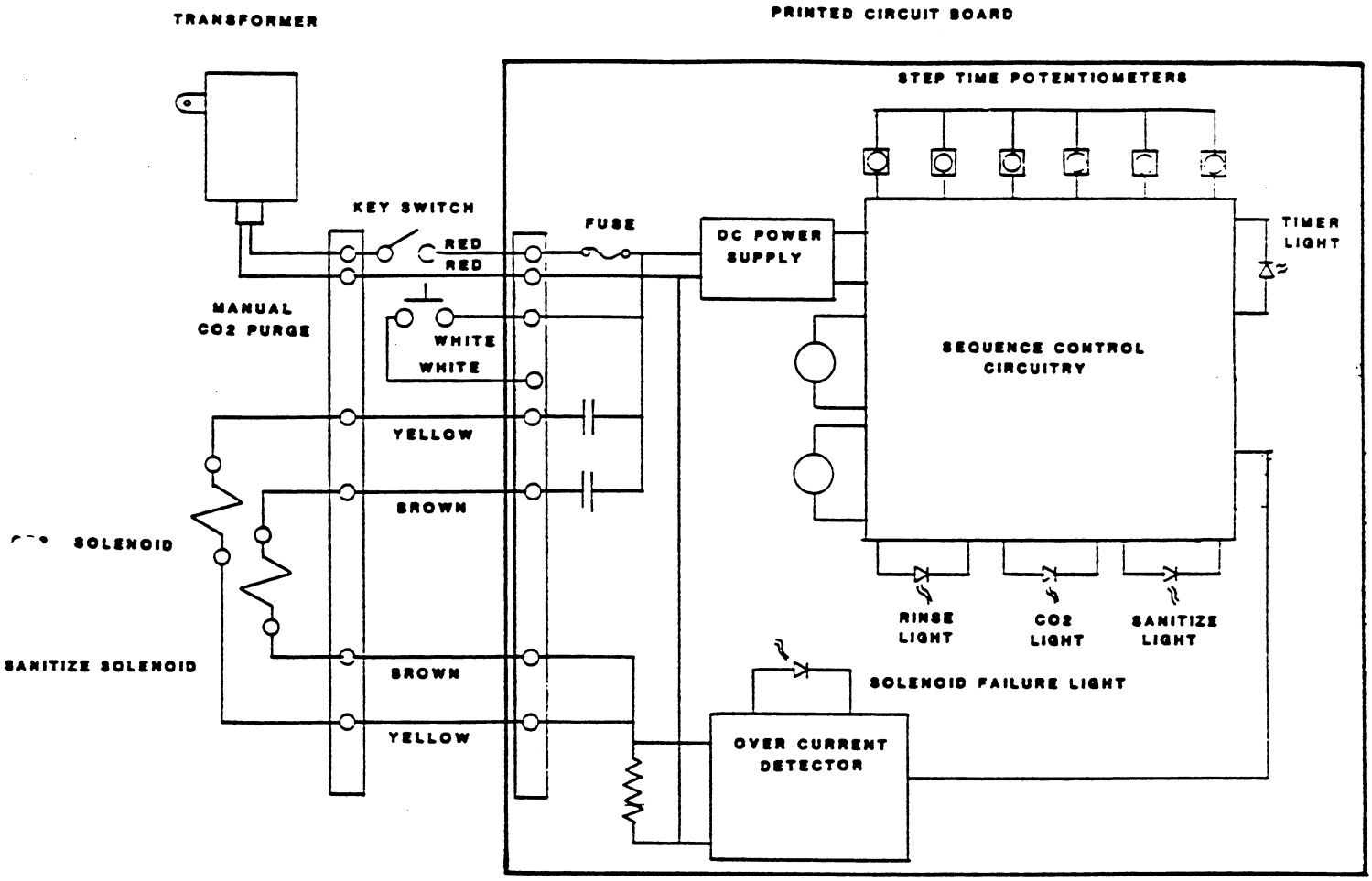
PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Red lights do not come on when key is turned to ON position.	24 VAC transformer is not plugged into electrical outlet.	Push 24 vac transformer into outlet firmly. Check to see if center screw is missing.
		Test transformer outlet voltage. It should be 24 VAC. If not, refer to Procedure 8.
	Circuit breaker has been tripped.	See circuit-breaker designated to outlet that transformer is plugged into. Reset circuit breaker.
	Circuit board is defective	Replace circuit board. Refer to Procedure 10.
Key is ON, light is ON (rinse) but water does not flow.	Filter on sanitize line is plugged.	1. Remove lines from 10 gal.
		2. Clean filter and replace.
		3. If filter is beyond repair, replace with new one. Refer to Procedure 13.
	Sanitize lines are not connected or connected incorrectly.	After connections are made, pull on fittings to assure connections are fully engaged.
	Syrup Supply Isolation valve (V-6) on CO_2 closed.	Open valve.

