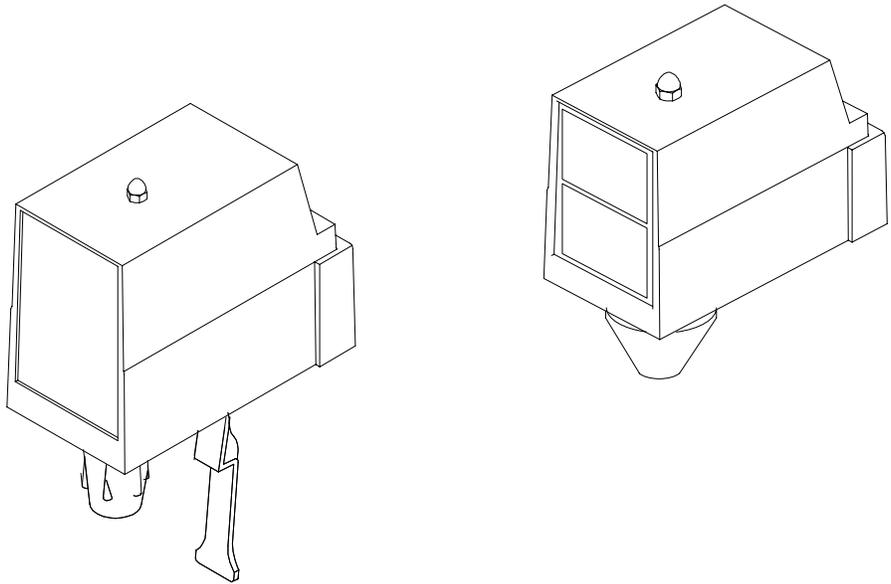




SF-1 AND GEMINI POST-MIX DISPENSING VALVES

Adjustment, Operation, and Maintenance Manual



Part No. 319006000
April 13, 1982
Revised: August 3, 1992

THIS DOCUMENT CONTAINS IMPORTANT INFORMATION

This Manual must be read and understood before installing or operating this equipment

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GENERAL INFORMATION

SAFETY INFORMATION

Recognize Safety Information

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

Follow recommended precautions and safe operating practices.



Understand Signal Words

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



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



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



Follow Safety Instructions

Carefully read all safety messages in this manual and on your equipment safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs.

Learn how to operate the equipment and how to use the controls properly. Do not let anyone run the equipment without instructions.

Keep your equipment in proper working condition. Unauthorized modifications to the equipment may impair the function and/or safety and affect the life of the equipment.

warranty registration data

(to be filled out by Customer)

Model Number:

Serial Number:

Install Date:

Local Authorized Service Center:

GENERAL WARRANTY POLICY

IMI Cornelius Inc. Warrants that all equipment and parts are free from defects in material and workmanship under normal use and service. **More expressly defined and limited by specific warranties covering each product.**

TERMS AND CONDITIONS

Prices: All prices are F.O.B. factory. Taxes imposed by any present or future federal, state or local laws, if paid by us, will be charged to purchaser. Title and risk of loss to equipment pass to purchaser upon delivery to carrier.

Terms: Terms of net thirty (30) days from date of invoice will be gladly extended to those customers of known and acceptable financial standing. Otherwise, orders must be accompanied by cash. A service charge of 1-1/2% per month, which is an effective annual percentage rate of 18% will be charged for invoices not paid within 30 days, but in no event will the monthly service charge exceed 1/12 if the annual percentage rate is allowable under applicable state laws.

Returned Goods: Merchandise must not be returned without prior approval or consent, which will be given or withheld at our sole discretion. **(All returned merchandise must be sent freight prepaid to IMI Cornelius Inc; Anoka, Minnesota).** If the merchandise is in a new, unused condition and is in its original carton with all the original packing and is a configuration appearing in our current catalog, it will be accepted back (subject to prior approval as stated above) and a credit allowed amounting to the original selling price or current selling price whichever is lower, less the restocking charge indicated below.

If returned goods are received by Cornelius: within 60 days of invoice date - 10% of applicable selling price.

Within 61-120 days of invoice date - 20% of applicable selling price.

Over 120 days of invoice date - 30% of applicable selling price.

Shipments of returned merchandise sent collect will not be accepted. Used or discontinued equipment will not be accepted for credit under any circumstances. Item returned to IMI Cornelius Inc; for credit or reimbursement having a value of less than **\$25.00** will not receive credit.

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

ORDERING INFORMATION

Please check the part number carefully when ordering. Be sure to include: Quantity, Part No., Description, and How to Ship - If you have specific routing plans.

NOTE: Quantity prices may be available on spare parts. Save money by ordering larger quantities or bulk packaging on specific items shipped from Anoka.

Compare quality, performance and prices. Then consolidate and simplify your ordering procedure by ordering current service parts from IMI Cornelius Inc. located nearest to your area.

NOTE: To reduce processing and shipping time, please submit separate orders for service parts, rather than combine orders with equipments.

SHIPPING INFORMATION

Unless otherwise instructed, all merchandise will be shipped as follows:

0-150 lbs. (0-68 KG) United Parcel Service

Over 150 lbs. (68 KG) Truck

Cornelius shall select point of origin for shipments to give the most efficient service. Freight charges are from manufacturing point.

COMPLETE SERVICE

Your trained Cornelius sales person stands ready to serve you with ordering and technical assistance. He can also offer you success proven merchandising ideas and placement programs that will help you to locate Cornelius Beverage equipment in retail accounts.

Complete repair and installation service by factory trained personnel is available at Authorized Service Centers. Addresses are available at your request. Spare parts may also be ordered from our Authorized Service Centers.

HOME OFFICES AND MANUFACTURING

IMI Cornelius Inc.
One Cornelius Place
Anoka, Minnesota 55303-6234

(612) 421-6120

800-238-3600

FAX (612) 422-3255

Our 800 number accesses the nearest Distribution Center for sales assistance.

Distribution Centers

Northwest:

IMI Cornelius Inc.
One Selina Drive
Albany, New York 12205
(518) 869-6606
FAX 518-869-9038
800-238-3600

Southeast:

IMI Cornelius Inc.
120 Interstate No. Parkway E
Suite 314
Atlanta, Georgia 30339
(770) 956-1556
FAX 770-956-9532
800-238-3600

HOME OFFICES AND MANUFACTURING (CONT'D)

Distribution Centers (cont'd)

Southwest:

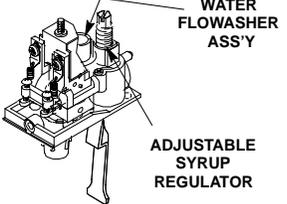
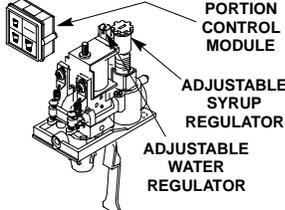
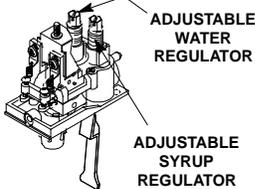
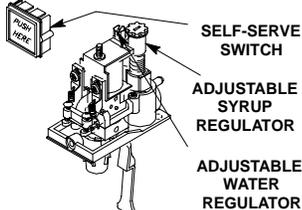
IMI Cornelius Inc.
7427 Tower
Fort Worth, Texas 76118
(817) 654-3888
FAX 817-590-9639
800-238-3600

West:

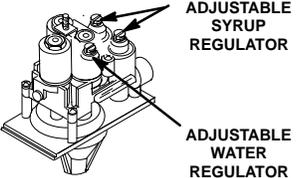
IMI Cornelius Inc.
23285 Eichler Street, Unit C
Hayward, California 94545
(510) 785-6422
FAX 510-785-6423
800-238-3600

