



PN 85-3151R - VV

PN 85-3161R - LFCV

Lancer Corp.

6655 Lancer Blvd.

San Antonio, Texas 78219

800-729-1500

Technical Support/Warranty: 800-729-1550

custserv@lancercorp.com

lancercorp.com



310



Manual PN: 28-0883/03

DIGITAL RELEASE ONLY - MAY 2013

FOR QUALIFIED INSTALLER ONLY

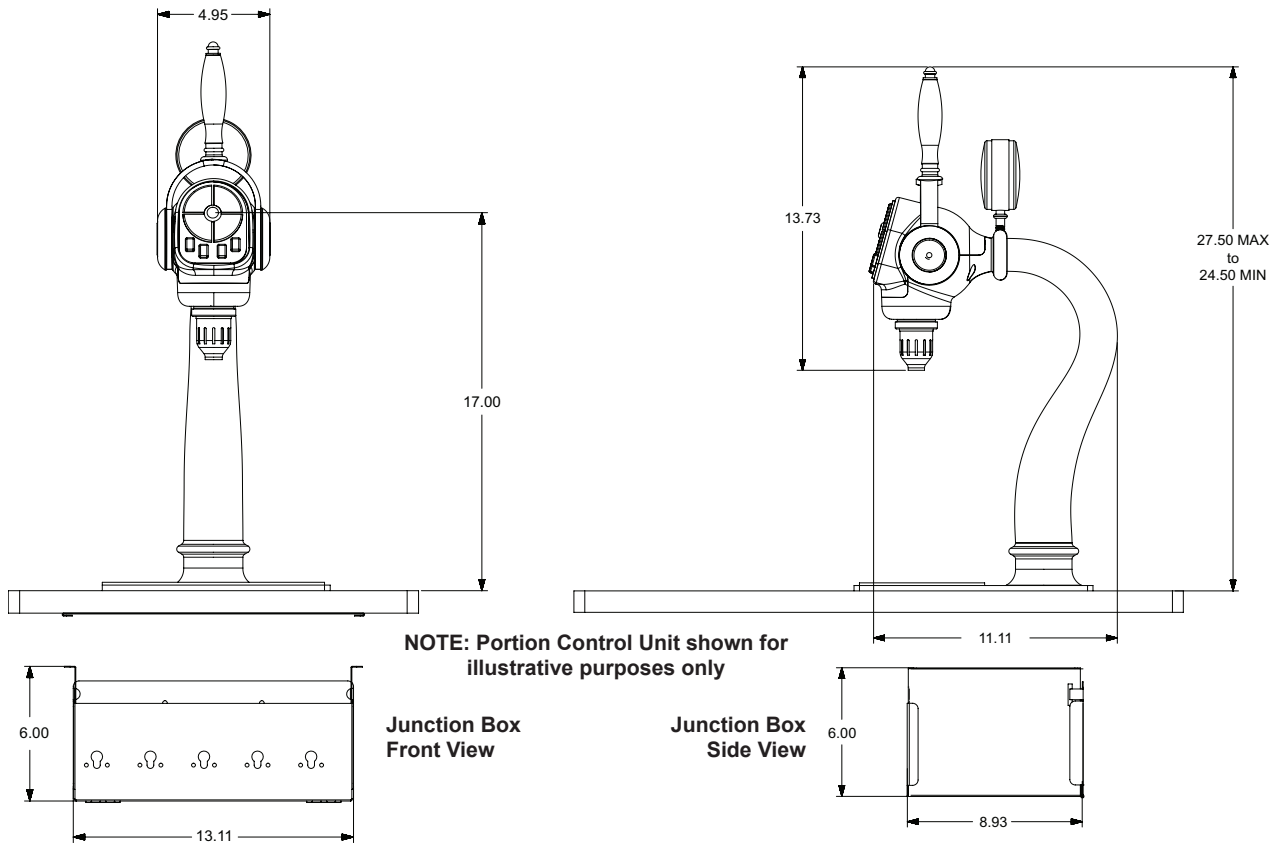
ABOUT THE UNICORN

The Unicorn Tower is designed using the highest quality materials and state-of-the-art technology to provide our customers with consistent quality and a unique drink experience.

TABLE OF CONTENTS

SPECIFICATIONS	3
WARNINGS/SAFETY/CAUTIONS	4
ELECTRICAL WARNING	4
WATER NOTICE.....	5
ADA STANDARDS FOR ACCESSIBLE DESIGN.....	5
DISPENSER INSTALLATION HIGHLIGHTS.....	6
PRE-INSTALLATION CHECKLIST.....	7
1. INSTALLATION.....	8
1.1 UNPACKING THE DISPENSER.....	8
1.2 SELECTING A LOCATION FOR THE DISPENSER	8
1.3 ADA STANDARDS FOR ACCESSIBLE DESIGN.....	8
1.4 INSTALLATION OF THE UNIT.....	8-11
1.5 PLUMBING LINE CONNECTIONS.....	12
2. LINE RUN - RECIRCULATING SYSTEM.....	13
3. CONNECTING TO ELECTRICAL POWER.....	14
4. CLEANING AND SANITIZING INSTRUCTIONS.....	15
4.1 CLEANING & SANITIZING SOLUTIONS	15
4.2 DAILY CLEANING.....	15
4.3 WEEKLY CLEANING & SANITIZING	16
4.4 CLEANING AND SANITIZING BEVERAGE COMPONENTS - BAG-IN-BOX SYSTEMS..	17
5. PROGRAMMING OVERVIEW	18
5.1 PROGRAMMING WITH THE VOLUMETRIC HANDHELD PROGRAMMER.....	19
5.2 CONFIGURATION.....	19-21
5.3 ADJUSTING WATER FLOW AND WATER TO SYRUP RATIO (BRIX) - LFCV ONLY	22
5.4 OPERATION	22
6. TROUBLESHOOTING	23
7. DISPENSER DISPOSAL.....	24
8. ILLUSTRATIONS, PARTS LISTINGS, AND WIRING DIAGRAMS.....	24
TOWER, UNICORN, T/C, PC, CC, LFCV - SPARE PARTS LIST	
8.1 ELECTRONIC, LFCV SPARE PARTS.....	25
8.2 NOZZLE, LFCV SPARE PARTS	26
8.3 VALVE, LFCV SPARE PARTS	27
8.4 WIRING DIAGRAM, LFCV.....	28
TOWER, UNICORN, T/C, PC, CC, VV - SPARE PARTS LIST	
8.4 WIRING DIAGRAM, LFCV.....	28
8.5 ELECTRONIC, VV SPARE PARTS.....	29
8.6 NOZZLE, VV SPARE PARTS.....	30
8.7 WATER VALVE, VV SPARE PARTS.....	31
SYRUP VALVE, VV SPARE PARTS	31
8.8 MISC, VV SPARE PARTS.....	32
8.9 WIRING DIAGRAM, VV	33
8.10 COUNTER CUTOUT TEMPLATE.....	34

UNICORN TOWER SPECIFICATIONS



DIMENSIONS Height: 25.4 in (645.2 mm) Width: 4.95 in (125.7 mm) Depth: 11.11 in (282.2 mm) SPACE REQUIRED Left Side: 6 in (152.4 mm) Right side: 6 in (152.4 mm) Top and Rear: 6 in (152.4 mm) NORTH AMERICA ELECTRICAL REQUIREMENTS: 120 VAC 50/60Hz INTERNATIONAL ELECTRICAL REQUIREMENTS: Refer to 'CONNECTING TO ELECTRICAL SUPPLY' on pg 13	WEIGHT Shipping: 35 lbs (15.88 kg) Counter Weight: 40 lbs (18.1 kg) FITTINGS Soda/Plain water inlet: 1/4" barb Brand syrup inlets: 1/4" barb OPERATING PRESSURES Flow Rate: 2.0 ounces per second (44.4 ml/sec)	PLAIN WATER Min: 40 PSIG (0.276 MPA) Max: 110 PSIG (0.756 MPA) SYRUP Min: 20 PSIG (0.137 MPA) Max: 70 PSIG (0.482 MPA) DIET SYRUP Min: 10 PSIG (0.068 MPA) Max: 70 PSIG (0.482 MPA)
--	---	---



WARNING/ADVERTENCIA/AVERTISSEMENT



⚠ The dispenser is for indoor use only. This unit is not a toy. It should not be used by children or infirm persons without supervision. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. This unit is not designed to dispense dairy products. The min/max ambient operating temperature for the dispenser is 40 to 105 degrees F.

⚠ El dispensador sólo debe usarse en interiores. Esta unidad no es un juguete. No la deben usar niños ni personas discapacitadas sin supervisión. Esta unidad no está destinada al uso por parte de personas (incluso niños) con capacidad física, sensorial o mental reducida, o sin experiencia y conocimientos suficientes, a menos que una persona responsable de su seguridad les haya dado supervisión o capacitación en el uso de la unidad. Esta unidad no ha sido diseñada para suministrar productos lácteos. La temperatura ambiente operativa mínima/ máxima para el dispensador es de 40 a 105 grados F.

⚠ Le distributeur est destiné à un usage à l'intérieur seulement. Cet appareil n'est pas un jouet. Il ne devrait pas être utilisé par des enfants ou des personnes infirmes sans surveillance. Cet appareil n'est pas destiné à un usage par des personnes (y compris les enfants) ayant des capacités physiques, sensorielles ou mentales réduites, ou manquant d'expérience et de connaissances, à moins qu'elles obtiennent de la surveillance ou des instructions au sujet de l'utilisation de l'appareil de la part d'une personne chargée de leur sécurité. Cet appareil n'est pas conçu pour distribuer des produits laitiers. La température de service ambiante minimum/maximum pour le distributeur est de 40 à 105 degrés F.



ELECTRICAL WARNING/ADVERTENCIA ELÉCTRICA/ AVERTISSEMENT ÉLECTRIQUE



⚠ Check the dispenser serial number plate for correct electrical requirements of unit. Do not plug into a wall electrical outlet unless the current shown on the serial number plate agrees with local current available. Follow all local electrical codes when making connections. Each dispenser must have a separate electrical circuit. Do not use extension cords with this unit. Do not 'gang' together with other electrical devices on the same outlet. The keyswitch does not disable the line voltage to the transformer primary. Always disconnect electrical power to the unit to prevent personal injury before attempting any internal maintenance. The resettable breaker switch should not be used as a substitute for unplugging the dispenser from the power source to service the unit. Only qualified personnel should service internal components of electrical control housing. Make sure that all water lines are tight and units are dry before making any electrical connections!

⚠ Verifique la placa con el número de serie del dispensador, donde encontrará los requisitos eléctricos correctos de la unidad. No enchufe la unidad en un tomacorriente de pared a menos que la corriente indicada en la placa con el número de serie concuerde con la corriente local disponible. Al hacer las conexiones, respete todos los códigos eléctricos locales. Cada dispensador debe tener un circuito eléctrico independiente. No use extensiones con esta unidad. No la conecte junto con otros dispositivos eléctricos al mismo tomacorriente. El interruptor de llave no corta el voltaje de línea al transformador primario desconecte siempre la alimentación eléctrica a la unidad para evitar lesiones personales antes de tratar de realizar tareas de mantenimiento. El disyuntor de sobrecarga reseteable no se debe usar como sustituto para desenchufar el dispensador de la fuente de alimentación para realizar tareas de servicio de la unidad. El servicio de los componentes internos de la caja de control eléctrico debe confiarse exclusivamente a personal calificado. Asegúrese de que todas las líneas de agua estén ajustadas y las unidades estén secas antes de hacer conexiones eléctricas.

⚠ Examinez la plaque de numéro de série du distributeur pour connaître les bonnes exigences en matière d'électricité pour l'appareil. Ne le branchez pas à une prise électrique murale à moins que le courant indiqué sur la plaque de numéro de série corresponde au courant local disponible. Respectez tous les codes électriques locaux lorsque vous faites des connexions. Chaque distributrice doit avoir un circuit électrique séparé. N'utilisez pas de cordons prolongateurs avec cet appareil. Ne pas le brancher avec d'autres appareils électriques sur la même prise. L'interrupteur à clé ne coupe pas la tension secteur au transformateur primaire. Débranchez toujours le courant électrique à l'appareil, afin de prévenir des blessures, avant de faire un entretien interne quelconque. Le disjoncteur réarmable ne devrait pas être utilisé au lieu de débrancher le distributeur de la source d'alimentation en électricité pour faire de l'entretien/une réparation de l'appareil. Seul le personnel qualifié devrait faire l'entretien/la réparation des composants internes dans le logement des commandes électriques. Assurez-vous que toutes les conduites d'eau sont étanches et que les appareils sont secs avant de faire des connexions électriques!



WATER NOTICE/AGUA AVISO/ PRÉAVIS DE L'EAU



⚠ Provide an adequate potable water supply. Water pipe connections and fixtures directly connected to a potable water supply must be sized, installed, and maintained according to federal, state, and local laws. The water supply line must be at least 3/8 inches (9.525 mm) pipe with a minimum of 20 PSI (0.137 MPA) line pressure, but not exceeding a maximum of 50 PSI (0.345 MPA). Water pressure exceeding 50 PSI (0.345 MPA) must be reduced to 50 PSI (0.345 MPA) with the provided pressure regulator. Use a filter in the water line to avoid equipment damage and beverage off-taste. Check the water filter periodically, as required by local conditions. The water supply must be protected by means of an air gap, a backflow prevention device (located upstream of the CO₂ injection system) or another approved method to comply with NSF standards. A leaking inlet water check valve will allow carbonated water to flow back through the pump when it is shut off and contaminate the water supply. Ensure the backflow prevention device complies with ASSE and local standards. It is the responsibility of the installer to ensure compliance.

⚠ Proporcione un suministro adecuado de agua potable. La línea de suministro de agua debe ser de una tubería de por lo menos 3/8 pulgadas (9.525 mm) con una presión de línea mínima de 20 PSI (0.137 MPA) , pero sin superar el máximo de 50 PSI (0.345 MPA). La presión de agua que supere los 50 PSI se debe reducir a 50 PSI (0.345 MPA) con un regulador de presión. Use un filtro en la línea de agua para evitar daños al equipo y cierto sabor raro en las bebidas. Verifique periódicamente el filtro de agua de acuerdo con las condiciones imperantes. El suministro de agua debe estar protegido por una separación de aire, un dispositivo de prevención del contraflujo (situado antes del sistema de inyección de CO₂) u otro método aprobado para cumplir las normas NSF. Si la válvula de retención de entrada de agua tuviera pérdidas, permitiría el contraflujo del agua carbonatada a través de la bomba cuando se la detiene y contaminaría el suministro de agua. Asegúrese de que el dispositivo de prevención del contraflujo cumpla con las normas locales y de ASSE. Es responsabilidad del instalador cumplir con estos requisitos.

⚠ Fournissez une alimentation en eau potable adéquate. Les connexions et les dispositifs de conduite d'eau connectés directement à une alimentation en eau potable doivent être calibrés, installés et maintenus selon les lois fédérales, provinciales et locales. La conduite d'alimentation en eau doit être un tuyau d'au moins 3/8 pouces (9.525 millimètres) avec une pression de ligne minimum de 20 LPC (0.137 MPA) , mais ne doit pas dépasser un maximum de 50 LPC (0.345 MPA). Une pression d'eau de plus de 50 LPC (0.345 MPA) doit être réduite à 50 LPC (0.345 MPA) avec le régulateur de pression fourni. Utilisez un filtre dans la conduite d'eau pour éviter des dommages à l'équipement et un goût des boissons qui n'est pas juste. Vérifiez le filtre à eau périodiquement, selon les exigences des conditions locales. L'alimentation en eau doit être protégée au moyen d'un intervalle d'air, un disconnecteur hydraulique (situé en amont du système d'injection de CO₂) ou une autre méthode approuvée pour se conformer aux normes de la NSF. Un clapet antiretour pour l'eau entrante qui fuie permettra à l'eau gazeuse de repasser par la pompe quand elle est fermée et de contaminer l'alimentation en eau. Assurez-vous que le disjoncteur hydraulique soit conforme aux normes de l'ASSE et locales. L'installateur est responsable d'assurer la conformité.