CLEAN-IN-PLACE PANEL TROUBLESHOOTING GUIDE

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Key is ON, light is ON (rinse) but water does not flow (Cont. from previous page).	Check if solenoid failure light is illuminated.	Turn key OFF and ON. Run sanitize cycle. Refer to Procedure 11 or 12 for solenoid repair instructions.
	Circuit board is defective	Replace circuit board. Refer to Procedure 10.
	Sanitizer tank is empty.	Fill sanitize tank.
More than 1 gallon of sanitizer left in 10 gallon sanitizing tank after cycle is over.	Connections to 10 gal were not fully engaged.	1. Reconneet fittings and give a light pull to assure connection is fully engaged. 2. Restart sanitizing cycle. 3. Clean filter and replace. 4. If filter is beyond repair, replace with new one. Refer to Procedure 13.
	Sanitize connections are reversed.	Reverse connections and restart cycle.
	CO_2 pressure is lower than 60 PSI.	Check Syrup Supply Pressure Gauge on Bulk CO2 tank. Gauge shoul read 60 psig. If less than 60 psig, see Troubleshooting section of MCDST-160B manual.
	Sanitizing time cycle needs calibration.	Refer to Procedure 10 for calibration instructions.

Bulk Syrup tank will not fill or fills slowly.	Vent line not properly connected on syrup tank.	Check all connections so they are fully engaged.
	Bulk CO2 tank syrup supply pressure is below 60 psi	Check Syrup Supply Pressure Gauge on bulk CO_2 tank. Gauge should read 60 psig. If less than 60 psig see Troubleshooting section of MCDST-160B manual.
Purge button not operating.	Purge button defective.	Refer to Procedure 15 for repair instructions.
Door does not latch properly.	Latch is defective.	Refer to Procedure 14 for repair.
Miscellaneous leaks in system.	Hoses, crimps, quick connectors, etc. defective.	Refer to index and Figures 1 & 2 after leak is isolated to find repair procedure.

SSM 80G BULK SYRUP SYSTEM WIRING DIAGRAM



SECTION 8

REPAIR PROCEDURES

The procedures listed below have been developed to instruct in the safe and efficient repair of the bulk syrup system.

Procedure No.	Procedure
1.	SSM Closure Spray Head Inspection Repair
2.	SSM Burst Disk Replacement
3.	Syrup/Fill Nipple Repair/Replacement
4.	Liquid Level Indication Hose/Replacement
5.	Drain Nipple Repair/Replacement
6.	Broken Liquid Level Gauge Protector Tube Repair
7.	Jumper Hose Repair
8.	Transformer Replacement
9.	Keyswitch Assembly Replacement
10.	P. C. Board Replacement
11.	Solenoid Actuator Replacement
12.	Solenoid Spindle Assembly Replacement
13.	Sanitize Solution Strainer Replacement
14.	Latch Replacement
15.	Manual CO2 Purge Button Replacement
16.	Jumper Coupling/Solenoid Block Hose Repair
17.	Jumper/Sanitize Quick Disconnect Coupling Repair
18.	Regulator Set

PROCEDURE 1: SSM Closure Spray Head Inspection, Repair (See Figure 6-1)

Tools: Wrench

Time Required: 20 min.

1) Remove 2-pin (Red) pressure line from SSM 80 and relieve all pressure through 2-Pin (Green) vent. It is not necessary to drain the product from the tank.

2) Remove (Green) vent line from the 2-pin connector.

