

## Introduction

### Purpose

This manual provides instructions for installing the E25 and E85 Retrofit Kits on Encore® 300/500/500S/700S remote control models:

*Note: Depending on the configuration, additional kits may be required to retrofit additional meter and manifold assemblies.*

- **M12658K001 E25 Kit for dispensers:** NA0, NA1, NA2, NA3, NG1, NL0, NL1, NL2, and NL3 (any non-blending position for all listed models).
- **M19499K001 E85 Kit for dispensers:** NA0 (include extend/mirror), NA1/NA2/NA3 (all inlet positions), NG1 (4<sup>th</sup> inlet position), NL0, NL1, NL2, NL3 (all inlet positions), NN1, NN2, NN3 (all inlet positions), NG0/NG1 (all inlet positions).

*Note: Models NG1 and NL0, NL1, NL2, NL3 are X+1 configurations, where X indicates the number of blendable grades running through one hose on each side and +1 indicates a dedicated independent set of hydraulics.*

### E25 Kit

E25 kits may only be installed on non-blending positions. The E25 Retrofit Kits are used to upgrade the proportional valve Encore units (non-Ultra-Hi™) built after May 2003.

*Note: These kits are required for dispensing E15 and E25 fuels.*

### M12658K001

The M12658K001 Kit is for standard Encore dispensers and is not designed for Ultra-Hi, multi-hose blender, or self-contained pumping units. The M12658K001 Kit contains parts to upgrade one meter and manifold assembly for dispensers.

### E85 Kit

### M19499K001

The M19499K001 Kit is for standard Encore dispensers built beginning January 2017 and is not designed for Ultra-Hi units. Sharing hoses for standard fuels and ethanol fuels is regulated by state. Follow regulations for the state in which the kit is utilized. This is not approved for use with copper tubing. Replace copper tubing with genuine Gilbarco galvanized steel tubing in order to be E85 compatible. M19499K001 Kit contains parts to upgrade one meter manifold assembly and upper housing components to current UL® listed E85 components.

### Date Codes

#### Dispenser Date Code (Build Date)

The date code is the first two characters in the unit's serial code. For example, serial number **EMEN123456**.



May 2003

For a complete list of Gilbarco® date codes, refer to [“Appendix: Date Codes” on page 35](#).

## Intended Users

This manual is intended for Gilbarco-trained and certified Authorized Service Contractors (ASCs).

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## Required Tools and Materials

The following tools and materials are required for installing the E25 Retrofit Kits on Encore units:

- 13-mm and 17-mm Socket
- Ladder
- Phillips® and Security Bit Screwdrivers
- Pipe Wrench
- Pipe Sealant
- Petroleum Jelly

## Parts List

The following table lists the parts included in the M12658K001 E25 Retrofit Kit:

Item #	Description	Part Number	Quantity
1	Assembly, V Meter and Manifold Phase 1, with Inlet Pipe, E25	M13183A101	1
2	Screw, Metric M8 X 25	M00417B011	2
3	Label, Inlet, Flex Fuel	M08181B003	1
4	Security Spacer	M08852B001	2
5	Nut, Metric M8 Serrated	M00414B003	2
6	U-bolt, Metric, M8	M00703B002	1
7	Label E25/E85 Components (see <a href="#">Figure 1</a> on <a href="#">page 4</a> )	M11305B001	1
8	Gasket O-ring 0.862 ID X 1.06	Q12974-118	6
9	UL Label - Listed By Report	M12879B001	2
10	Clamp, Parflange Double	M00133B001	4
11	Screw Metric M8 X 20	M00415B010	10
12	Parflange Clamp	N23908-01	2
13	Screw M8 X 16 Serrated Head	M00417B009	4


The following table lists the parts included in the M19499K001 E85 Kit Parts:

Item #	Description	Part Number	Quantity
1	Plated Hose Outlet	M05612B140	2
2	Plated Angle Casting - Blend	M15530B030	2
3	Plated Angle Casting - Open	M02087B030	2
4	Plated Angle Casting - Closed	M02088B030	2
5	Plug	M11310B001	6
6	Gasket O-ring 0.862 ID X 1.06	Q12974-118	8
7	Assy, V15 Meter Manifold, Plated Parker Valve, E85 Filter	M13157A101	1
8	Screw Metric M8 X 20	M00415B010	2
9	Label E25/E85 Components (see <a href="#">Figure 1</a> on <a href="#">page 4</a> )	M11305B001	1
10	UL Label - Listed by Report	M20027B001	1
11	Label - Inlet Flex Fuel	M08181B001	1

## Prerequisites

E25/E85 Components Label (M11305B001) contains the part number details required for different part types (see [Figure 1](#)). Other system components may have to be upgraded to be compatible with E25/E85, for example, labels, hoses, nozzles, swivels, breakaways, filters, shear valves, pipe sealant, and Submersible Turbine Pumps (STPs).

**Figure 1: E25/E85 Components Label (M11305B001)**

 FOR E85 OR E25 RATED HYDRAULICS USE ONLY THE FOLLOWING		
PART TYPE	MANUFACTURER P/N	GILBARCO P/N
HOSE ASSEMBLIES	CATLOW: HAERS003, HAERS004, HAERS005, HAERS008, HAERS009, HAERS017 (E85), HAERS012, HAERS013, HAERS014 (E25).	GILBARCO: HAERS003, HAERS004, HAERS005, HAERS008, HAERS009, HAERS017 (E85), HAERS012, HAERS013, HAERS014 (E25).
HOSE	VEYANCE FLEXSTEEL FUTURA ETHAN-ALL (E85)	HH6GXXXXYYEI WHERE XXX IS THE LENGTH. YY IS THE COLOR.
NOZZLE	CATLOW: ER75E85A2 (E85), ER75E25A2, NEPNL-E25 (E25), OPW: 11BP-0492-E85 (BLACK), 11BP-0992-E85 (YELLOW) (E85).	NOT AVAILABLE NOT AVAILABLE M11298B001 M11298B002
SWIVEL	CATLOW: C720 3/4-E85 (E85), C720-E25B20 (E25), OPW: 241 TPS-0492 (E85).	NOT AVAILABLE NOT AVAILABLE N23748-04
BREAK-A-WAY	CATLOW: CTM75-E85 (E85), CTM75-E25B20 (E25), OPW: 66V-0492 (E85)	NOT AVAILABLE NOT AVAILABLE N23020-10
FILTER	FILTERS MUST BE MARKED FOR USE WITH UP TO E85	M08005B010 M08005B030 M08006B010 M10316B010
SHEAR VALVE	OPW 10P-0152E85	T19695 23
PIPE SEALANT	SAF-T-LOC TPS PTFE PIPE SEALANT	NOT APPLICABLE

M11305B001 REV C

## Related Documents

Document Number	Title	GOLD <sup>SM</sup> Library
MDE-3804	Encore and Eclipse® Start-up/Service Manual	<ul style="list-style-type: none"> <li>• Encore and Eclipse</li> <li>• Service Manual</li> </ul>
MDE-3860	Programming Quick Reference Guide	<ul style="list-style-type: none"> <li>• Encore and Eclipse</li> <li>• Encore and Eclipse Installers</li> </ul>
PT-1936	Encore Series Pumps and Dispensers Illustrated Parts Manual	<ul style="list-style-type: none"> <li>• Encore and Eclipse</li> <li>• Encore and Eclipse Installers</li> <li>• Parts Manual</li> </ul>
PT-1937	Encore 300, Encore 500/500S, Encore 550, Encore 700S, Eclipse Recommended Spare Parts Manual	<ul style="list-style-type: none"> <li>• Encore and Eclipse</li> <li>• Encore and Eclipse Installers</li> <li>• Parts Manual</li> </ul>

## Abbreviations and Acronyms

Term	Description
ASC	Authorized Service Contractor
CD	Computer Display
DEF	Diesel Exhaust Fluid
E15	Gasoline containing up to 15% ethanol
E25	Gasoline containing up to 25% ethanol
E85	Gasoline containing up to 85% ethanol
GOLD	Gilbarco Online Documentation
GPU	Global Pumping Unit
OSHA	Occupational Safety and Health Administration
STP	Submersible Turbine Pump
UL	Underwriters Laboratories

# Important Safety Information

**Notes:** 1) Save this Important Safety Information section in a readily accessible location.

2) Although DEF is non-flammable, Diesel is flammable. Therefore, for DEF cabinets that are attached to Diesel dispensers, follow all the notes in this section that pertain to flammable fuels.

This section introduces the hazards and safety precautions associated with installing, inspecting, maintaining, or servicing this product. Before performing any task on this product, read this safety information and the applicable sections in this manual, where additional hazards and safety precautions for your task will be found. Fire, explosion, electrical shock, or pressure release could occur and cause death or serious injury, if these safe service procedures are not followed.



## Preliminary Precautions

You are working in a potentially dangerous environment of flammable fuels, vapors, and high voltage or pressures. Only trained or authorized individuals knowledgeable in the related procedures should install, inspect, maintain, or service this equipment.

## Emergency Total Electrical Shut-Off

The first and most important information you must know is how to stop all fuel flow to the pump/dispenser and island. Locate the switch or circuit breakers that shut off all power to all fueling equipment, dispensing devices, and Submerged Turbine Pumps (STPs).

**⚠ WARNING**

The EMERGENCY STOP, ALL STOP, and PUMP STOP buttons at the cashier's station WILL NOT shut off electrical power to the pump/dispenser. This means that even if you activate these stops, fuel may continue to flow uncontrolled.

You must use the TOTAL ELECTRICAL SHUT-OFF in the case of an emergency and not the console's ALL STOP and PUMP STOP or similar keys.

## Total Electrical Shut-Off Before Access

Any procedure that requires access to electrical components or the electronics of the dispenser requires total electrical shut off of that unit. Understand the function and location of this switch or circuit breaker before inspecting, installing, maintaining, or servicing Gilbarco equipment.

## Evacuating, Barricading, and Shutting Off

Any procedure that requires access to the pump/dispenser or STPs requires the following actions:



- An evacuation of all unauthorized persons and vehicles from the work area
- Use of safety tape, cones, or barricades at the affected unit(s)
- A total electrical shut-off of the affected unit(s)

## Read the Manual

Read, understand, and follow this manual and any other labels or related materials supplied with this equipment. If you do not understand a procedure, call the Gilbarco Technical Assistance Center (TAC) at 1-800-743-7501. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

## Follow the Regulations

Applicable information is available in National Fire Protection Association (NFPA) 30A; Code for Motor Fuel Dispensing Facilities and Repair Garages, NFPA 70; National Electrical Code (NEC), Occupational Safety and Health Administration (OSHA) regulations and federal, state, and local codes. All these regulations must be followed. Failure to install, inspect, maintain, or service this equipment in accordance with these codes, regulations, and standards may lead to legal citations with penalties or affect the safe use and operation of the equipment.

## Replacement Parts

Use only genuine Gilbarco replacement parts and retrofit kits on your pump/dispenser. Using parts other than genuine Gilbarco replacement parts could create a safety hazard and violate local regulations.

## Federal Communications Commission (FCC) Warning

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

## Safety Symbols and Warning Words

This section provides important information about warning symbols and boxes.

### Alert Symbol



This safety alert symbol is used in this manual and on warning labels to alert you to a precaution which must be followed to prevent potential personal safety hazards. Obey safety directives that follow this symbol to avoid possible injury or death.

### Signal Words

These signal words used in this manual and on warning labels tell you the seriousness of particular safety hazards. The precautions below must be followed to prevent death, injury, or damage to the equipment:



**DANGER:** Alerts you to a hazard or unsafe practice which will result in death or serious injury.



**WARNING:** Alerts you to a hazard or unsafe practice that could result in death or serious injury.



**CAUTION** with Alert symbol: Designates a hazard or unsafe practice which may result in minor injury.

**CAUTION** without Alert symbol: Designates a hazard or unsafe practice which may result in property or equipment damage.

## Working With Fuels and Electrical Energy

### Prevent Explosions and Fires

Fuels and their vapors will explode or burn, if ignited. Spilled or leaking fuels cause vapors. Even filling customer tanks will cause potentially dangerous vapors in the vicinity of the dispenser or island.