ADA STANDARDS FOR ACCESSIBLE DESIGN



To assure that beverage service is accessible to all customers, Lancer recommends that counter height and equipment selection be planned carefully. The 2010 ADA Standards for Accessible Design states the maximum reach height from the floor should be no more than 48" if touch point is less than 10" from the front of the counter, or a maximum of 46" if the touch point is more than 10" and less than 27" from the front of the counter (See Fig 1). For more information about the customer's legal requirements for the accessibility of installed equipment, refer to 2010 ADA Standards for Accessible Design - <http://www.ada.gov>.



DISPENSER INSTALLATION HIGHLIGHTS



This unit has been factory sanitized per Lancer specifications.

Listed below are critical elements which will aid in a successful installation.

1. If this dispenser is installed in an area that is susceptible to $\pm 10\%$ variation of the nominal line voltage, consider installing a surge protector or similar protection device.
2. Supply Water Pressure: Minimum - 25 PSI (0.172 MPA); Maximum - 50 PSI (0.345 MPA); If pressure is over 50 PSIG (0.345 MPA), a water pressure regulator must be used.
3. Bag-in-box (BIB) syrup packages must be within 6 feet (1.83 m) from unit when internal syrup pumps are being used.
4. Valve Adjustment: Make sure drink temperature is below 40°F (4.4°C) before adjusting brix.



PUNTOS IMPORTANTES EN LA UNIDAD DISPENSADORA



Esta unidad ha sido saneada en fábrica por las especificaciones de Lancer.

A continuación se relacionan 6 puntos importantes para una correcta instalación.

1. Si la unidad va a ser instalada en un área en la que puedan darse variaciones de voltaje de + 6 - 10% de su valor nominal, se debe considerar la conveniencia de instalar un estabilizador de corriente o sistema de protección similar.
2. Presión de suministro del agua de red: Mínimo 25 PSIG (0.172 MPA). Máximo 50 PSIG (0.345 MPA). En unidades sin regulador de presión incorporado, si la presión del agua es superior a 50 PSIG (0.345 MPA) se debe usar un regulador de presión.
3. Los envases de jarabe Bag-In-Box deben estar situados a menos de 6 pies (2 metros) de la unidad cuando se utilicen bombas de jarabe internas.
4. Ajuste de las válvulas: Cerciórese de que la temperatura de la bebida es inferior a 4.4°C (40°F) antes de regular el coeficiente Brix.



REGLES DE SECURITE POUR L'INSTALLATION DU DISTRIBUTEUR DE SODAS



La propreté de cet ensemble est assurée à l'usine suivant les spécifications émises par Lancer.

Il est essentiel de respecter les 6 points suivants pour l'installation de l'appareil:

1. Si le distributeur est installé dans une zone où la tension électrique nominale est susceptible de variations de (+) 10%, il est conseillé d'installer un appareil de protection contre les sautes de courant.
2. Pression de l'eau: Minimum 25 PSIG (0.172 MPA); Maximum 50 PSIG (0.345 MPA). Sur les unités qui n'ont pas de régulateur de pression d'eau incorporé, si la pression d'H₂O est supérieure à 50 PSIG (0.345 MPA), un régulateur de pression d'eau doit être utilisé.
3. Le sac dans les paquets de sirop doit être à 1,83 m. au plus de l'unité quand on utilise les pompes à sirop internes.
4. Réglage des valves: S'assurer que la température de la boisson est inférieure à 4.4°C (40°F) avant de régler le degré Brix.

PRE-INSTALLATION CHECKLIST

BEFORE GETTING STARTED

Each unit is tested under operating conditions and is thoroughly inspected before shipment. At the time of shipment, the carrier accepts responsibility for the unit. Upon receiving the unit, carefully inspect the carton for visible damage. If damage exists, have the carrier note the damage on the freight bill and file a claim with carrier.

TOOLS & ACCESSORIES	
☐ CO2 Regulator Set	☐ Beverage Tubing
☐ CO2 Supply	☐ Water Booster (if necessary)
☐ Remote System	☐ Oetiker Clamps/Fittings
☐ Wrenches	☐ Slotted Screwdriver
☐ Tubing Cutters	☐ Drill

BIB SYSTEM	
☐ BIB Rack	☐ BIB Regulator Set
☐ BIB Connectors - verify correct amount for syrup lineup	
☐ BIB Syrup Boxes	☐ Remote Cooling/Carbonation System

CONSIDER LOCATION OF THE FOLLOWING PRIOR TO INSTALL	
☐ Water supply lines	☐ Is the countertop at least 1 inch thick?
☐ Grounded electrical outlet.	☐ Drain
☐ Is there enough space to install the dispenser and the junction box?	

THIS MANUAL APPLIES TO THE FOLLOWING UNITS

85-3151R-21-11111-00	TOWER, UNICORN, RECIRC, TC, PC, CC, VV-R, GI
85-3151R-21-11111	TOWER, UNICORN, RECIRC, TC, PC, CC, VV-R
85-3151R-20-11111-22	TOWER, UNICORN, TC, PC, CC, VV-R, AUS
85-3161R-21-11111	TOWER, UNICORN, TC, PC, CC, LFCV-R
85-3161R-21-11111-00	TOWER, UNICORN, TC, PC, CC, LFCV-R, GI
85-3161R-21-21222	TOWER, UNICORN, RECIRC, TC, PC, GB, LFCV-R
85-3161R-21-21222-00	TOWER, UNICORN, RECIRC, TC, PC, GB, LFCV-R, GI
85-3161R-21-23222	TOWER, UNICORN, RECIRC, TC, NOPC, GB, LFCV-R*
85-3161R-21-23222-00	TOWER, UNICORN, RECIRC, TC, NOPC, GB, LFCV-R, GI*
85-3161R-21-31332	TOWER, UNICORN, RECIRC, TC, PC, PI, LFCV-R
85-3161R-21-31332-00	TOWER, UNICORN, RECIRC, TC, PC, PI, LFCV-R, GI
85-3161R-20-31332-22	TOWER, UNICORN, RECIRC, T/C, PC, PI, LFCV-R, AUS

KEY		
TC – Thru Counter	PC – Portion Control	NOPC – Non Portion Control (*Self serve)
R – Recirculation (RECIRC)	AUS – Australia	GI – No Transformer (International Only)

1. INSTALLATION

1.1 UNPACKING THE DISPENSER

- A. The Lancer dispenser is shipped in a corrugated shipping carton.
- B. Remove dispenser from corrugated shipping carton.
- C. Inspect unit and parts for concealed damage. If damage exists, notify delivering carrier and file claim against the carrier.

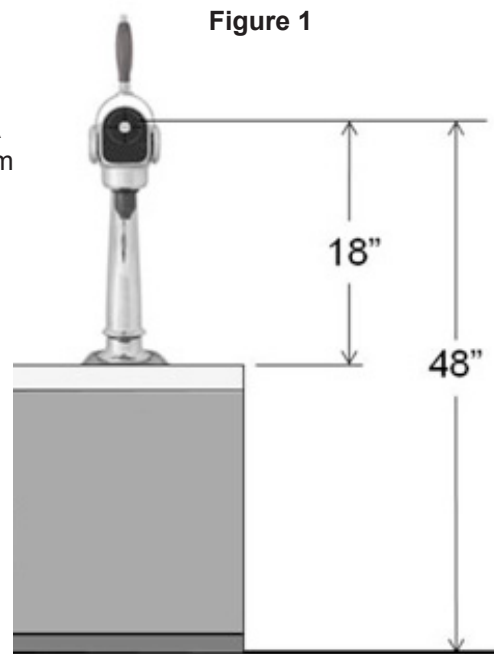
1.2 SELECTING A LOCATION

- A. Select a counter location which is near a properly grounded electrical outlet, and a water supply that meets the requirements specified in Section 1.6.
- B. Unit is designed to be supported by remote chiller system or remote ice cooled system. See the manufacturer's specifications for installation.

1.3 ADA STANDARDS FOR ACCESSIBLE DESIGN

To assure that beverage service is accessible to all customers, Lancer recommends that counter height and equipment selection be planned carefully. The 2010 ADA Standards for Accessible Design states that the maximum reach height from the floor should be no more than 48" if touch point is less than 10" from the front of the counter, or a maximum of 46" if the touch point is more than 10" and less than 27" from the front of the counter (See Fig 1).

For more information about the customer's legal requirements for the accessibility of installed equipment, refer to 2010 ADA Standards for Accessible Design - <http://www.ada.gov>.



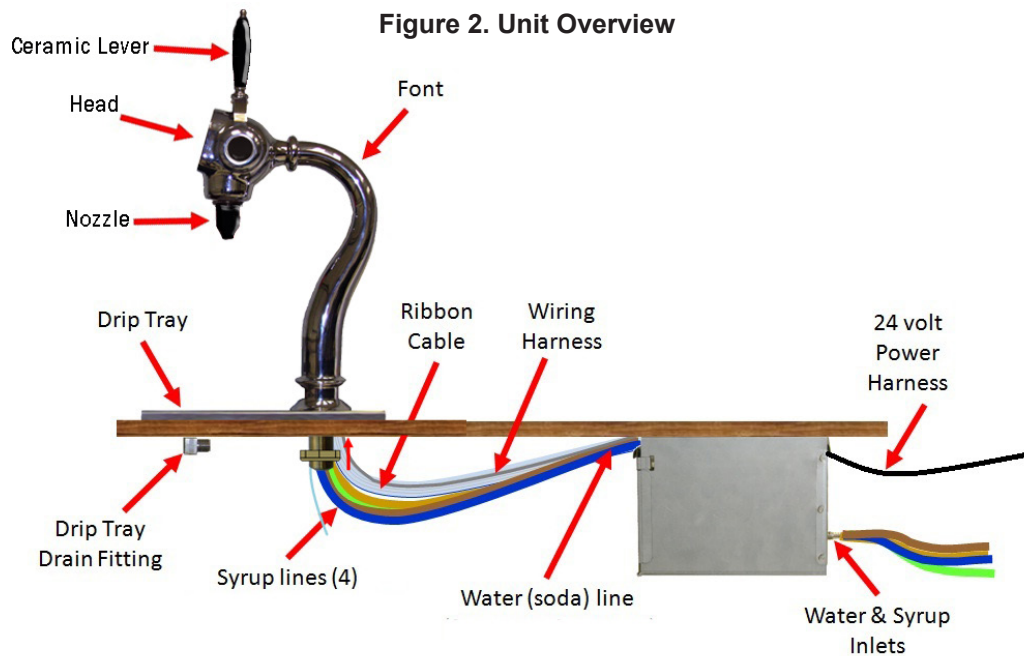
1.4 INSTALLATION OF THE UNIT

A. DRIP TRAY INSTALL

1. Inspect the counter location where the unit is to be installed. Verify the selected counter is strong enough to safely support the weight of the installed unit, after the cutout for the unit is made.
2. Use the Counter Cutout template provided in the Install Kit for correct dimensions.

NOTE: The ideal counter for installation should measure at least 1" thick.

3. Cut the required holes as shown on the Counter Cutout for the Drip Tray and Font Shank.
4. Place Drip Tray in the counter.



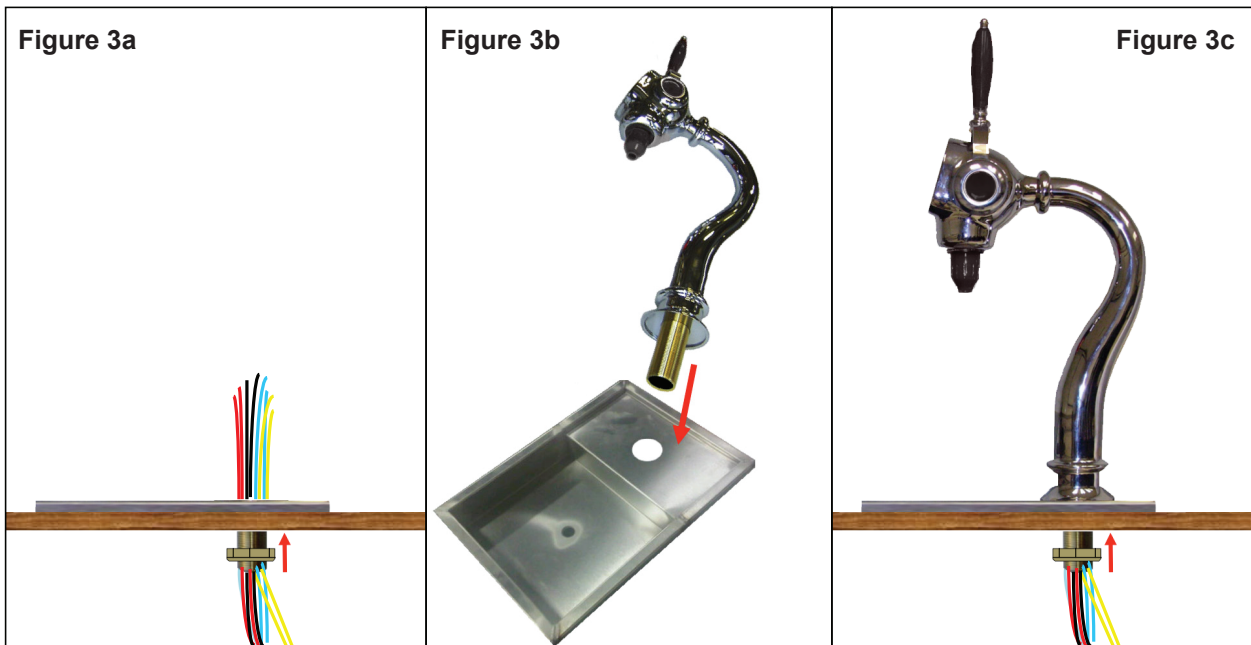
1.4 INSTALLATION OF THE UNIT - CONTINUED

B. FONT INSTALLATION

1. Route ribbon cable, harness, and syrup/water lines through hole in the Tray Assembly (Fig 3a).
2. Guide font shank through hole in the drip tray (Fig 3b). Position the font with the Selection Buttons and Nozzle above the Drip Tray.
3. Route Ribbon Cable, Wire Harnesses and Plumbing Lines through the nut. Next, thread nut on shank and tighten to secure font to counter (Fig 3c).

NOTE: To avoid damage to the ceramic lever, use caution to avoid over tightening.

Figure 3. Font Installation



C. JUNCTION BOX INSTALLATION

NOTE: The Font Ribbon Cable, Harness, Syrup and Water lines are 36" inches length. Placement of Junction Box must be under counter within 2' of Font/Drip Tray Assembly. The Junction Box slides on the hanging bracket to expose components (Fig 4). It is recommended that the Junction Box is mounted with the inlet fittings facing the rear so the access panel can swing down to access the Box interior.



WARNING DO NOT INSTALL OR SET THE JUNCTION BOX ON THE GROUND. THIS IS A SHOCK HAZARD.

ADVERTENCIA ELÉCTRICA NO INSTALAR O CONFIGURAR LA CAJA DE EMPALME EN EL SUELO. SE TRATA DE UN RIESGO DE DESCARGA ELÉCTRICA.

AVERTISSEMENT ÉLECTRIQUE NE PAS INSTALLER OU CONFIGURER LA BOÎTE DE JONCTION SUR LE TERRAIN. IL S'AGIT D'UN RISQUE DE CHOC ÉLECTRIQUE.

