



# PRISM

## Owner's Manual



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**Revision: C**

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The products, technical information, and instructions contained in this manual are subject to change without notice. These instructions are not intended to cover all details or variations of the equipment, nor to provide for every possible contingency in the installation, operation or maintenance of this equipment. This manual assumes that the person(s) working on the equipment have been trained and are skilled in working with electrical, plumbing, pneumatic, and mechanical equipment. It is assumed that appropriate safety precautions are taken and that all local safety and construction requirements are being met, in addition to the information contained in this manual.

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Cornelius will not be responsible for any repair, replacement or other service required by or loss or damage resulting from any of the following occurrences, including but not limited to, (1) other than normal and proper use and normal service conditions with respect to the Product, (2) improper voltage, (3) inadequate wiring, (4) abuse, (5) accident, (6) alteration, (7) misuse, (8) neglect, (9) unauthorized repair or the failure to utilize suitably qualified and trained persons to perform service and/or repair of the Product, (10) improper cleaning, (11) failure to follow installation, operating, cleaning or maintenance instructions, (12) use of "non-authorized" parts (i.e., parts that are not 100% compatible with the Product) which use voids the entire warranty, (13) Product parts in contact with water or the product dispensed which are adversely impacted by changes in liquid scale or chemical composition.

### **Contact Information:**

To inquire about current revisions of this and other documentation or for assistance with any Cornelius product contact:

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This document contains the original instructions for the unit described.

CORNELIUS INC  
101 Regency Drive  
Glendale Heights, IL

### **Correct Disposal of this Product**



This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling

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# SAFETY INSTRUCTIONS

## READ AND FOLLOW ALL SAFETY INSTRUCTIONS

### Safety Overview

- Read and follow **ALL SAFETY INSTRUCTIONS** in this manual and any warning/caution labels on the unit (decals, labels or laminated cards).
- Read and understand ALL applicable OSHA (Occupational Safety and Health Administration) safety regulations before operating this unit.
- Must wear required PPE before you start to service or maintain the equipment.

### Recognition



## DIFFERENT TYPES OF ALERTS

### **DANGER:**

Indicates an immediate hazardous situation which if not avoided **WILL** result in serious injury, death or equipment damage.

### **WARNING:**

Indicates a potentially hazardous situation which, if not avoided, **COULD** result in serious injury, death, or equipment damage.

### **CAUTION:**

Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury or equipment damage.

## SAFETY TIPS

- Carefully read and follow all safety messages in this manual and safety signs on the unit.
- Keep safety signs in good condition and replace missing or damaged items.
- Learn how to operate the unit and how to use the controls properly.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- Keep your unit in proper working condition and do not allow unauthorized modifications to the unit.
- Any modifications to be done by Factory Authorized Service personnel only.
- Any part replacement in the system shall be conducted with like components.

## QUALIFIED SERVICE PERSONNEL



**WARNING:**

Only authorized service personnel shall service the valve. **ALL WIRING AND PLUMBING MUST CONFORM TO NATIONAL AND LOCAL CODES. FAILURE TO COMPLY COULD RESULT IN SERIOUS INJURY, DEATH OR EQUIPMENT DAMAGE.**

## SAFETY PRECAUTIONS

This unit has been specifically designed to provide protection against personal injury. To ensure continued protection observe the following:



**WARNING:**

Disconnect power to the unit before servicing following all lock out/tag out procedures established by the user. Verify all of the power is off to the unit before any work is performed.

**Failure to disconnect the power could result in serious injury, death or equipment damage.**



**CAUTION:**

Always be sure to keep area around the valve clean and free of clutter.

**Failure to keep this area clean may result in injury or equipment damage.**

# OPERATION

## PRISM

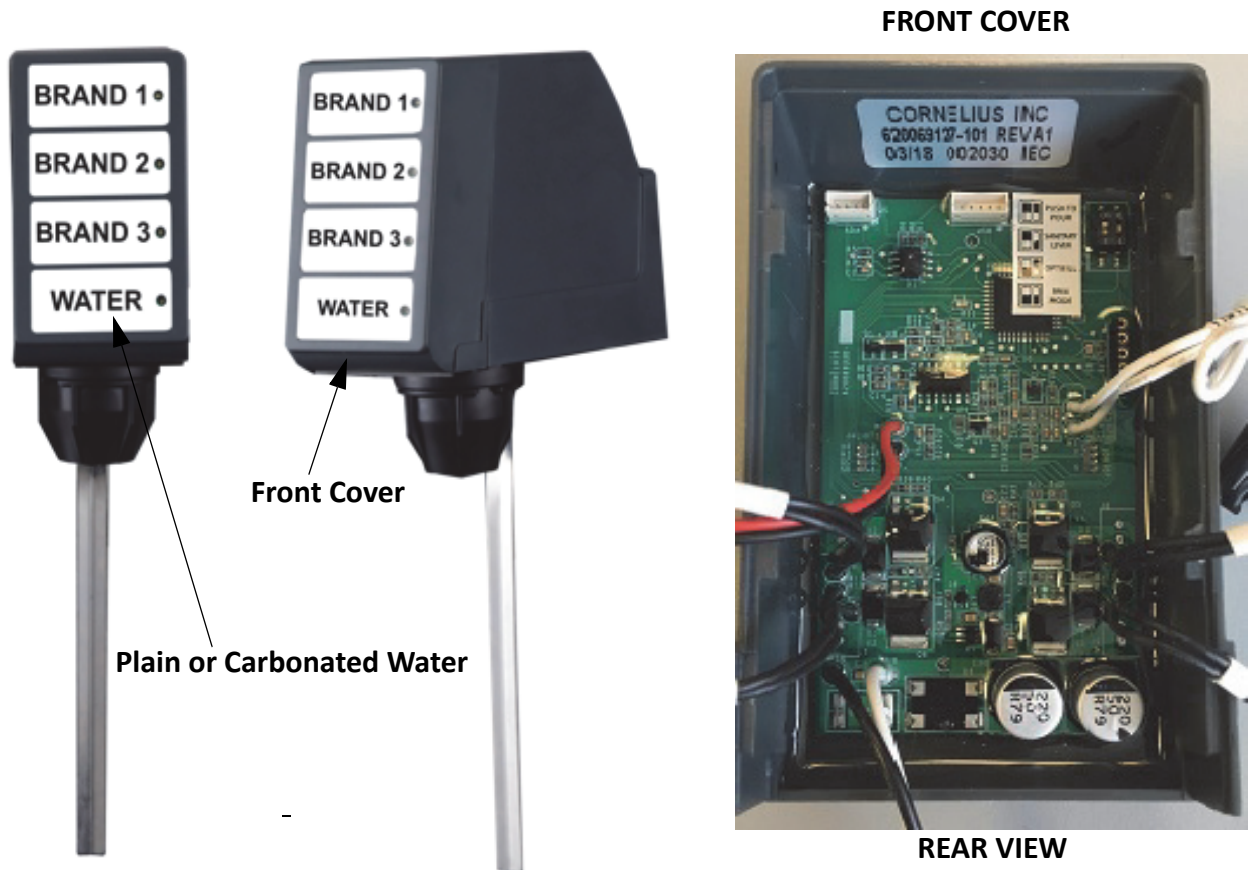


Figure 1.

The Cornelius Prism is capable of dispensing 3 CARBONATED BRANDS / SYRUP OR 3 NON CARBONATED BRANDS / SYRUP and comes with 3 variants as below, refer Table 1 on page 4.

**NOTE: Both carbonated and non carbonated beverages CANNOT BE DISPENCED IN THE SAME VALVE**

### Optifill

The user places a cup against the dispensing lever, press the brand, and the valve automatically shuts off after the cup begins to overflow.

### Sanitary Lever

The user manually dispenses a beverage by selecting a brand and then pressing the cup against the dispensing lever.

### Push Button

The user manually dispenses a beverage by pressing the brand until the cup is full.

Table 1

Part No.	Description
<b>Sanitary Lever Valves</b>	
620069302	Prism, Ceramic regulator, with mounting block and covers
620070464	Prism, Ceramic regulator, with covers
<b>Push Button Valves</b>	
620069304	Prism, Ceramic regulator, with mounting block and covers
620070465	Prism, Ceramic regulator, with covers
<b>Optifill Lever Valves</b>	
620069308	Prism, Ceramic regulator, with mounting block and covers
620070466	Prism, Ceramic regulator, with covers

## CLEANING INSTRUCTION

### Daily Cleaning

1. Remove nozzle and diffuser from the valve and clean with warm soapy water. Soak with sanitization with 2-3 minutes and Rinse with clean water, reinstall them back onto the valves and allow to air dry.

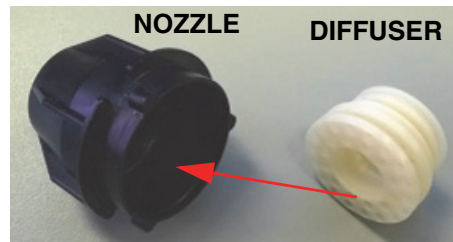


Figure 2.

2. Wash external surfaces with mild soap solution, rinse with clean water, and wipe dry.

**NOTE: While cleaning the valve do not use abrasive or harsh cleaners on the unit.**

**NOTE: Diffuser is only compatible with Prism valve.**

### CAUTION:

All sanitizing solution must be drained from the system. A freezing ambient environment will cause residual sanitizing solution or water remaining inside the valve to freeze resulting in damage to internal components.