3) Remove the 2-pin connector and inspect level tube and o-ring inside for damage. Remove the top cover from tank. If oval closure O-Ring doesn't come out, reach under the lip of the tank opening and retrieve it. Cover the opening with cellophane to prevent contaminants from entering the tank. Inspect the cover, o-ring and 2-pin connector for damage.

4) Discard and replace any damaged parts. These parts are not repairable:

Closure Spray Head	56-1490-9
Closure O-Ring	23-0001-1
Level Tube	47-1060-9
Level Tube O-Ring	47-1061-9
2-Pin Connector	65-1163-1

5) Wash parts in soap and water, then sanitize in chlorine solution.

6) Put the assembly back together, making sure all o-rings are in place and install on top of the tank again. Connect (Red) pressure Line to the tank and test for leaks. If any leaks occur, return to Step 3.

NOTE: Minor adjustments to the snap-down legs may be needed so they hold the cover down tightly and without leaks. If the seal leaks when first installed, moisten the closure o-ring and visually examine the snap-down legs. If they appear uneven, pound them straight with a small hammer.

PROCEDURE 2: SSM Burst Disk Replacement(See Figure 6-1)

Tools: 1 large crescent wrench, small screwdriver, soaptest solution
Small Phillips screw driver

Time Required: 10 min.

1) Remove 2-pin (Red) pressure line from SSM-80 and relieve all pressure through 2-pin (green) vent valve. It is not necessary to drain the product from the tank.

2) Remove the burst disc holder with a wrench and reach into the hole with your fingers or a small screwdriver to remove the broken disk. Be sure to get all loose metal and plastic out of the hole.

3) Insert plastic disk in the hole first and place the metal one on top with the domed side up of it (P/N 19-1135-1). Be careful not to crinkle or puncture the disk.

4) Replace the burst disk holder and tighten firmly.

5) Connect (red) pressure line and test for leaks with soap test solution.

PROCEDURE 3: Syrup/Fill Nipple Repair/Replacement (See Figure 6-1)

Tools: Crescent wrench, soap test solution

Time required: 15-20 min.

1) Remove 2-pin (Red) pressure line from SSM-80 and relieve all pressure through 2-pin (green) vent valve. It is not necessary to drain the product from the tank.

2) Remove the quick connect nipple with a large wrench, exposing a threaded nipple with an o-ring on the end. Replace the o-ring with a new one (P/N 23-0002-9). Check for visible damage on threaded nipple.

3) Check dust cap for damage. If damaged, replace with a new one (P/N 39-1090-6). Wash the dust cap in soapy water and rinse in sanitize solution.

4) Slide the dust cap ring over the threaded nipple, then install the quick connect nipple back on the threaded nipple and pressurize the tank again.

5) Connect (red) pressure line and test for leaks with soap test solution.

6) If the quick connect nipple still leaks or operates improperly, remove the nipple and install a new one (P/N 65-1166-1).

PROCEDURE 4: Liquid Level Indication Hose/Replacement (See Figure 6-1)

Tools: Tubing Cutters, screwdriver, crimping tool, channel locks, soaptest solution

Time Required: 15 min.

Note: Unless only repairing the top crimp, this procedure should only be done when the syrup tank is empty or nearly empty to minimize syrup losses.

1) Drain the product from the tank if replacing the hose or the lower crimp.

2) Remove 2-pin (Red) pressure line from SSM 80 and relieve all pressure through 2-pin (Green) vent line.

3) Use the screwdriver to loosen the leaking ferrule The ferrules are soft and can be ripped open with a pliers. Next pry the hose end off of the hose barb.

4) Replace the hose, if damaged, with a 5' 7/32" (5.2188) foot length of 1/4" ID hose (P/N 28-1141-6) and crimp each end on the hose barbs with 1/2" diameter crimps (P/N 34-1133-1).

5) Connect (red) pressure line and test for leaks with soap test solution.

PROCEDURE 5: Drain Nipple Repair/Replacement (See Figure 6-1)

Tools: Crescent wrench, soap test solution

Time required: 15-20 min.

Note: This procedure should only be done when the syrup tank is empty or nearly empty to minimize syrup losses.

1) Drain the product from the tank.

2) Remove the 2-pin (Red) pressure line from the SSM-80 and relieve all pressure through the 2-pin (Green) vent line.