Figure 4

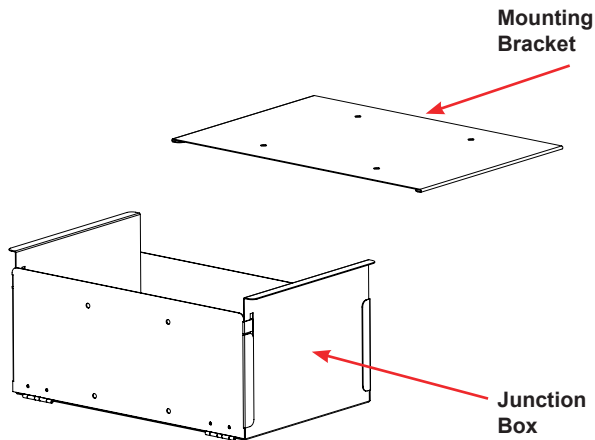
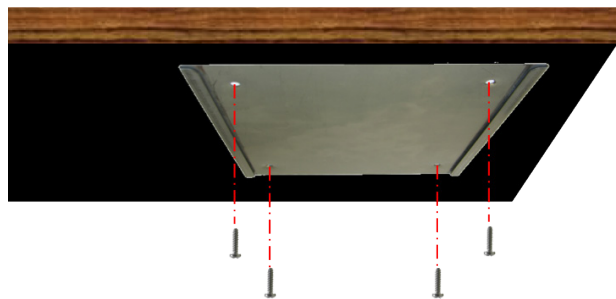
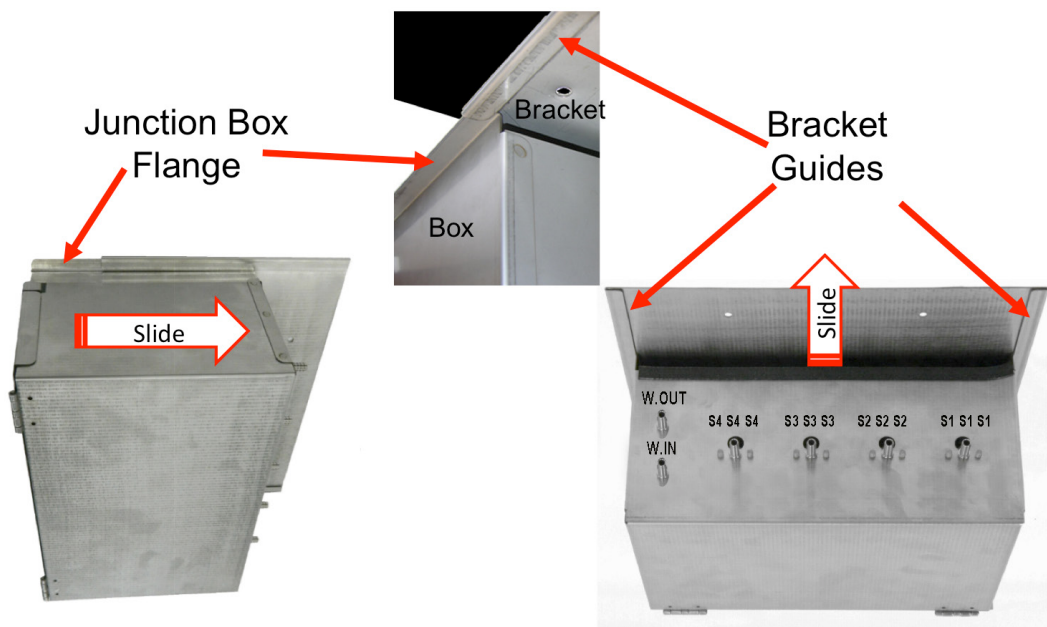


Figure 5



1. Position the Mounting Bracket to ensure adequate slack remains for connection lines to accommodate sliding the Box forward for servicing.
2. Secure the Mounting Bracket to bottom of counter with four screws (Fig 5).
3. Align the Junction Box flanges with Bracket Guides, slide Box under counter (Fig 6).

Figure 6



D. JUNCTION BOX WIRING CONNECTIONS

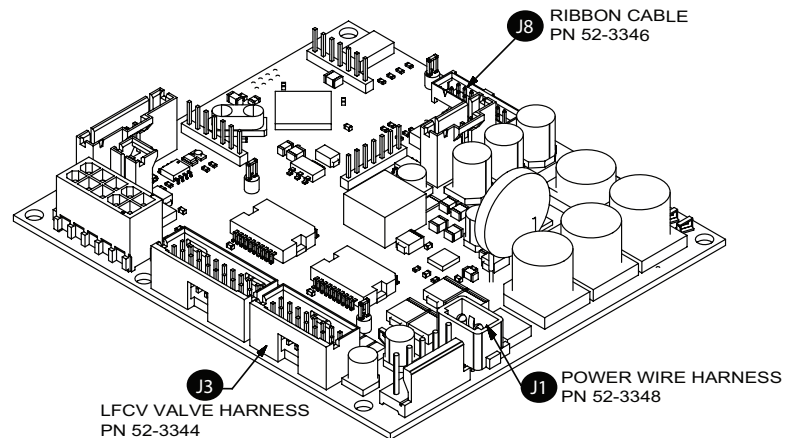
1. CONNECT THE FOLLOWING, FOR BOTH Volumetric (VV) AND Lancer Flow Control Valve (LFVC) MODELS:

- The various Syrup Valve Harnesses from the Unicorn Font to the appropriate connection in the Junction Box. Refer to the Wiring Diagram in the Junction Box.
- Connect the Medallion Harness (PN 52-3348) from the Unicorn Font to the appropriate connection in the Junction Box.
- Connect the Ribbon Cable (PN 52-3346) to the Main Board (PN 64-5048) space labeled J8 (in the Junction Box).
- Connect the Power Wire Harness (PN 52-3348) to the Main Board space labeled J1.

NOTE: DO NOT CONNECT TO POWER SOURCE AT THIS TIME.

- For VV Models, continue to Step 3.
- For LFCV, continue to Step 2.

Figure 7. LFCV



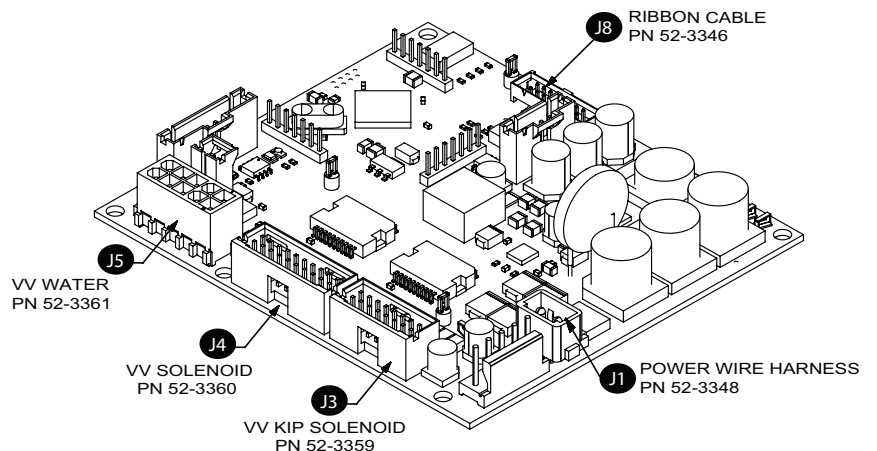
2. FOR LFCV MODELS ONLY:

- Connect the LFCV Valve Harness (PN 52-3344) to the Selector Board space labeled J3.
- Continue to **SECTION E. JUNCTION BOX PLUMBING LINE CONNECTIONS**

3. FOR VV MODELS ONLY:

- Connect the VV KIP Solenoid Harness (PN 52-3359) to the Main Board space labeled J3.
- Connect the VV Solenoid Harness (PN 52-3360) to the Main Board space labeled J4.
- Connect the VV Water Harness (PN 52-3361) to the Main Board space labeled J5.

Figure 8. VV



1.5 PLUMBING LINE CONNECTIONS

A. CONNECTING TO WATER SUPPLY

1. Use a tube cutter to cut tubing. Tubing cut with a saw will result in plastic shavings that could plug the flow controls in the dispensing valve.
2. Provide an adequate potable water supply. Water pipe connections and fixtures directly connected to a potable water supply must be sized, installed, and maintained according to federal, state, and local laws. An adequate potable water supply must be provided. It is recommended that the supply shut-off is easily accessible. The water supply line must be at least 3/8 inches (9.525 mm) pipe with a minimum of 20 PSI (0.317 MPA) line pressure, but not exceeding a maximum of 50 PSI (0.345 MPA). Water pressure exceeding 50 PSI (0.345 MPA) must be reduced to 50 PSI (0.345 MPA) with a pressure regulator. Use filter* in the water line to avoid equipment damage and beverage off-taste.

* Filter of at least 100 mesh [100 strands per 25mm (one inch)] shall be installed immediately upstream of all check valve type backflow preventers used for water supply protection. The screen shall be accessible and removable for cleaning or replacement. Check the water filter periodically, as required by local conditions. The water supply must be protected by means of an air gap, a backflow prevention device (located upstream of the CO₂ injection system) or another approved method to comply with NSF standards. Do not connect to a heated (hot) water source or a water source supplying soft water. This will cause excessive foaming.



WARNING CHECK THE WATER FILTER PERIODICALLY, AS REQUIRED BY LOCAL CONDITIONS. IT IS THE RESPONSIBILITY OF THE INSTALLER TO ENSURE COMPLIANCE.

ADVERTENCIA VERIFIQUE PERIÓDICAMENTE EL FILTRO DE AGUA DE ACUERDO CON LAS CONDICIONES IMPERANTES. ES RESPONSABILIDAD DEL INSTALADOR CUMPLIR CON ESTOS REQUISITOS.

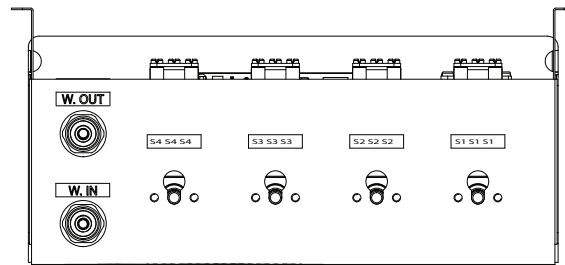
AVERTISSEMENT VÉRIFIEZ LE FILTRE À EAU PÉRIODIQUEMENT, SELON LES EXIGENCES DES CONDITIONS LOCALES. L'INSTALLATEUR EST RESPONSIBLE D'ASSURER LA CONFORMITÉ.

B. JUNCTION BOX PLUMBING LINE CONNECTIONS - FOR LFCV

NOTE: It is recommended that the that plumbing lines to font are routed out rear of Junction Box.

1. Insert the syrup and water lines (from the Unicorn Font) into the appropriate syrup and water outlets on the rear of the Junction Box. Refer to Fig 5.
2. There are 2 (two) 1/4" OD Recirculating Water lines, labeled RECIRC. Plug both into the John Guest Bulkhead Connectors. **NOTE:** Either RECIRC line can plug into the top.
3. Use the small diameter insulation accordingly to cover all water and syrup tubing.
4. Secure all the fittings in place with the red locking clips.

Figure 9



C. JUNCTION BOX PLUMBING LINE CONNECTIONS - VOLUMETRIC

NOTE: It is recommended that the that plumbing lines to font are routed out rear of Junction Box.

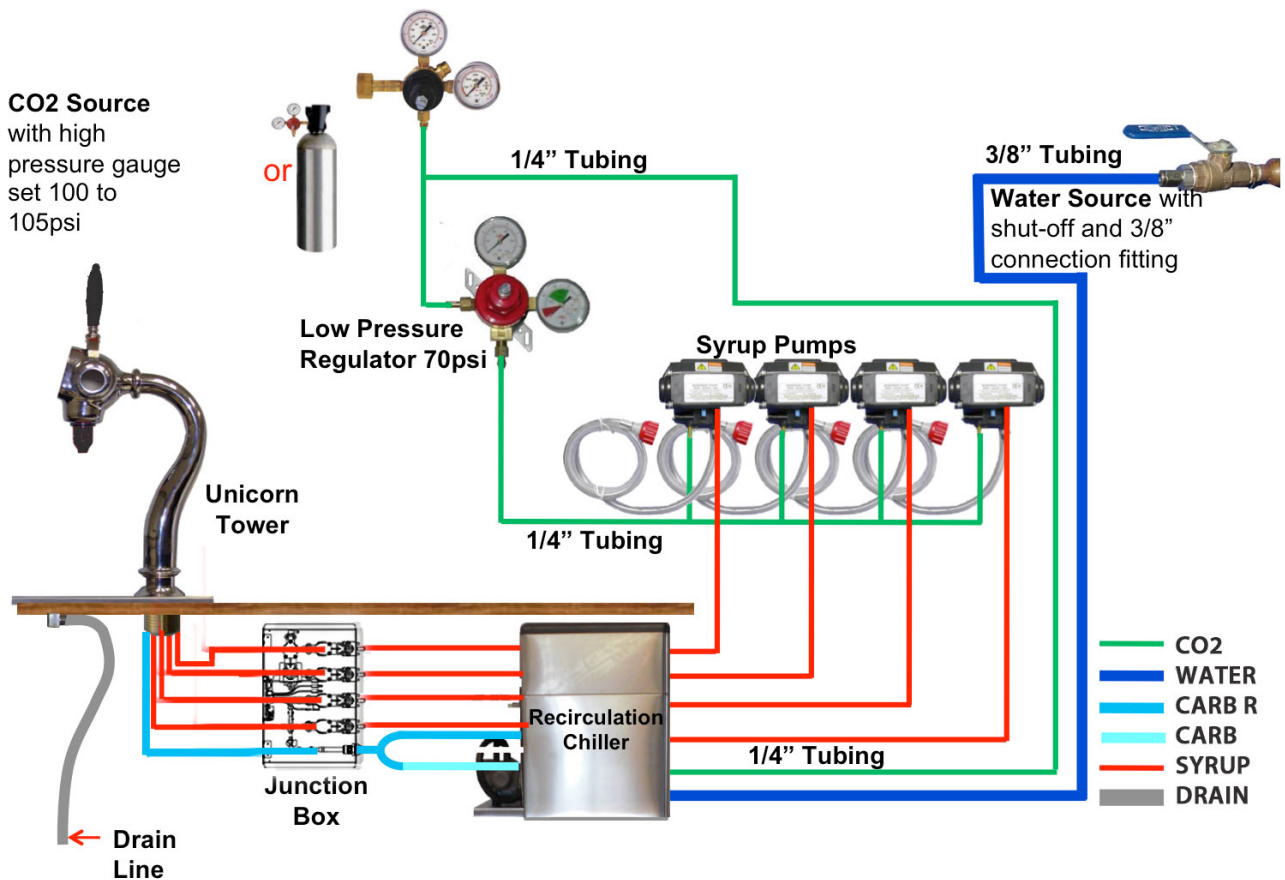
1. Insert the syrup and water lines (from the Unicorn Font) into the appropriate syrup and water outlets on the rear of the Junction Box. Refer to Fig 5.
2. Connect the 'H' shaped water line to the John Guest Bulkhead Connectors. **NOTE:** Either RECIRC line can plug into the top.
3. Secure all the fittings in place with the retainer clips.

2. LINE RUN - RECIRCULATING SYSTEM

NOTE: REFER TO COOLING SYSTEMS MANUFACTURERS INSTALLATION INSTRUCTIONS.

- A. **SYRUP** - Route and connect beverage tubing between Recirculating System Syrup Outlet and Junction Box Inlet. Repeat for each syrup.
- B. **WATER** - Route and connect beverage tubing between Recirculating System and Junction Box Water Inlet and Outlets. Insulate the tubing.
- C. **DRAIN** - Route and connect drain tubing between font drip tray and facility drain. Follow all local health and safety codes when performing this step.
- D. **CONNECT 'Y' FITTING**
 1. Route and connect beverage tubing between recirculation outlet and 'Y' fitting at Junction Box.
 2. Route and connect beverage tubing between 'Y' fitting at Junction Box and recirculation inlet.
 3. Route and connect beverage tubing between 'Y' fitting and Junction Box water inlet.
 4. Insulate all tubing.