## USER INSTRUCTION

The user will have to pour directly from the valve into the ratio cup. User will have to pour water & syrup separately (not at the same time).

3. "The user has to enter into "ratio mode" via the dip switches on the board. Set the dip switches as shown in Figure 4. First adjust the water flow rate then press the water button. The valve will dispense a preset amount of water. Adjust the flow rate using the valve flow control until the flow rate is adjusted properly. After water is adjusted properly - use the Brand buttons to dispense a preset amount of syrup. Adjust the corresponding Brand flow control until the Brand flow rate is adjusted properly



Touch UI: 1x4

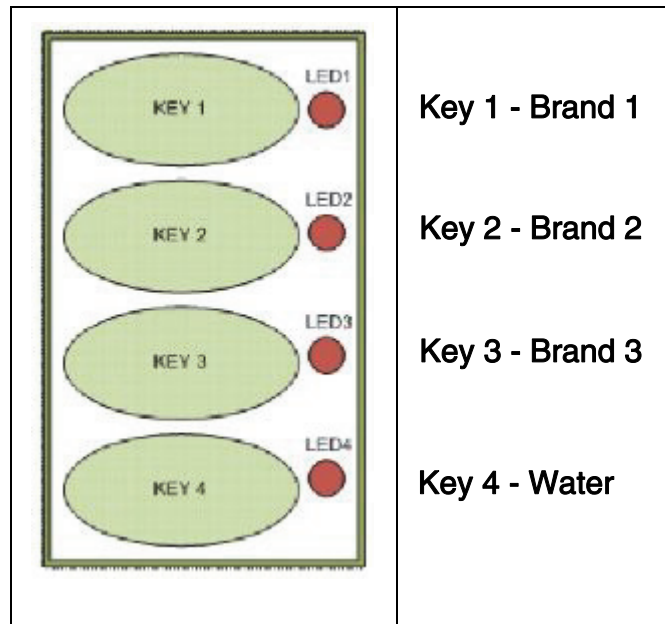


Figure 3.

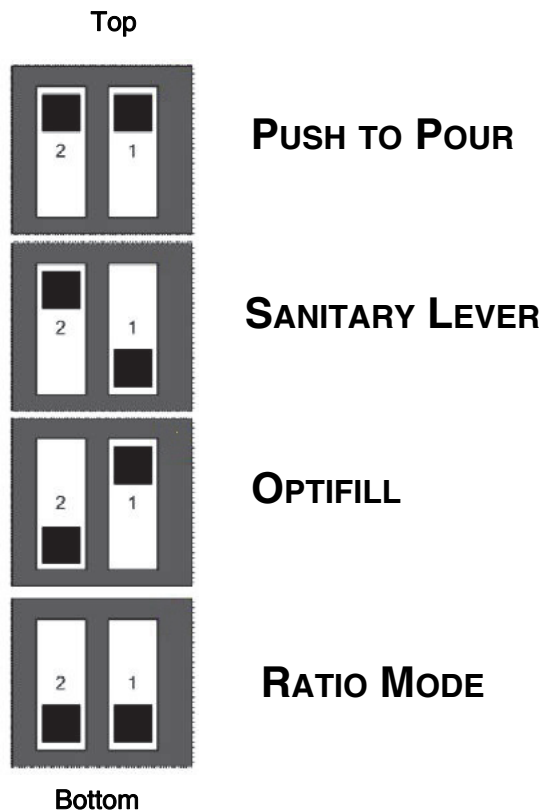


Figure 4.

**NOTE:** The switch is located in the upper right hand corner of the back of the valve faceplate.

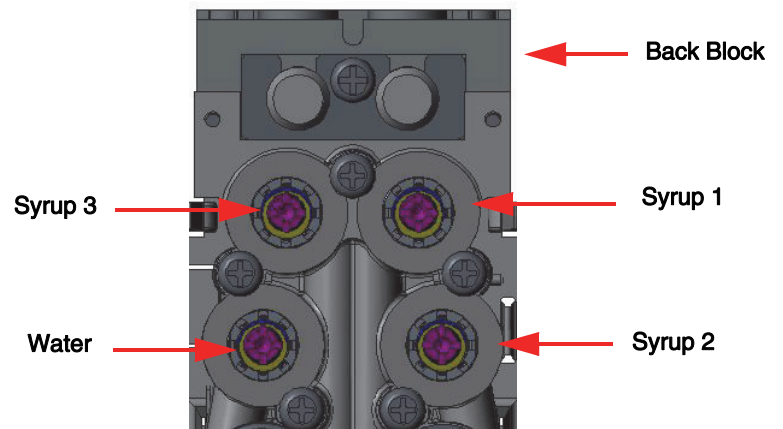
# How To CHECK PRISM RATIO

**⚠ CAUTION:**  
Do not expose the capacitive touch module wire to water.

Table 2.

<p>1. Remove the capacitive touch module by lifting it upward and pulling out. Remove the rear valve cover. Leave the wire attached to the capacitive touch module.</p>	<p>Figure 5.</p>
<p>2. Place the ratio cup under the valve.</p>	
<p>3. Place the dip switch into "ratio mode".</p>	<p>Figure 6.</p>
<p>4. Press the water button to activate a time dispense of 5.8 sec. Target 14.5 oz into the water chamber of the ratio cup.</p> <p><b>NOTE: After the water flow is adjusted, note the level of the ratio cup. Do not adjust the water again for the syrup.</b></p>	<p>Figure 7.</p>

- Press a brand to activate the time dispense into the proper syrup chamber. If the syrup level doesn't fall within one bandwidth from the noted water level, turn the adjust screw on the appropriate syrup flow control counter-clockwise to decrease syrup flow or clockwise to increase syrup flow. Dispense a few drinks to check the ratio. Re-adjust as necessary. Repeat for the remaining flavors.



Top View

Figure 8.

- Select the respective mode based on the type of dispense.

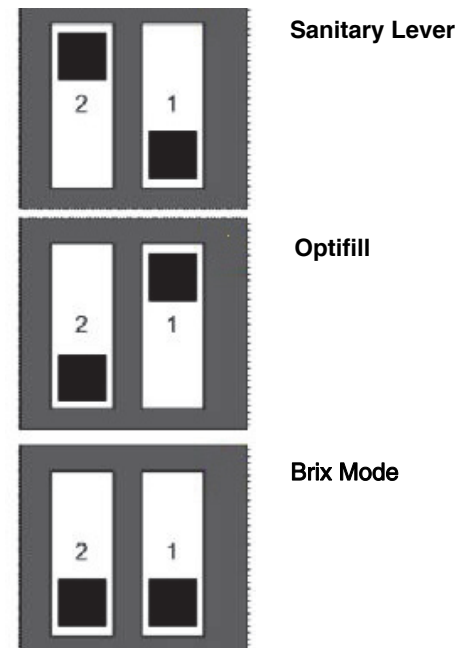


Figure 9.

- Replace the rear valve cover and replace the capacitive touch module.

## KNOCK OUT KIT-P/N 629097803

**NOTE: All Enduro Cold Carbonation units since 2004 have panels that will accept the Prism Valve.**

**Models:**

**ED150BCH, 150BCHZ, ED175BCH, ED175BCHZ, ED200BCH, ED200BCHZ, ED250BCH, ED250BCHZ, ED300BCH and ED300BCHZ**

**NOTE: All Enduro Ambient Carbonation and Beverage Only units prior to November 2018 will require the punch tool. All Enduro Units since November 2018 have panels that will accept the PRISM valve**