3) Remove the quick connect nipple with a large wrench, exposing a threaded nipple with an o-ring on the end. Replace the o-ring with a new one (P/N 23-0003-9). Check for visible damage on the threaded nipple.

4) Check dust cap for damage. If damaged, replace with a new one (P/N 39-1089-6).

5) Wash and sanitize the assembly, then slide the dust cap ring over the threaded nipple, then install the quick connect nipple back on the threaded nipple and pressurize the tank again.

6) Connect (red) pressure line and test for leaks with soap test solution.

7) If the quick connect nipple still leaks or operates improperly, remove the nipple and install a new one (P/N 65-1166-1 for 3/4" connector, P/N 65-1165-1) as described above.

PROCEDURE 6: Broken Liquid Level Gauge Protector Tube Repair (See Figure 6-1)

Tools: Screwdriver, Crimping Tool, Leak Test Solution

Time Required: 15 min.

1) Remove the 2-Pin (Red) pressure line from the SSM 80 and relieve all pressure through the 2-Pin (Green) vent line.

3) Use the screwdriver to loosen the crimp on the top hose barb. The cap crimps are soft and can then be ripped open with a pliers. Next pry the hose end off of the hose barb.

3) Plug the hose tightly and pull it through the level tube protector.

5) Position a new sight gauge protector (P/N 28-1142-6) in the brackets.

6) Pull the level tube up through the protector tube, then remove the plug and crimp it back onto the hose barb.

7) Pressurize the syrup tank and bubble test for leaks in the sight gauge tube.

PROCEDURE 7: Jumper Hose Repair (Defective Quick-Disconnect Couplings) See Figure -6-3

Tools: Tubing Cutters, Crimping Tool, Wrenches, Soap solution

Time Required: 15-25 min.

NOTE: Jumper Hose Replacement Criteria--If the coupling has lost ball bearings, or if the hose is cracked or leaking through the crimps, return it to MVE and replace it with a new one (P/N 97-1057-9).

1) Blow out all syrup from the line and purge with sanitizer solution.

2) If the coupling is leaking at the quick connect joint, pry out the o-ring in the coupling and replace with a new one (P/N 23-0007-R for 1/2" coupling, P/N 23-0006-R for 3/4" coupling). If a teflon ring was in the o-ring slot, slide it in front of the o-ring. Proceed to step 5 to test for leaks.

3) If the coupling is leaking at the threaded joint between the hose barb and the quick coupling, remove the coupling from the hose barb connector with two large wrenches. This will expose a threaded nipple with an o-ring on it.

4) Replace the o-ring with a new one (P/N 23-0002-9 for 3/4" coupling, P/N 23-0003-9 for 1/2" coupling) and assemble the coupling again.

5) Test the coupling for leaks under pressure using a bubble test solution.

6) If the coupling still leaks, replace the coupling with a new one (P/N 65-1168-1 for 3/4" coupler, P/N 65-1167-1 for 1/2" coupler).

PROCEDURE 8: Transformer Replacement (See Figure 6-2)

Tools: Screwdriver

Time Required: 5 min.

1) Unplug transformer from wall.

2) Unscrew transformer leads.

3) Connect leads to new transformer (P/N 46-1389-R).

4) Plug in new transformer and turn on the key. verify that the panel lights light up.

PROCEDURE 9: Keyswitch Assembly Replacement (See Figure 6-2)

Tools: Screwdriver, 7/8" wrench

Time Required: 10 min.

NOTE: Replace lost or damaged key with P/N 46-1391-R

1) Shut off the pressure source to the CIP panel by closing the isolation valve on the MCDST just before the 100 PSIG pressure regulator. Shut off the power by unplugging the transformer.

2) Disconnect the terminals on the keyswitch assembly with a screwdriver. Remove the screws and lockwashers and set them aside.

3) Loosen and remove keyswitch retaining nut and pull the keyswitch assembly out of the panel. Be careful not to disturb the circuit board next to the keyswitch.

4) Install a new keyswitch assembly (P/N 46-1390-R) and reconnect terminals. Assure the keyswitch is installed right side up.

5) Open up the MCDST isolation valve, plug in the transformer and turn on the key to verify that there is power to the panel.

PROCEDURE 10: PC Board Replacement (See Figure 6-2)

Tools: None

Time Required: 10 min.