**CORNELIUS ELECTRIC SF-1 (SUPER FLOW - 1)
AND
GEMINI TWO-FLAVOR POST-MIX DISPENSING VALVES**

SF-1 DISPENSING VALVES

Valve No.	Includes:	Type of Flow Rate *(see Note)	
318806015 318807015	Cover w/Water Lever Cover w/o Water Lever	Standard-Flow Standard-Flow	 <p>WATER FLOWWASHER ASS'Y ADJUSTABLE SYRUP REGULATOR</p>
2103	Portion Control and Cover w/o Water Lever	Fast-Flow	 <p>PORTION CONTROL MODULE ADJUSTABLE SYRUP REGULATOR ADJUSTABLE WATER REGULATOR</p>
318813015 318812015	Cover w/Water Lever Cover w/o Water Lever	Fast-Flow Fast-Flow	 <p>ADJUSTABLE WATER REGULATOR ADJUSTABLE SYRUP REGULATOR</p>
1690	Self-Serve Dispense Switch	Standard-Flow Cover w/o Water Lever	 <p>SELF-SERVE SWITCH ADJUSTABLE SYRUP REGULATOR ADJUSTABLE WATER REGULATOR</p>

GEMINI DISPENSING VALVE (TWO-FLAVOR)

309912000	Standard Gemini Cover	Fast-Flow	 <p>ADJUSTABLE SYRUP REGULATOR ADJUSTABLE WATER REGULATOR</p>
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***NOTE FLOW RATE:** 1. Fast-Flow Valves - Adjustable syrup and water regulators.
2. Standard-Flow - Adjustable syrup regulator and non-adjustable water flow.

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ADJUSTMENTS

INTRODUCTION

This manual is intended to assist the Operator and Service Personnel in the Operation and Maintenance procedures to be performed.

WATER FLOW RATE

Dispensing Valve With Water Flowasher.

Water flowasher is at a fixed water flow rate and is nonadjustable.

Dispensing Valve With Adjustable Water Flow Regulator.

Turn dispensing valve water flow regulator adjusting screw to the left (counterclockwise) no more than 1/4 turn at a time for less water or to the right (clockwise) no more than 1/4 turn at a time for more water.

WATER-TO-SYRUP “RATIO” OF DISPENSED PRODUCT

SF-1 Single-Flavor Dispensing Valve.

(see Figure 1)

NOTE: Make sure water flow rate is satisfactory or has been adjusted on dispensing valve with adjustable water flow regulator.

Adjust Water-to-Syrup “Ratio” of dispensed product by using Ratio Cup (P/N 311100000) and Syrup Diversion Tube Assembly (P/N 319540-000) as follows (see Figure 1).

1. Remove acorn nut securing cover on dispensing valve, then remove cover from valve.
2. Install syrup diversion tube assembly on dispensing valve by pushing rubber end of syrup diversion tube up on baffle inside nozzle.

NOTE: Refer to syrup manufacturer’s recommendations on syrup package for Water-to-Syrup “Ratio”.

3. Open dispensing valve and dispense just enough to fill syrup diversion tube with syrup.
4. Hold large chamber of ratio cup under dispensing valve nozzle. Place free end of syrup diversion tube into syrup chamber marked for proper ratio. Open dispensing valve and dispense approximately 5 ounces of water into ratio cup. Water and syrup levels should be even in cup.
5. Adjusting Syrup Flow Regulator. If water and syrup levels are not even in ratio cup, turn dispensing valve syrup flow regulator labeled “SYRUP” adjusting screw to the left (counterclockwise) no more than 1/4-turn at a time for less syrup or to the right (clockwise) no more than 1/4-turn at a time for more syrup.
6. Repeat Water-to-Syrup “Ratio” test and adjust syrup flow regulator as many times as necessary until proper ratio of dispensed drink is achieved.
7. Remove syrup diversion tube assembly from dispensing valve.
8. Install dispensing valve cover and secure with acorn nut.

Gemini Two-Flavor Dispensing Valve.

(see Figure 1)

NOTE: Make sure water flow rate is satisfactory or has been adjusted on dispensing valve with adjustable water flow regulator before adjusting Water-to-Syrup “Ratio” of dispensed drinks.

Adjust Water-to-Syrup “Ratio” of dispensed product by using Ratio Cup (P/N 311100000) and Syrup Diversion Tube Assembly (P/N 319540000) as follows (see Figure 1).

1. Remove acorn nut securing dispensing valve cover, then remove cover from valve.
2. Remove nozzle from dispensing valve.
3. Slide nozzle on to long portion of syrup diversion tube, then push rubber end of syrup diversion tube up on dispensing valve syrup outlet.
4. Slide nozzle up on syrup diversion tube and reinstall on dispensing valve.

NOTE: Refer to syrup manufacturer’s recommendations on syrup package for Water-to-Syrup “Ratio”.

5. Hold large chamber of ratio cup under dispensing valve nozzle. Place free end of syrup diversion tube into syrup chamber marked for proper ratio. Press applicable dispense button and dispense approximately 5 ounces of water into ratio cup. Water and syrup levels should be even in ratio cup.
6. If water and syrup levels are not even in ratio cup, turn applicable syrup flow regulator adjusting screw to the left (counterclockwise) no more than 1/4-turn at a time for less syrup or to the right (clockwise) no more than 1/4-turn at a time for more syrup.
7. Repeat Water-to-Syrup “Ratio” test and adjust syrup flow regulator as many times as necessary until proper ratio of dispensed drink is achieved.
8. Remove syrup diversion tube from dispensing valve syrup outlet and install on other syrup outlet.
9. Repeat preceding steps 5 through 7 to adjust Water-to-Syrup “Ratio” of dispensed drink to other dispensing valve syrup system.
10. Remove nozzle and syrup diversion tube from dispensing valve.
11. Remove nozzle from syrup diversion tube, then install nozzle on dispensing valve.
12. Install dispensing valve cover and secure with acorn nut.

ADJUSTING SF-1 DISPENSING VALVE PORTION CONTROL FOR SIZE OF DRINK DISPENSED

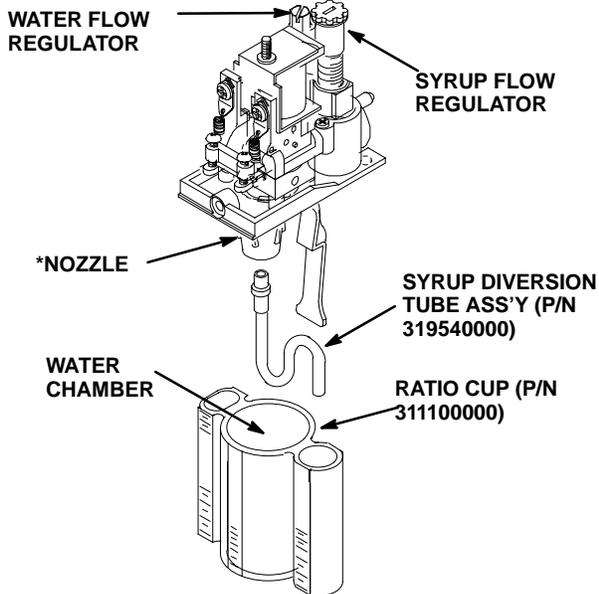
(see Figure 2)

NOTE: Drink size switches S (SMALL), M (MEDIUM), and L (LARGE) must be momentarily depressed, then released before dispensing of drink will occur. Drinks may be manually dispensed by pressing cup or glass against dispensing valve lever should portion control module become inoperative. The CANCEL/POUR switch may be used for three separate dispensing functions as follows:

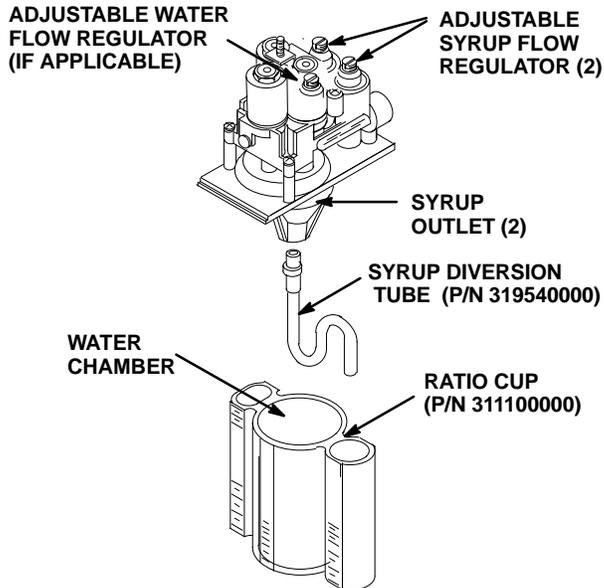
- A. Portion control drink may be cancelled by momentarily depressing and releasing CANCEL/POUR switch. DO NOT HOLD SWITCH IN DEPRESSED POSITION AS DRINK WILL NOT CANCEL AND DISPENSING WILL CONTINUE.
- B. CANCEL/POUR switch may also be used to dispense a non-portion controlled drink by merely depressing and holding CANCEL/POUR switch until desired drink has been dispensed, then release switch.
- C. Press CANCEL/POUR switch to return to operational mode after all portion size adjustments have been completed.

1. Simultaneously pressing the small and large portion size buttons activates the set mode LED light which will blink indicating the set mode is active.
2. Put desired amount of ice in correct portion size cup, place under dispensing valve nozzle. Press selected size button (small, medium, or large) and hold until cup fills to desired portion, then release the button.
3. Repeat step 2 for remaining drink sizes.
4. After programming all drink sizes, press the CANCEL/POUR switch to cancel the programming cycle and return the autaset portion control to the operational mode. The LED light turns off.

SF-1 SINGLE FLAVOR DISPENSING VALVE



GEMINI TWO-FLAVOR DISPENSING VALVE



*Baffle (syrup distributor) may be removed by first removing nozzle, then pull distributor down and off valve.

FIGURE 1. RATIO CUP AND SYRUP DIVERSION TUBE ASSEMBLY

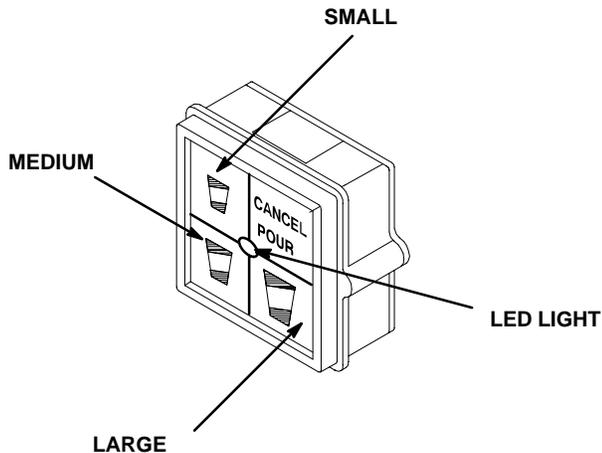


FIGURE 2. PORTION CONTROL ADJUSTMENT

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OPERATION

SF-1 DISPENSING VALVE

Standard SF-1 Electric Dispensing Valve.

1. Press cup or glass against dispensing valve lever and dispense product until cup or glass is full, then release lever. If carbonated water only is desired, place cup or glass under dispensing valve with lever on its side. Actuate lever and dispense until cup or glass is full of carbonated water, then release lever.

SF-1 Dispensing Valve With Self-Serve Dispense Switch.

1. Place cup or glass under dispensing valve nozzle.
2. Press dispense switch and dispense until cup or glass is full of product, then release switch.

SF-1 Dispensing Valve With Portion Control.

NOTE: Drink size switches S (SMALL), M (MEDIUM), and L (LARGE) must be momentarily depressed, then released before dispensing of drink will occur. Drinks may be manually dispensed by pressing cup or glass against dispensing valve lever should portion control module become inoperative. The CANCEL/POUR switch may be used for two separate dispensing functions as follows:

- A. Portion control drink may be cancelled by momentarily depressing and releasing the CANCEL/POUR switch. **DO NOT HOLD SWITCH IN DEPRESSED POSITION AS DRINK WILL NOT CANCEL AND DISPENSING WILL CONTINUE.**
 - B. CANCEL/POUR switch may also be used to dispense a non-portion controlled drink by merely depressing and holding CANCEL/POUR switch until desired drink has been dispensed, then release switch.
1. Place cup or glass under dispensing valve nozzle.
 2. Momentarily depress and release S (SMALL), M (MEDIUM), or L (LARGE) drink size switch to dispense portion size drink. Dispensing will stop at end of portion cycle.

GEMINI TWO-FLAVOR DISPENSING VALVE

1. Place cup or glass under dispensing valve nozzle.
2. Press and hold dispense button and dispense product until cup or glass is full, then release button.
1. Remove nozzle and baffle from dispensing valve. Wash nozzle and baffle in warm water, then install nozzle and baffle on valve.

NOTE: Refer to *REMOVAL AND REPLACEMENT PROCEDURES* for applicable instructions should syrup or water flow regulator, water flowasher assembly, need to be removed from dispensing valve and cleaned.

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SERVICE AND MAINTENANCE

REMOVAL AND REPLACEMENT PROCEDURES ON SF-1 VALVE

(see Figure 3)

REMOVE AND REPLACE SOLENOID COIL (item 12)

Removal.

1. Remove acorn nut securing dispensing valve cover, then remove cover from valve.
2. Disconnect electrical wiring from solenoid coil.
3. Remove two MACHINE SCREWS (item 11.) securing SOLENOID COIL (item 12.) to dispensing valve, then remove coil from coil plunger.

Installation.

1. Install new solenoid coil by reversing removal procedure.
2. Install dispensing valve cover and secure with acorn nut.

REMOVE AND REPLACE MICRO SWITCH (item 13)

Removal.

1. Remove acorn nut securing dispensing valve cover, then remove cover from valve.
2. Tag electrical wires connected to MICRO SWITCH (item 13.) for identification, then disconnect wires from switch terminals.
3. Remove MACHINE SCREW (item 14.) securing MICRO SWITCH (item 13.) to dispensing valve, then remove switch.