**Beverage Only Models:**

**ED150B, ED150BZ, ED175B, ED175BZ, ED200B, ED200BZ, ED250B, ED250BZ, ED300B and ED300BZ**

**Ambient Carbonation Models:**

**ED150BC, ED150BCZ, ED175BC, ED175BCZ, ED200BC, ED200BCZ, ED250BC, ED250BCZ, ED300BC and ED300BCZ**

**NOTE: All IDC Units (Serial #: 62C0912JD002) since 2009 have panels that will accept the Prism Valve.**

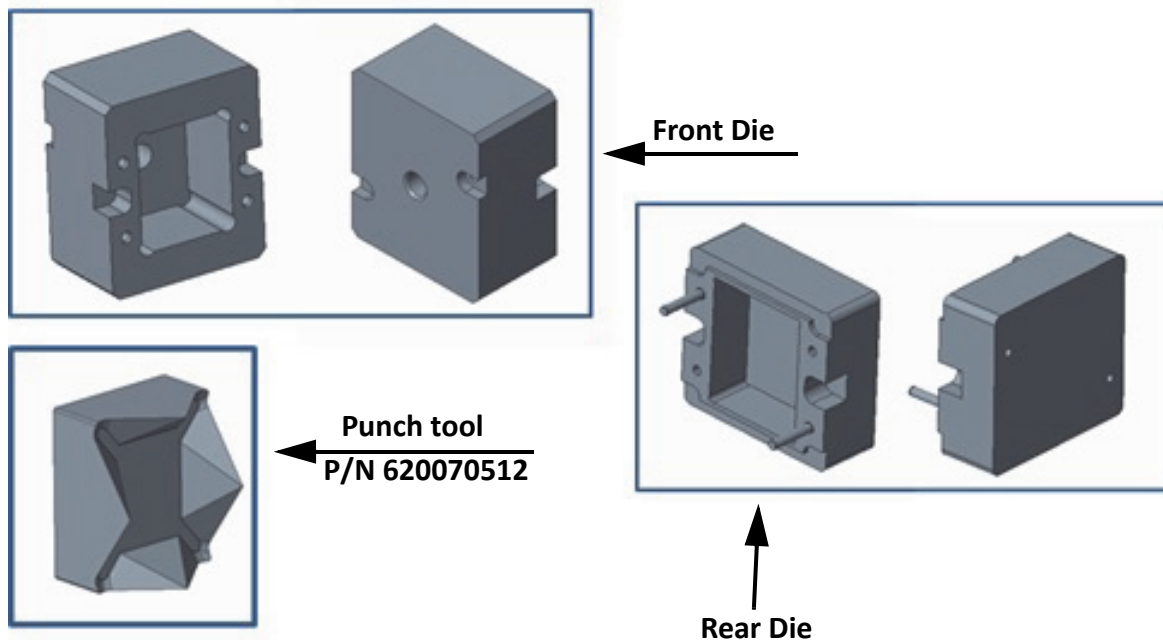
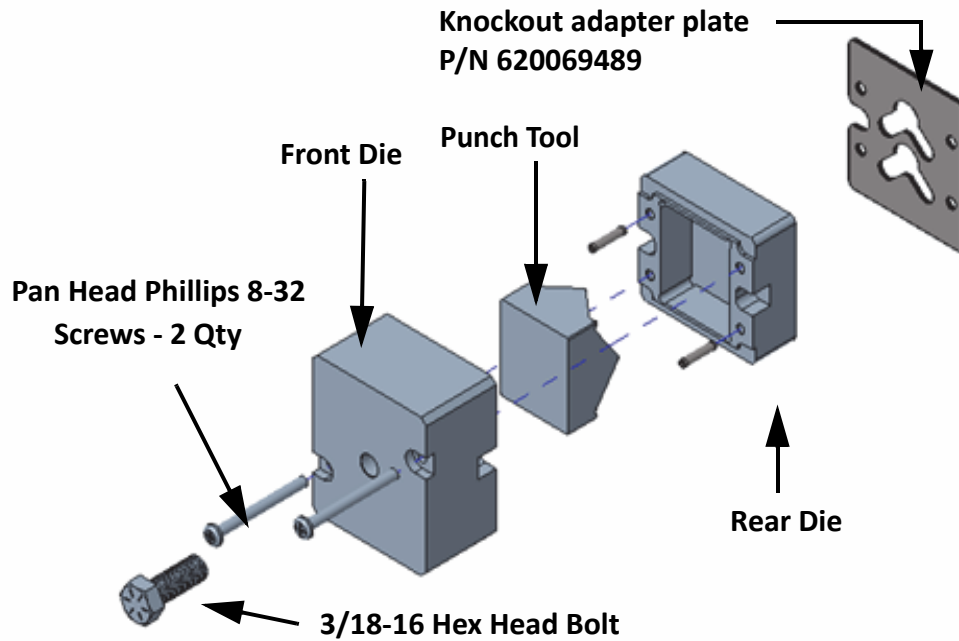


Figure 10.



**Knockout kit P/N-629097803**

Figure 11.

629097803 – KNOCKOUT KIT BOM		
Part Number	Description	Qty
620070512	Punch Tool	1
620069490_Front Die	Front Die	1
620069490_Rear Die	Rear Die/Receiver	1
620069490_Screws	8-32 Pan head Phillip Screws	2
620069490_Bolt	3/18-16 Hex Head Bolt	1
620069489	Knockout Adapter Plate	5

629097803 – KNOCKOUT KIT: SERVICE PARTS	
Part Number	Description
620070512	Punch Tool
620069489	Knockout Adapter Plate

## KNOCK OUT PUNCH INSTRUCTIONS



**WARNING:**  
Must wear required PPE and right tools before using the punch out tool.

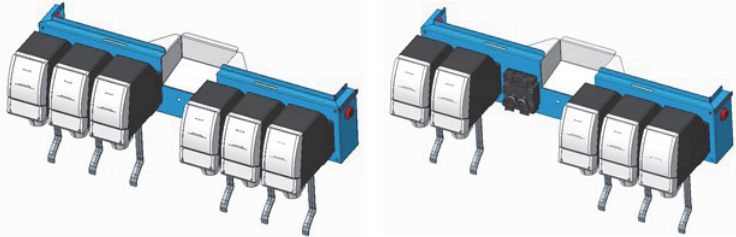
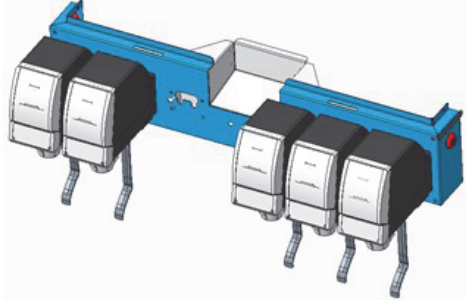
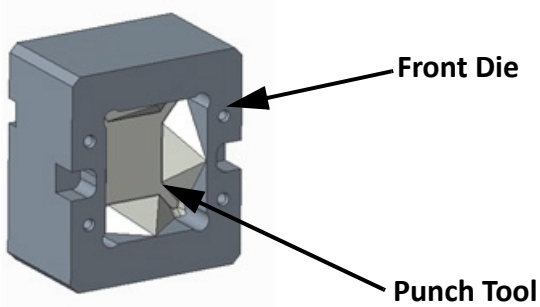


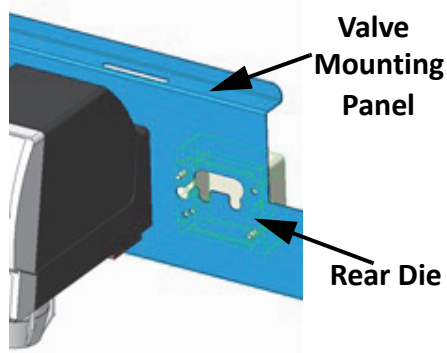
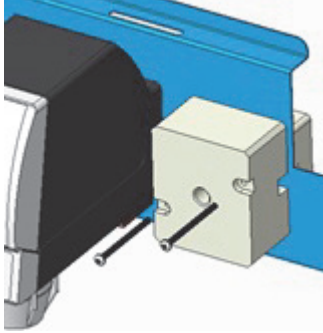
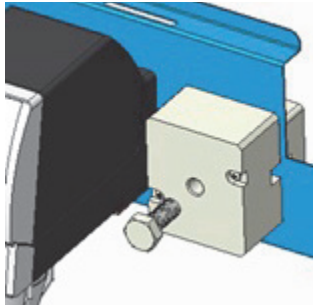
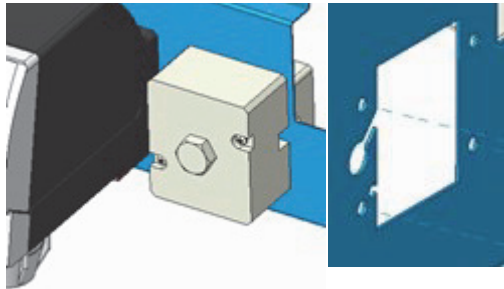
**WARNING:**  
Disconnect power to the unit before servicing following all lock out/tag out procedures established by the user. Verify all of the power is off to the unit before any work is performed.



**CAUTION:**  
Disconnect all fluid supply to the unit and release all pressures in the system.

Table 3 .

<p>1. Remove the valve from the back block.</p>	 <p>Figure 12.</p>
<p>2. Remove the existing back-block from the valve panel.</p> <p><b>NOTE: Keep the screws safe for later.</b></p> <p><b>NOTE: used with installation of new "Prism".</b></p>	 <p>Figure 13.</p>
<p>3. Load the "Front Die" with "Punch Tool".</p>	 <p>Figure 14.</p>

<p>4. Align the 2 dowel pins of the "Rear Die" with Corresponding holes on the "Valve mounting panel".</p>	 <p style="text-align: center;">Figure 15.</p>
<p>5. Assemble "Front Die" loaded with "Punch Tool" to "Rear Die", using 2 Phillip "8-32" screws.</p>	 <p style="text-align: center;">Figure 16.</p>
<p>6. Assemble &amp; tighten the hexagon bolt using socket wrench, until the bolt head rests on the front die surface.</p> <p><b>NOTE: Add lubricant to 3/16" bolt before using the knockout.</b></p>	 <p style="text-align: center;">Figure 17.</p>
<p>7. Remove the tool from the valve mounting panel and dispose of the punched out piece.</p>	 <p style="text-align: center;">Figure 18.</p>

**CAUTION:**

**NOTE: Position of the punching may vary, depending upon requirement.**

**NOTE: With reference to Step - 5, all 2 screws must be tightened to avoid any tool damage or improper punching.**

# INSTALLATION INSTRUCTIONS

## KNOCK OUT ADAPTER PLATE - P/N 620069489

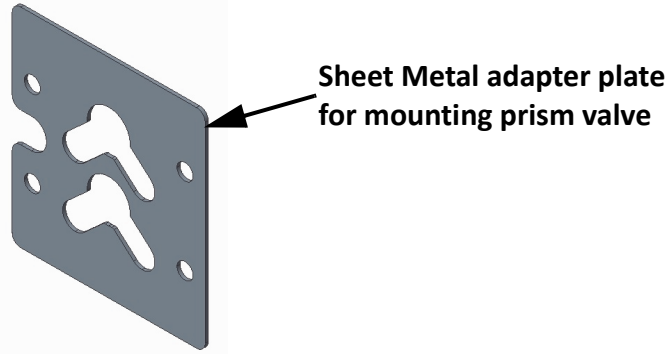


Figure 19.