1) Shut off the pressure source to the CIP panel by closing the isolation valve on the MCDST just before the 100 PSIG pressure regulator. Shut off the power by unplugging the transformer.

2) Carefully remove 12-wire pin connector from P.C. board.

3) Press the board off each of the four mounting pegs with thumb and forefinger.

4) Press new P.C. board (P/N 46-1392-R) into place and reconnect 12 pin connector to board.

5) Open up the MCDST isolation valve, plug in the transformer and turn on the key, then test by running one sanitize cycle.

6) If necessary to adjust times consult factory.

PROCEDURE 11: Solenoid Actuator Replacement (See Figure 6-2)

Tools: 2 Small Screwdrivers

Time Required: 15 min.

1) Shut off the pressure source to the CIP panel by closing the isolation valve on the MCDST just before the 100 PSIG pressure regulator. Shut off the power by unplugging the transformer.

2) Unwind the spiral wrap from the solenoid wires, then disconnect the wires of the defective solenoid coil from terminal block.

3) Insert a small screwdriver in the narrow slot of the yellow clip holding the solenoid coil and twist slowly and carefully until the clip pops open. NOTE: The yellow clips break easily when removed. Pull solenoid coil off the spindle.

4) Replace the solenoid coil with a new coil (P/N 46-1393-R) and clip in place. Wind the spiral wrap around the wires and reattach the wires to the terminal block. NOTE: The left solenoid wires should attach to the middle two terminals (with yellow wires to PC board) and the right solenoid wires attach to the right two terminals (with brown wires to PC board).

5) Open up the MCDST isolation valve, plug in the transformer and turn on the key. Test that solenoid operates properly by running a sanitizing cycle.

PROCEDURE 12: Solenoid Spindle Assembly Replacement (See Figure 6-2)

Tools: Screwdriver, wrenches, 1-1/8" spark plug socket wrench

Time Required: 20 min.

1) Shut off the pressure source to the CIP panel by closing the isolation valve on the MCDST just before the 100 PSIG pressure regulator. Shut off the power by unplugging the transformer.

2) Insert a small screwdriver in the narrow slot of the yellow clip holding the solenoid coil and twist slowly and carefully until the clip pops open. NOTE: Yellow clips break easily when removed. Remove both solenoid coils.

3) Remove the solenoid spindle assembly. A 1-1/8" sparkplug socket wrench is the ideal tool to remove the spindle. Otherwise, it may be necessary to remove the solenoid block from the CIP to remove the spindles. NOTE: Be careful not to disturb the PC board while working on the solenoid spindle.

4) Pull out the brass seat plug and the two o-rings.

5) Replace the inner o-ring with the thicker one in the spindle ass'y kit (P/N 46-1394-R), then insert the brass seat plug. Set the thin o-ring back in the groove on the plug and replace the spindle with a new one. Assure that the spring and seat assembly are seated in the spindle. Install the spindle tightly on the solenoid block.

6) Clip the solenoid coils back into place with the yellow spindle clips. NOTE: The left solenoid wires should attach to the middle two terminals (with yellow wires to PC board) and the right solenoid wires attach to the right two terminals (with brown wires to PC board).

7) Connect all hoses to their respective port and crimp them tight.

8) Open up the MCDST isolation valve, plug in the transformer and turn on the key. Test that solenoid operates properly by running a sanitizing cycle.

PROCEDURE 13: Sanitize Solution Strainer Replacement (See Figure 6-2)

Tools: Wrench, soap solution

Time Required: 30 min.

1) Shut off the pressure source to the CIP panel by closing the isolation valve on the MCDST just before the 100 PSIG pressure regulator. Shut off the power by unplugging the transformer.

2) Remove element from strainer.

3) Rinse sediments backwards out of the strainer.

4) Inspect the strainer element and replace.

5) If strainer body is damaged, remove strainer with a wrench and replace with a new one (P/N 49-1034-2). It is usually necessary to remove the solenoid block from the wall to remove the strainer. To do this, remove the CIP panel from the wall, then loosen the Allen bolts on the back of the cabinet. Pull the block out far enough so that the strainer can be threaded off.