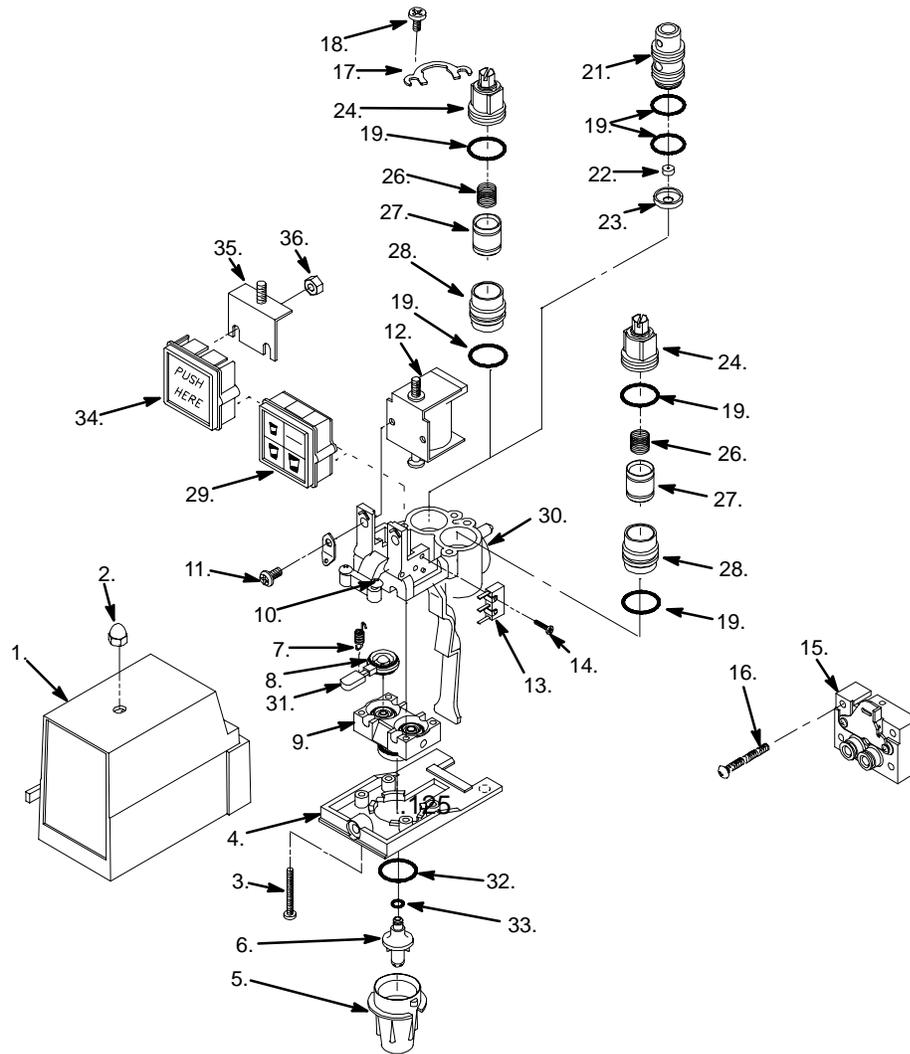
Installation.

1. Install new micro switch by reversing removal procedure.
2. Install dispensing valve cover and secure with acorn nut.

REMOVE AND REPLACE SYRUP OR WATER FLOW REGULATOR

Removal.

1. Remove acorn nut securing dispensing valve cover, then remove cover from valve.
2. Disconnect electric or portion control dispensing valve wiring harness connector from unit wiring harness connector.



ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION
1.	Cover Ass'y (varies with dispensing valve model)	19.	O-Ring, .676 I.D. by .070 C.S.
2.	Acorn Nut, Nickel-pltd	20.	
3.	Screw, Thread Cutting, No. 6-32 by 3/4-in. long	21.	Housing, Water Flowwasher
4.	Bottom Cover	22.	Flowwasher
5.	Nozzle	23.	Retainer
6.	Baffle	24.	Top Flow Control
7.	Spring	25.	
8.	Inlet Valve	26.	Spring
9.	Valve Block	27.	Piston
10.	Setscrew, Hex Socket, No. 8-32 by 1/2-in. long	28.	Cylinder
11.	Machine Screw, No. 10-32 by 3/8-in. long	29.	Portion Control Module
12.	Solenoid Coil	30.	Body
13.	Micro Switch	31.	Short Nib, Syrup Long Nib, Water
14.	Machine Screw, No. 2-56 by 7/16-in. long	32.	O-Ring, .799 I.D. by .103 C.S.
15.	Mounting Block Ass'y	33.	O-Ring, .157 I.D. by .038 C.S.
16.	Screw, Thread Rolling, No. 10-32 by 1-in. long	34.	Dispense Switch Module
17.	Plate	35.	Bracket, Cover, Manual
18.	Screw, Thread Cutting, No. 8-32 by 5/16-in. long	36.	Hex Nut, No. 10-32

FIGURE 3. PARTS IDENTIFICATION (SF-1 DISPENSING VALVE)

3. Pull dispensing valve release latch (see Figure 3), located on mounting block assembly back of valve, to the left to release valve. Release safety latch on bottom of the valve block, then pull valve off block assembly.
4. Remove two SCREWS (item 18.) securing PLATE (item 17.) that secure flow regulator in dispensing valve BODY (item 30.), then remove plate.
5. Pull TOP FLOW CONTROL (item 24.), SPRING (item 26.), and PISTON (item 27.) up out of flow regulator CYLINDER (item 28.).
6. The CYLINDER (item 28.) normally does not need to be removed from BODY (item 30.). If the need to remove cylinder should arise, pull cylinder up out of body. *ALWAYS INSTALL NEW O-RING (item 19.) P/N 317816000 ON CYLINDER BEFORE INSTALLING CYLINDER IN BODY.*

Installation.

1. Install TOP FLOW CONTROL (item 24.), SPRING (item 26.), and PISTON (item 27.) in CYLINDER (item 28.).
2. Secure water flow or syrup flow regulator in dispensing valve BODY (item 30.) with PLATE (item 17.) and SCREWS (item 18.).
3. Install dispensing valve on unit by inserting valve guide pin in mounting block assembly guide pin hole. Push valve on block until a click is heard indicating release latch has seated in valve guide pin notch. **MAKE SURE SAFETY LATCH ON BOTTOM OF DISPENSING VALVE IS HOOKED TO SECURE VALVE ON BLOCK.**
4. Connect dispensing valve wiring harness connector to unit wiring harness connector, then install valve cover.

5. *Water Flow Regulator Removed.*

If water flow regulator was removed from dispensing valve, water flow rate must be checked and if necessary, regulator must be adjusted as instructed.

Syrup Flow Regulator Removed.

If syrup flow regulator was removed, check dispensing valve for Water-to-Syrup "Ratio" of dispensed product and if necessary, adjust as instructed.

6. Install dispensing valve cover and secure with acorn nut.

REMOVE AND REPLACE WATER FLOWASHER ASS'Y

Removal.

1. Remove acorn nut securing dispensing valve cover, then remove cover from valve.
2. Disconnect dispensing valve wiring harness connector from unit wiring harness connector.
3. Pull dispensing valve release latch (see Figure 3), located on mounting block assembly back of valve, to the left to release valve block, release safety latch on bottom of the valve, then pull valve off block assembly.
4. Remove two SCREWS (item 18.) securing PLATE (item 17.) that secure water flowwasher assembly in dispensing valve BODY (item 30.), then remove plate.
5. Pull water flowwasher assembly up out of dispensing valve BODY (item 30.).
6. Remove water flowwasher RETAINER (item 23.) from bottom of HOUSING, WATER FLOWASHER (item 21.), then remove FLOWASHER (item 22.) from housing.

Installation.

1. Install FLOWASHER (item 22.) in bottom of HOUSING, WATER FLOWASHER (item 21.) and secure with RETAINER (item 23.). FLOWASHER MUST BE INSTALLED IN WATER FLOWASHER HOUSING WITH CONCAVE SURFACE OF FLOWASHER FACING AWAY FROM ITS RETAINER.

IMPORTANT: New O-RINGS (item 19.) P/N 317816000 *must* be installed on water flowasher assembly before its installation in dispensing valve body.

2. Install water flowasher assembly in dispensing valve body.
3. Secure flowasher assembly in dispensing valve body with PLATE (item 17.) and SCREWS (item 18.).
4. Install dispensing valve on unit by inserting valve guide pin in mounting block assembly guide pin hole. Push valve on block until a click is heard indicating release latch has seated in valve guide pin notch. MAKE SURE SAFETY LATCH ON BOTTOM OF DISPENSING VALVE IS LOCKED TO SECURE VALVE ON BLOCK.
5. Connect dispensing valve electrical wiring harness connector to unit wiring harness connector.
6. Install dispensing valve cover and secure with acorn nut.