## KNOCK OUT ADAPTER PLATE AND TUBING

Table 4.

1. Align knock out adapter plate with 4 holes of valve mounting panel from "Front Side".

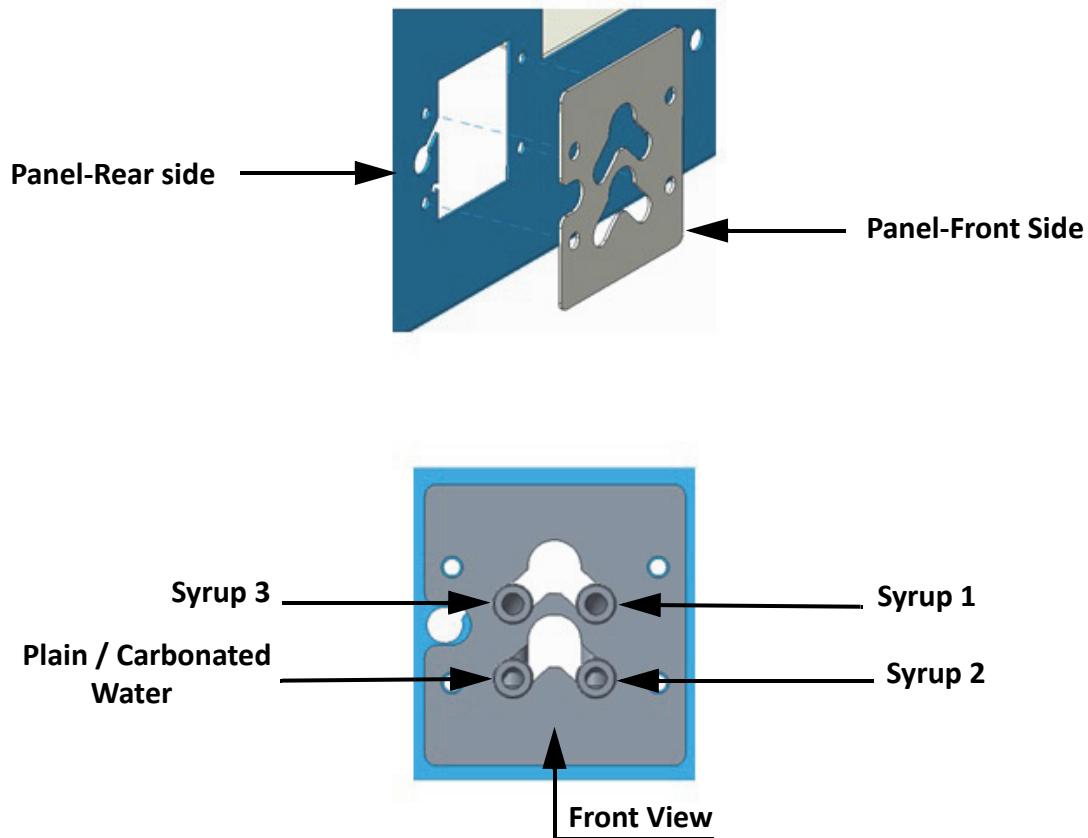


Figure 20.



## INSTALLATION KIT P/N 629097802

2. Prepare the tubing assemblies.

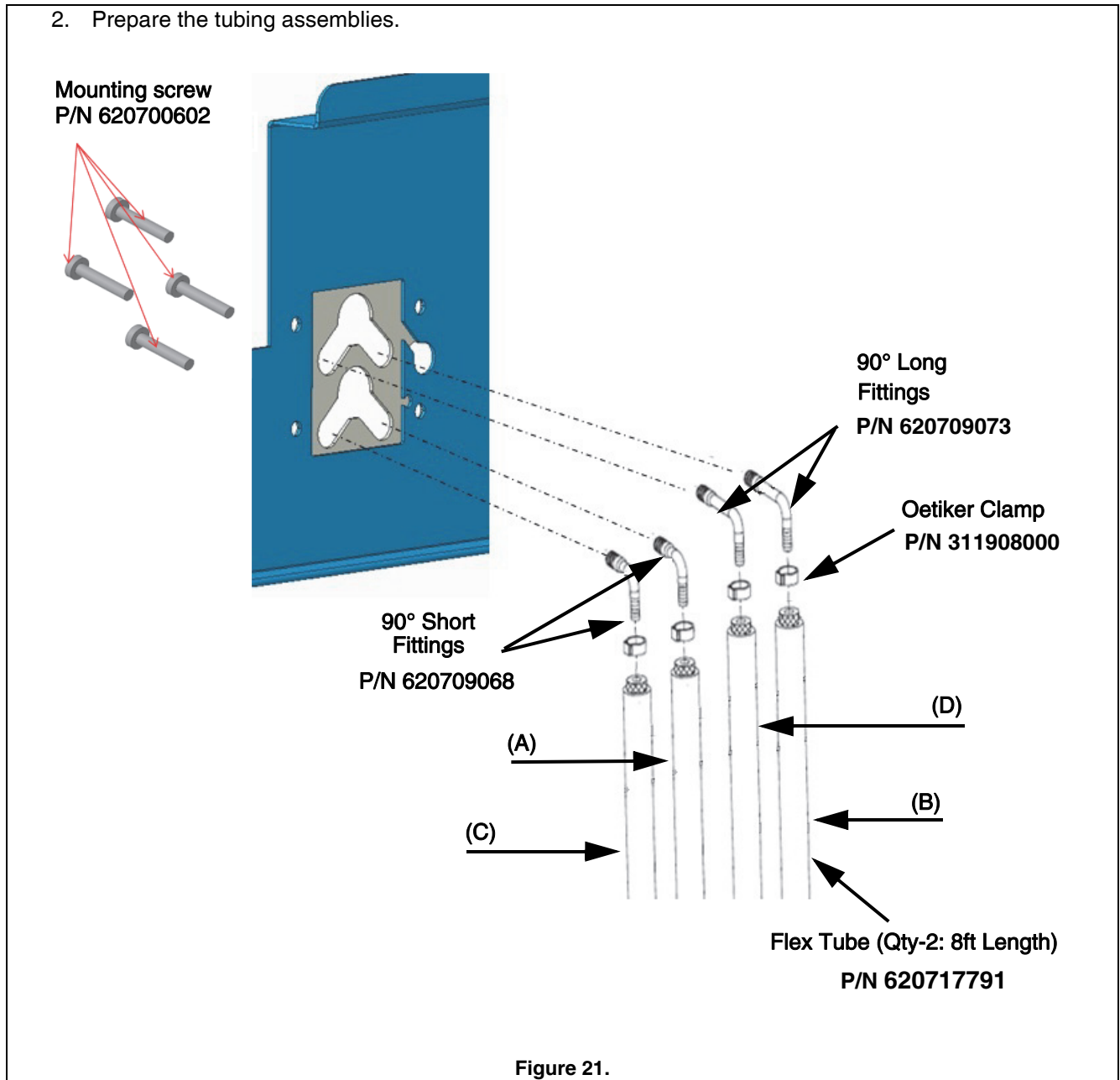


Figure 21.

**NOTE:** Check the O-rings on the 90° fittings for damage and replace if necessary.

**NOTE:** Apply Dow 111 or equal lube on the O-rings prior to install.

**NOTE:** Use P/N 620717792 to order additional Flex tubing

**NOTE:** Use P/N 629097822 for an advance kit(100' Flex tubing, Barb Fittings & Co2 tubing, O-rings & Oetikers).

Table 5.

A.	Plain/Carb Water	Use 90° short fitting, 1/4" tubing & insulation from existing plain / carbonated Water line
B.	Syrup 1	Existing syrup line from the cold plate
C.	Syrup 2	New syrup line using 90° short fitting & 1/4" insulated tubing
D.	Syrup 3	New syrup line using 90° long fitting & 1/4" insulated tubing

## BACK BLOCK INSTALLATION



Figure 22.  
Table 6.

1. Route the wire & connector through relief hole of rear adapter plate and back block.

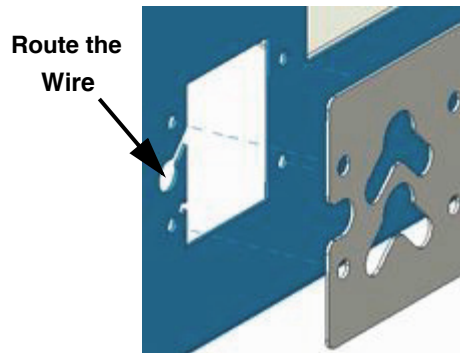


Figure 23.