DEF is non-flammable. Therefore, explosion and fire safety warnings do not apply to DEF lines.

## No Open Fire



Open flames from matches, lighters, welding torches or other sources can ignite fuels and their vapors.

## No Sparks - No Smoking



Sparks from starting vehicles, starting or using power tools, burning cigarettes, cigars or pipes can also ignite fuels and their vapors. Static electricity, including an electrostatic charge on your body, can cause a spark sufficient to ignite fuel vapors. Every time you get out of a vehicle, touch the metal of your vehicle, to discharge any electrostatic charge before you approach the dispenser island.

## Working Alone

It is highly recommended that someone who is capable of rendering first aid be present during servicing. Familiarize yourself with Cardiopulmonary Resuscitation (CPR) methods, if you work with or around high voltages. This information is available from the American Red Cross. Always advise the station personnel about where you will be working, and caution them not to activate power while you are working on the equipment. Use the OSHA Lockout/Tagout procedures. If you are not familiar with this requirement, refer to this information in the service manual and OSHA documentation.

## Working With Electricity Safely

Ensure that you use safe and established practices in working with electrical devices. Poorly wired devices may cause a fire, explosion or electrical shock. Ensure that grounding connections are properly made. Take care that sealing devices and compounds are in place. Ensure that you do not pinch wires when replacing covers. Follow OSHA Lockout/Tagout requirements. Station employees and service contractors need to understand and comply with this program completely to ensure safety while the equipment is down.

## Hazardous Materials

Some materials present inside electronic enclosures may present a health hazard if not handled correctly. Ensure that you clean hands after handling equipment. Do not place any equipment in the mouth

### WARNING

In the event of inclement weather, including snow, ice, or flooding that makes driving conditions dangerous, please avoid servicing units. Always use available door stops to secure upper doors against unwanted/unexpected movement, especially during high winds. If necessary, reschedule service to avoid damage to the equipment. Weather may change unexpectedly; be aware of local weather conditions. During service, if conditions develop making service unsafe, close the unit(s) and proceed to a safe location.

### WARNING

The pump/dispenser contains a chemical known to the State of California to cause cancer.

### WARNING

The pump/dispenser contains a chemical known to the State of California to cause birth defects or other reproductive harm.



Gilbarco Veeder-Root encourages the recycling of our products. Some products contain electronics, batteries, or other materials that may require special management practices depending on your location. Please refer to your local, state, or country regulations for these requirements.

## In an Emergency

### Inform Emergency Personnel

Compile the following information and inform emergency personnel:

- Location of accident (for example, address, front/back of building, and so on)
- Nature of accident (for example, possible heart attack, run over by car, burns, and so on)
- Age of victim (for example, baby, teenager, middle-age, elderly)
- Whether or not victim has received first aid (for example, stopped bleeding by pressure, and so on)
- Whether or not a victim has vomited (for example, if swallowed or inhaled something, and so on)

### WARNING



Gasoline/DEF ingested may cause unconsciousness and burns to internal organs. Do not induce vomiting. Keep airway open. Oxygen may be needed at scene. Seek medical advice immediately.

### WARNING

DEF generates ammonia gas at higher temperatures. When opening enclosed panels, allow the unit to air out to avoid breathing vapors. If respiratory difficulties develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention.

### WARNING



Gasoline inhaled may cause unconsciousness and burns to ls, mouth and lungs. Keep airway open. Seek medical advice immediately.

### WARNING



Gasoline/DEF spilled in eyes may cause burns to eye tissue. Irrigate eyes with water for approximately 15 minutes. Seek medical advice immediately.

### WARNING



Gasoline/DEF spilled on skin may cause burns. Wash area thoroughly with clear water. Seek medical advice immediately.

### WARNING

DEF is mildly corrosive. Avoid contact with eyes, skin, and clothing. Ensure that eyewash stations and safety showers are close to the work location. Seek medical advice/recommended treatment if DEF spills into eyes.

**IMPORTANT:** Oxygen may be needed at scene if gasoline has been ingested or inhaled. Seek medical advice immediately.

### Lockout/Tagout

Lockout/Tagout covers servicing and maintenance of machines and equipment in which the unexpected energization or start-up of the machine(s) or equipment or release of stored energy could cause injury to employees or personnel. Lockout/Tagout applies to all mechanical, hydraulic, chemical, or other energy, but does not cover electrical hazards. Subpart S of 29 CFR Part 1910 - Electrical Hazards, 29 CFR Part 1910.333 contains specific Lockout/Tagout provision for electrical hazards.

# Installing E25 Retrofit Kits on Encore Units

To install the E25 Retrofit Kits (M12658K001) on Encore units, proceed as follows:

## Before You Begin

Read and understand all the safety information found in *MDE-3804 Encore and Eclipse Start-up/Service Manual*.

### **WARNING**

Failure to turn off the unit during the kit installation may cause injury or bodily harm from electrical shock. Ensure that all power to the unit is switched off before opening the door to the unit and during the kit installation.

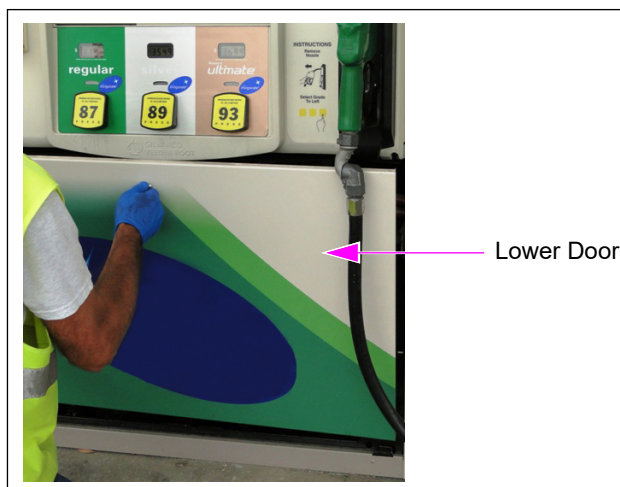
- 1 Inform the manager that the power must be removed from the unit.
- 2 Close the shear valves to all inlets and test dispenser to ensure no product flows with shear valve closed.
- 3 Remove all power supplied to the unit at the breaker located in the building.
- 4 Use OSHA lockout/tagout procedure for electrical circuits.
- 5 Block the unit from the customers.
- 6 Empty all the hoses into an approved container by cycling the hose nozzle valve.

## Removing Existing Meter and Manifold Assembly

To remove the existing meter and manifold assembly, per chosen grade to upgrade to E25 components, proceed as follows:

- 1 Remove both lower doors from the dispenser (see [Figure 2](#)).

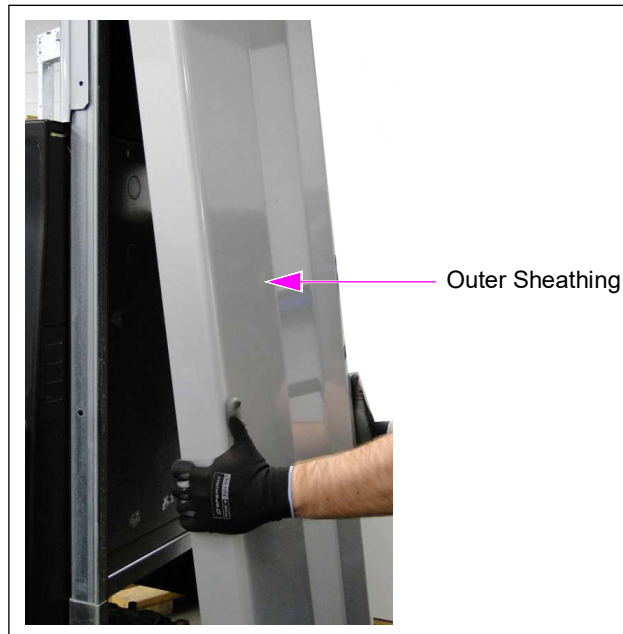
**Figure 2: Removing Lower Doors**





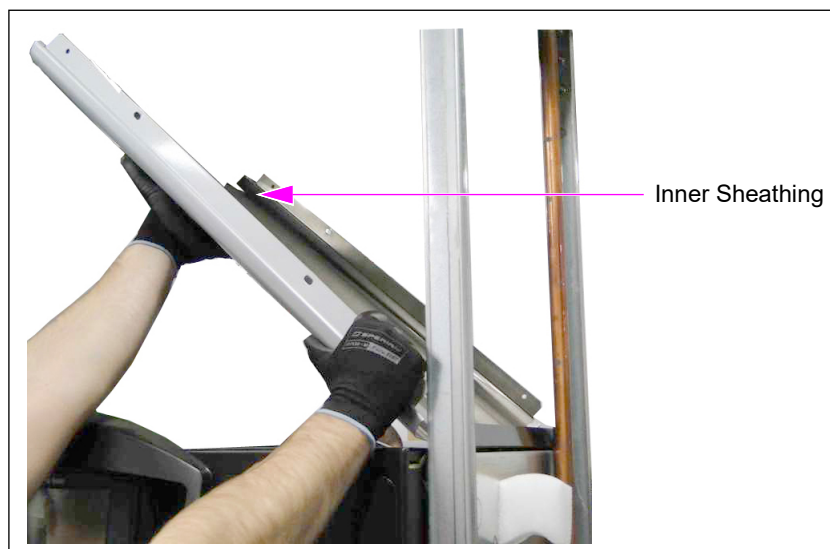
- 2 Open both bezel doors (main doors).
- 3 Remove the side sheathing by performing the following steps:
  - a Remove the outer sheathing on both sides of the dispenser by removing the four screws from each sheathing (see [Figure 3](#)) using a Phillips screwdriver. Retain the mounting screws and outer sheathing.

**Figure 3: Removing Outer Sheathing**



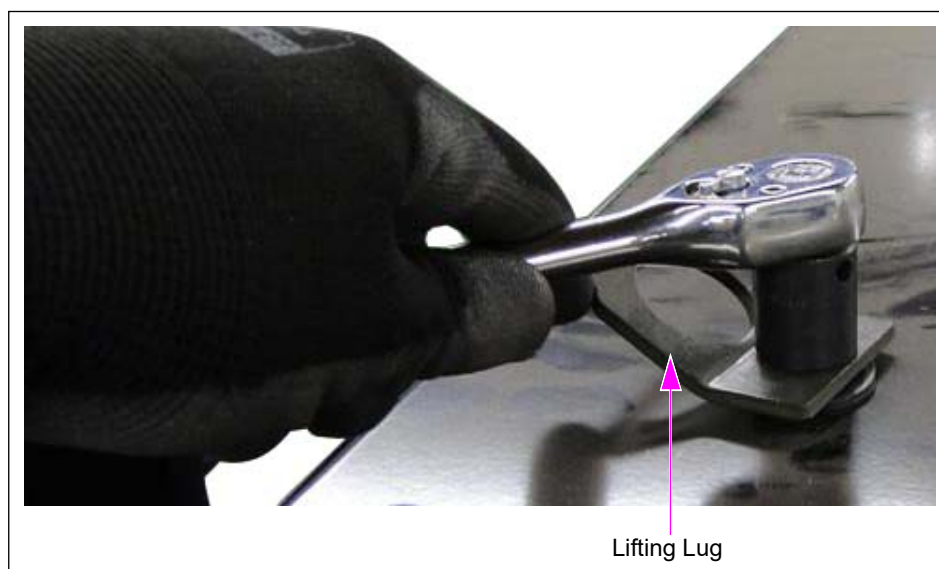
- b Remove the inner sheathing on both sides of the dispenser (see [Figure 4](#)). Retain the inner sheathing and protect from damage.

**Figure 4: Removing Inner Sheathing**



- 4 Remove the upper housing cover and canopy by performing the following steps:
  - a Locate the four lifting lugs on top of the canopy.
  - b Remove the lifting lugs using a 17-mm socket and lift (see [Figure 5](#)). Retain the lifting lugs for reuse.