Figure 10



3. CONNECTING TO ELECTRICAL SUPPLY

NOTE: In addition to the following, adhere to ELECTRICAL WARNINGS AND CAUTIONS, page 6.

NORTH AMERICAN UNITS REQUIREMENTS:

Plug the provided transformer (PN 25-0069/01) into the proper wall socket.

INTERNATIONAL TRANSFORMER (NOT PROVIDED) REQUIREMENTS:

Rated 50 VA or higher, primary voltage as required, and a Secondary Voltage 24VAC. Overcurrent and surge protection is recommended. Connector wires for the transformer are included in the unit.



WARNING CHECK THE DISPENSER SERIAL NUMBER PLATE FOR CORRECT ELECTRICAL REQUIREMENTS OF UNIT. DO NOT PLUG INTO A WALL ELECTRICAL OUTLET UNLESS THE CURRENT SHOWN ON THE SERIAL NUMBER PLATE AGREES WITH LOCAL CURRENT AVAILABLE. THIS UNIT MUST BE PROPERLY ELECTRICALLY GROUNDED TO AVOID POSSIBLE FATAL ELECTRICAL SHOCK OR SERIOUS INJURY TO THE OPERATOR. THE POWER CORD HAS A THREE-PRONG GROUNDED PLUG. IF A THREE-HOLE GROUNDED ELECTRICAL OUTLET IS NOT AVAILABLE, USE AN APPROVED METHOD TO GROUND THE UNIT. FOLLOW ALL LOCAL ELECTRICAL CODES WHEN MAKING CONNECTIONS. EACH POWER SUPPLY MUST HAVE A SEPARATE ELECTRICAL CIRCUIT. DO NOT USE EXTENSION CORDS. DO NOT "GANG" TOGETHER WITH OTHER ELECTRICAL DEVICES ON THE SAME OUTLET. THE KEYSWITCH DOES NOT DISABLE THE LINE VOLTAGE TO THE TRANSFORMER PRIMARY. ALWAYS DISCONNECT POWER TO THE DISPENSER BEFORE ATTEMPTING ANY INTERNAL MAINTENANCE. ONLY QUALIFIED PERSONNEL SHOULD SERVICE INTERNAL COMPONENTS OF ELECTRICAL CONTROL HOUSING. MAKE SURE THAT ALL WATER LINES ARE TIGHT AND UNITS ARE DRY BEFORE MAKING ANY ELECTRICAL CONNECTIONS!

ADVERTENCIA VERIFIQUE LA PLACA CON EL NÚMERO DE SERIE DEL DISPENSADOR, DONDE ENCONTRARÁ LOS REQUISITOS ELÉCTRICOS CORRECTOS DE LA UNIDAD. NO ENCHUFE LA UNIDAD EN UN TOMACORRIENTE DE PARED A MENOS QUE LA CORRIENTE INDICADA EN LA PLACA CON EL NÚMERO DE SERIE CONCUERDE CON LA CORRIENTE LOCAL DISPONIBLE. ESTA UNIDAD DEBE ESTAR DEBIDAMENTE CONECTADO A TIERRA PARA EVITAR POSIBLES CHOQUES ELÉCTRICOS MORTALES O LESIONES GRAVES AL OPERADOR. LE BLOC D'ALIMENTATION DOIT ÊTRE MIS À LA TERRE ÉLECTRIQUEMENT CORRECTEMENT POUR ÉVITER DES BLESSURES GRAVES OU UNE DÉCHARGE ÉLECTRIQUE MORTELLE. LE CORDON D'ALIMENTATION A UNE FICHE À TROIS BRANCHES MISE À LA TERRE. SI AUCUNE PRISE DE COURANT ÉLECTRIQUE À TROIS TROUS N'EST DISPONIBLE, UTILISEZ UNE MÉTHODE APPROUVÉE POUR METTRE L'UNITÉ À LA TERRE. AL HACER LAS CONEXIONES, RESPETE TODOS LOS CÓDIGOS ELÉCTRICOS LOCALES. CADA DISPENSADOR DEBE TENER UN CIRCUITO ELÉCTRICO INDEPENDIENTE. NO USE EXTENSIONES CON ESTA UNIDAD. NO LA CONECTE JUNTO CON OTROS DISPOSITIVOS ELÉCTRICOS AL MISMO TOMACORRIENTE. EL INTERRUPTOR DE LLAVE NO CORTA EL VOLTAJE DE LÍNEA AL TRANSFORMADOR PRIMARIO. DESCONECTE SIEMPRE LA ALIMENTACIÓN ELÉCTRICA A LA UNIDAD PARA EVITAR LESIONES PERSONALES ANTES DE TRATAR DE REALIZAR TAREAS DE MANTENIMIENTO. EL SERVICIO DE LOS COMPONENTES INTERNOS DE LA CAJA DE CONTROL ELÉCTRICO DEBE CONFIARSE EXCLUSIVAMENTE A PERSONAL CALIFICADO. ASEGÚRESE DE QUE TODAS LAS LÍNEAS DE AGUA ESTÉN AJUSTADAS Y LAS UNIDADES ESTÉN SECAS ANTES DE HACER CONEXIONES ELÉCTRICAS.

EXIGENCES DE MISE À LA TERRE EXAMINEZ LA PLAQUE DE NUMÉRO DE SÉRIE DU DISTRIBUTEUR POUR CONNAÎTRE LES BONNES EXIGENCES EN MATIÈRE D'ÉLECTRICITÉ POUR L'APPAREIL. NE LE BRANCHEZ PAS À UNE PRISE ÉLECTRIQUE MURALE À MOINS QUE LE COURANT INDIQUÉ SUR LA PLAQUE DE NUMÉRO DE SÉRIE CORRESPONDE AU COURANT LOCAL DISPONIBLE. L'UNITÉ DOIT ÊTRE MISE À LA TERRE ÉLECTRIQUEMENT POUR ÉVITER UNE DÉCHARGE ÉLECTRIQUE MORTELLE OU DES BLESSURES GRAVES POSSIBLES À L'OPÉRATEUR. LE BLOC D'ALIMENTATION DOIT ÊTRE MIS À LA TERRE ÉLECTRIQUEMENT CORRECTEMENT POUR ÉVITER DES BLESSURES GRAVES OU UNE DÉCHARGE ÉLECTRIQUE MORTELLE. LE CORDON D'ALIMENTATION A UNE FICHE À TROIS BRANCHES MISE À LA TERRE. SI AUCUNE PRISE DE COURANT ÉLECTRIQUE À TROIS TROUS N'EST DISPONIBLE, UTILISEZ UNE MÉTHODE APPROUVÉE POUR METTRE L'UNITÉ À LA TERRE. RESPECTEZ TOUS LES CODES ÉLECTRIQUES LOCAUX LORSQUE VOUS FAITES DES CONNEXIONS. CHAQUE SOURCE D'ALIMENTATION DOIT AVOIR UN CIRCUIT ÉLECTRIQUE SÉPARÉ. N'UTILISEZ PAS DE CORDONS PROLONGATEURS. NE BRANCHEZ PAS PLUSIEURS APPAREILS ÉLECTRIQUES À LA MÊME PRISE DE COURANT. L'INTERRUPTEUR À CLÉ NE COUPE PAS LA TENSION SECTEUR AU TRANSFORMATEUR PRIMAIRE. DÉCONNECTEZ TOUJOURS L'ALIMENTATION EN ÉLECTRICITÉ À LA DISTRIBUTRICE AVANT DE FAIRE DE L'ENTRETIEN INTERNE. SEUL LE PERSONNEL QUALIFIÉ DEVRAIT FAIRE L'ENTRETIEN/LA RÉPARATION DES COMPOSANTS INTERNES DANS LE LOGEMENT DES COMMANDES ÉLECTRIQUES. ASSUREZ-VOUS QUE TOUTES LES CONDUITES D'EAU SONT ÉTANCHES ET QUE LES APPAREILS SONT SECS AVANT DE FAIRE DES CONNEXIONS ÉLECTRIQUES!

4. CLEANING AND SANITIZING INSTRUCTIONS

- A. The cleaning and sanitizing procedures provided herein pertain to the Lancer equipment identified by this manual. If other equipment is being cleaned, follow the guidelines established by the manufacturer for that equipment.
- B. Lancer equipment (new or reconditioned) is shipped from the factory cleaned and sanitized in accordance with NSF guidelines. The equipment must be cleaned and sanitized after installation is complete. The operator of the equipment must provide continuous maintenance as required by this manual and state and local health department guidelines to ensure proper operation and sanitation requirements are maintained.
- C. Cleaning and sanitizing should be accomplished only by trained personnel. Sanitary gloves are to be used during cleaning and sanitizing operations. Applicable safety precautions must be observed. Instruction warnings on the product being used must be followed.
- D. Other Required Supplies: 1) Clean cloth towels, 2) bucket, 3) extra nozzle, 4) sanitary gloves and 5) Small brush PN [22-0017](#) from installation kit.

4.1 CLEANING AND SANITIZING SOLUTIONS

CLEANING SOLUTION: Mix a mild, non-abrasive detergent (e.g. Sodium Laureth Sulfate, dish soap) with clean, potable water at a temperature of 90 to 110°F (32 to 43°C). The mixture ratio is one ounce of cleaner to two gallons of water. Prepare a minimum of five gallons of cleaning solution. Do not use abrasive cleaners or solvents because they can cause permanent damage to the unit. Ensure rinsing is thorough, using clean, potable water at a temperature of 90 to 110 degrees F. Extended lengths of product lines may require additional cleaning solution.

SANITIZING SOLUTION: Prepare sanitizing solutions in accordance with the manufacturer's written recommendations and safety guidelines. The solution must provide 50 to 100 parts per million (PPM) chlorine (e.g. Sodium Hypochlorite or bleach). A minimum of five gallons of sanitizing solution should be prepared. Any sanitizing solution may be used as long as it is prepared in accordance with the manufacturer's written recommendations and safety guidelines, and provides 50 to 100 parts per million (PPM) chlorine.



WARNING UNPLUG THE DISPENSER DURING SERVICING, CLEANING, AND SANITIZING.

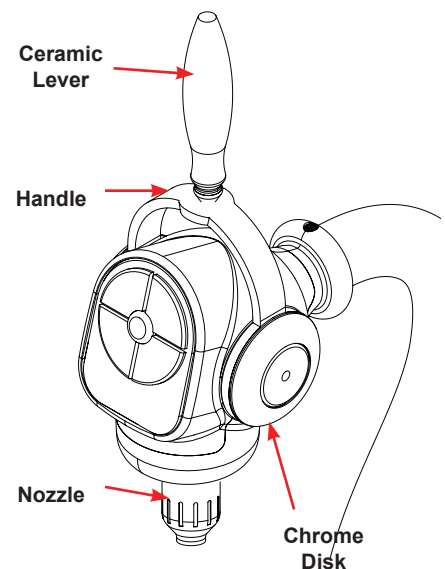
ADVERTENCIA DURANTE EL SERVICIO, LA LIMPIEZA Y LA ESTERILIZACIÓN, DESENCHUFE EL DISPENSADOR.

AVERTISSEMENT DÉBRANCHEZ LE DISTRIBUTEUR PENDANT L'ENTRETIEN/LA RÉPARATION, LE NETTOYAGE ET L'ASEPTISATION.

4.2 DAILY CLEANING

- A. Disconnect power to the unit.
- B. Following the instructions as described in 4.1 above, mix appropriate amount of cleaning solution in a clean container. Place a small portion of the cleaning solution in separate clean container (at least 3 inches deep).
- C. Remove nozzle by twisting counterclockwise and pulling down (Fig 11).
- D. Submerge the Nozzle in the container with the smaller portion of solution.
- E. Use a clean cloth soaked in the cleaning solution to clean the font and all exterior stainless steel surfaces.
- F. Clean the font and all exterior stainless steel surfaces.
- G. Wipe clean all splash areas using a damp cloth soaked in cleaning solution.
- H. Clean beverage valves as specified by the valve manufacturer.

Figure 11



4.3 WEEKLY CLEANING AND SANITIZING



WARNING IF A POWDER SANITIZER IS USED, DISSOLVE IT THOROUGHLY WITH HOT WATER PRIOR TO ADDING TO THE SYRUP SYSTEM. ENSURE SANITIZING SOLUTION IS REMOVED FROM THE DISPENSER AS INSTRUCTED. AVOID GETTING SANITIZING SOLUTION ON CIRCUIT BOARDS. DO NOT USE STRONG BLEACHES OR DETERGENTS; THESE CAN DISCOLOR AND CORRODE VARIOUS MATERIALS. DO NOT USE METAL SCRAPERS, SHARP OBJECTS, STEEL WOOL, SCOURING PADS, ABRASIVES, OR SOLVENTS ON THE DISPENSER. DO NOT USE HOT WATER ABOVE 140° F (60° C). THIS CAN DAMAGE THE DISPENSER.

ADVERTENCIA SI SE USA UN HIGIENIZADOR EN POLVO, DISUÉLVALO BIEN EN AGUA ANTES DE AGREGARLO AL SISTEMA DE CONCENTRADO. EL USO DE AGUA CALIENTE CONTRIBUYE A DISOLVER LOS HIGIENIZADORES EN POLVO. ASEGÚRESE DE HABER ELIMINADO LA SOLUCIÓN DE ESTERILIZACIÓN DEL DISPENSADOR DE ACUERDO CON LAS INSTRUCCIONES. LOS RESIDUOS DE LA SOLUCIÓN DE ESTERILIZACIÓN REPRESENTAN UN PELIGRO PARA LA SALUD. EVITE QUE LA SOLUCIÓN DE ESTERILIZACIÓN LLEGUE A LAS PLACAS DE CIRCUITOS. NO USE LAVANDINAS NI DETERGENTES QUE PODRÍAN QUITAR EL COLOR Y CORROER DISTINTOS MATERIALES. NO USE RASPADORES METÁLICOS, OBJETOS FILOSOS, LANA DE ACERO, ESTROPAJOS, ABRASIVOS NI SOLVENTES EN EL DISPENSADOR. NO USE AGUA CALIENTE A MÁS DE 140 °F (60 °C). PODRÍA DAÑAR EL DISPENSADOR.

AVERTISSEMENT AVANT L'INJECTION DANS LE SYSTÈME, IL FAUDRA QUE LA POUDRE SEPTIQUE SOIT DISSOLUE ENTIÈREMENT DANS CHAUDE. L'EAU CHAUDE PERMETTRA UN MEILLEUR PROCÈS DE DISSOLUTION. SUIVANT LES INSTRUCTIONS JOINTES, IL EST IMPÉRATIF QUE LA SOLUTION SEPTIQUE SOIT ENTIÈREMENT ENLEVÉE. EVITEZ DE METTRE LA SOLUTION EN CONTACT AVEC LES CIRCUITS. N'UTILISEZ PAS DE JAVELLISANTS OU DEDÉTERGENTS FORTS; CEUX-CI PEUVENT DÉCOLORER ET CORRODER DIVERS MATÉRIAUX. N'UTILISEZ PAS DE RACLEURS EN MÉTAL, D'OBJETS POINTUS, DE LAINE D'ACIER, DE TAMPONS À RÉCURER, D'ABRASIFS OU DE SOLVANTS SUR LE DISTRIBUTEUR. N'UTILISEZ PAS DE L'EAU CHAUDE DE PLUS DE 140 DEGRÉS F (60 DEGRÉS C). CECI PEUT ENDOMMAGER LE DISTRIBUTEUR.