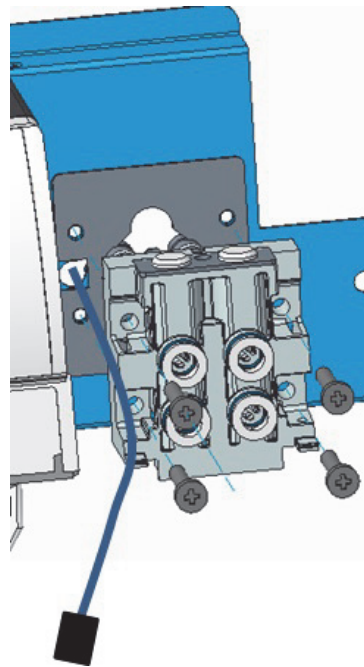
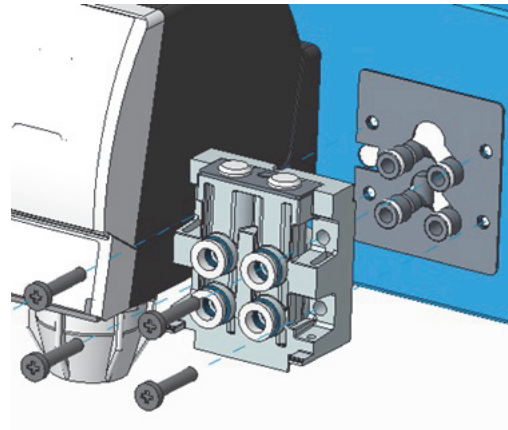


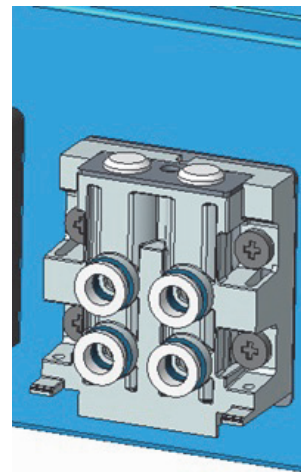
Figure 24.

2. Assemble all the lines with L - fittings on to the knock out adapter plate and



**Figure 25.**

3. Align the back block inlet ports to the L- fittings and fasten back block to the valve panel using screws removed earlier (Use either existing screws or screws provided in the kit).



**Figure 26.**

# VALVE INSTALLATION

Table 7.

<ol style="list-style-type: none"> <li>1. Slide, open the capacitive touch module.</li> <li>2. Disconnect the wires from the capacitive touch module.</li> <li>3. Remove the rear cover</li> </ol>	<p style="text-align: center;"><b>Figure 27.</b></p>
<ol style="list-style-type: none"> <li>4. Apply Dow 111 or equal lube on O - rings before assembling the valve body. Align the inlet holes of "valve body" with outlet holes of back block.</li> </ol>	<p style="text-align: center;"><b>Figure 28.</b></p>

5. Gently push the valve body against back block, until rear surface of the valve body is flush with the back block.

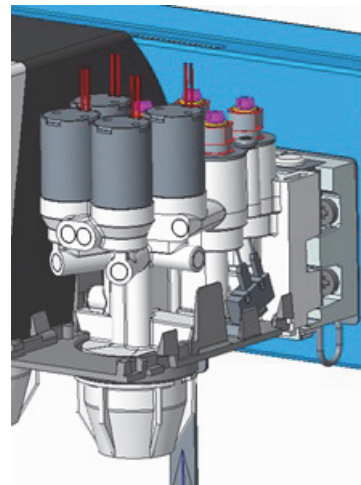


Figure 29.

6. Lock the valve body and back block together with lock pin. Refer to Table 8 on page 18.

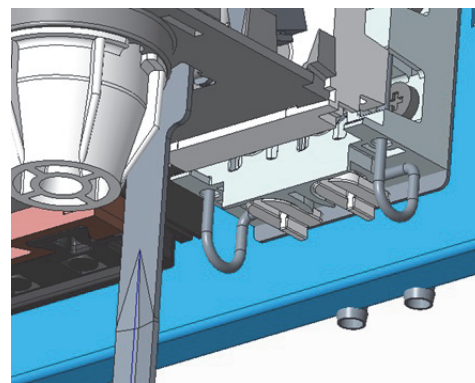


Figure 30.

## LOCKING VALVE WITH BACK BLOCK USING LOCK PIN

Table 8.

1. Align the valve body with back block.

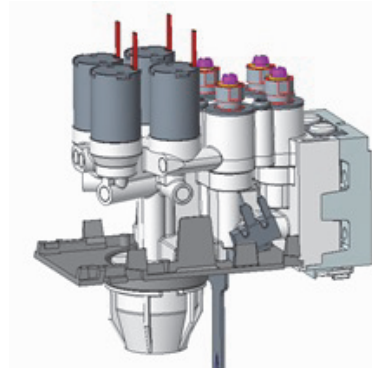
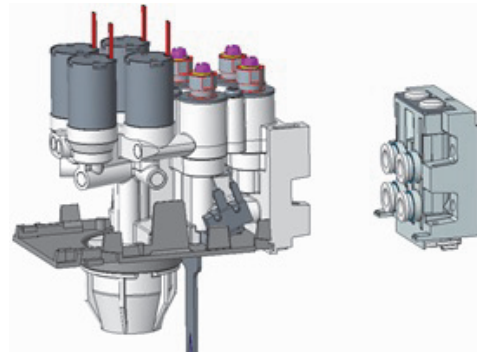


Figure 31.

2. Insert the lock pin through the back block and valve body.

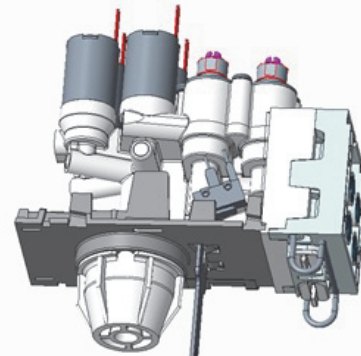
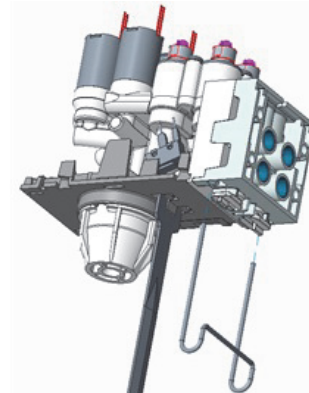
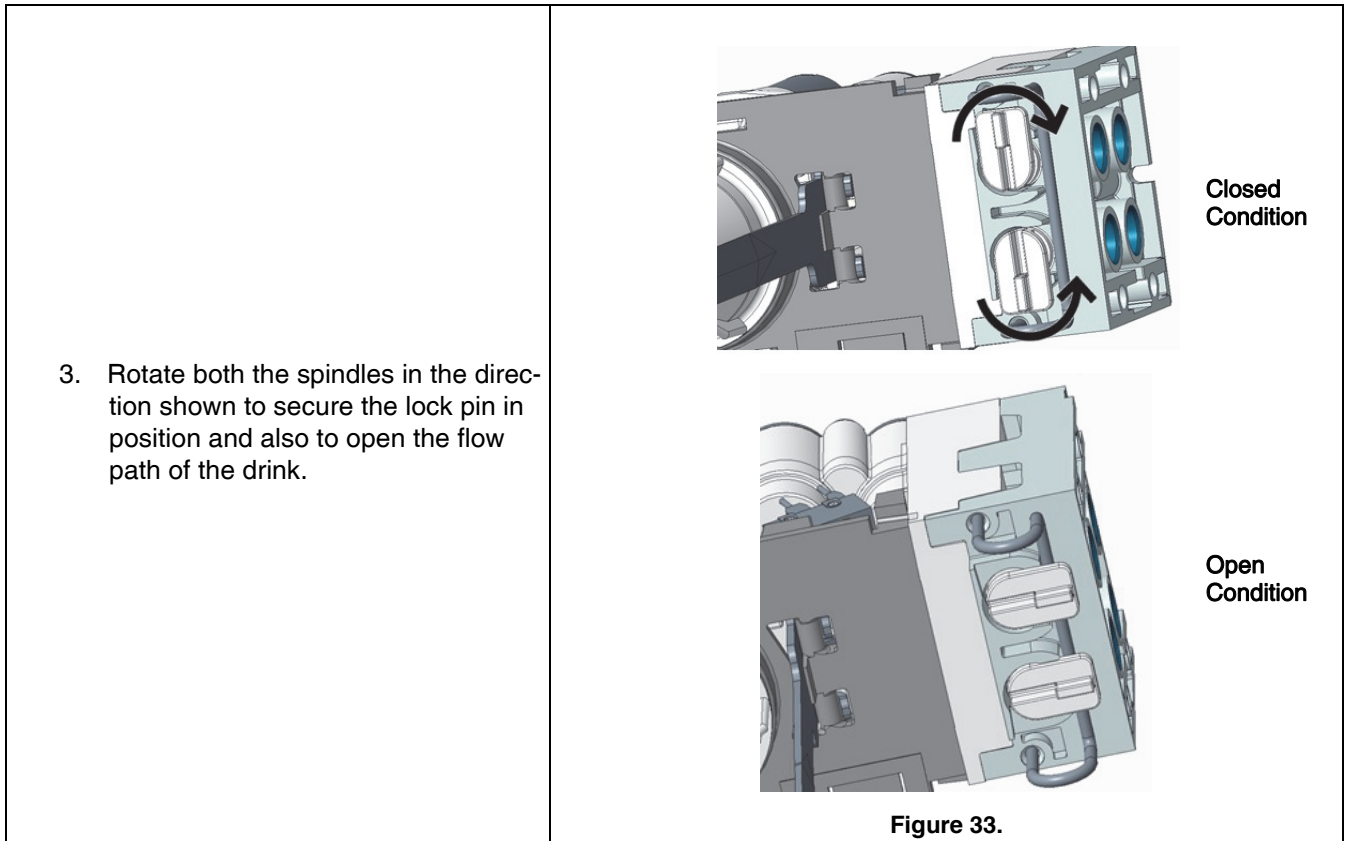
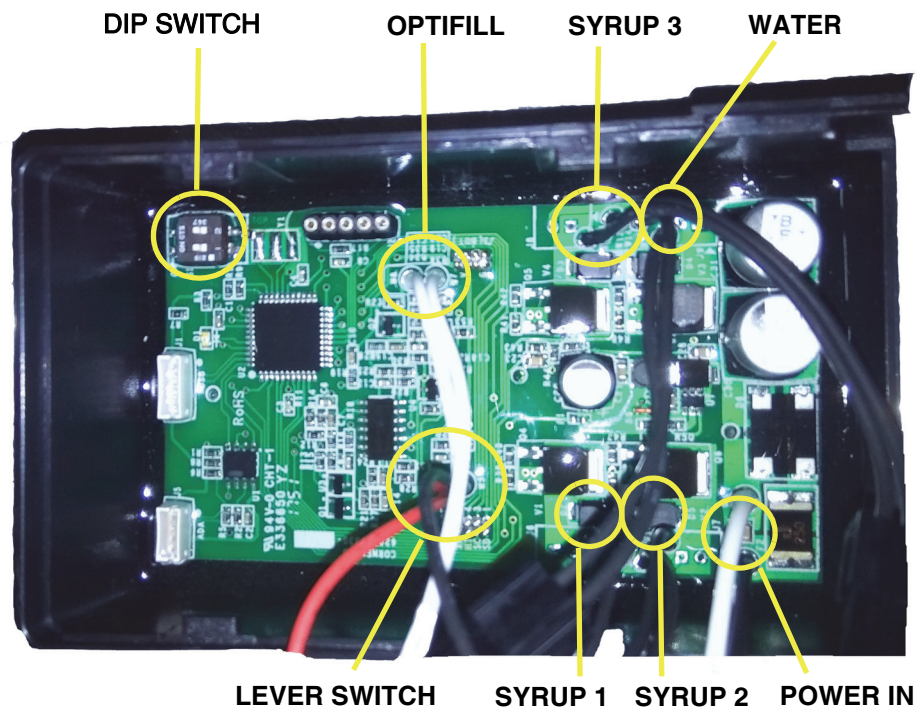