**Figure 5: Removing Lifting Lugs**



- c Remove the upper hydraulic housing canopy. Retain the hardware, upper housing cover, and top cover.  
*Note: Two technicians are recommended for removing the cover.*
- 5 Installation of this kit involves lowering and removing one of the meter and manifold assemblies. Identify the meter and manifold assembly to be replaced and examine the area below that assembly for field-installed conduits that may interfere with removing the meter and manifold assembly.  
*Note: The kit cannot be installed if conduits interfere.*
- 6 Locate the two outlet tubes from the selected meter and manifold assembly and make a note of the position of the tubes. Label the tubes for later reassembly.

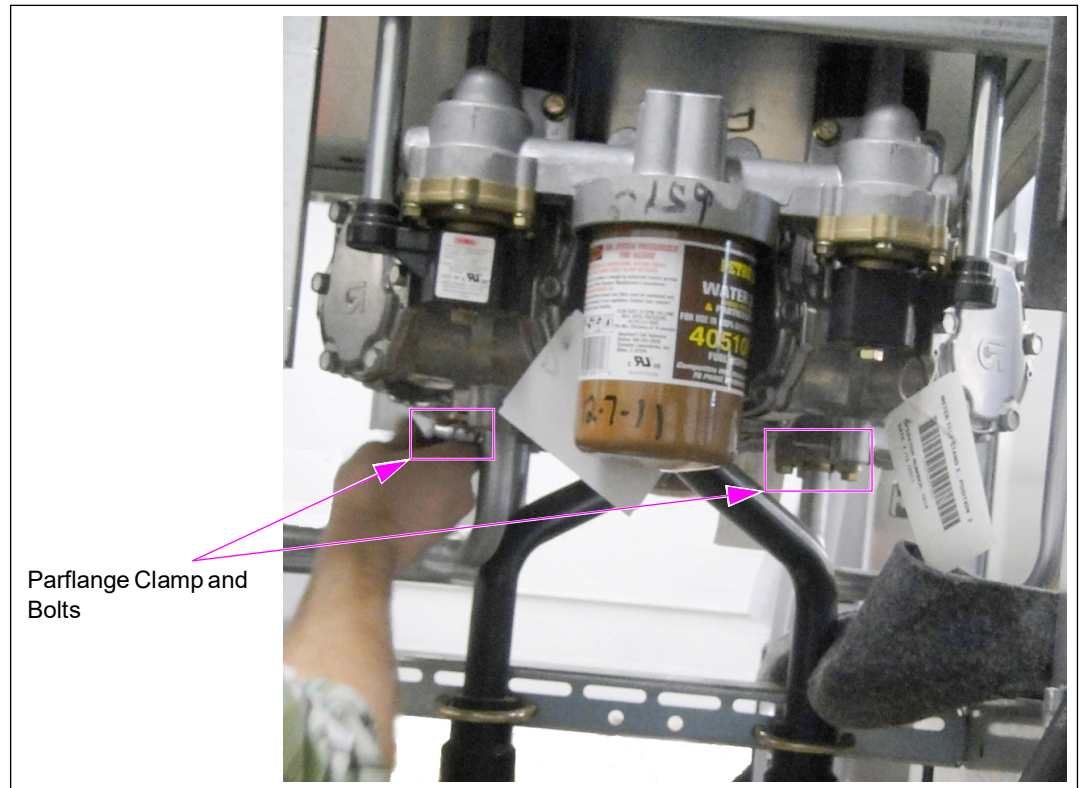
To remove the tubes from the meter and manifold assembly, proceed as follows:

### IMPORTANT INFORMATION

Fuel must be drained into an approved container. Although the fuel is drained, there may be residual fuel in the meter and manifold assembly to be removed.

- a** Remove and discard the bolts and Parflange Clamp securing the tubes to the meter and manifold assembly (see [Figure 6](#)).

**Figure 6: Removing Parflange Clamp and Bolts**



- b** Remove the parflange clamp at the angle casting.
- c** Remove the tubing assembly. Carefully handle the tubes, they will be reused.

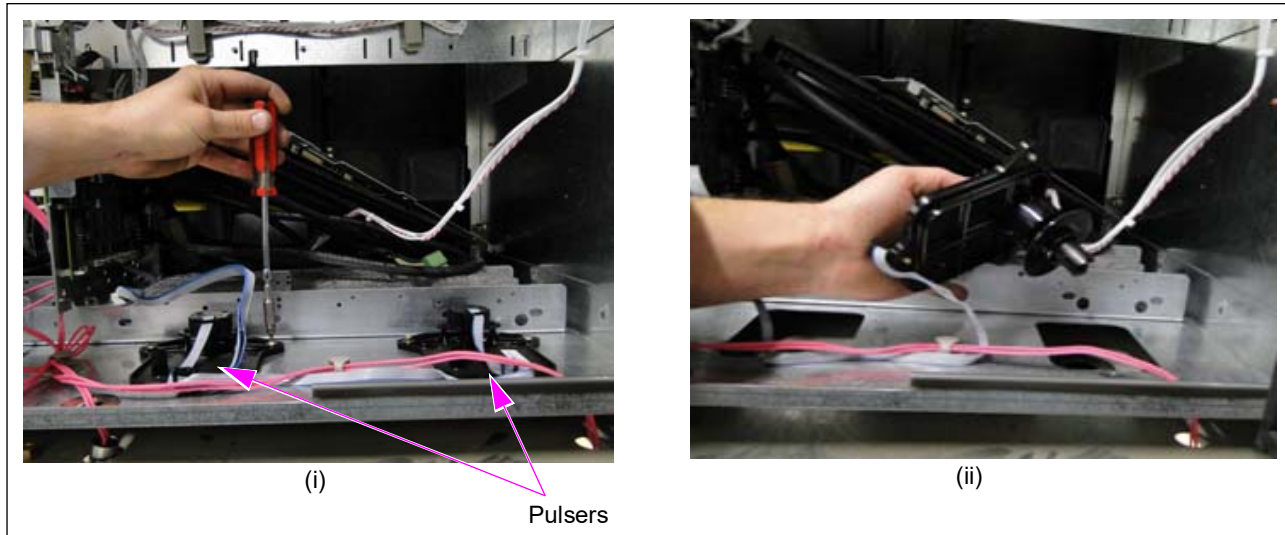
Repeat steps [a](#) to [c](#) for the second tubing assembly.

- 7** Remove the valve coils from the valve by removing the two nuts using a 13-mm socket and move them out of the way. Remove the meter and manifold assembly.  
*Notes: 1) It is not required to unplug the valve coils inside the Computer Display (CD) module. There is sufficient space to allow the coil to hang without interfering with the meter and manifold assembly removal.*  
 2) Retain the nuts for reuse.

- 8 Remove the pulsers by removing the screws from the CD module [keeping their connectors installed (see [Figure 7 \(i\)](#))] located at the meter and manifold assembly using a security bit screwdriver. Retain the pulsers and place them in the U-channel out of the way [see [Figure 7 \(ii\)](#)].

*Note: Retain the screws for reuse.*

**Figure 7: Removing Pulsers**



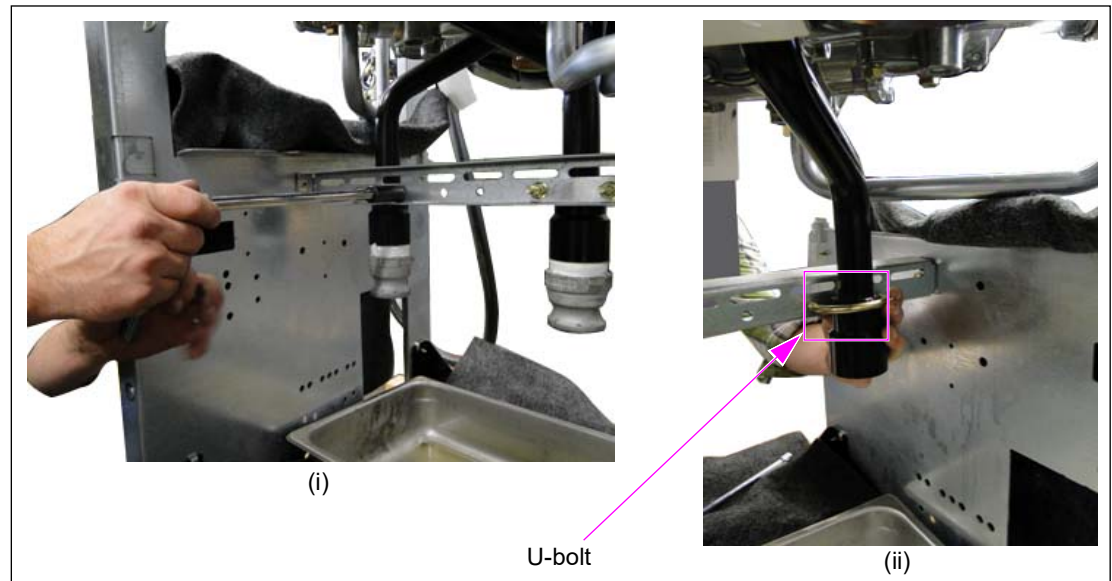
- 9 Remove the meter and manifold assembly by performing the following steps:
    - a Disconnect the union between the shear valve and meter and manifold assembly to be removed.
    - b Remove the piping and union assembly from the inlet tube using a pipe wrench and retain for later use.
    - c While supporting the meter and manifold assembly through the CD module, remove the two screws holding the meter and manifold assembly using a 13-mm socket (see [Figure 8](#)).
- Note: To avoid damage to the meter and manifold assembly, ensure that the meter and manifold assembly is held or supported by someone before the last two screws are removed.*

**Figure 8: Removing Screws Holding Meter and Manifold Assembly**



**d** Remove the U-bolt that holds the inlet to the rails using a 13-mm socket (see [Figure 9](#)).

**Figure 9: Removing U-bolt**



**e** Lift and remove the meter and manifold assembly.

## Installing V Meter and Manifold Assembly (M13183A101)

To install the new V meter and manifold assembly, proceed as follows:

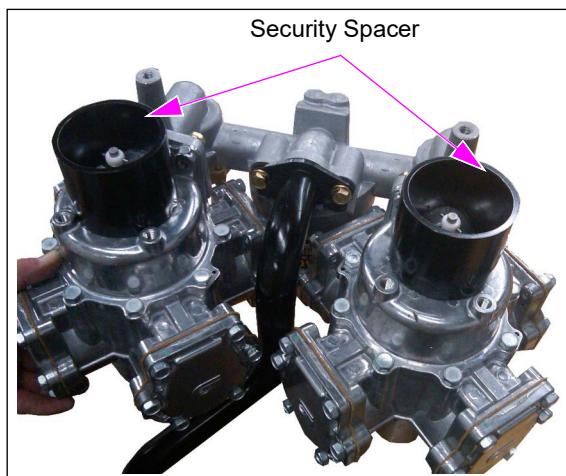
### IMPORTANT INFORMATION

It is a UL violation to substitute unplated parts where plated parts are required in the hydraulics.

- 1** Locate the pipe and union assembly removed in step [9 \(b\)](#) on [page 12](#). Clean the threads on the pipe and union assembly and apply SAF-T-LOC TPS PTFE pipe sealant to the threads. Thread the assembly to the inlet tube in the V meter and manifold assembly and tighten.
- 2** Place the Security Spacer (M13805B001) on the V meter and manifold assembly (see [Figure 10](#) on [page 14](#)).