REMOVE AND REPLACE INLET VALVE

Removal.

1. Remove acorn nut securing dispensing valve cover, then remove cover from valve.
2. Disconnect dispensing valve wiring harness connector from unit wiring harness connector.
3. Pull dispensing valve release latch (see Figure 3), located on mounting block assembly back of valve, to the left to release valve. Release safety latch on bottom of the valve block, then pull valve off block assembly.
4. Turn dispensing valve upside down, then disconnect SPRINGS (item 7.) from INLET VALVES (item 8.).
5. Remove four SCREWS (item 3.) securing dispensing valve BOTTOM COVER (item 4.) and VALVE BLOCK (item 9.) to BODY (item 30.), then separate valve block from body.
6. Remove inlet valve from valve block.
7. Remove NIB (item 31.) from inlet valve.

NOTE: Short nib is for syrup inlet valve and long nib is for water inlet valve.

Installation.

1. Install inlet valve and assemble dispensing valve by reversing disassembly procedure.
2. Install dispensing valve on unit by inserting valve guide pin in mounting block assembly guide pin hole. Push valve on block until a click is heard indicating release latch has seated in valve guide pin notch. MAKE SURE SAFETY LATCH ON BOTTOM OF DISPENSING VALVE IS HOOKED TO SECURE VALVE ON BLOCK.

NOTE: It may be necessary to adjust inlet valves so water and syrup dispensing start at same time and stop at same time by turning SETSCREWS (item 10.).

3. Connect dispensing valve wiring harness connector to unit wiring harness connector.

4. Install dispensing valve cover and secure with acorn nut.

REMOVE AND REPLACE PORTION CONTROL MODULE

Removal.

1. Remove screw securing dispensing valve cover, then remove cover from valve.
2. Tag electrical wires for identification, then disconnect PORTION CONTROL MODULE (item 29.) wires from solenoid coil and unit wiring harness connector.
3. Lift portion control module up out of holding brackets on dispensing valve.

Installation.

1. Install portion control module by reversing removal procedure.
2. Adjust portion control module for size of drinks dispensed as instructed.
3. Install dispensing valve cover and secure with acorn nut.

REMOVE AND REPLACE SELF-SERVE DISPENSE SWITCH MODULE

Removal.

1. Remove acorn nut securing dispensing valve cover, then remove cover from valve.
2. Lift DISPENSE SWITCH MODULE (item 34.) up out of holding brackets on dispensing valve.
3. Disconnect dispense switch module electrical connector from dispenser wiring harness connector.
4. Disconnect dispense switch module electrical wires from dispensing valve solenoid coil terminals.

Installation

1. Install dispense switch module by reversing removal procedure.

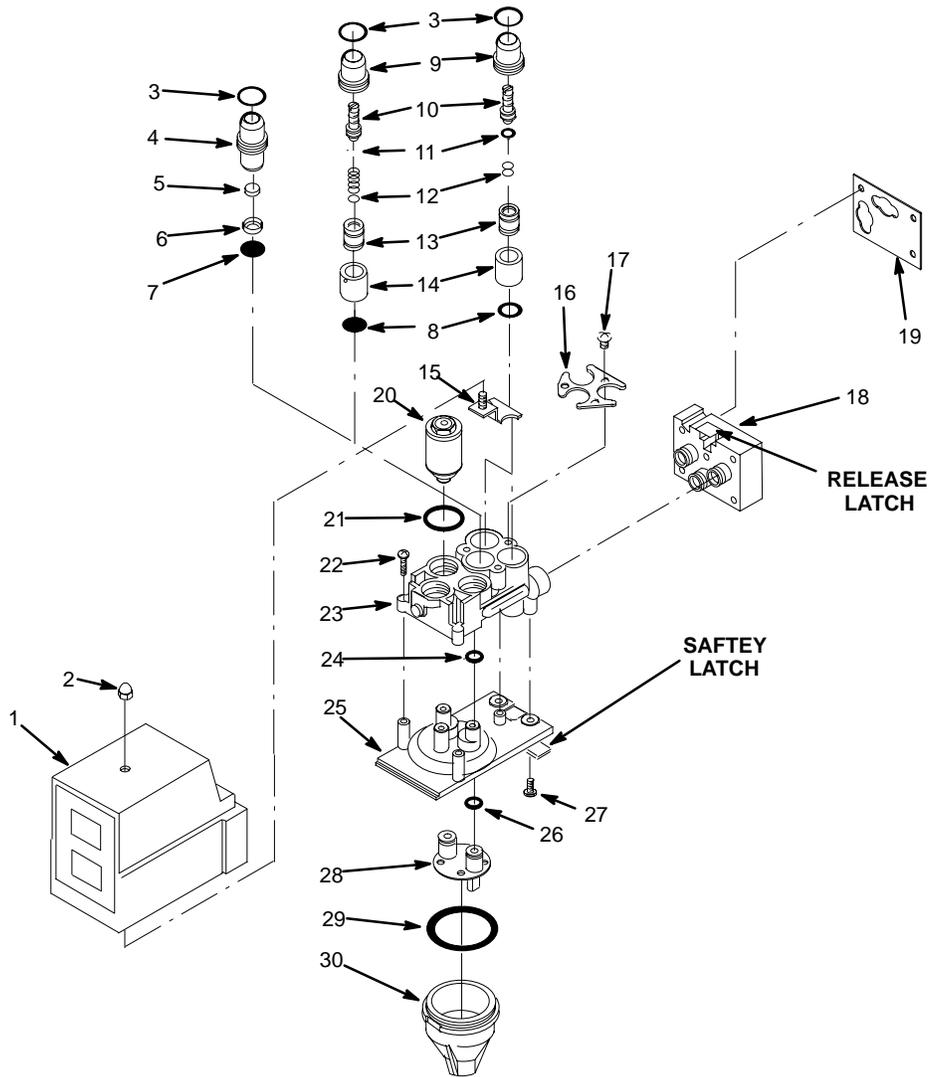
REMOVAL AND REPLACEMENT PROCEDURE ON GEMINI TWO-FLAVOR DISPENSING VALVE

(see Figure 4)

REMOVE AND REPLACE SYRUP OR WATER SOLENOID AND COIL ASS'Y

Removal.

1. Remove acorn nut securing dispensing valve cover, then remove cover from valve.



ITEM NO.	DESCRIPTION
1	Cover Ass'y (includes switches and circuit board assembly)
2	Acorn Nut, Nickel-pltd, No. 10-32
3	O-Ring, .551 I.D. by .070 C.S.
4	Housing, Flowwasher
5	Flowwasher, 60 GPM
6	Flowwasher Cap
7	O-Ring, .426 I.D. by .070 C.S.
8	O-Ring, .488 I.D. by .040 C.S.
9	Top Flow Control
10	Screw, Adjusting Spring
11	O-Ring, .208 I.D. by .070 C.S.
12	Spring, Flow Regulator
13	Piston
14	Cylinder
15	Cover Mounting Bracket

ITEM NO.	DESCRIPTION
16	Retainer Plate
17	Thread Rolling Screw, Phil Pan Hd, No. 8-16 by 7/16-in. long
18	Mounting Block Ass'y
19	Backup Plate
20	Solenoid and Coil Ass'y (Water or Syrup)
21	O-Ring, .426 I.D. by .070 C.S.
22	Thread Rolling Screw, Phil Pan Hd, Nickel-pltd, No. 6-32 by 3/4-in. long
23	Valve Body
24	O-Ring, .239 I.D. by .070 C.S.
25	Valve Bottom
26	O-Ring, .239 I.D. by .070 C.S.
27	Thread Rolling Screw, Phil Pan Hd, Stainless Steel, No. 6-19 by 3/8-in. long
28	Baffle
29	O-Ring, 1.549 I.D. by .103 C.S.
30	Nozzle

FIGURE 4. PARTS IDENTIFICATION (GEMINI TWO-FLAVOR DISPENSING VALVE)

2. Disconnect dispensing valve wiring harness connector from dispenser wiring harness connector.
3. Disengage safety latch on bottom of dispensing valve (see Figure 4) from pin on bottom of mounting block assembly.
4. Push down on dispensing valve release latch located on top of mounting block assembly (see Figure 4) to release valve from block assembly, then pull valve off block.
5. Remove COVER MOUNTING BRACKET (item 15) from dispensing valve.
6. Cut two electrical wires connected to inoperable SOLENOID AND COIL ASS'Y (item 20).
7. Remove inoperable SOLENOID AND COIL ASS'Y (item 20) from VALVE BODY (item 23) by turning solenoid and coil assembly to the left (counterclockwise).
8. Remove old O-RING (item 21) from VALVE BODY (item 23) bore where solenoid and coil assembly was removed.