Figure 32.



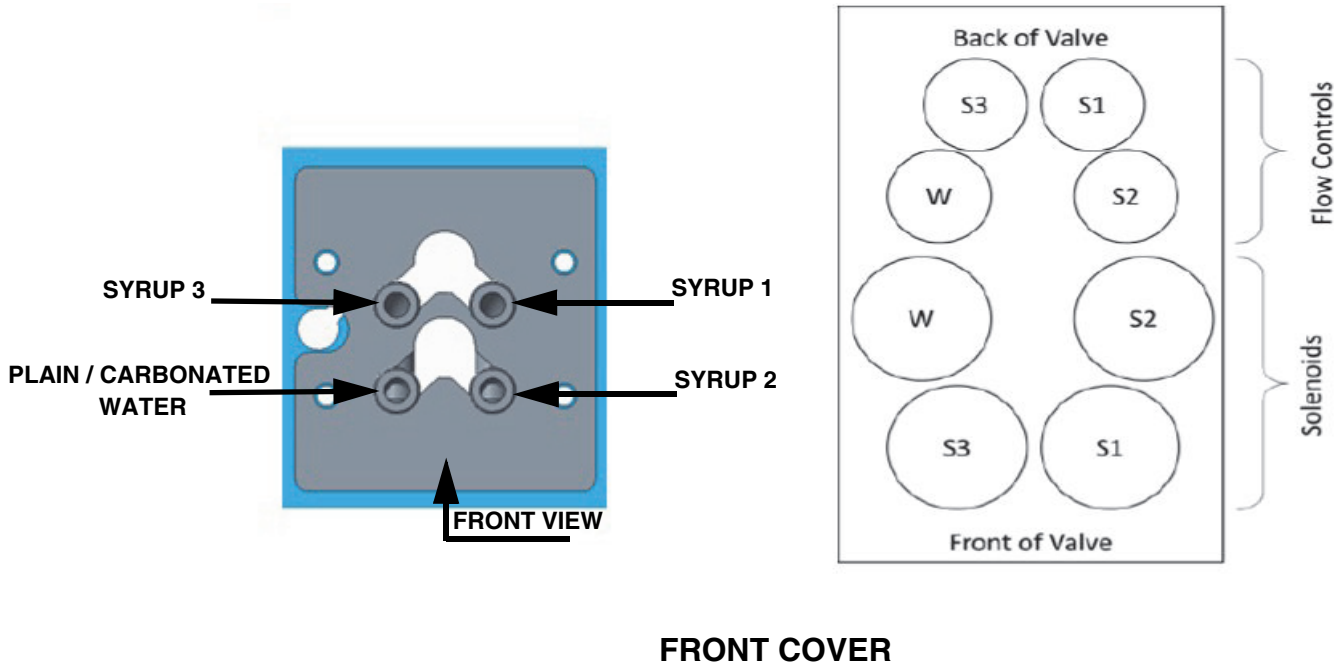
**CONNECTION DIAGRAM**



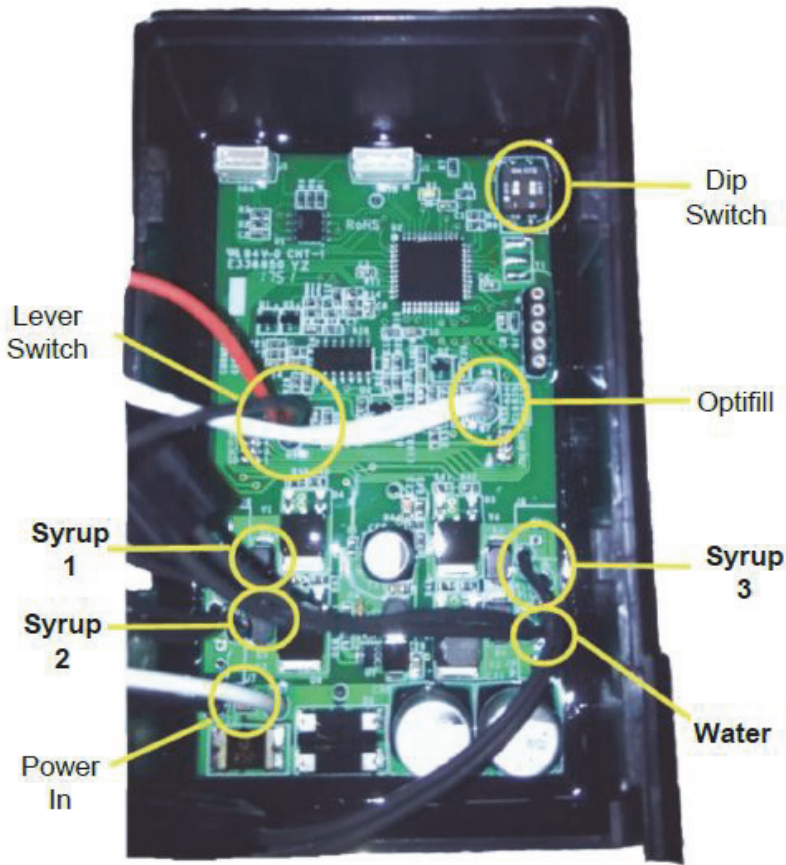
**Figure 34.**

# SYRUP AND WATER MAPS

NOTE: For switch positions, refer figure 4 on page 5.



## FRONT COVER



REAR VIEW



FRONT VIEW

Figure 35.



## TOUCH MODULE AND COVER INSTALLATION

1. Assemble rear cover.

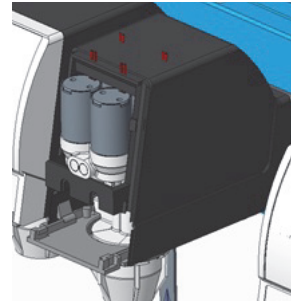


Figure 36.

2. Route the wires from valve body and connect with capacitive touch module, refer Figure 37.

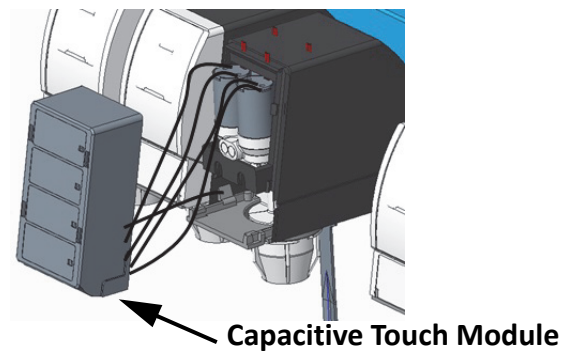


Figure 37.