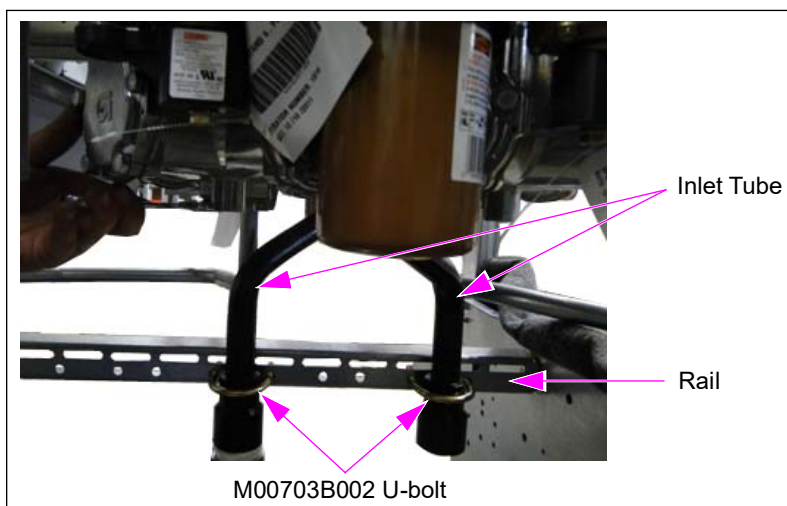


**Figure 10: Security Spacer on V Meter and Manifold Assembly**



- 3 Move the V meter and manifold assembly into the lower hydraulics enclosure and position as shown in [Figure 11](#). When properly positioned, the two threaded openings on the top of the V meter and manifold assembly lines up with two holes in the lower air gap. Mount the meter manifold assembly to the air gap using two M8 X 20 Screws (M00415B010).
- 4 Mount the inlet tube to the rail (see [Figure 11](#)) and secure the tube to the dispenser using the M00703B002 U-bolt and M00414B003 Nuts.  
*Note: If impact occurs, verify that the tube is mounted properly to ensure proper shear valve operation.*

**Figure 11: Mounting Inlet Tube to Rail**



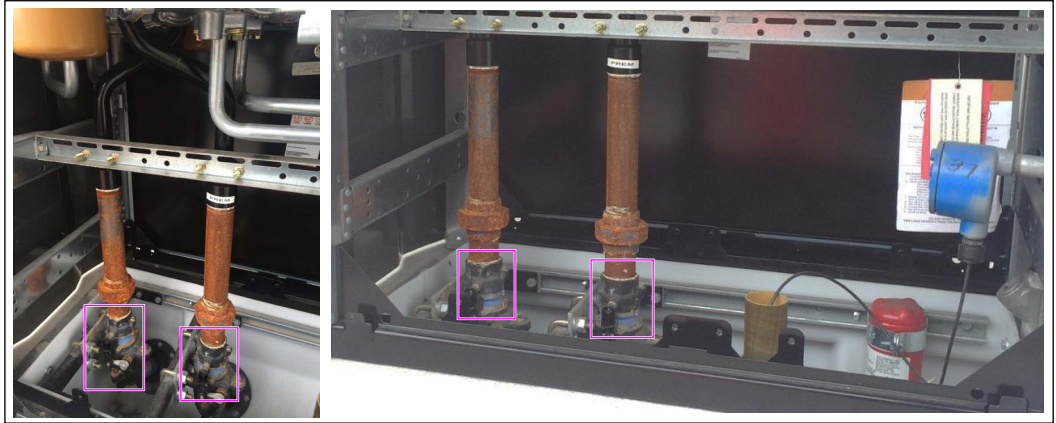
- 5 Reattach the piping union between the shear valve and inlet tubing (see [Figure 12](#)).

*Note: You may have to replace the shear valve to be compatible with E25.*

### IMPORTANT INFORMATION

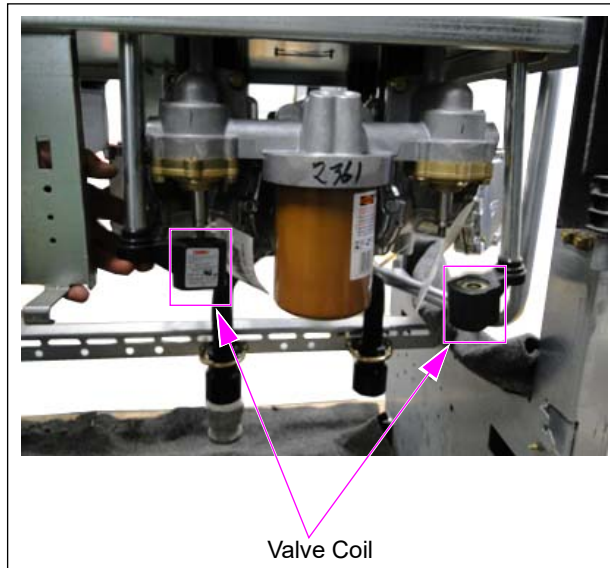
The current shear valve may or may not be compatible and stand up over time with the E25 product. For additional information on compatibility, contact the shear valve manufacturer.

**Figure 12: Reattaching Inlet**



- 6 Secure the two valve coils to the valve on the V meter and manifold assembly using the two nuts removed in step 7 on [page 11](#) (see [Figure 13](#)). Ensure that the conduit extends through the air gap and into the electrical enclosure.

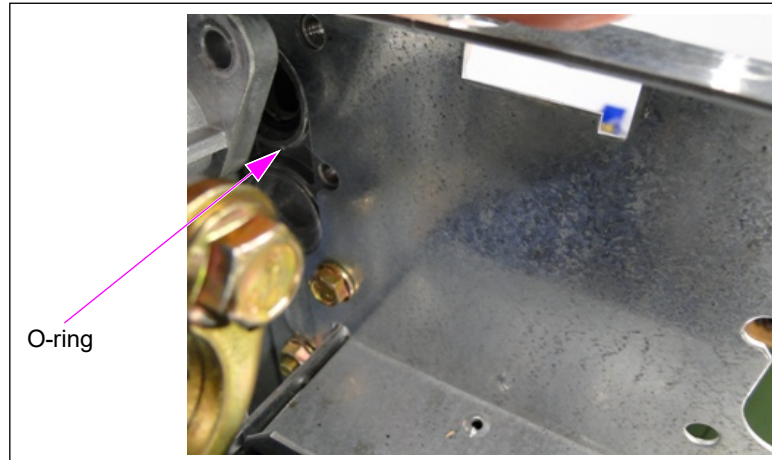
**Figure 13: Securing Valve Coils**



- 7 Replace the pulsers into their original position in the electronic enclosure and secure using the screws removed in step 8 on [page 12](#).

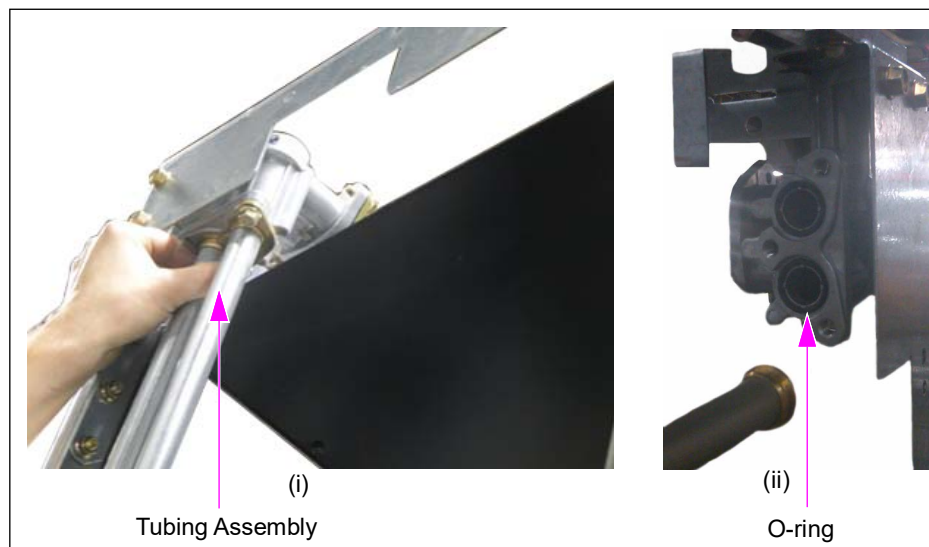
- 8 Remove the O-ring from the bottom of the angle casting at locations where the two tubings were removed in step 6 on [page 10](#). For each angle casting with tubing, remove the two screws that secure the angle casting and retain for reuse.

**Figure 14: Removing O-ring**



- 9 Gently pull back the angle casting to allow access to the outlet casting O-ring.
- 10 Remove the O-ring and replace it with the new Q12974-118 O-ring.  
*Note: Ensure that you apply a coat of petroleum jelly on the O-rings.*

**Figure 15: Replacing O-rings**

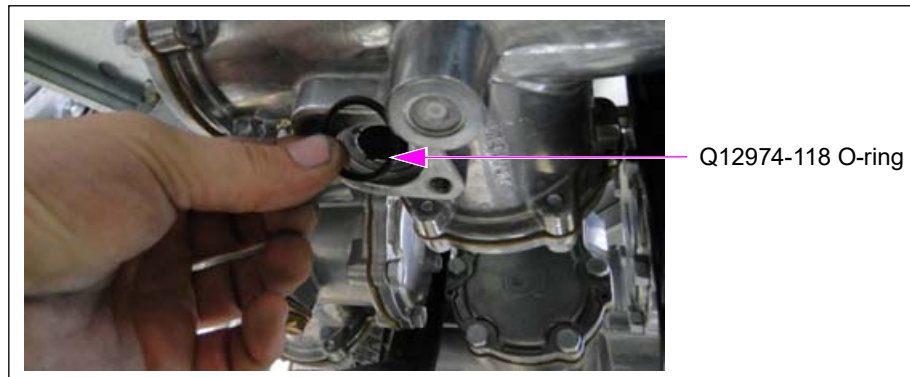


- 11 Reattach the angle casting to the outlet casting using the two screws retained previously.
- 12 Locate the tubing assembly and place them in their original locations using the marking applied to the tubing.



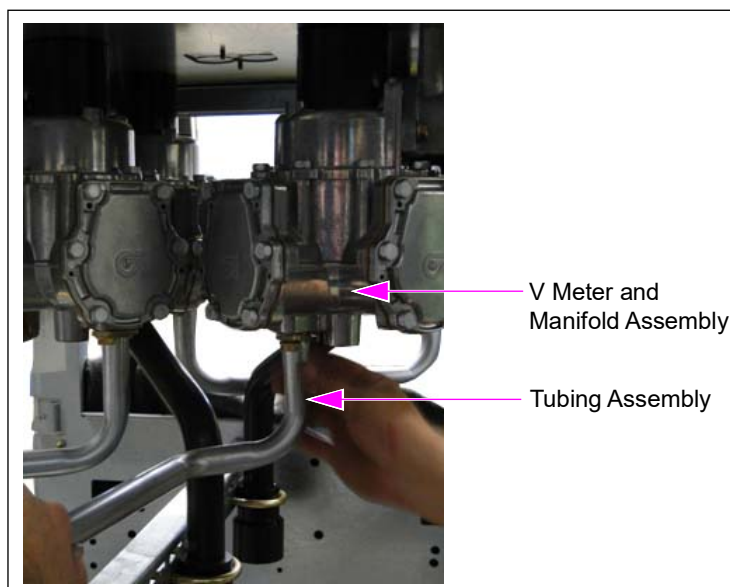
- 13** Fit the appropriate ends of the tubing along with the new Q12974-118 O-ring into the angle casting. Place the double parflange clamp (M00133B001) over the tubing connections at the angle casting as shown in [Figure 15](#) on [page 16](#) and tighten using the three screws (M00415B010).
- 14** Insert the Q12974-118 O-ring into the opening in the V meter and manifold assembly as shown in [Figure 16](#).  
*Note: Apply light coating of petroleum jelly to O-ring surfaces.*

**Figure 16: Fitting Tubing into Outlet Casting**



- 15** Place the end of the tubing assembly into the opening in the V meter and manifold assembly. Locate the bracket and screws, and secure the bracket to the V meter and manifold assembly using the screws (M00417B009) as shown in [Figure 17](#).