- A. Disconnect power to the unit.
- B. Following the instructions as described in 4.1 above, mix appropriate amount of sanitizing solution in a clean container. Place small portion of the cleaning solution in a separate clean container (no less than 3 inches deep).
- C. To remove the Nozzle (Fig 11) from the dispenser, grasp the Nozzle and pull downward.
- D. Submerge the Nozzle in the container with the smaller portion of solution.
- E. Place the Nozzle in the set aside portion of solution.
- F. Grasp the Chrome Disks located on the right and left side of the dispenser head (Fig 11).
- G. Rotate the Chrome Disks, slowly, in a counter-clockwise movement. **NOTE:** When facing unit, the Left Disk will rotate towards the back (away from front). The Right Disk will rotate forward.
- H. Stop rotating the disks when a square notch is visible on both the Left and Right side (Fig 12).
- I. To remove the Handle, slowly pull the Handle up and away from the Unicorn dispenser.
- J. Use the brush provided (PN [22-0017](#)) to gently clean the side of the dispenser head. Refer to the arrows in Figure 13.
- K. To reinstall the Handle, align the Set Pins with the notch on both sides of the dispenser. Gently push the Handle into place.
- L. Rotate the Chrome Disks back into place. **NOTE:** Verify square notches are not visible to prevent accidental Handle removal.
- M. Use a clean cloth soaked in the cleaning solution to clean the front and all exterior stainless steel surfaces.
- N. Remove the Cup Rest. Wipe clean the Drip Tray and Cup Rest. Replace Cup Rest.
- O. Wipe clean all the splash areas.
- P. Clean beverage valves as specified by the valve manufacturer.

Figure 12

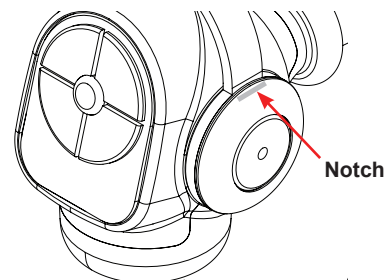
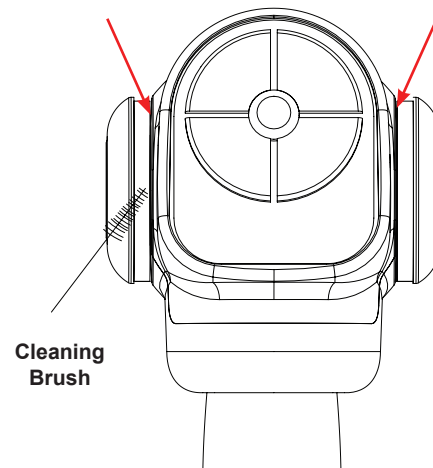


Figure 13



4.4 CLEANING AND SANITIZING BEVERAGE COMPONENTS - BAG IN BOX SYSTEM

NOTE: Extended lengths of product lines may require more time for flushing and rinsing lines than described below.

- A. Disconnect the syrup quick disconnect coupling from the syrup packages and connect the coupling to a bag valve removed from an empty Bag-in-Box (BIB) package.
- B. Place the syrup inlet line in a clean container filled with clean, potable, room temperature water.
- C. Activate valve until water is dispensed. Flush and rinse line and fittings for a minimum of 60 seconds to remove all traces of residual product.
- D. Following the instructions as described in 4.1 above, mix appropriate amount of cleaning solution in a clean container. Place syrup inlet line in container filled with cleaning solution.
- E. Activate valve and draw cleaning solution through lines for a minimum of 60 seconds. This will ensure line is flushed and filled with cleaning solution. Allow line to stand for at least 30 minutes.
- F. Place syrup inlet line in a clean container filled with clean, potable, water at a temperature of 90° to 110°F (32.2° to 43.3° C)
- G. Activate valve to flush and rinse line and fittings for a minimum of 60 seconds to remove all traces of cleaning solution. Taste dispensed product to ensure there is no off-taste. If off-taste is found, additional flushing of syrup system may be required.
- H. Following the instructions as described in 4.1 above, mix appropriate amount of sanitizing solution in a clean container. Place syrup inlet line in container filled with sanitizing solution.
- I. Activate valve and draw sanitizing solution through line for a minimum of 60 seconds. This will ensure line is flushed and filled with sanitizing solution. Allow line to stand for at least 30 minutes.
- J. Remove bag valve from quick disconnect coupling and reconnect syrup inlet line to syrup package. Ready unit for operation.
- K. Draw drinks to refill lines and to flush the chlorine sanitizing solution from the dispenser.
- L. Test dispenser in normal manner for proper operation. Taste dispensed product to ensure there is no off-taste. If off-taste is found, additional flushing of syrup system may be required.
- M. Repeat cleaning, rinsing, and sanitizing procedures for each valve and each circuit.



CAUTION FOLLOWING SANITIZATION, RINSE WITH END-USE PRODUCT UNTIL THERE IS NO AFTERTASTE. DO NOT USE A FRESH WATER RINSE. THIS IS A NSF REQUIREMENT. RESIDUAL SANITIZING SOLUTION LEFT IN THE SYSTEM CREATES A HEALTH HAZARD.

PRECAUCIÓN DESPUÉS DE LA ESTERILIZACIÓN, ENJUAGUE CON EL PRODUCTO FINAL HASTA QUE ELIMINAR EL SABOR QUE QUEDA. NO ENJUAGUE CON AGUA FRESCA. ÉSTA ES UNA EXIGENCIA DE NSF. SI QUEDA SOLUCIÓN DE ESTERILIZACIÓN EN EL SISTEMA, GENERA UN PELIGRO PARA LA SALUD.

ATTENTION DÉFENSE DE RINCER L'OUTIL À L'EAU FRAICHE IMMÉDIATEMENT APRÈS UN TRAITEMENT SEPTIQUE. EN CAS DE APRÈS-GOÛT, NE PURGER AVEC LE PRODUIT FINAL UNE EXIGENCE NSF.

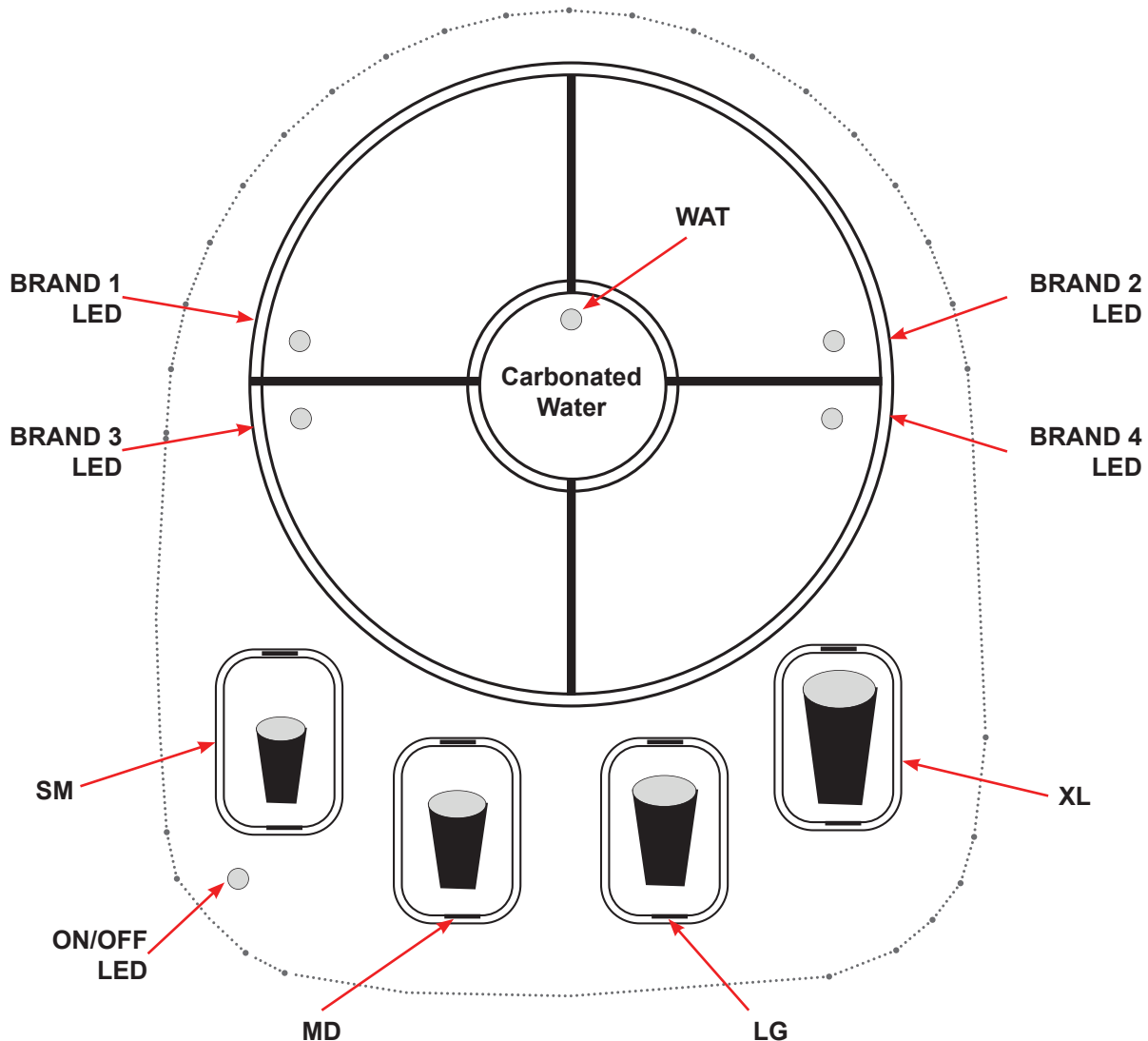
5. PROGRAMMING OVERVIEW

NOTE: Ratio will be set by either the LFCV or Volumetric method. Setting ratio will require syrup separator (included with unit) and ratio cup (sold separately).

DEFINITIONS

Brand	One of the four buttons around the water button	Size	SM, MD, LG, or XL
Brand 1	The brand button in the upper left quadrant	SM	Small button
Brand 2	The brand button in the upper right quadrant	MD	Medium button
Brand 3	The brand button in the lower left quadrant	LG	Large button
Brand 4	The brand button in the lower right quadrant	XL	Extra Large button
WAT	Water button in the middle of the circle	On	(LED) indicates steady on state
Mode LED	Red LED below the Size buttons	Off	(LED) indicates steady off state
Brand LED	Green LEDs in each brand quadrant	Illuminated	On, or blinking
Water LED	Green LED in the middle of the circle		
P/C	Pour/Cancel; depending on configuration, activated by the handle and/or holding the Active Brand		
Dispensing	Pouring product or water, or waiting for a previously programmed settle time as part of a portion control dispense		

Figure 14. PROGRAM/OPERATION BUTTONS



5.1 PROGRAMMING WITH THE VOLUMETRIC HANDHELD PROGRAMMER

NOTE: REQUIRES VOLUMETRIC HANDHELD PROGRAMMER AND SELECTOR BOARD (PN 64-5050) PROGRAMMER IS SOLD SEPARATELY FOR VV PROGRAMMING ONLY (C = CARBONATED; 5.00 = 5:1 RATIO)

- Connect the Volumetric Handheld programmer (Fig 15) to J2 on the Selector Board (Fig 16).
- Connect the Selector Board Cable to the J8 on the Main Board.
- Select the valve for programming by adjusting the toggle for the selected valve as shown in Fig 17.
- Press [red mem] to read the valve ratio setting in memory.
- Press [carb toggle] button to choose between carbonated (C) or non-carbonated rink (n).
- Press [+] or [-] to raise or lower desired ratio.
- Press 'enter' button to save the setting into the valve memory.

AFTER PROGRAMMING IS COMPLETE

Figure 16. Selector Board

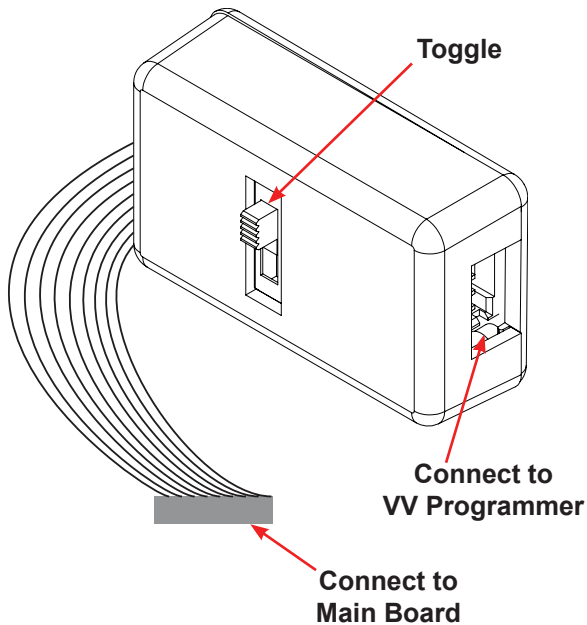


Figure 15. VV Programmer



Figure 17. Toggles Shown in Position to Corresponding Valve

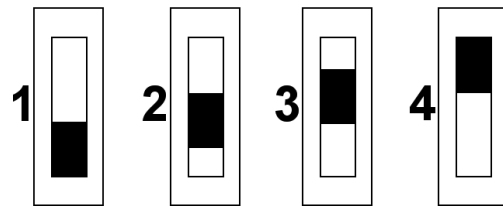
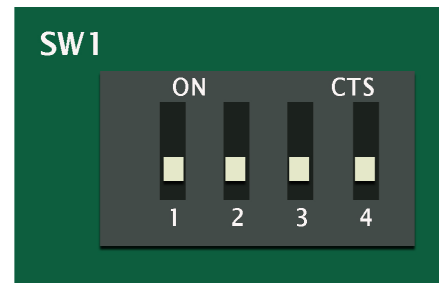


Figure 17. Main Board



5.2 CONFIGURATION

A. SW 1 ON THE MAIN BOARD

NOTE: Fig 18 displays all toggles are switched to 'OFF' mode for illustrative purposes.

- Any changes to SW1 will cause the dispenser to reset.
- Leave Toggle 1 in 'OFF' position for LFCV Mode.
- Switch Toggle 1 to 'ON' for Volumetric Mode.
- If Toggle 2 is switched to 'ON', pressing a brand button in IDLE MODE will dispense product.
- Volumetric Mode Only: during a water manual dispense, if the volume of product dispensed reaches 128oz, the water LED turns off and dispense stops.

B. IDLE MODE

This is the normal operating mode of the dispenser. At the start of IDLE MODE, the mode LED is turned off.

- Active brand is indicated by the illuminated LEDs. (ON - active/ OFF - not active). Only one brand can be Active at a time.

C. IDLE MODE - TO DEACTIVATE A BRAND, WHILE THE UNIT IS NOT DISPENSING PRODUCT

1. Select an inactive Brand. This will activate the selected Brand and deactivate the formerly Active Brand.
 - To deactivate an Active Brand without selecting an inactive Brand, press the Active Brand button for less than .35 seconds.
2. The Active brand automatically deactivates If the last recognized button press and the last dispense were both at least 10 (ten) seconds prior.

D. MANUAL BRAND DISPENSE

1. Select the desired brand if it is inactive.
2. Pull and hold the handle to pour.

NOTE: Depending on configuration, press and hold any brand while idle to pour.

E. WATER DISPENSE

1. To dispense water manually, Press and hold WAT button. Water LED will illuminate (Active Brands automatically deactivate). If P/C or WAT buttons are not pressed, the Water LED will turn off and dispense stops.
2. During a manual dispense, if 60 (sixty) seconds elapse, the Water LED turns off and the dispense stops.