3. Slide the touch module on the rear cover from top.

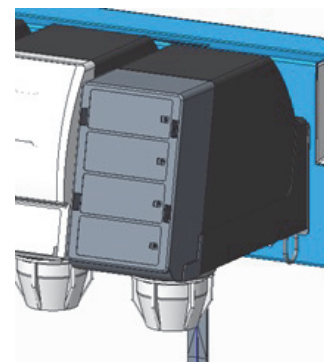


Figure 38.

4. Press each button on the capacitive touch module & visually check the pour.

**NOTE: Refer page 6 for ratio information.**

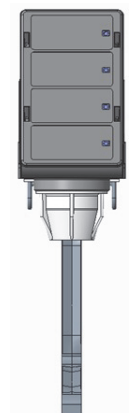


Figure 39.

# SCHEMATICS

## PLUMBING DIAGRAM

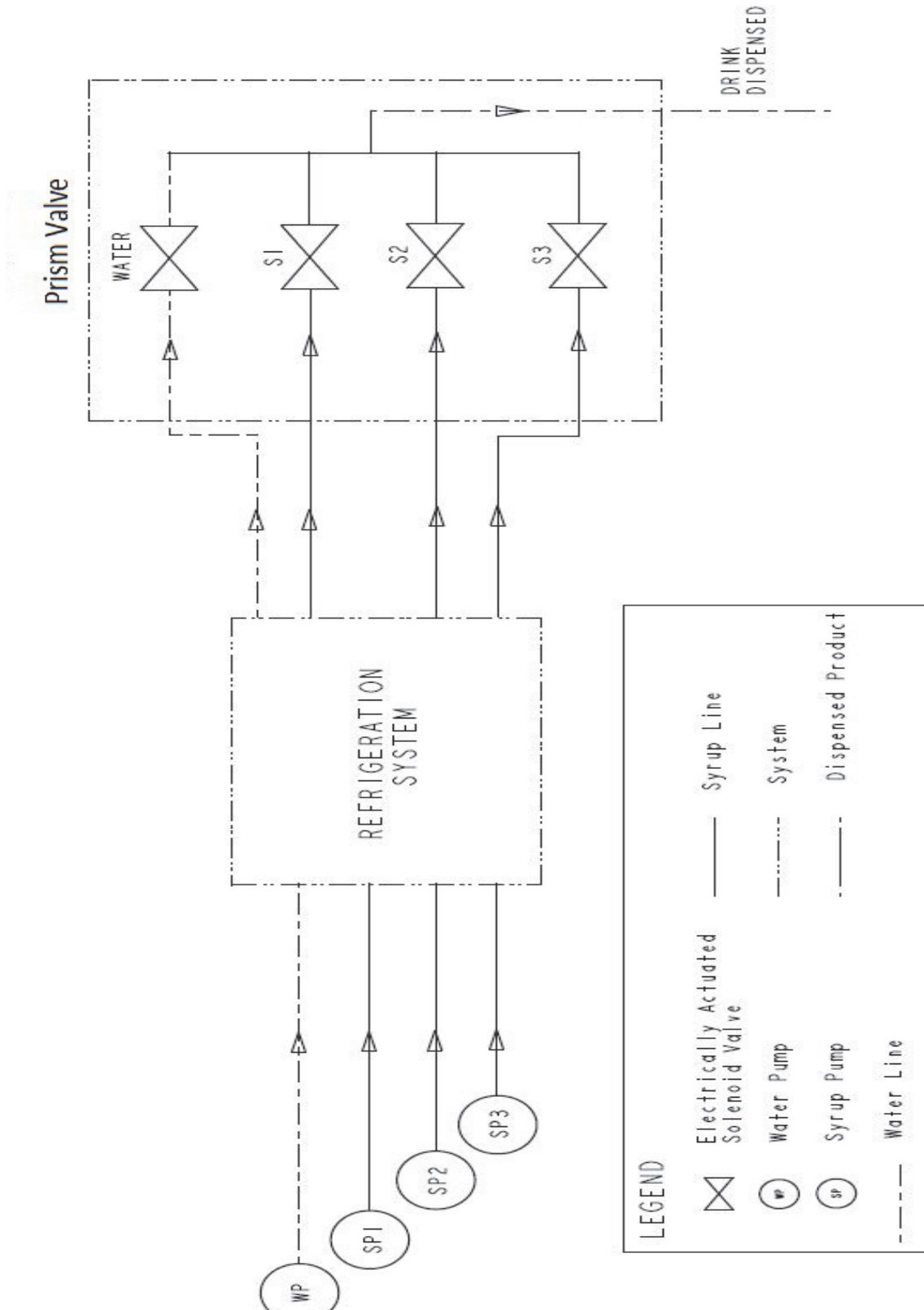


Figure 40.

# WIRING DIAGRAM

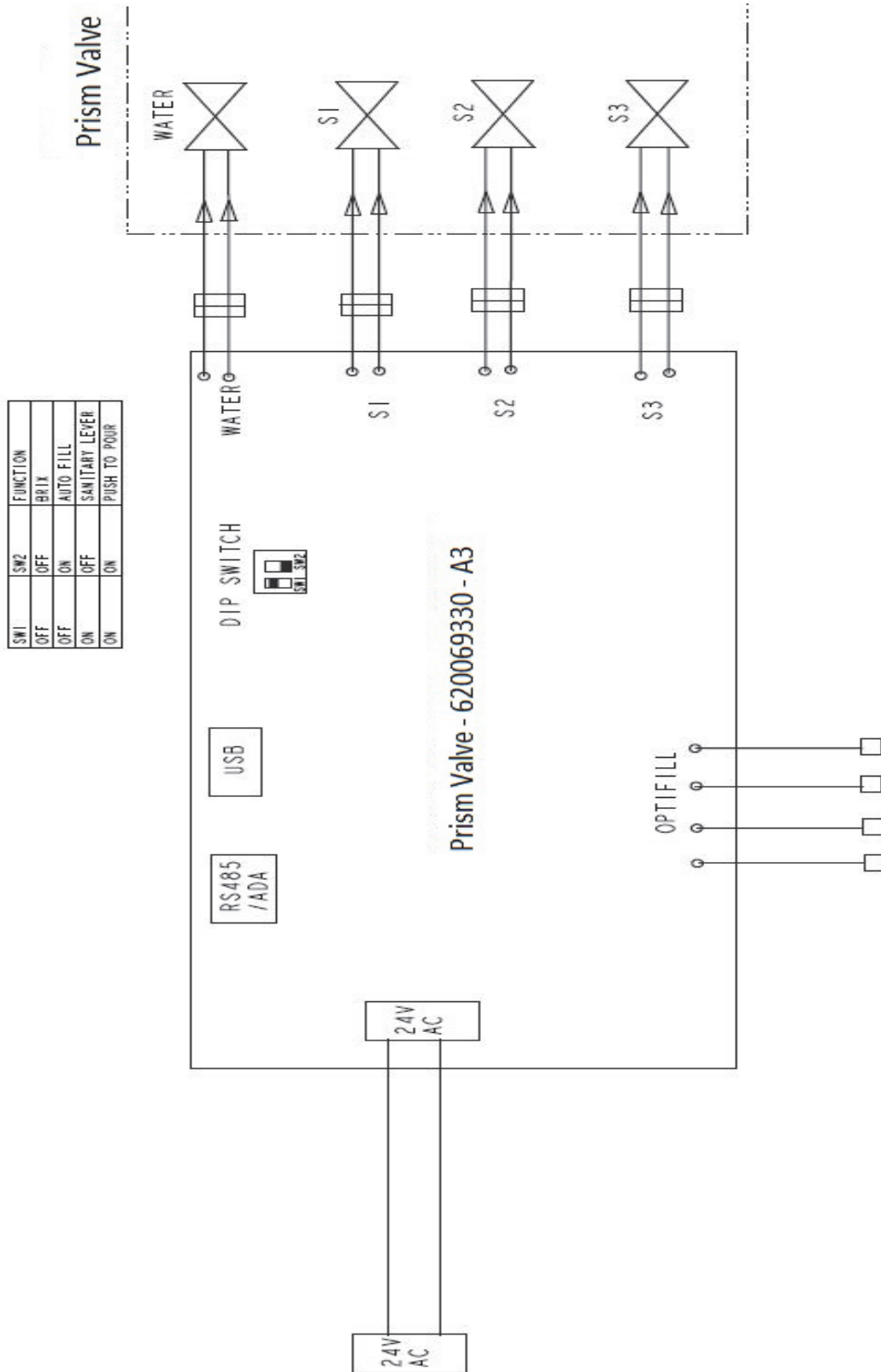


Figure 41.