**Figure 17: Placing Tubing Assembly**

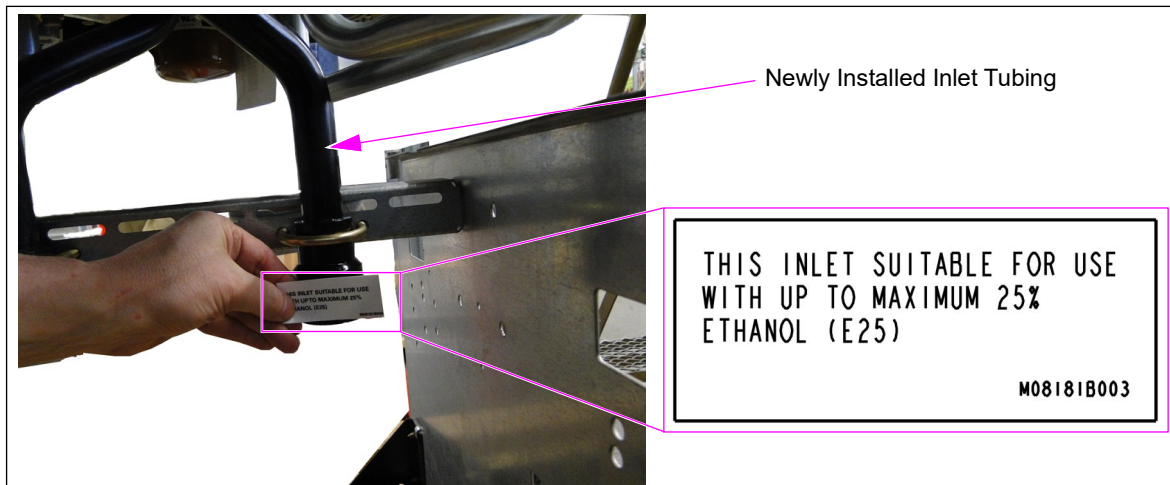


Repeat the steps 12 through 14 on [page 16](#) to install the second tubing assembly.

**16** Reconnect the union.

**17** Add the Inlet Tube Label (M08181B003) on the newly installed inlet tube (see [Figure 18](#)).

**Figure 18: Applying Inlet Label**

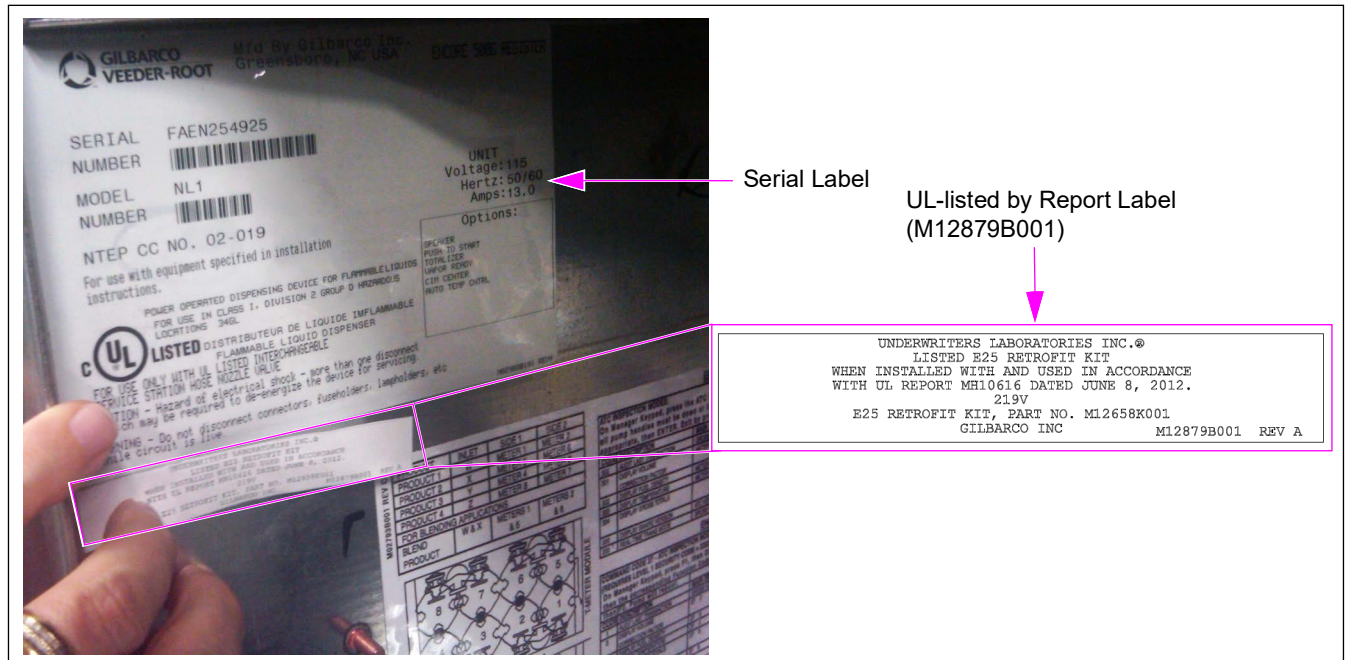


## Completing Installation

After completing the installation of the manifolds, perform the following steps to complete the installation of the E25 Retrofit Kits:

- 1 Add the UL-listed By Report Label (M12879B001) near the serial label (see [Figure 19](#)).

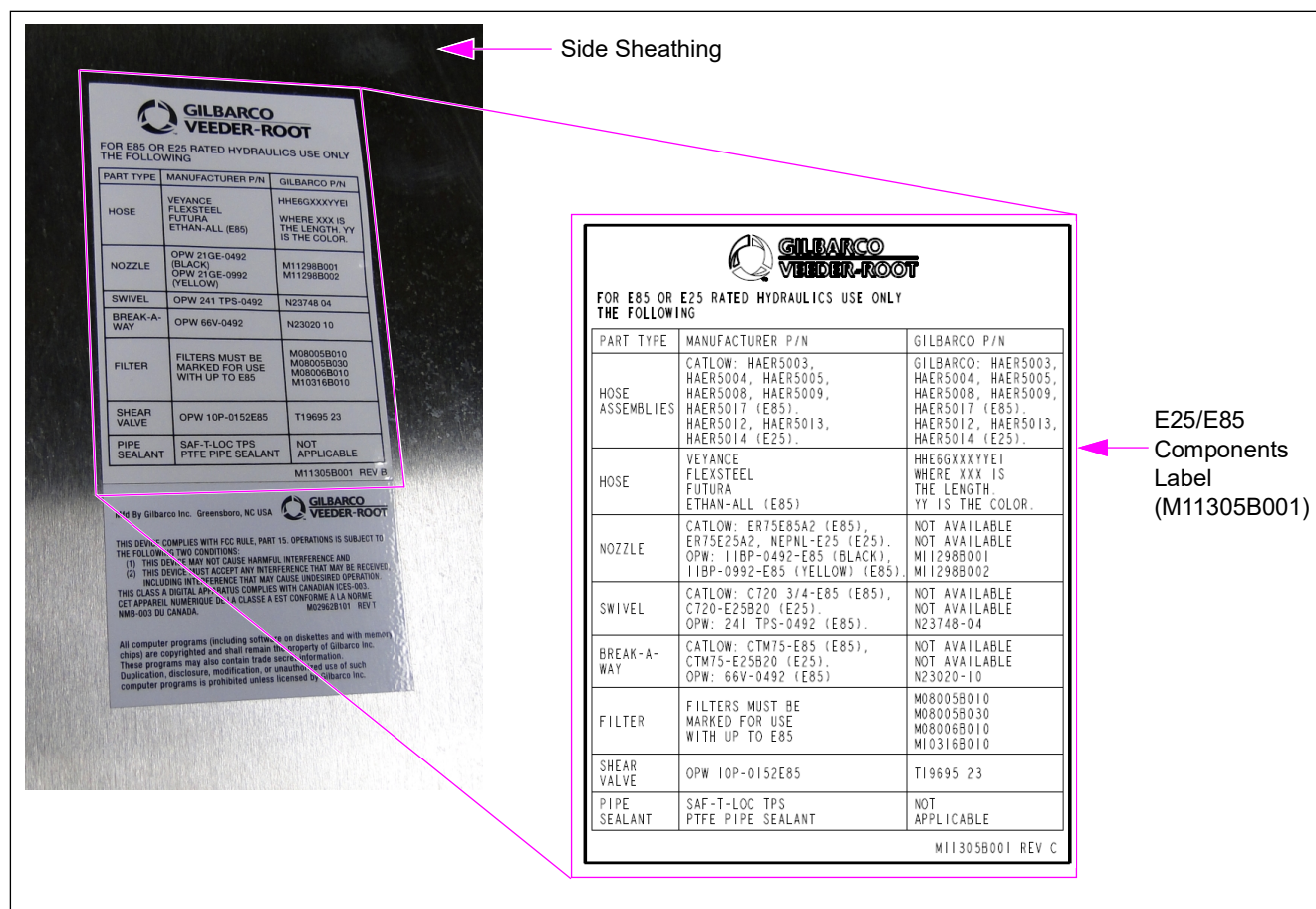
**Figure 19: Adding UL-listed by Report Label**



- 2 Close the door to the CD module.
- 3 Open the shear valves.
- 4 Repressurize the unit.
- 5 Restore power to the unit.
- 6 Authorize a sale and turn on the shear valves.
- 7 Check for leaks. Examine all the liquid joints for signs of leakage.
- 8 Purge the air from the unit (25 gallons).
- 9 Calibrate the unit.
- 10 Dispose properly any leftover parts or hydraulic components that were removed during the retrofit.
- 11 Reinstall the upper housing cover and canopy.
- 12 Reinstall the inner side sheathing.

- 13 Apply the E25/E85 Components Label (M11305B001) on the side sheathing (see Figure 20).

Figure 20: Applying E25/E85 Components Label



- 14 Install the lower panel.

Installing the E25 Retrofit Kits (M12658K001) on Encore units is now complete.

*Note: Following conversion to E25 fuel, filters are likely to become clogged with loosened deposits or sediment. It is recommended to replace the filter shortly following fuel conversion.*

# Installing E85 Retrofit Kits on Encore Units

To install the E85 Retrofit Kit (M19499K001) on Encore units, proceed as follows:

## Before You Begin

Read and understand all the safety information found in *MDE-3804 Encore and Eclipse Start-up/Service Manual*.

### WARNING

Failure to turn off the unit during the kit installation may cause injury or bodily harm from electrical shock. Ensure that all power to the unit is switched off before opening the door to the unit and during the kit installation.

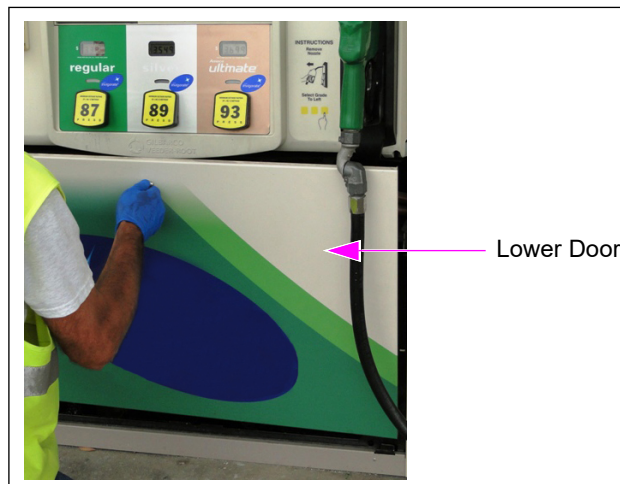
- 1 Inform the manager that the power must be removed from the unit.
- 2 Close the shear valves to all inlets and test dispenser to ensure no product flows with shear valve closed.
- 3 Remove all power supplied to the unit at the breaker located in the building.
- 4 Use OSHA lockout/tagout procedure for electrical circuits.
- 5 Block the unit from the customers.
- 6 Empty all the hoses into an approved container by cycling the hose nozzle valve.

## Removing Existing Meter and Manifold Assembly

To remove the existing meter and manifold assembly, proceed as follows:

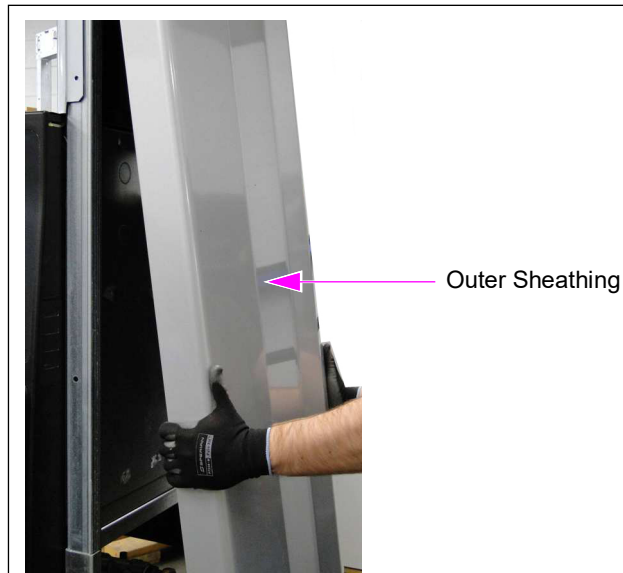
- 1 Remove both lower doors from the dispenser (see [Figure 21](#)).