Installation.

1. Install new O-RING (item 21) in VALVE BODY (item 23) bore.
2. Install new SOLENOID AND COIL ASS'Y (item 20) by reversing removal procedure.
3. Connect new solenoid and coil assembly electrical wires to dispensing valve wiring harness. Secure connections with wire nuts (not provided).
4. Install dispensing valve on unit by inserting valve guide pin in mounting block assembly guide pin hole. Push valve on block until a click is heard indicating release latch has seated in valve guide pin notch. **MAKE SURE SAFETY LATCH ON BOTTOM OF DISPENSING VALVE IS HOOKED ON MOUNTING BLOCK PIN TO SECURE VALVE ON BLOCK.**
5. Connect dispensing valve wiring harness connector to dispenser wiring harness connector.
6. Install dispensing valve cover and secure with acorn nut.

REMOVE AND REPLACE SYRUP OR WATER FLOW REGULATOR

Removal.

1. Remove acorn nut securing dispensing valve cover, then remove cover from valve.
2. Disconnect dispensing valve wiring harness connector from dispenser wiring harness connector.
3. Disengage safety latch on bottom of dispensing valve (see Figure 4) from pin on bottom of mounting block assembly.
4. Push down on dispensing valve release latch on top of mounting block assembly (see Figure 4) to release valve from block assembly, then pull valve off block.
5. Remove three THREAD ROLLING SCREWS (item 17) securing RETAINER PLATE (item 16) that secures flow regulator in VALVE BODY (item 23), then remove plate.
6. Pull TOP FLOW CONTROL (item 9), SPRING (item 12), and PISTON (item 13) up out of flow regulator CYLINDER (item 14).
7. The CYLINDER (item 14) normally does not need to be removed from VALVE BODY (item 23). If the need to remove cylinder should arise, pull cylinder up out of valve body. **ALWAYS INSTALL NEW O-RING (item 8) P/N 309650000 on cylinder before installing cylinder in valve body.**

Installation.

1. Install TOP FLOW CONTROL (item 9), SPRING (item 12) and PISTON (item 13) in CYLINDER (item 14).
2. Secure flow regulator in VALVE BODY (item 23) with RETAINER PLATE (item 16) and THREAD ROLLING SCREWS (item 11).
3. Install dispensing valve on unit by inserting valve guide pin in mounting block assembly guide pin hole. Push valve on block until a click is heard indicating release latch has seated in valve guide pin notch. MAKE SURE SAFETY LATCH ON BOTTOM OF DISPENSING VALVE IS HOOKED ON MOUNTING BLOCK PIN TO SECURE VALVE ON BLOCK.
4. Connect dispensing valve wiring harness connector to dispenser wiring harness connector.
5. *Water Flow Regulator Removed.*

If water flow regulator was removed, dispensing valve water flow rate must be checked and if necessary, regulator must be adjusted as instructed.

Syrup Flow Regulator Removed.

If syrup flow regulator was removed, check dispensing valve for Water-to-Syrup "Ratio" of dispensed product and if necessary, adjust as instructed.

6. Install dispensing valve cover and secure with acorn nut.

REMOVE AND REPLACE WATER FLOWASHER ASS'Y

Removal.

1. Remove acorn nut securing dispensing valve cover, then remove cover from valve.
2. Disconnect dispensing valve wiring harness connector from dispenser wiring harness connector.
3. Disengage safety latch on bottom of dispensing valve (see Figure 4) from pin on bottom of mounting block assembly.
4. Push down on dispensing valve release latch on top of mounting block assembly (see Figure 4) to release valve from block assembly, then pull valve off block.
5. Remove three THREAD ROLLING SCREWS (item 17) securing RETAINER PLATE (item 16) that secures water flowasher assembly in VALVE BODY (item 23), then remove plate.
6. Pull water flowasher assembly up out of VALVE BODY (item 23).
7. Remove water flowasher FLOWASHER CAP (item) from bottom of HOUSING, FLOWASHER (item 4), then remove FLOWASHER (item 5) from housing.

Installation.

1. Install FLOWASHER (item 5) in bottom of HOUSING, FLOWASHER (item 4) and secure with FLOWASHER CAP (item 6). FLOWASHER MUST BE INSTALLED IN WATER FLOWASHER HOUSING WITH CONCAVE SURFACE OF FLOWASHER FACING AWAY FROM ITS RETAINER.

IMPORTANT: New O-RING (item 3) P/N 150160000 and O-RING (item 7) P/N 187436000 must be installed when installing water flowasher assembly in valve body.

2. Install water flowasher assembly in dispensing valve body.

3. Secure water flowasher assembly in dispensing valve body with RETAINER PLATE (item 16) and THREAD ROLLING SCREWS (item 17).
4. Install dispensing valve on unit by inserting valve guide pin in mounting block assembly guide pin hole. Push valve on block until a click is heard indicating release latch has seated in valve guide pin notch. MAKE SURE LATCH ON BOTTOM OF DISPENSING VALVE IS HOOKED ON MOUNTING BLOCK PIN TO SECURE VALVE ON BLOCK.
5. Connect dispensing valve wiring harness connector to dispenser wiring harness connector.
6. Install dispensing valve cover and secure with acorn nut.

REMOVE AND REPLACE DISPENSING VALVE COVER ASS'Y (INCLUDES CIRCUIT BOARD AND DISPENSING SWITCHES)

Removal.

1. Remove acorn nut securing dispensing valve cover, then remove cover from valve.
2. Disconnect dispensing valve wiring harness connector from circuit board connector inside cover.

Installation.

1. Connect dispensing valve wiring harness connector to circuit board connector inside COVER ASS'Y (item 1).
2. Install dispensing valve cover and secure with acorn nut.