# ILLUSTRATED PARTS LIST

## VALVE ASSEMBLY

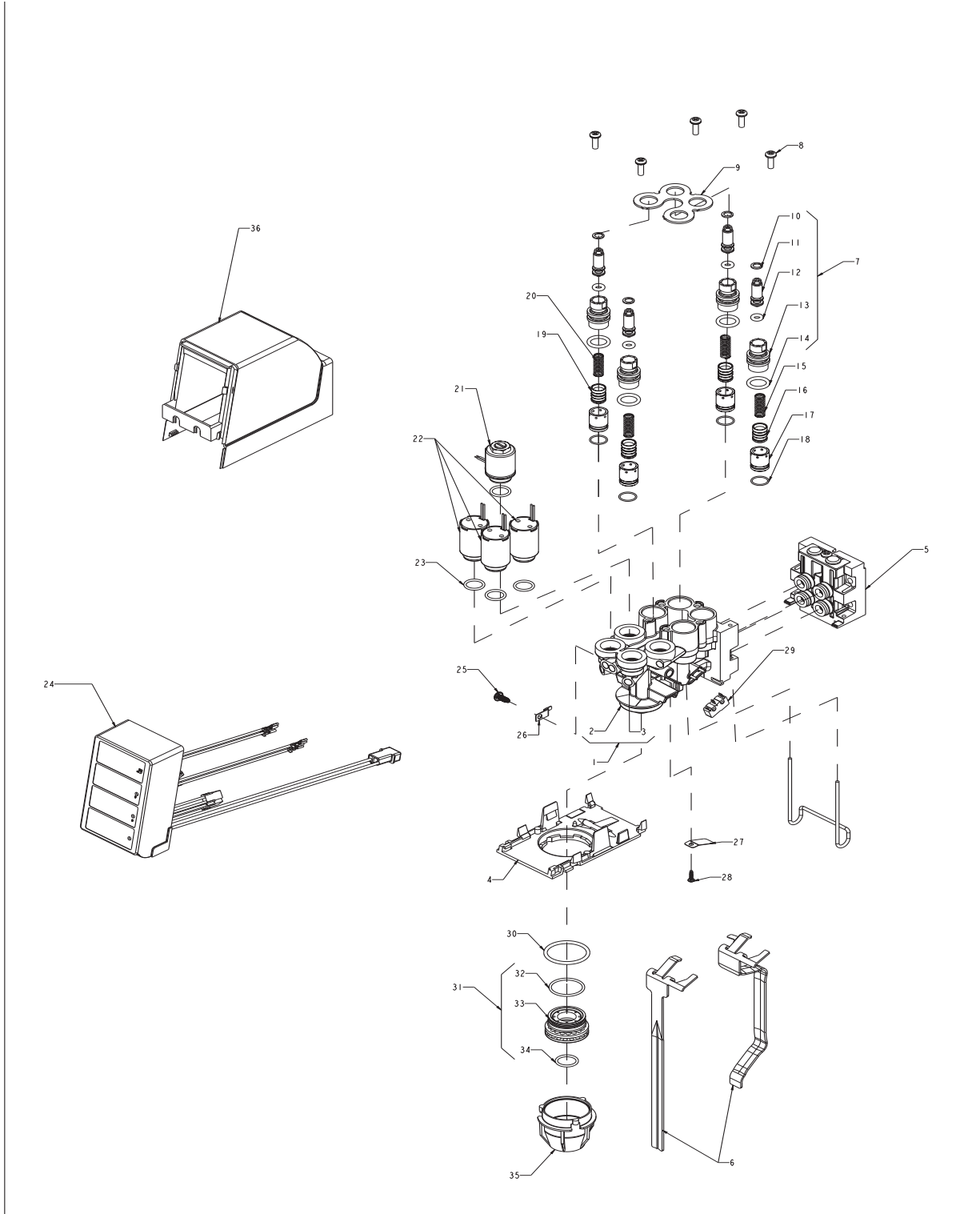


Figure 42

Item No.	Part No.	Description
1	620069122	Valve Body Assy.
2	620069122A	Valve Body
3	620069122B	Valve Body Plug
4	620069522	Plate Valve Base
5	620056417	Back Block Assy
6	560003252	Lever Valve Optifill
	560003193	Lever Valve Self Serve
7	84996001	Flow Control Bonnet Assy
8	620069310	Screw #8-18 X 1/2 Type 25 410 SS
9	620070153	Plate Retaining Prism Valve
10	71860292	Retainer Ring
11	60245001	Flow Adjustment Screw FFV
12	31525030	O-ring .174 ID 103CS
13	60247	Bonnet FFV Flow Control
14	31525007	O-ring .488 ID 103CS
15	48258005	Spring Syrup
16	60281002	Piston Syrup FFV
17	60281001	Sleeve Syrup FFV
18	740001883	O-Ring
19	60280002	Piston Water FFV
20	48258006	Spring Water
21	620069126W	Water Solenoid Assy
22	620069126S	Syrup Solenoid Assy
23	183008000	O-ring .489 ID 070 CS
24	620069127-301	Front Cover Assembly Black OP/SL/PB
25	620057622	Screw #8-18 X 3/8
26	620069124	Optifill Probe
27	620069125	Lever Return Spring
28	620069311	Screw #3-24 X 3/8

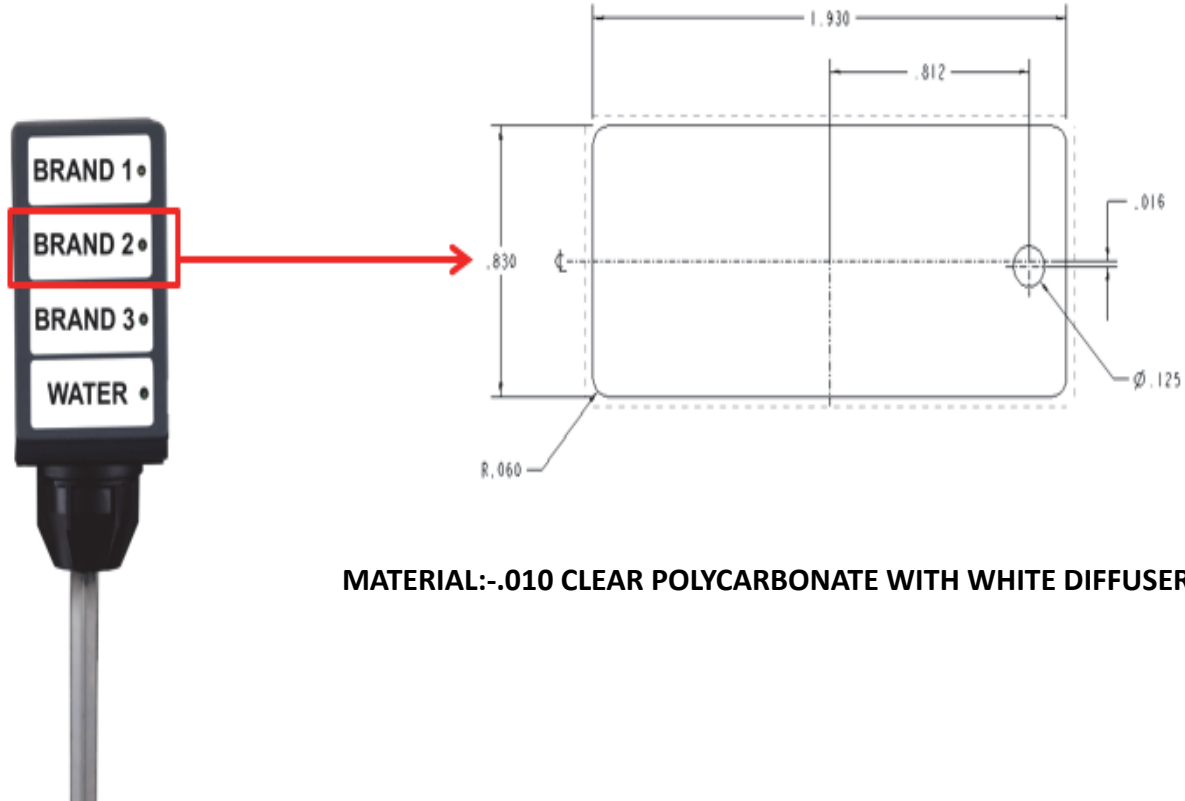
Item No.	Part No.	Description
29	620069584	Micro Switch
30	183184000	O-ring 1.17 ID 103 CS
31	620069283	Diffuser Assy
32	311086000	O-Ring.929 ID 070 CS
33	620069559	Diffuser
34	620069120	O-Ring .551 ID 070 CS
35	620069121	Nozzle Black
36	1950	Cover Valve Black
37	629097802	Installation Kit (Not shown in Fig.42)
	311908000	Oeitker Clamp #11.3 (Not shown in Fig 42)
	620709073	1/4 Dole L Fitting (Not shown in fig 42)
	620709068	1/4 Barb Fittings X1/4 SS (Not shown in fig 42)
	620717791	265 IDX42096" tube (Not shown in fig 42)
	620700602	Mounting Screw (Not shown in fig 42)
38	629097803	Knockout Kit (Not shown in fig 42)
	620069489	Knockout Adapter Plate (Not shown in fig 42)
	620070512	Knockout punch Tool (Not shown in fig 42)
39	620070508	Coke Decal (Not shown in fig 42)
	620070509	Pepsi Decal (Not shown in fig 42)
	620070510	Generic Decal (Not shown in fig 42)

## PRISM DECAL:

Table 9

Part number	Description
620070508	Coke Decal
620070509	Pepsi Decal
620070510	Generic Decal

Decal dimensions: Per brand



**MATERIAL:-.010 CLEAR POLYCARBONATE WITH WHITE DIFFUSER**

Figure 43



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