**Figure 21: Removing Lower Doors**



- 2 Open both bezel doors (main doors).
- 3 Remove the side sheathing by performing the following steps:
  - a Remove the outer sheathing on both sides of the dispenser by removing the four screws from each sheathing (see [Figure 22](#)) using a Phillips screwdriver. Retain the mounting screws and outer sheathing.

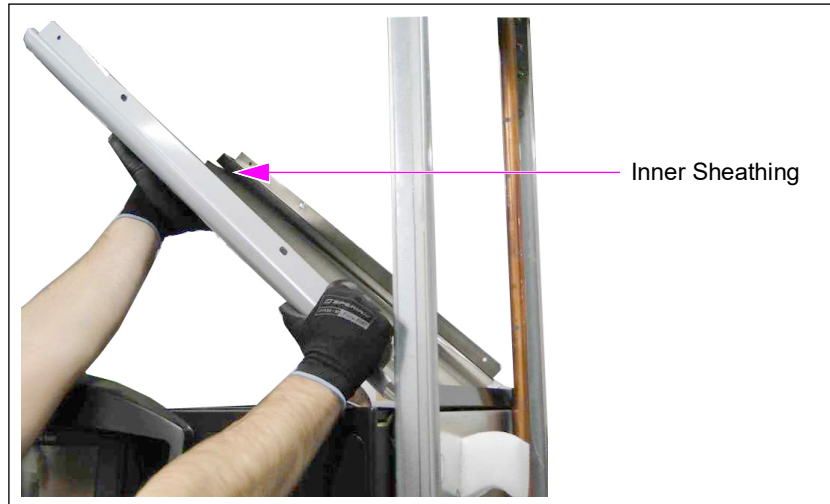
**Figure 22: Removing Outer Sheathing**



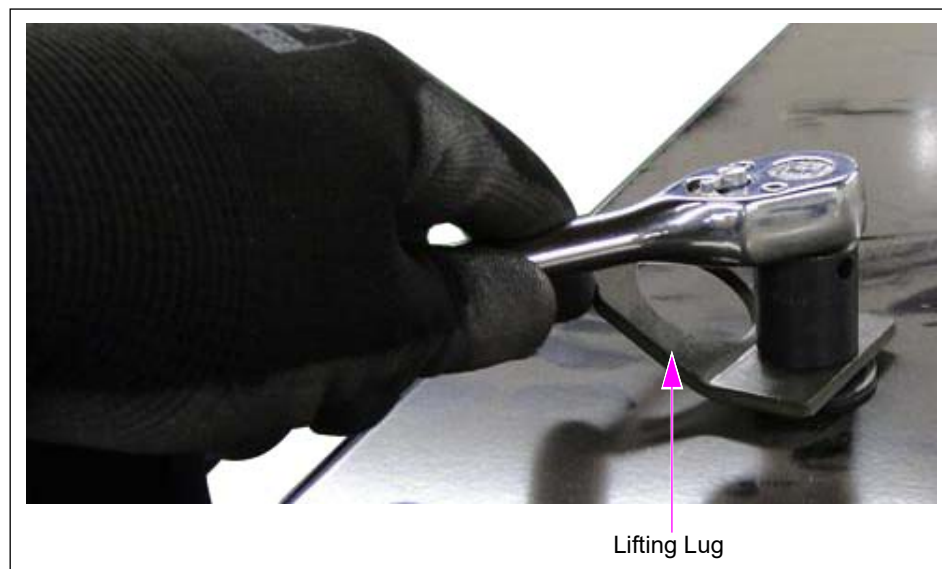
*Note: The E85 kit is not approved for use with copper tubing. If the upgraded E85 fueling position has copper tubing, replace it with galvanized steel tubing. For replacement galvanized steel tubing, contact your distributor for Gilbarco Spare Parts with your dispenser serial number and model number.*

- b Remove the inner sheathing on both sides of the dispenser (see [Figure 23](#) on [page 23](#)). Retain the inner sheathing and protect from damage.



**Figure 23: Removing Inner Sheathing**

- 4** Remove the upper housing cover and canopy by performing the following steps:
- a** Locate the four lifting lugs on top of the canopy.
  - b** Remove the lifting lugs using a 17-mm socket and lift (see [Figure 24](#)). Retain the lifting lugs for reuse.

**Figure 24: Removing Lifting Lugs**

- c** Remove the upper hydraulic housing canopy. Retain the hardware, upper housing cover, and top cover.  
*Note: Two technicians are recommended for removing the cover.*

- 5 Installation of this kit involves lowering and removing one of the meter and manifold assemblies. Identify the meter and manifold assembly to be replaced and examine the area below that assembly for field installed conduits that may interfere with removing the meter and manifold assembly.

*Note: The kit cannot be installed if conduits interfere.*

- 6 Locate the two outlet tubes from the selected meter and manifold assembly and make a note of the position of the tubes. Label the tubes for later reassembly.

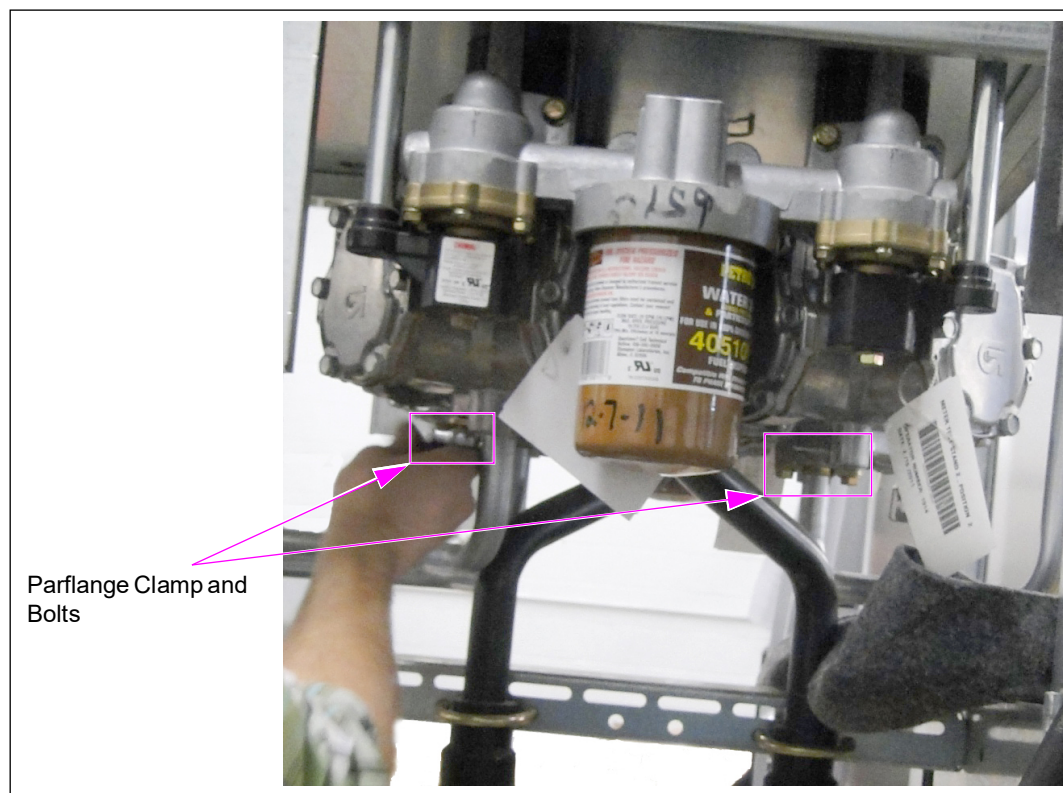
To remove the tubes from the meter and manifold assembly, proceed as follows:

### IMPORTANT INFORMATION

Fuel must be drained into an approved container. Although the fuel is drained, there may be residual fuel in the meter and manifold assembly to be removed.

- a Remove the bolts and parflange clamps securing the tubes to the meter and manifold assembly (see [Figure 25](#)). Retain the bolts and parflange clamps for reuse.

**Figure 25: Removing Parflange Clamp and Bolts**



- b Remove the parflange clamp at the angle casting.
- c Remove the tubing assembly. Carefully handle the tubes, they will be reused.
- d Repeat steps a to c for the second tubing assembly.



- 7 Remove the valve coils from the valve by removing the two nuts using a 13-mm socket and move them out of the way. Remove the meter and manifold assembly.

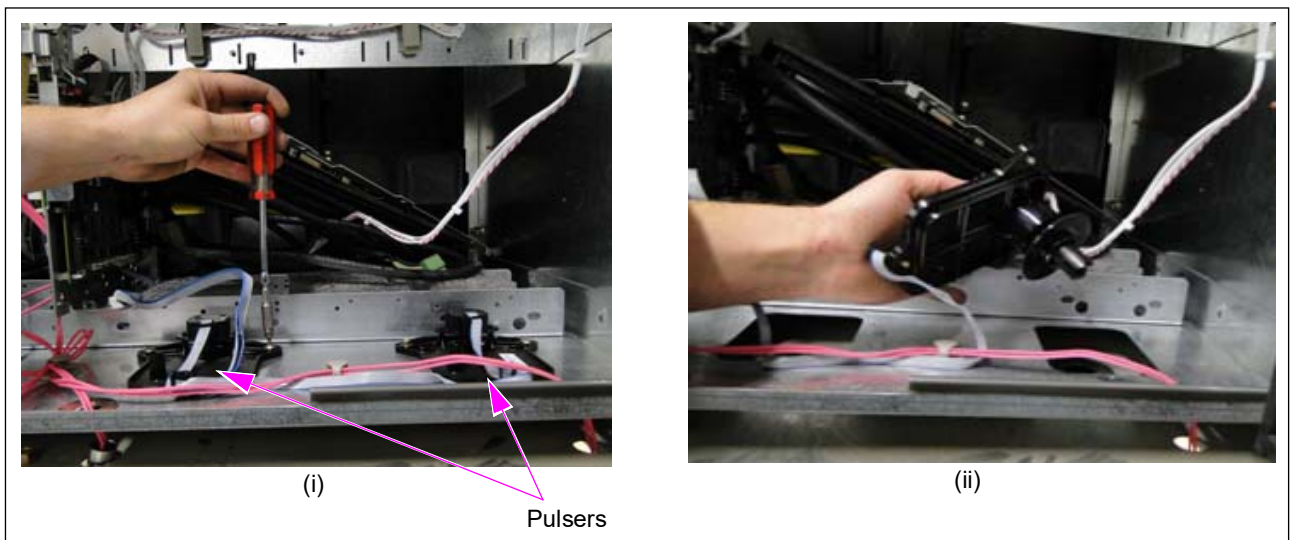
*Notes: 1) It is not required to unplug the valve coils inside the Computer Display (CD) module. There is sufficient space to allow the coil to hang without interfering with the meter and manifold assembly removal.*

*2) Retain the nuts for reuse.*

- 8 Remove the pulsers by removing the screws from the CD module [keeping their connectors installed (see [Figure 26 \(i\)](#))] located at the meter and manifold assembly using a security bit screwdriver. Retain the pulsers and place them in the U-channel out of the way [see [Figure 26 \(ii\)](#)].