F. PORTION CONTROL DISPENSE

1. Select a Brand.
2. Select a Size

NOTE: Depending on configuration, pressing and holding the active brand will stop a portion dispense in progress

G. PURGE MODE

NOTE: Purge mode allows independent purging of water or syrup without shutting off the back block.

1. If unit is in IDLE MODE without a selected Active Brand, AND has not dispensed since unit was powered on, the PURGE MODE can be accessed by pressing and holding both Brand 1 and Brand 4 buttons for 5 seconds.
2. During in Purge Mode, the Mode LED blinks at low duty cycle.
3. Press and hold WAT, to dispense water
4. Press and hold a Brand, to dispense syrup only
5. The unit will default to IDLE MODE automatically, if:
 - the unit is NOT dispensing AND the last button press AND last dispense were both at least 60 (sixty) seconds prior.
 - the unit is NOT dispensing AND the handle is pulled.

H. TIMED POUR MODE

NOTE: Timed pour mode assists flow rate calibration

If unit is in IDLE MODE without an Active Brand, and has not dispensed product since the unit was powered on, the TIMED POUR MODE can be accessed by pressing and holding both Brand 1 and Brand 2 buttons for 5 seconds.

1. During TIMED POUR MODE, the Mode LED blinks rapidly.
2. Press WAT, to dispense water.
3. Press a Brand, to dispense syrup only for the selected Brand
4. Dispense ends after 8 seconds
5. The unit will default to IDLE MODE automatically, if:
 - the unit is NOT dispensing AND the last button press AND last dispense were both at least 60 (sixty) seconds prior, unit will return to IDLE MODE.
 - the unit is NOT dispensing AND the handle is pulled, the unit returns to IDLE MODE.

I. PROGRAM MODE

NOTE: The unit supports separate portions with up to 1 topper for each brand

If the unit has an Active Brand, the PROGRAM MODE can be accessed by pressing and holding both the SM and XL buttons.

- During PROGRAM MODE, the Mode LED blinks.
 - During PROGRAM MODE and its sub-modes, all dispenses use the Active Brand.
 - During PROGRAM MODE and its sub-modes, the information stored for a Size is ONLY for the Active Brand
1. Put desired amount of ice in cup, place cup under valve
 2. Press and hold the size to be programmed until cup fills to desired portion
 3. If a topper is not necessary, return to Step 1 with a different size or press the Active Brand to exit portion program mode and save the programmed sizes.
 4. Wait for foam to settle, then press and hold the size again to top off.
 5. Return to Step 1 with a different size or press the Active Brand to exit portion program mode
- The unit will default to IDLE MODE automatically, if the unit is NOT dispensing AND the last button press AND last dispense

J. CALIBRATED CUP PORTION CONTROL PROGRAMMING FOR VOLUMETRIC MODE

NOTE: In this mode, the unit adds the volume from each programming step to the total drink size. When the portion is dispensed from idle mode, the entire drink is dispensed without pauses.

If unit has an Active Brand selected, Calibrated Cup Portion Control Programming MODE can be accessed by pressing and holding both the SM and LG buttons.

- During Calibrated Cup Portion Control Programming MODE, the Mode LED blinks.
 - During Calibrated Cup Portion Control Programming MODE and its sub-modes, all dispenses use the Active Brand.
 - During Calibrated Cup Portion Control Programming MODE and its sub-modes, the information stored for a Size is ONLY for the Active Brand.
1. Place volume cup under nozzle.
 2. Press appropriate size and fill volume cup to a point just short of the calibration mark on the volume cup. LED will turn 'on' while programming an individual cup size
 3. Allow foam to settle, jog size button until liquid reaches the calibration mark on the volume cup.
 4. Press the Active Brand to end programming the selected cup size. LED will return to blinking.
 5. Start at step 1 with a different size or press the Active Brand to exit Program Mode and save sizes.
- The unit will return to IDLE MODE automatically, if the unit's last button press AND last dispense were both at least 60 (sixty) seconds prior, the unit will save the programmed portions.

5.3 ADJUSTING WATER FLOW AND WATER TO SYRUP RATIO (BRIX) - LFCV ONLY

The water flow should be adjusted to 1.75oz/seconds.) x 8 seconds = 14.00oz Ensure ice is on the cold plate for a minimum of 1 (one) hour before valves are brix process. The drink temperature should be no higher than 40°F (4.4°C) when the brix is set.

- A. Remove nozzle by twisting counterclockwise and pulling down.
- B. Install Lancer syrup separator (PN 82-3458) in place of nozzle.
- C. Shut off syrup (Brand) supply to nozzle by closing shut-off at back block, disconnecting coil wire at the plug connection or disconnecting BIB connector.
- D. Hold a Lancer ratio cup under the syrup separator and dispense water into cup for eight seconds. Water volume should be 14oz.
- E. If water volume is not within specification, remove protective cap, and use a screwdriver to adjust water flow control to 14oz in 8 seconds. Adjust water module 'in' (clockwise) to increase the flow or 'out' (counter-clockwise) to decrease the flow.
- F. With water volume correct, turn on syrup (brand) supply to nozzle by opening shut-off at back block, re-connecting coil wire at plug connection or reconnecting BIB connector.
- G. Hold the Lancer ratio cup under the syrup separator and activate valve. Water and syrup levels must rise together in ratio cup
- H. If syrup level is not even with water in the cup, adjust syrup flow rate (at module) so the water and syrup levels are even at finish of pour. Use a screwdriver to adjust syrup flow control.

NOTE: To adjust syrup module, turn 'in' (clockwise) to increase the flow or 'out' (counter-clockwise) to decrease the flow.

- I. Once proper ratio is obtained, repeat to verify.
- J. Repeat process for each syrup Brand.
- K. Remove syrup separator.
- L. Install nozzle.

5.4 OPERATION

- A. Select desired Brand on the touch pad. Indicator light will activate.
- B. Pull handle back to dispense drink.

6. TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	VERIFICATION	REMEDY
6.1 RATIO INCORRECT	A. Wrong brand programmed B. Low syrup pressure C. Tolerance of parts affecting ratio D. Flowmeter problem.	A. Use hand-held programmer B. Run Syrup purge test using a hand-held programmer C. Syrup purge and programmed ratio values are correct D. Check the flowmeter output	A. Enter correct ratio value B. Increase pressure on BIB pump to obtain 3.0 OZ on syrup purge C. Offset ratio value to obtain optimum dispense ratio flowmeter problem D. Replace the valve body with a service value
6.2 NOTHING DISPENSED	A. No power B. Mounting block shut-offs closed C. ID panel malfunction D. Circuit board malfunction E. Water Solenoid malfunction F. Water core seal defective	A. Green LED does not light up B. Green LED lights up C. Touch panel buttons do not activate after programmer prompts valve D. Programmer LED lights do not light up E1. Green LED lights up, but product does not dispense E2. Red LED'S flash, but syup does not dispense F. Green LED lights up but product does not dispense	A. Plug in 24 volt power supply B. Open mounting block shut-offs C. Replace touch panel D. Check fuse or replace circuit board E1. Replace coil if resistance is 'open' or 'shorted' E2. Verify connectors are locked onto sockets on circuit board F. Replace core seal if rubber has expanded
6.3 DISPENSES WATER ONLY	A. Out of syrup B. Shut-off on back block not open C. Core seal defective D. Coil defective	A. Red LED'S flash, but syup does not dispense B. Red LED'S flash, but syup does not dispense C. Red LED'S flash, but syup does not dispense D. Red LED'S flash, but syup does not dispense	A. Replace BIB or Figal B. Open syrup shut-off on the back block C. Replace core seal assy if rubber has expanded D1. Verify connectors are locked into sockets on circuit board D2. Replace coil if resistance is 'open' or shorted
6.4 DELAYED WATER SHUT- OFF	A. Sunction between core and plug nut	A. After 5 dispenes, there is a significant delay in water shut-off	A. Replace water plug nut with vented design
6.5 EXCESS FOAM	A. Flow rate B. Portion Control is not using the Top-Off	A. Diet drinks and rootbeer have more foam B. Portion settings should use a 75%^ pour delay, 25% top-off	A. Change flow washer assy to lower flowrate B. Reprogram portion control to include optimum top-off

7. DISPENSER DISPOSAL



To prevent possible harm to the environment from improper disposal, recycle the unit by locating an authorized recycle outlet or contact the retailer where the product was purchased. Comply with local regulations regarding disposal of the refrigerant and insulation.