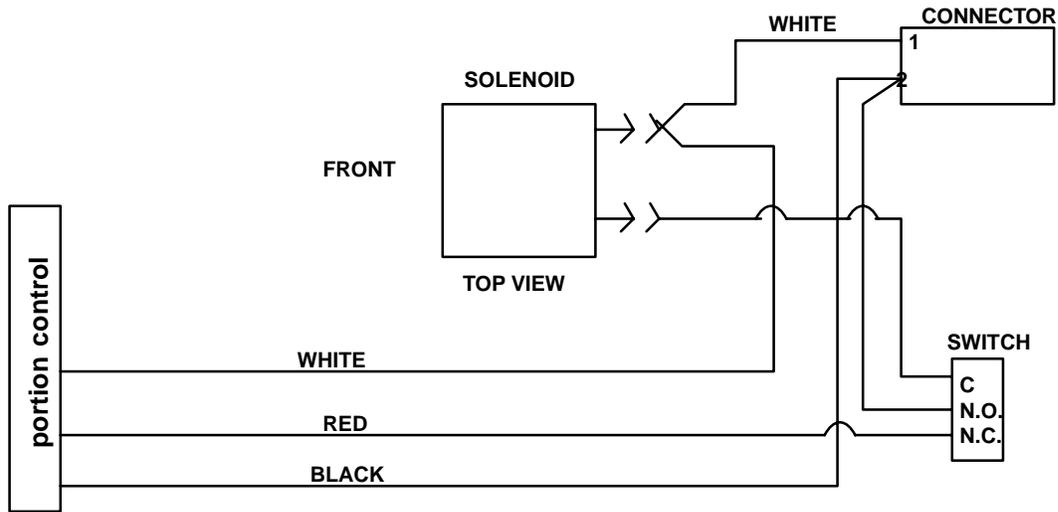


FIGURE 5. WIRING DIAGRAM (SF-1 PORTION CONTROL DISPENSING VALVE)

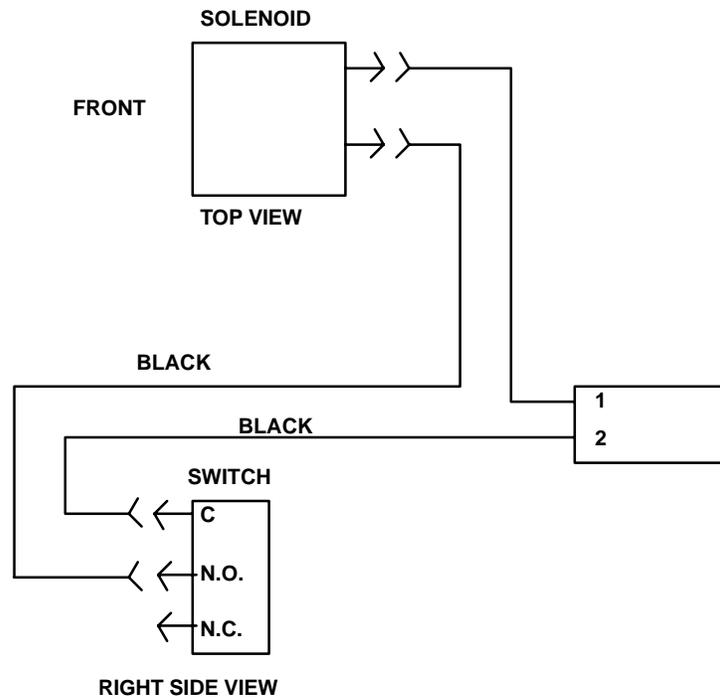


FIGURE 6. WIRING DIAGRAM (SF-1 STANDARD ELECTRIC DISPENSING VALVE)

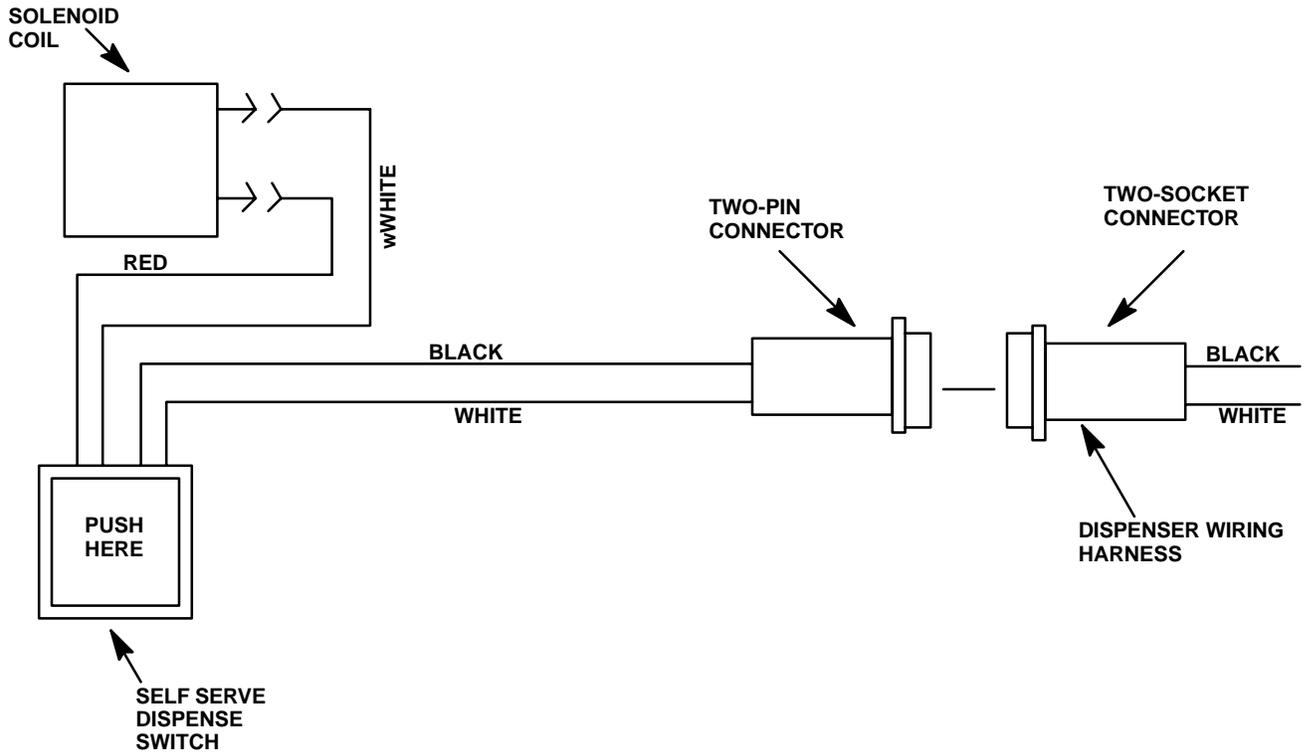


FIGURE 7. WIRING DIAGRAM (SF-1 DISPENSING VALVE WITH SELF-SERVE DISPENSE SWITCH)