*Note: Retain the screws for reuse.*

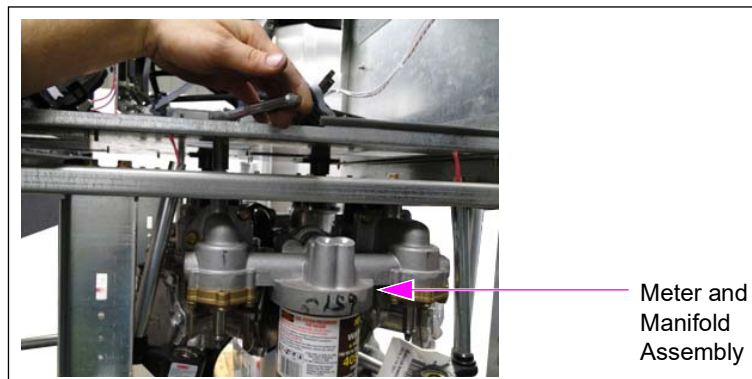
**Figure 26: Removing Pulsers**



- 9 Remove the meter and manifold assembly by performing the following steps:
- a Disconnect the union between the shear valve and meter and manifold assembly to be removed.
  - b Remove the piping and union assembly from the inlet tube using a pipe wrench and retain for later use.
  - c While supporting the meter and manifold assembly through the CD module, remove the two screws holding the meter and manifold assembly using a 13-mm socket (see [Figure 27](#) on [page 26](#)).

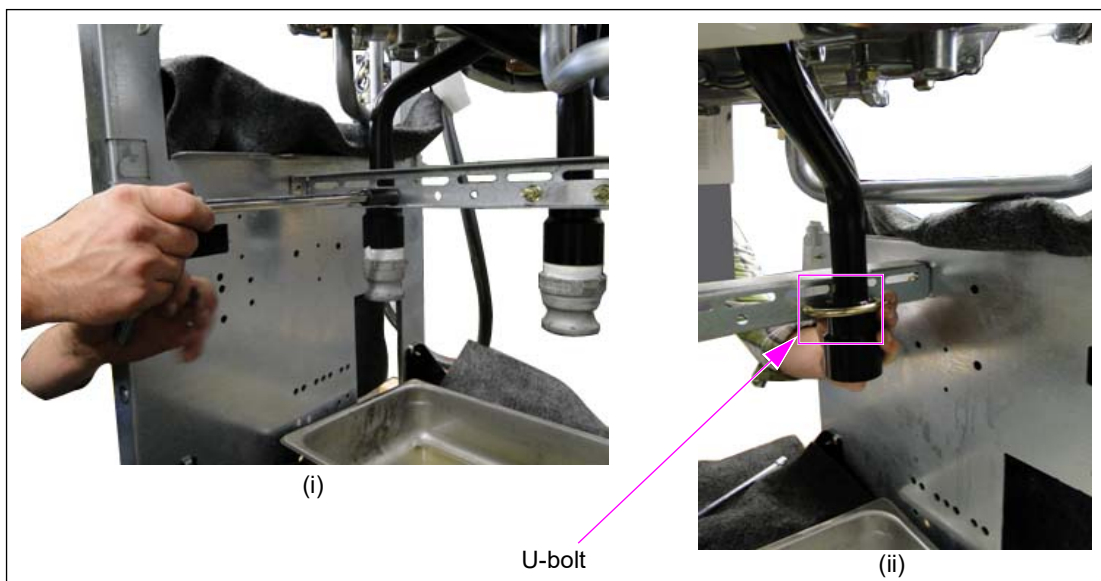
*Note: To avoid damage to the meter and manifold assembly, ensure that the meter and manifold assembly is held or supported by someone before the last two screws are removed.*

**Figure 27: Removing Screws Holding Meter and Manifold Assembly**



- d** Remove the U-bolt that holds the inlet to the rails using a 13-mm socket (see [Figure 28](#)). Retain the U-bolt and nuts for reassembly later.

**Figure 28: Removing U-bolt**



- e** Lift and remove the meter and manifold assembly. Remove the security spacers from the top of the meters and retain them for reassembly onto the new meter and manifold assembly.

## Installing Meter Manifold Assembly (M13157A101)

To install the new meter and manifold assembly, proceed as follows:

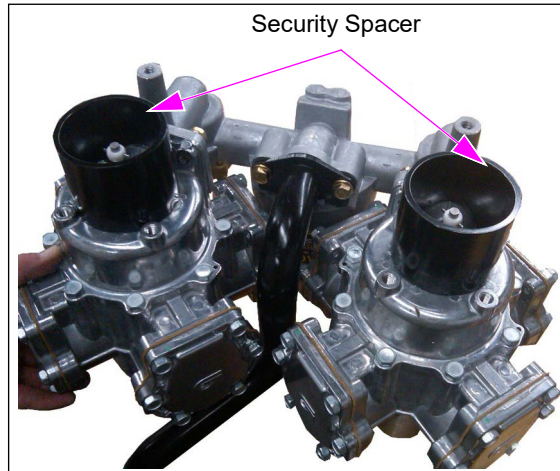
### IMPORTANT INFORMATION

It is a UL violation to substitute unplated parts where plated parts are required in the hydraulics.

- 1** Locate the pipe and union assembly removed in step [9 \(b\)](#) on [page 25](#). Clean the threads on the pipe and union assembly and apply SAF-T-LOC TPS PTFE pipe sealant to the threads. Thread the assembly to the inlet tube in the V meter and manifold assembly and tighten.

- 2 Reinstall the security spacers that were removed from the old meter manifold assembly (see [Figure 29](#)).

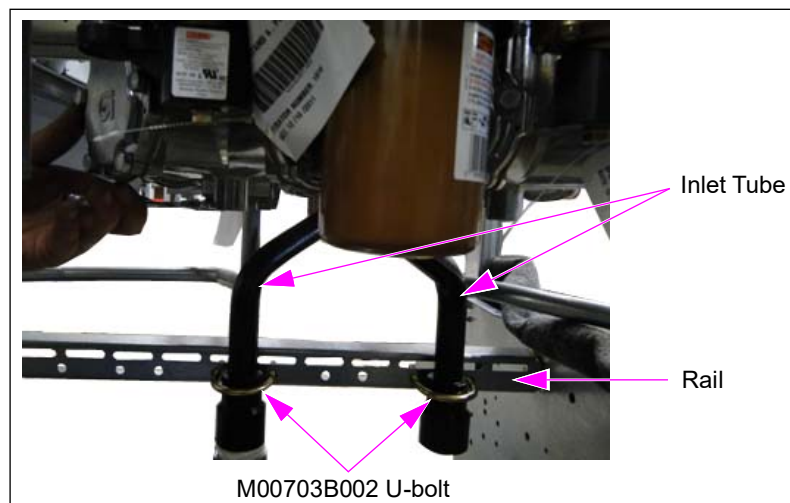
**Figure 29: Security Spacer on V Meter and Manifold Assembly**



- 3 Move the meter manifold assembly into the lower hydraulics enclosure and position as shown in [Figure 30](#). When properly positioned, the two threaded openings on the top of the meter and manifold assembly lines up with two holes in the lower air gap. Mount the meter manifold assembly to the air gap using two M8 X 20 Screws (M00415B010).
- 4 Mount the inlet tube to the rail (see [Figure 30](#)) and secure the inlet tube using the U-bolt and nuts that were removed earlier.

*Note: If impact occurs, verify that the tube is mounted properly to ensure proper shear valve operation.*

**Figure 30: Mounting Inlet Tube to Rail**

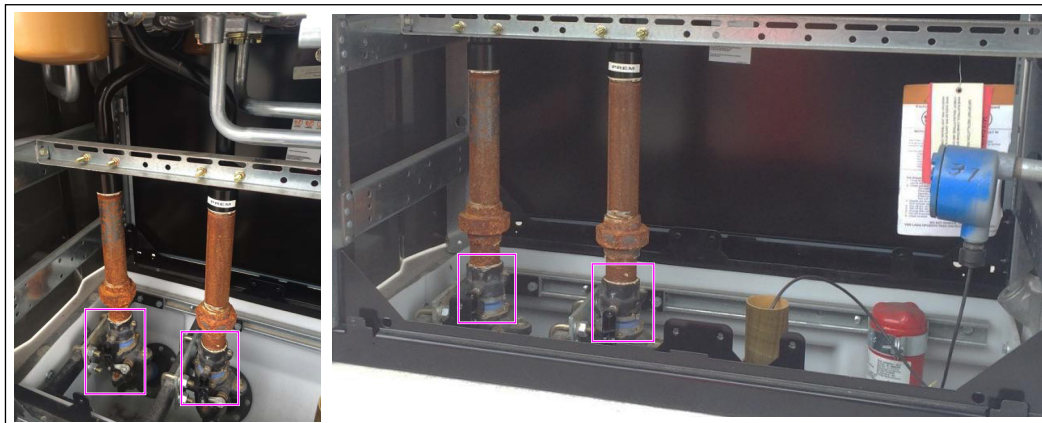


- 5 Reattach the piping union between the shear valve and inlet tubing (see [Figure 31](#)).  
*Note: You may have to replace the shear valve to be compatible with E85.*

### IMPORTANT INFORMATION

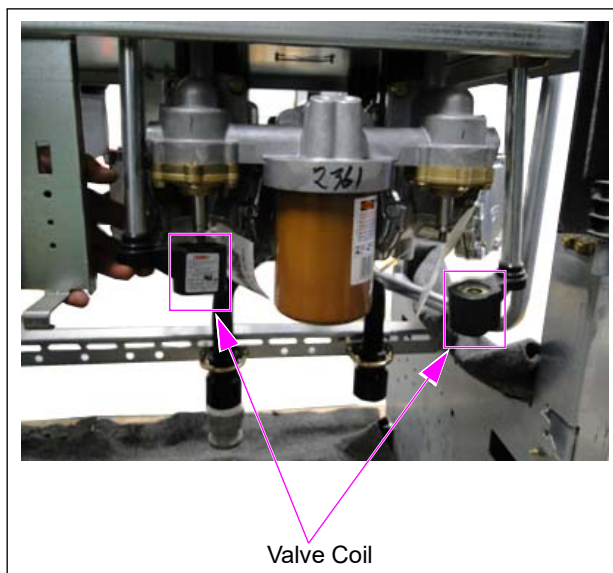
The current shear valve may or may not be compatible and stand up over time with the E85 product. For additional information on compatibility, contact the shear valve manufacturer.

**Figure 31: Reattaching Inlet**



- 6 Secure the two valve coils to the valve on the V meter and manifold assembly using the two nuts removed in step 7 on [page 25](#) (see [Figure 32](#)). Ensure that the conduit extends through the air gap and into the electrical enclosure.

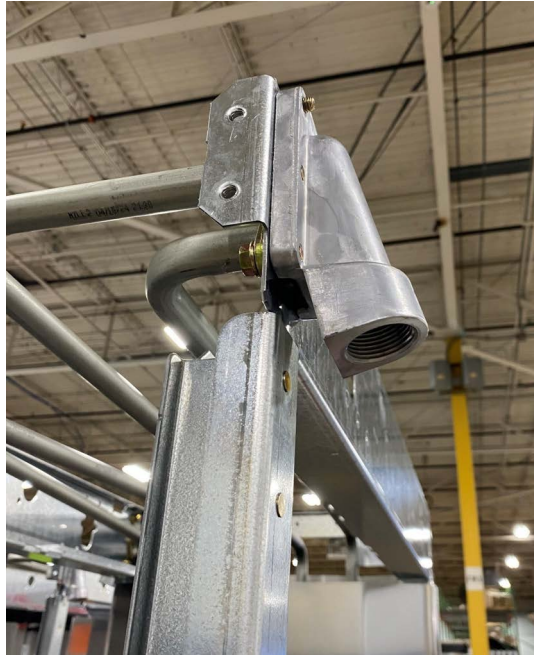
**Figure 32: Securing Valve Coils**



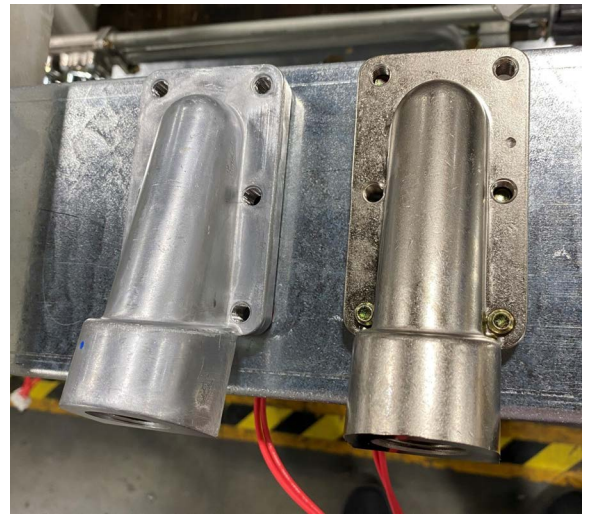


- 7 Replace the pulsers into their original position in the electronic enclosure and secure using the screws removed in step 8 on [page 25](#).
- 8 Remove the hose outlet casting for the newly installed E85 dispensing hose position. Retain the mounting screws for reassembly of the new hose outlet casting. The unplated or unprotected hose outlet casting will have a matte aluminum finish, whereas the E85 compatible part is nickel plated and will appear glossy (see [Figure 33](#)).