8. ILLUSTRATIONS AND PARTS LISTINGS

TOWER, UNICORN, T/C, PC, CC, LFCV - SPARE PARTS LIST LIST

8.1 LFCV ELECTRONIC SPARE PARTS24

8.2 LFCV NOZZLE SPARE PARTS25

8.3 LFCV VALVE SPARE PARTS26

8.4 WIRING DIAGRAM, LFCV.....27

TOWER, UNICORN, T/C, PC, CC, VV - SPARE PARTS LIST

8.5 VV ELECTRONIC SPARE PARTS.....28

8.6 VV NOZZLE SPARE PARTS.....29

8.7 VV WATER VALVE SPARE PARTS30

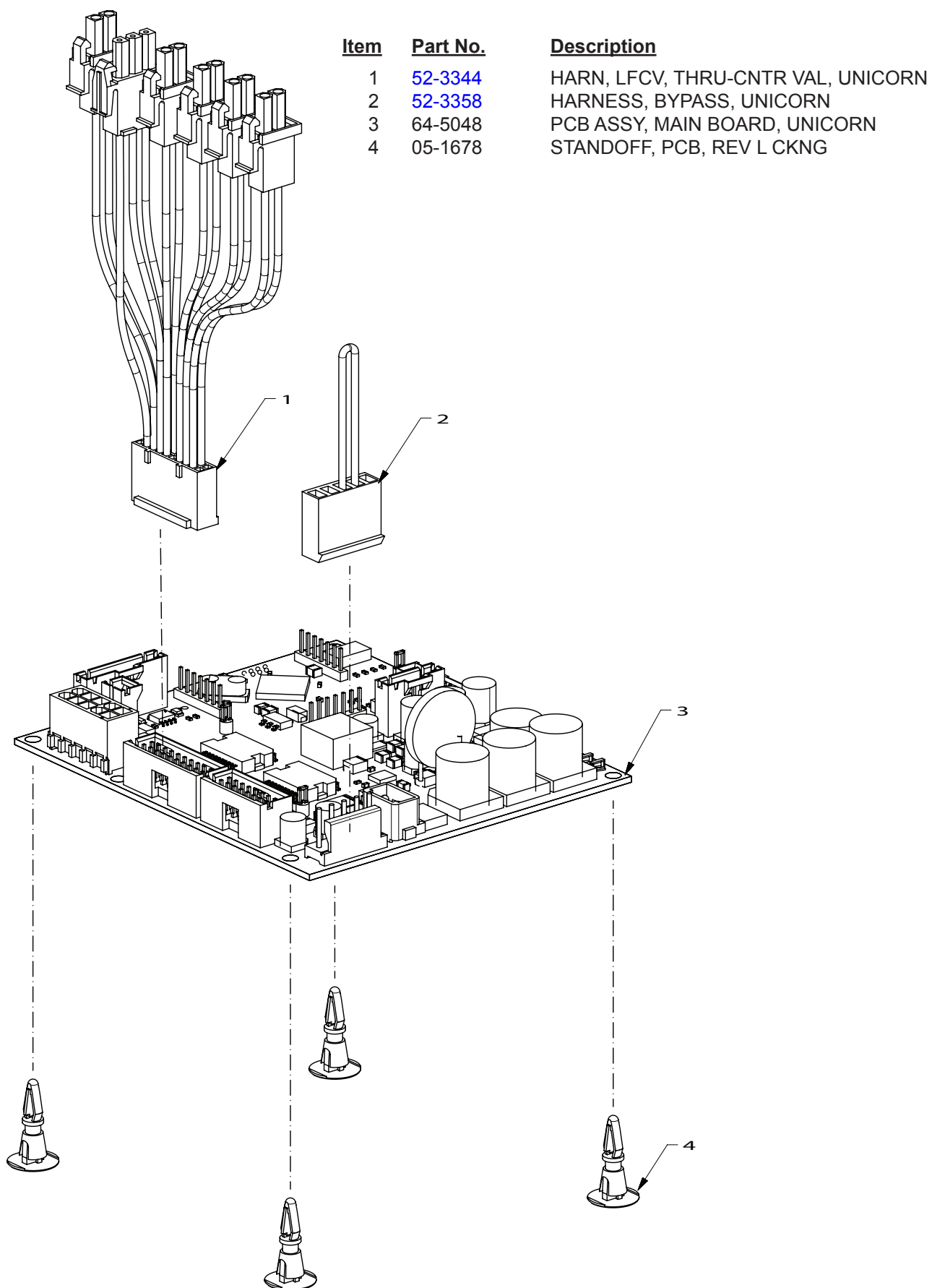
VV SYRUP VALVE SPARE PARTS.....30

8.8 VV MISC SPARE PARTS31

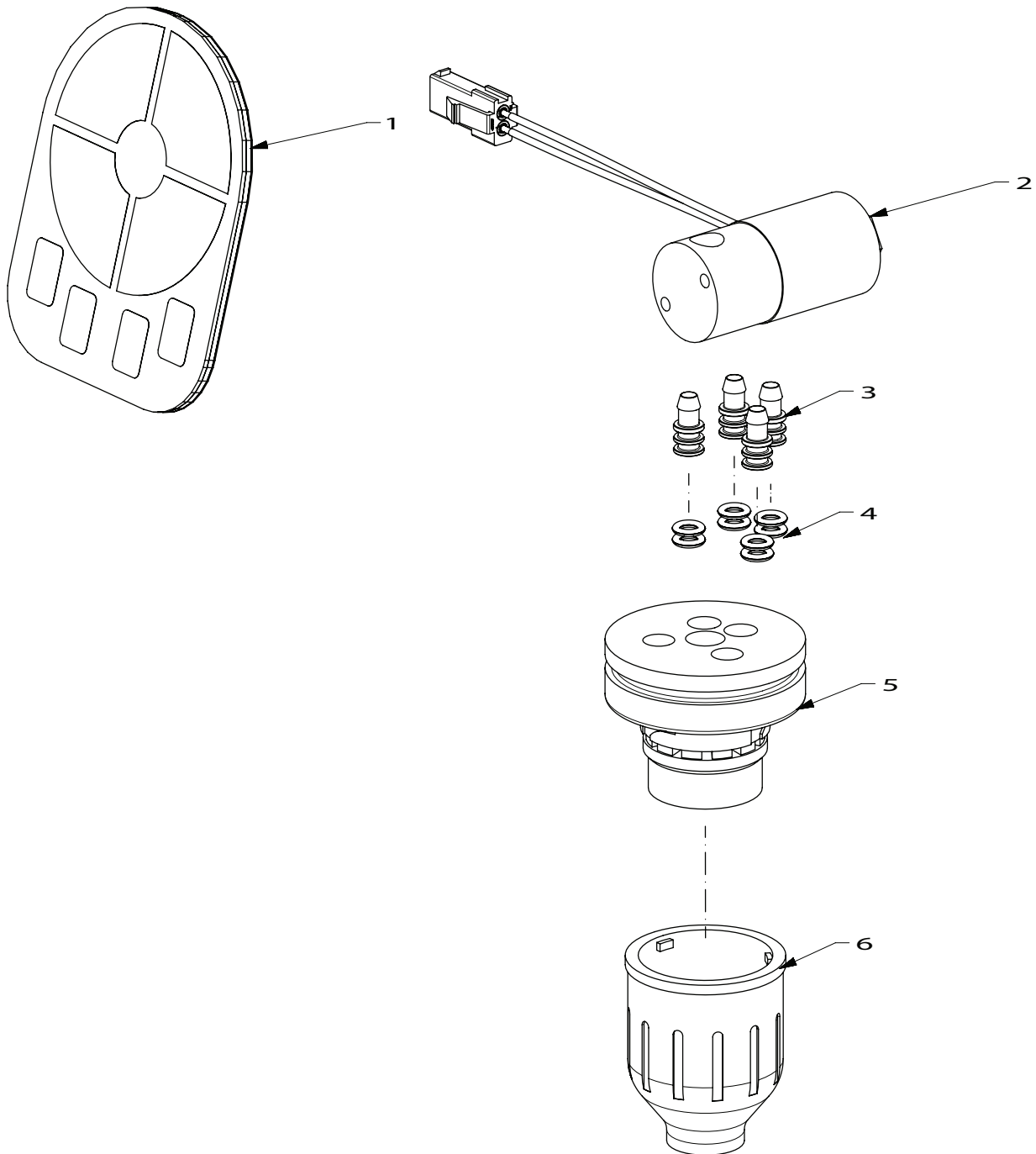
8.9 VV WIRING DIAGRAM32

8.10 COUNTER CUTOUT TEMPLATE33

8.1 ELECTRONIC, LFCV SPARE PARTS



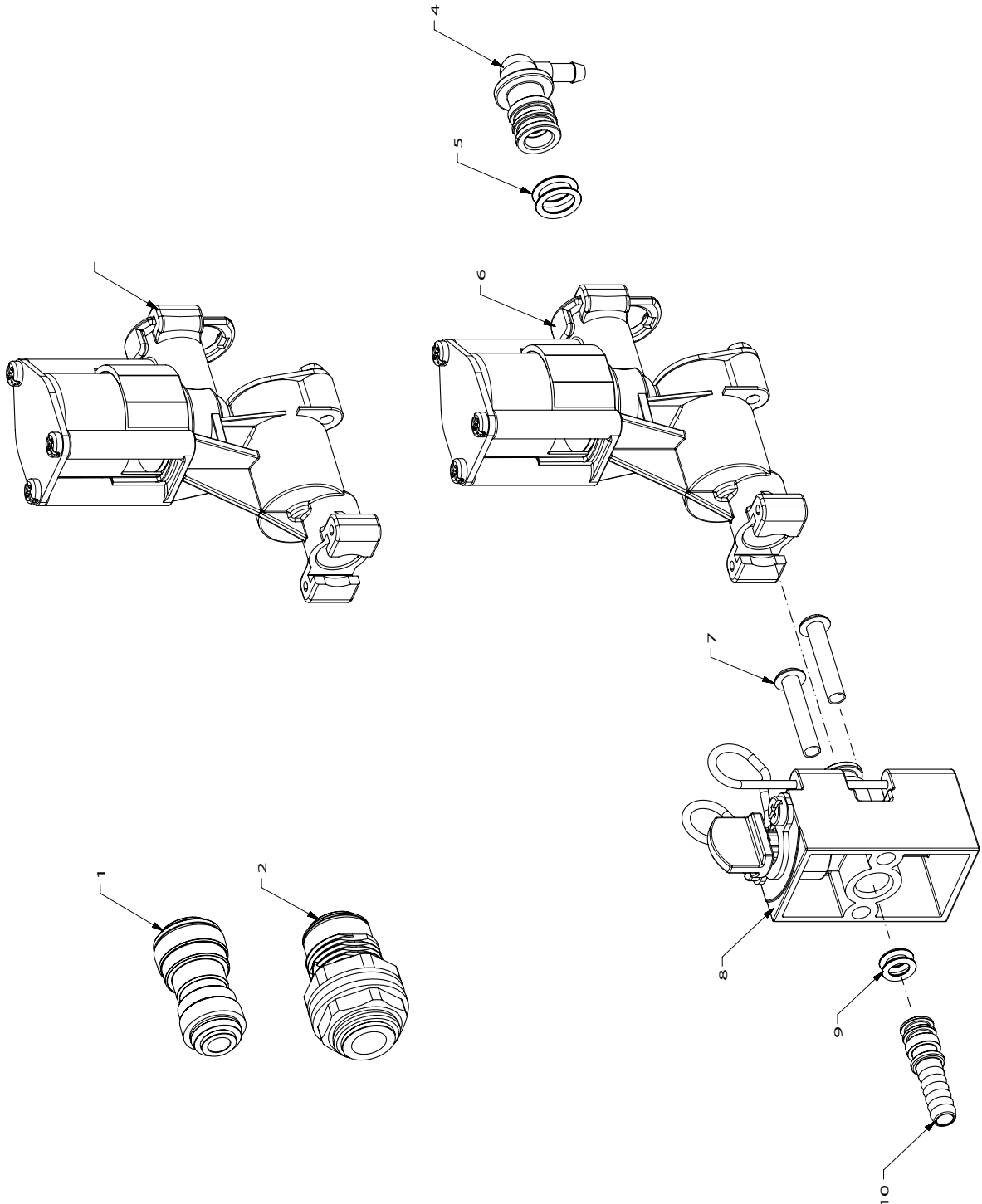
8.2 NOZZLE, LFCV SPARE PARTS

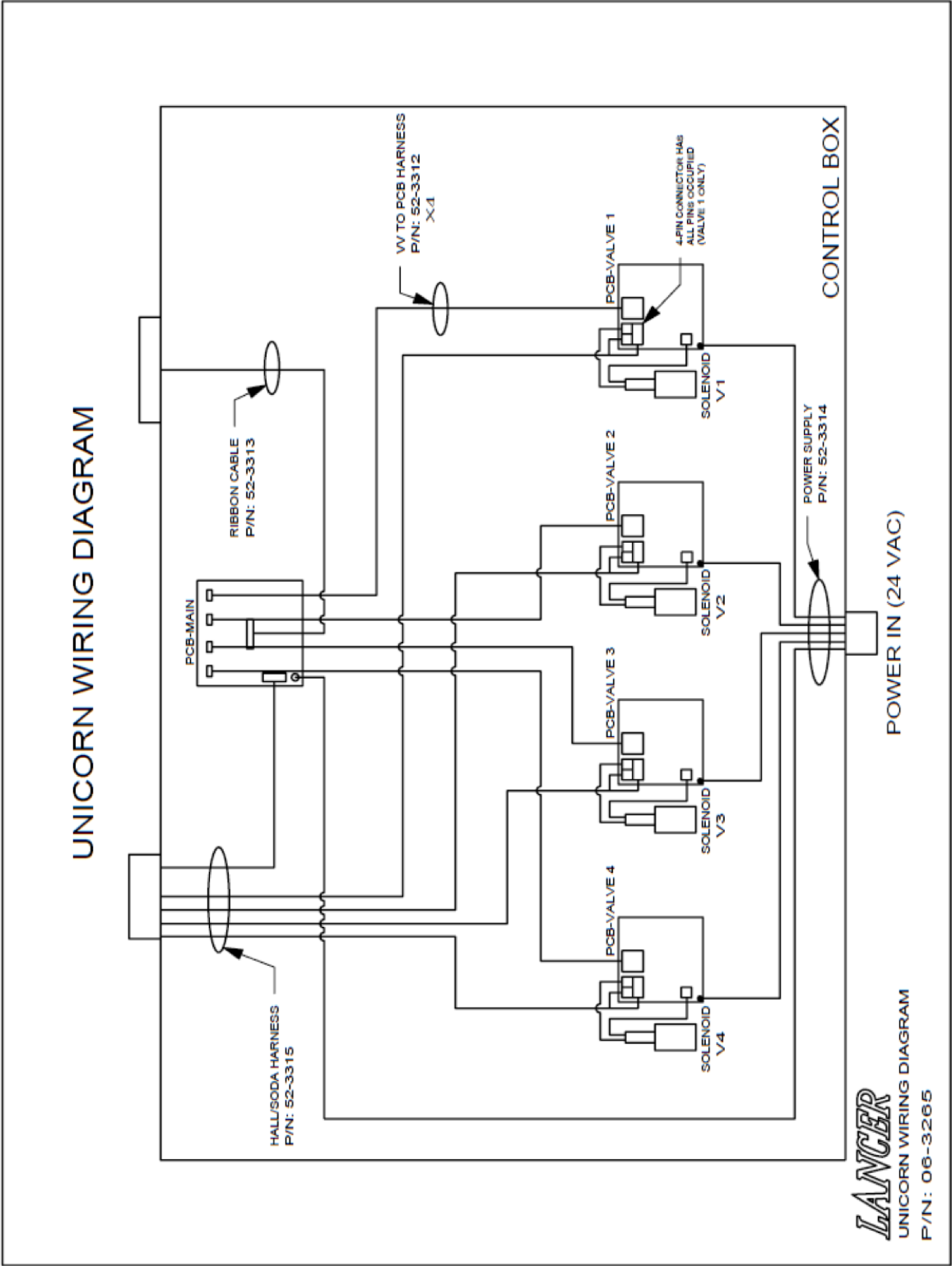


<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	64-5057	PCB ASSY, TOUCH PAD, UNICORN, W/ PORTION CONTROL
2	17-0647/01	SOLENOID, 24 VDC, 1/8 NPT, 2WNC
3	05-2971	ELBOW, qUICK CONNECT, 1/4 X 1/8
4	02-0214	O-RING, 2-008, 97-0999
5	81-0679	NOZZLE, ASSY, UNICORN
6	05-2956	NOZZLE, BLACK, UNICORN
	05-2943	NOZZLE, RED UNICORN

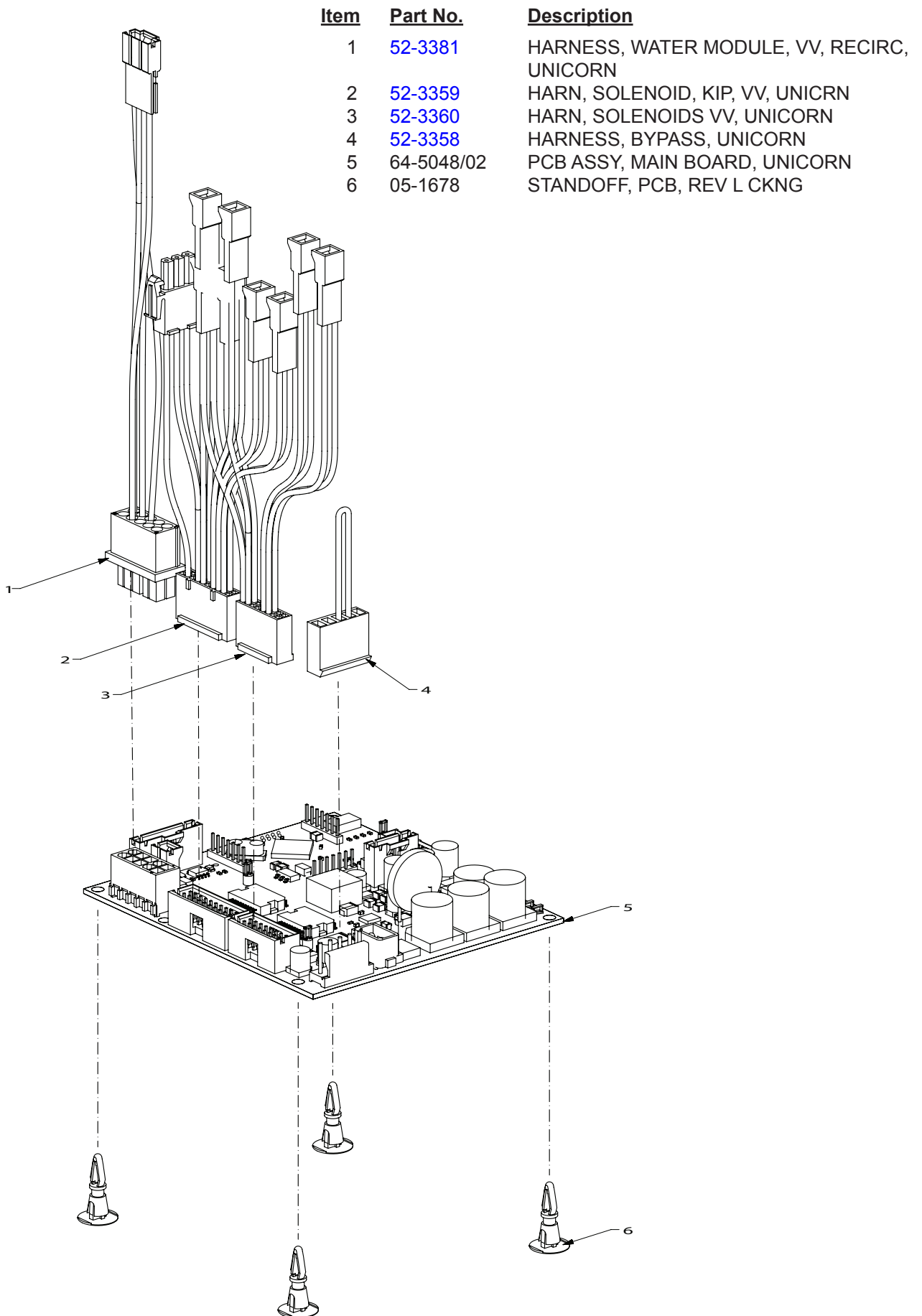
8.3 ELECTRONIC, LFCV SPARE PARTS

Item	Part No.	Description
1	01-2884	FITTING, JG,3/8X1/4,REDUCER, S/FIT
2	01-2806	JG BULKHEAD CONNECTOR,3/8 S/FIT X 3/8 S/FIT,79000217
3	19-0267/02	VALVE ASSY, LFCV,2.0 SODA, GRY, S
4	05-1385	ELBOW,.5 DOLE X .2 BARB, PLS
5	02-0089	O-RING,2-012,97-0999
6	19-0266/02	VALVE ASSY, LFCV,2.0 SYR, BLK, SC
7	04-1089	SCR, 10-32,RH, PH/SL, 1.000
8	82-2317/01	BLOCK, MOUNTING ASSY, SGL
9	02-0005	O-RING ,2 -010,97-0999
10	01-0012	ADAPTOR, 1/4 BARB X DOLE