6) Open up the MCDST isolation valve, plug in the transformer and turn on the key. Bubble test for leaks with soap solution.

PROCEDURE 14: Latch Replacement (See Figure 6-2)

Tools: Wrench, screwdriver

Time Required: 5 min.

1) Loosen latch and open cover.

2) Loosen retaining nut on the front of the panel and remove latch by pushing it back through the panel.

3) Position a new latch (P/N 46-1404-R) in the panel, making sure the latch action is correct and tighten the retaining screw.

4) Test latch to ensure it operates properly.

PROCEDURE 15: Manual CO2 Purge Button Replacement (See Figure 6-2)

Tools: Wrench, soldering iron

Time Required: 10 min.

1) Shut off the pressure source to the CIP panel by closing the isolation valve on the MCDST just before the 100 psig pressure regulator. Shut off the power by unplugging the transformer.

2) Desolder connections on back of the push-button.

3) Remove switch from panel and install new switch.

4) Solder wires to leads of new switch with 60-40 rosin core solder.

6) Open up the MCDST isolation valve, plug in the transformer and turn on the key.

6) Test by pushing purge button several times. The solenoid should click open when the purge button is pushed.

PROCEDURE 16: Jumper Coupling/Solenoid Block Hose Repair

(See Figure 6-2)

Tools: Crimping tool, tubing cutters, screwdriver, wrench or nut drivers, snap ring wrench, soap solution

Time Required: 15 min.

1) Shut off the pressure source to the CIP panel by closing the isolation valve on the MCDST just before the 100 PSIG pressure regulator. Shut off the power by unplugging the transformer.

2) Remove snap ring from the front of the coupling connector.

3) Break the crimp on each end and work the hose off of the hose barb.

4) Replace defective hose with a 18" length of 3/8" ID hose (P/N 37-1123-6) and crimp the hose tightly to the hose barbs with 5/8" crimps (34-1132-1).

5) Open up the MCDST isolation valve, plug in the transformer and turn on the key. Test the hose for leaks under pressure using bubble test solution.

6) Pull the coupling through the cabinet and replace the snap ring.

PROCEDURE 17: Jumper/Sanitize Quick Disconnect Coupling Repair(See Figure 6-2)

Tools: Snap Ring Wrench, 1" & 7/8" open end wrenches

Time Required: 10 min.

1) Shut off the pressure source to the CIP panel by closing the isolation valve on the MCDST just before the 100 PSIG pressure regulator. Shut off the power by unplugging the transformer.

2) Remove snap rings from the front of coupling connector.

3) Pull the coupling out of the cabinet.

4) Thread the quick coupling from the hose barb fitting.

5) Wrap the threads on the hose barb fitting in teflon tape and replace the quick coupling with a new one (P/N 65-1143-2).

6) Pull the coupling through the cabinet and replace the snap rings.

7) Open up the MCDST isolation valve, plug in the transformer and turn on the key.

8) Attach the jumper hose, apply pressure and leak test with soap solution.

PROCEDURE 18: Regulator Set (See Figure 6-2)

Tools Required: Tubing cutters, crimping tool, 0-100 PSI pressure gauge

Time required: 20 min.

1) Shut off the pressure source to the CIP panel by closing the isolation valve on the MCDST just before the 100 PSIG pressure regulator. Shut off the power by unplugging the transformer.

2) Tap a pressure gauge onto the "Sanitize Tank" pressure line with a 2-pin coupler or a standard 1/4" hose barb.

3) Crimp the pressure gauge onto the line if not using 2-pin coupler.

4) Open the MCDST isolation valve. The pressure now indicated on the test gauge is the regulator set point. Turn the adjusting nut clockwise to raise the set point. Turn the adjusting nut counterclockwise and relieve the pressure from the line to lower the set point. If the regulator leaks or will not set properly replace with a new one (P/N 21-1130-2).

5) When the regulator is set, shut the MCDST isolation valve and remove the gauge from the line. If it was removed crimp the female disconnect back on to the sanitize line.

7) Open up the MCDST isolation valve, plug in the transformer and turn on the key. Bubble test with soap solution.

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MVE, INC.
3505 County Road 42 West
Burnsville, MN 55306-3803 U.S.A.
Phone: (800) 247-4446
Fax: (612) 882-5185

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