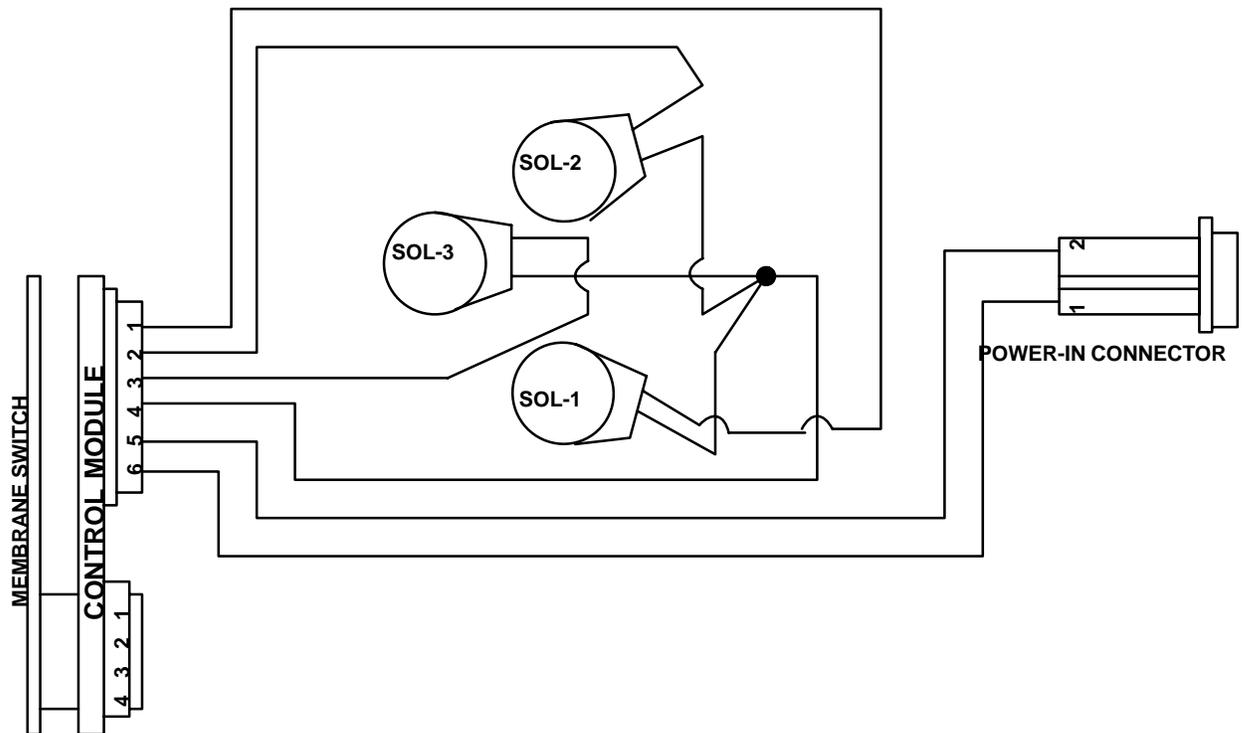


FIGURE 8. WIRING DIAGRAM (GEMINI TWO-FLAVOR DISPENSING VALVE)

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TROUBLESHOOTING

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



WARNING: If repairs are to be made to a product system, remove quick disconnects from the applicable product tank, then relieve the system pressure before proceeding. If repairs are to be made to the CO₂ system, stop dispensing, shut off the CO₂ supply, then relieve the system pressure before proceeding. If repairs are to be made to the refrigeration system, make sure electrical power is disconnected from the unit.

Trouble	Probable Cause	Remedy
WATER-TO-SYRUP "RATIO" TOO LOW OR TOO HIGH.	A. Dispensing valve syrup flow regulator not properly adjusted.	A. Adjust Water-to-Syrup "Ratio" as instructed.
	B. CO ₂ gas pressure to syrup tanks insufficient to push syrup out of tanks.	B. Adjust syrup tanks secondary CO ₂ regulator.
ADJUSTMENT OF DISPENSING VALVE SYRUP FLOW REGULATOR DOES NOT INCREASE TO DESIRED WATER-TO-SYRUP "RATIO".	A. No syrup supply.	A. Replenish syrup supply.
	B. Syrup tank quick disconnect not securely connected to tank.	B. Securely connect quick disconnect to tank.
	C. Syrup tanks CO ₂ regulator out of adjustment.	C. Adjust syrup tanks CO ₂ regulator.
	D. Dispensing valve syrup flow regulator, syrup tank quick disconnect, or syrup line restricted.	D. Sanitize syrup system.
	E. Improper syrup Baume.	E. Replace syrup supply.
	F. Dirty or inoperative piston or spring in dispensing valve adjustable syrup flow regulator.	F. Disassemble and clean dispensing valve syrup flow regulator.
	G. Tapered nylon washer inside tube swivel nut connector (if applicable) distorted from being overtightened.	G. Replace nylon washer and make sure it seats properly.
ADJUSTMENT OF DISPENSING VALVE SYRUP FLOW REGULATOR DOES NOT DECREASE TO DESIRED WATER-TO-SYRUP "RATIO".	A. Dirty or inoperative piston or spring in dispensing valve adjustable syrup flow regulator.	A. Disassemble and clean dispensing valve syrup flow regulator.
NO PRODUCT DISPENSED FROM ALL DISPENSING VALVES.	A. No electrical power to dispenser.	A. Connect electrical power to dispenser.
	B. Disconnected or broken wiring to dispensing valves.	B. Connect or replace wiring.

Trouble	Probable Cause	Remedy
NO PRODUCT DISPENSED FROM ONE DISPENSING VALVE.	<p>C. Inoperative 115VAC transformer.</p> <p>A. Broken or disconnected wiring.</p> <p>B. Inoperative dispensing valve solenoid coil.</p> <p>C. Inoperative dispensing valve micro switch (SF-1 dispensing valve only).</p>	<p>C. Replace transformer.</p> <p>A. Repair or connect wiring.</p> <p>B. Replace solenoid coil as instructed.</p> <p>C. Replace micro switch as instructed.</p>
ONLY CARBONATED WATER DISPENSED.	<p>A. Quick disconnects not secure on syrup tanks.</p> <p>B. Out of syrup.</p> <p>C. Syrup tanks CO₂ regulator not properly adjusted.</p> <p>D. Inoperable dispensing valve.</p> <p>E. Dispensing valve adjustable syrup flow regulator not properly adjusted.</p> <p>F. Dispensing valve adjustable syrup flow regulator, syrup tank quick disconnect, or syrup lines restricted.</p>	<p>A. Secure quick disconnects on syrup tanks.</p> <p>B. Replenish syrup supply as instructed.</p> <p>C. Adjust syrup tanks CO₂ regulator.</p> <p>D. Repair dispensing valve.</p> <p>E. Adjust Water-to-Syrup "Ratio" as instructed.</p> <p>F. Sanitize syrup system.</p>
ONLY SYRUP DISPENSED.	<p>A. No carbonated water supply.</p> <p>B. Dispensing valve adjustable water flow regulator not properly adjusted.</p>	<p>A. Restore carbonated water supply.</p> <p>B. Adjust dispensing valve water flow rate as instructed.</p>

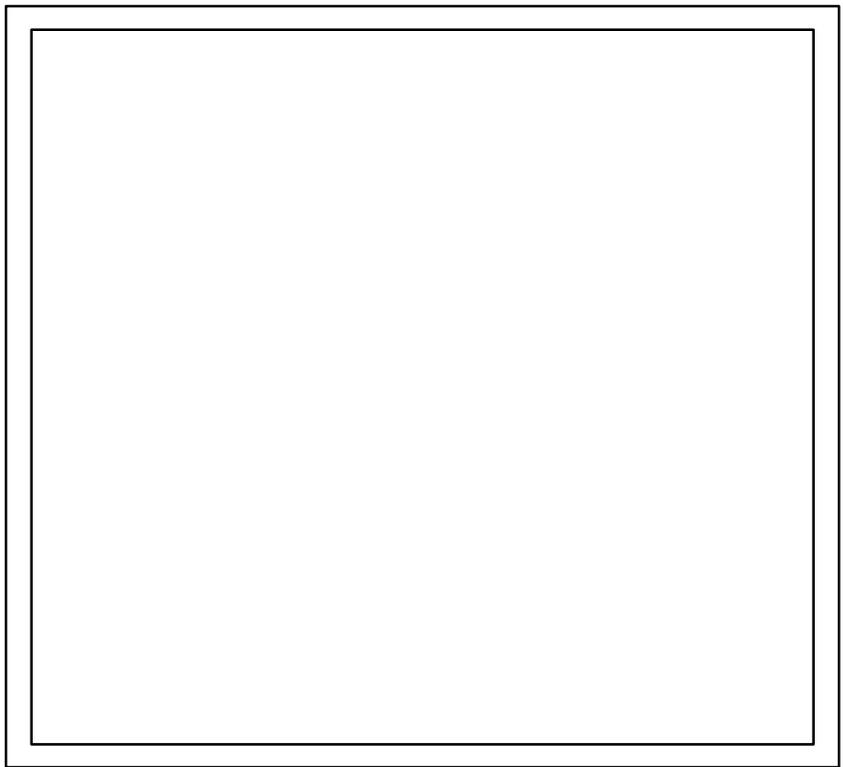
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