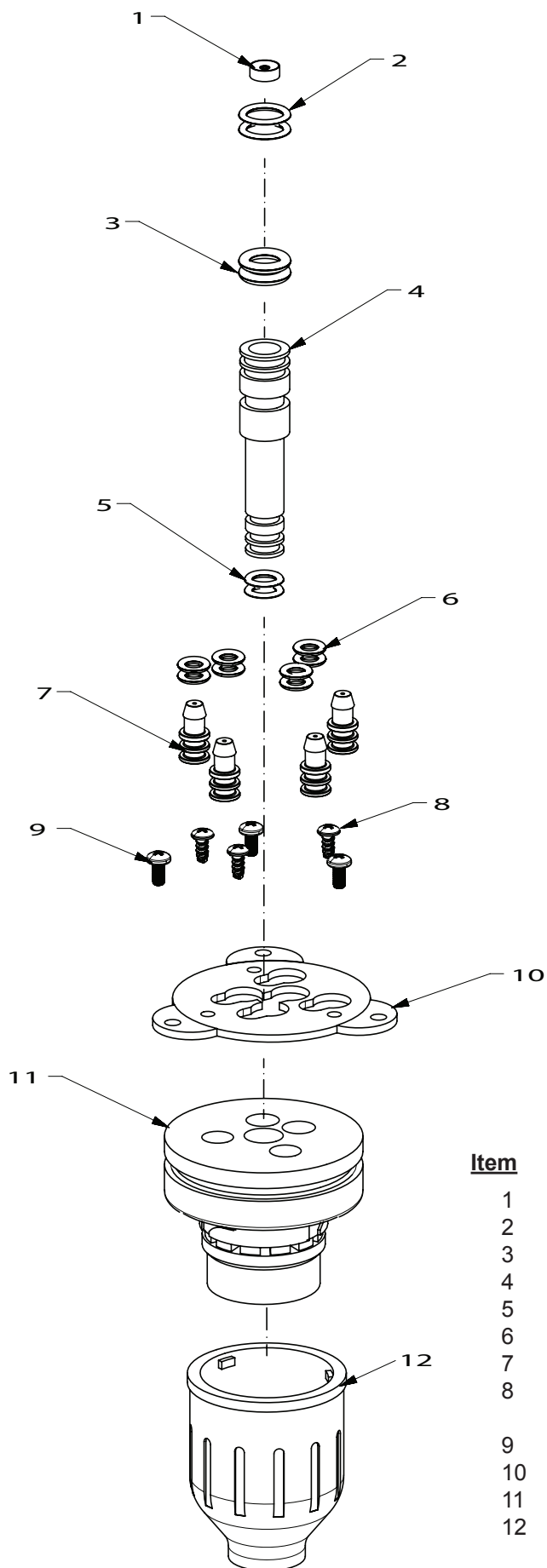




8.5 ELECTRONIC, VV SPARE PARTS

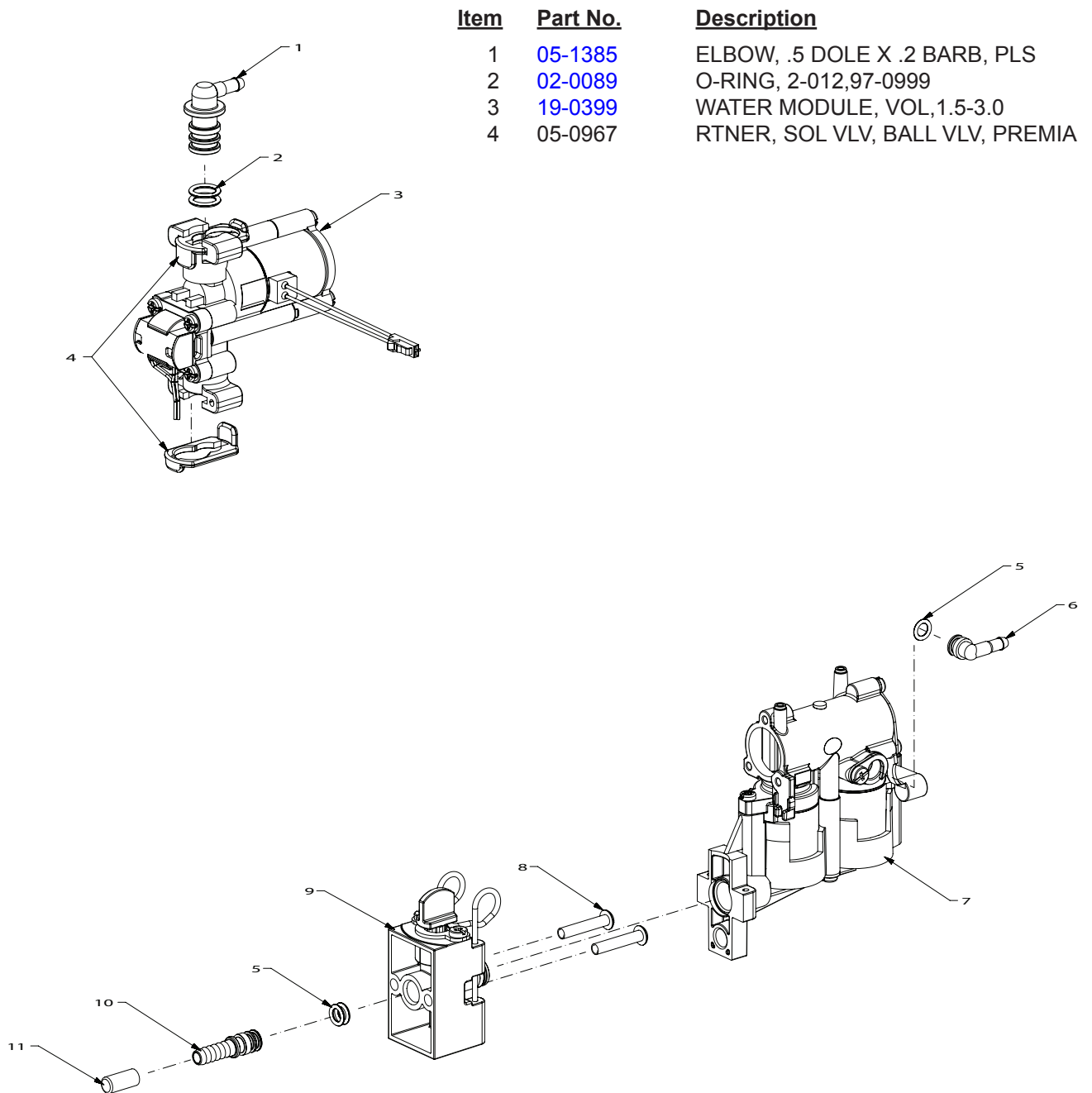


8.6 NOZZLE, VV SPARE PARTS



<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	02-0371	WASHER, FLOW, 1.5, VOL VALVE
2	02-0089	O-RING, 2-012, 97-0999
3	02-0126	O-RING, 2-109, 97-0999
4	01-2762	FTG, SODA OUTLET, UNCRN
5	02-0005	O-RING, 2-010, 97-0999
6	02-0214	O-RING, 2-008, 97-0999
7	05-2929	FITTING, INLET, NOZZLE, SYRUP
8	04-1639	SCREW, 4-20X.250 IN, PH, PHILLIPS, PLASTITIE, 18-8 SS
9	04-1640	SCR, M3X6MM, PH, PH,6H, S, ZP
10	30-10867	PLATE, MNTG, NOZZLE, UNICORN
11	81-0679	NOZZLE, ASSY, UNICORN
12	05-2956	NOZZLE, BLACK, UNICORN
	05-2943	NOZZLE, RED UNICORN

8.7 WATER VALVE, VV SPARE PARTS LIST



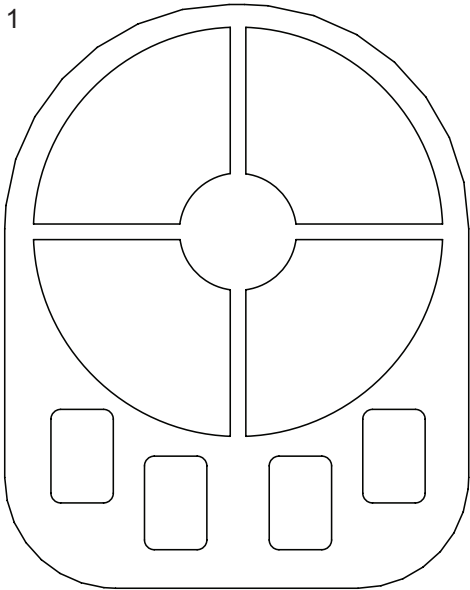
VV SYRUP VALVE SPARE PARTS LIST

Item	Part No.	Description
5	02-0005	O-RING ,2 -010,97-0999
6	05-1386	ELBOW,.375 DOLE X .2 BARB, PLS
7	19-0398	SYRUP MODULE, VOL,1.5-3.0
8	04-1089	SCR, 10-32,RH, PH/SL, 1.000
9	82-2317/01	BLOCK, MOUNTING ASSY, SGL
10	01-0012	ADAPTOR, 1/4 BARB X DOLE
11	04-0527	CAP, PROTECTIVE, 5HIP, 1/4 BARB

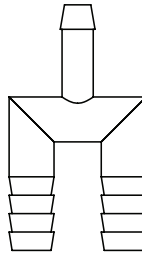
8.8 MISC SPARE, VV PARTS LIST

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	64-5057	PCB ASSY, TOUCH PAD, UNICORN, W/PORTION CONTROL
2	01-2757	FTG, WYE,.12ID, UNCRN
3	01-2806	JG BULKHEAD CONNECTOR, 3/8 S/FIT X 3/8 S/FIT, 79000217

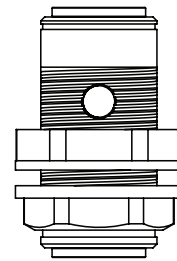
1

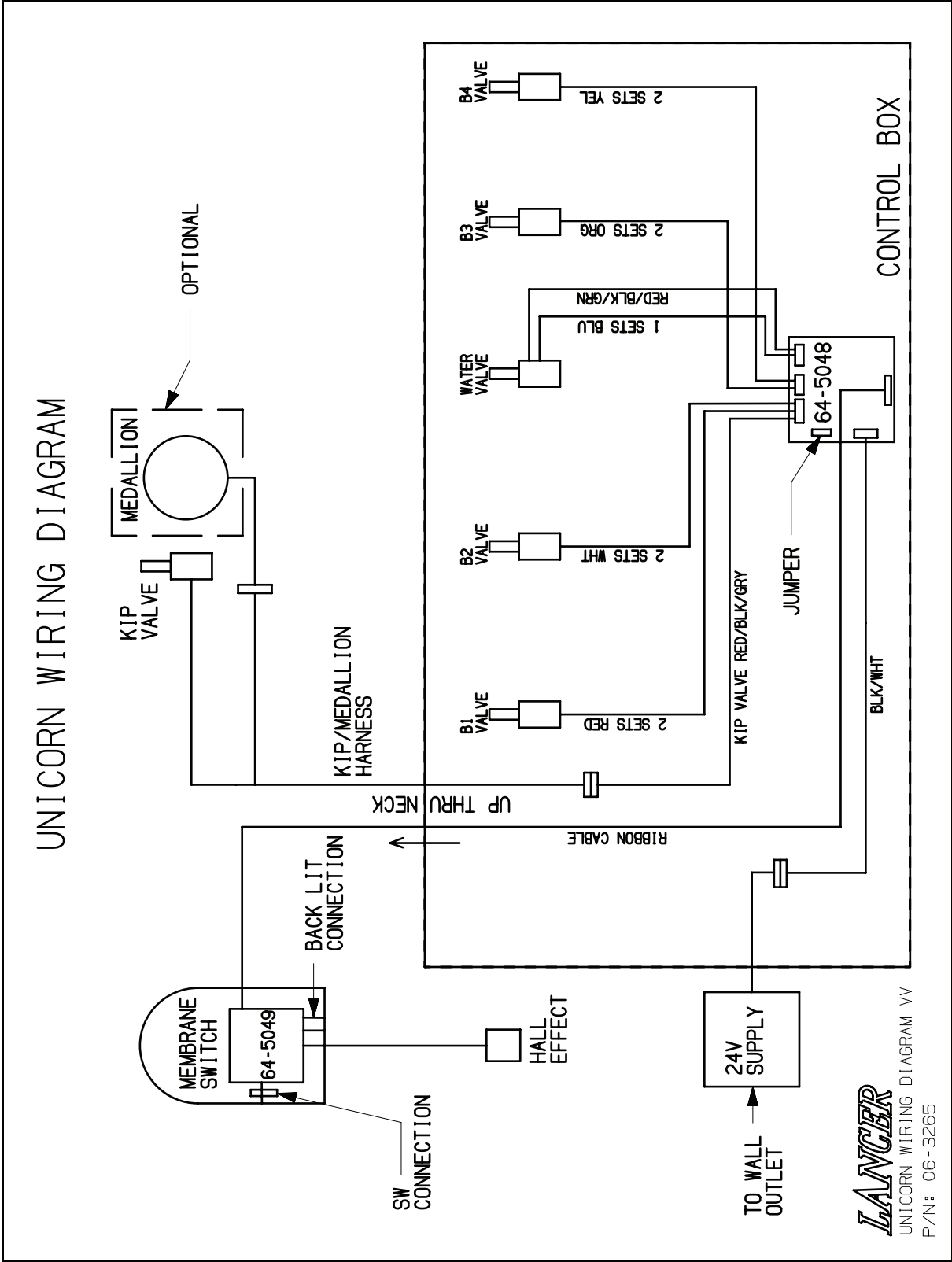


2

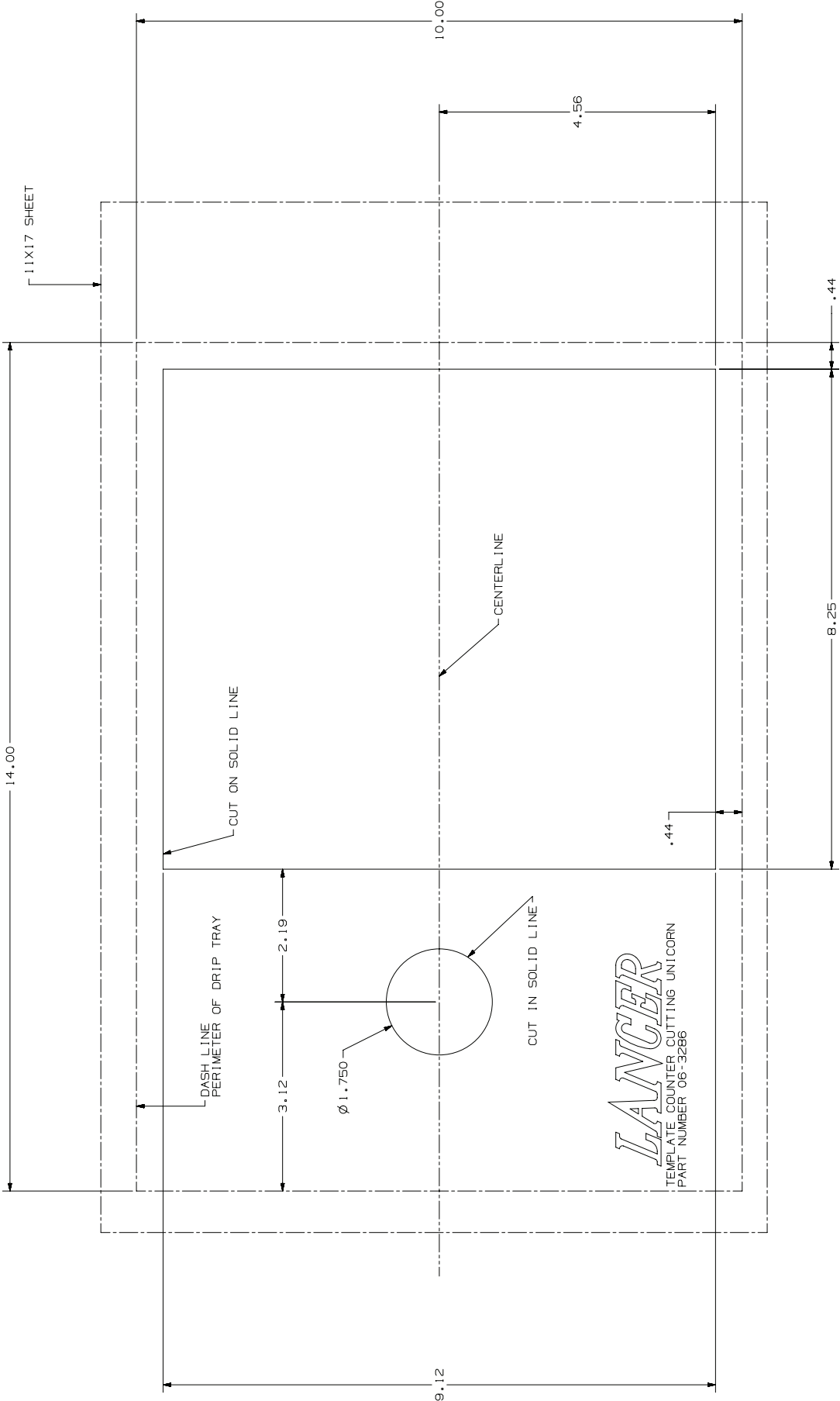


3





8.10 COUNTER CUTOUT TEMPLATE (not to scale)



NOTES

LANCER[®]

Lancer Corp.

800-729-1500

Technical Support/Warranty: 800-729-1550

custserv@lancercorp.com

lancercorp.com