**Figure 33: Hose Outlet Casting**



(i)  
Unplated



(ii)  
Unplated on left, nickel plated on right

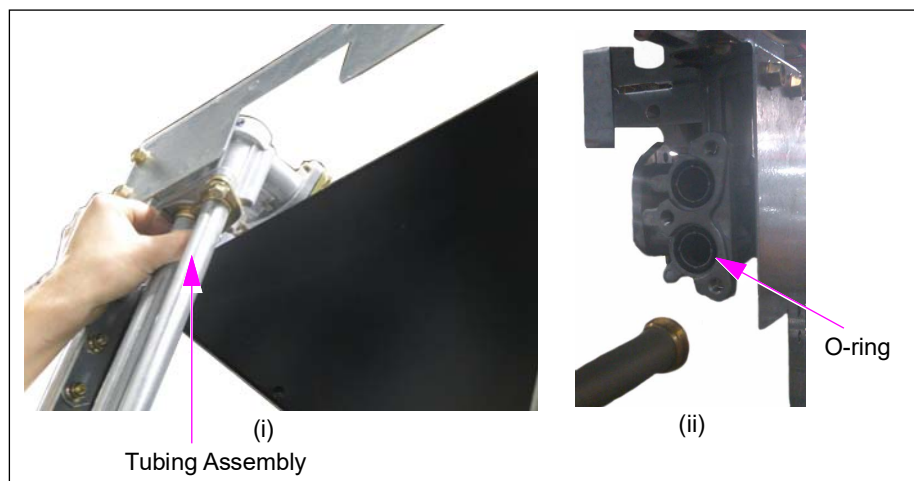
- 9 Some dispenser models will have an angle casting mounted inside the upper housing at the backside of the hose outlet casting for the E85 hose position. If so equipped, remove the existing angle casting. Retain the mounting screws for reassembly of the new angle casting.
- 10 Identify and use the correct matching hard anodized angle casting from the kit during reassembly. The kit includes extra replacement hard anodized angle castings to fit various dispenser models as needed. The hard anodized angle castings have a dark brown finish color (see [Figure 34](#) on [page 30](#) Angle Casting with Hard Anodizing (Dark Finish) for E85 Compatibility).

**Figure 34: Angle Casting with Hard Anodizing (Dark Finish) for E85 Compatibility**



- 11** Install the plated hose outlet (M05612B140). Install new O-rings (Q12974-118) at the backside of the hose outlet for the tubing connection.  
*Note: Apply light coating of petroleum jelly to O-ring surfaces.*
- 12** As needed, install the plated (anodized) angle castings (M15530B030 or M02088B030 or M02087B030) along with new O-rings (Q12974-118) at the tubing connection. Install the nickel-plated steel plug (M11310B001) and O-rings (Q12974-118) to blank off any unused tubing connection ports on the new angle casting (see [Figure 35](#)).
- 13** Install the tubing assembly with the parflange clamp and bolts that were removed earlier.

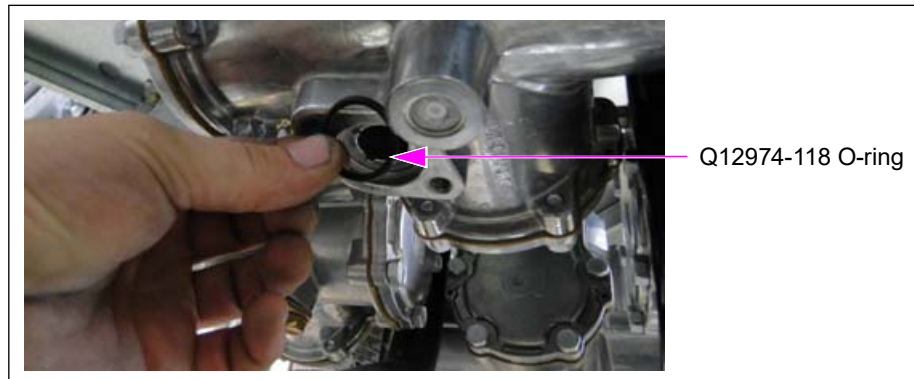
**Figure 35: Replacing O-rings**



- 14** Insert the O-ring (Q12974-118) into the opening in the meter and manifold assembly as shown in [Figure 36](#).

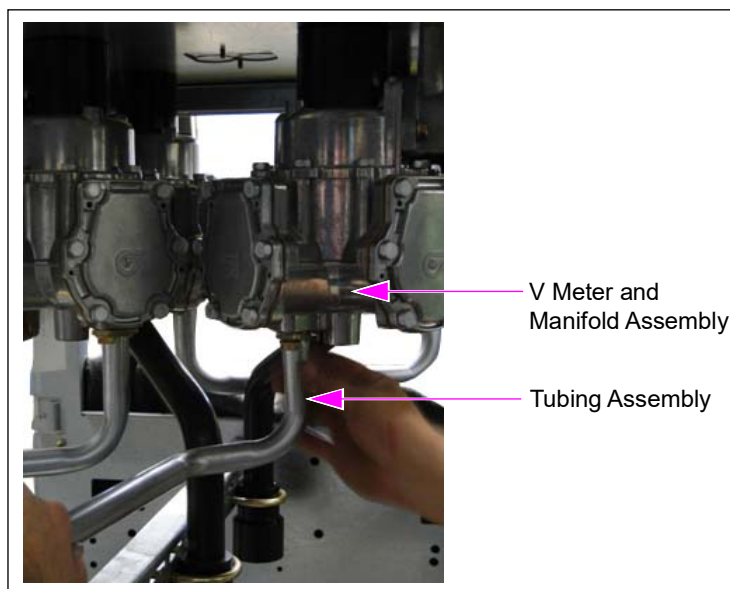
*Note: Apply light coating of petroleum jelly to O-ring surfaces.*

**Figure 36: Tubing Connection to Meter**



- 15** Place the tubing assembly into the opening in the meter and manifold assembly. Locate the parflange clamp and screws that were removed earlier. Secure the parflange clamp to the meter and manifold assembly using the screws as shown in [Figure 37](#).

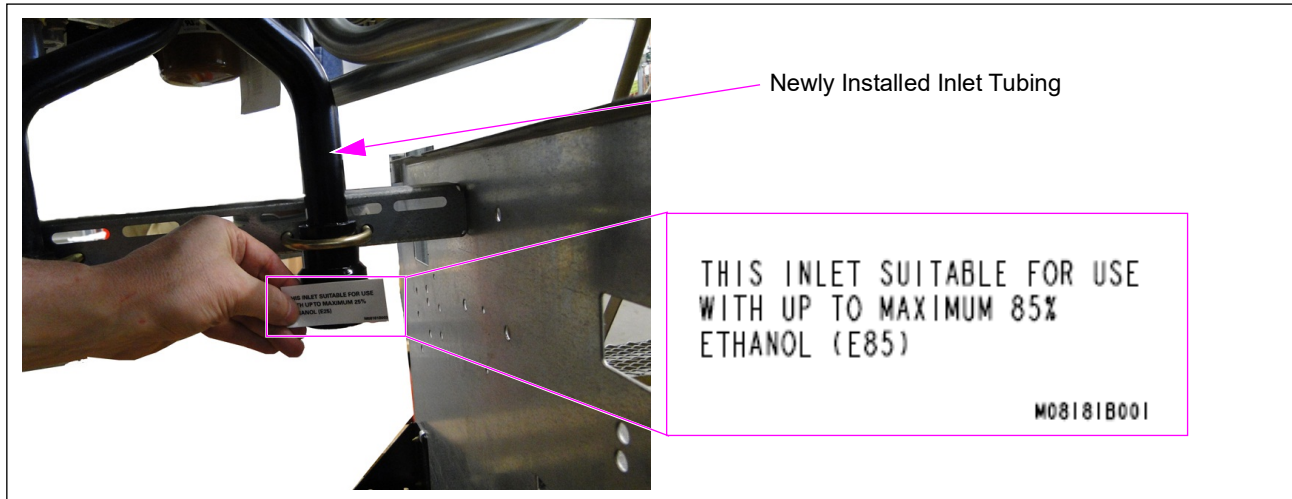
**Figure 37: Placing Tubing Assembly**



Repeat the steps [13](#) through [15](#) on [page 30](#) and [page 31](#) to install the second tubing assembly.

- 16 Reconnect the union.
- 17 Add the Inlet Tube Label (M08181B001) on the newly installed inlet tube (see [Figure 38](#)).

**Figure 38: Applying Inlet Label for E85**



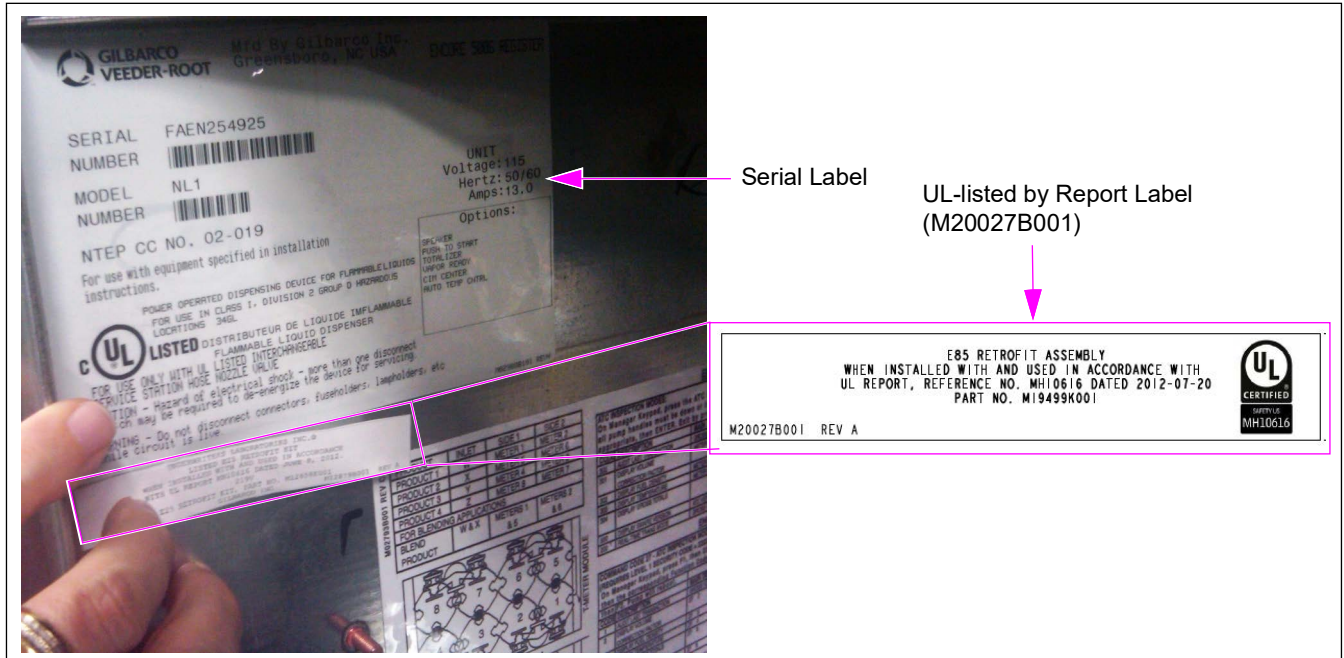


## Completing Installation

After completing the installation of the manifolds and outlet components, perform the following steps to complete the installation of the E85 Retrofit Kits:

- 1 Add the UL-listed By Report Label (M20027B001) near the serial label (see [Figure 39](#)).

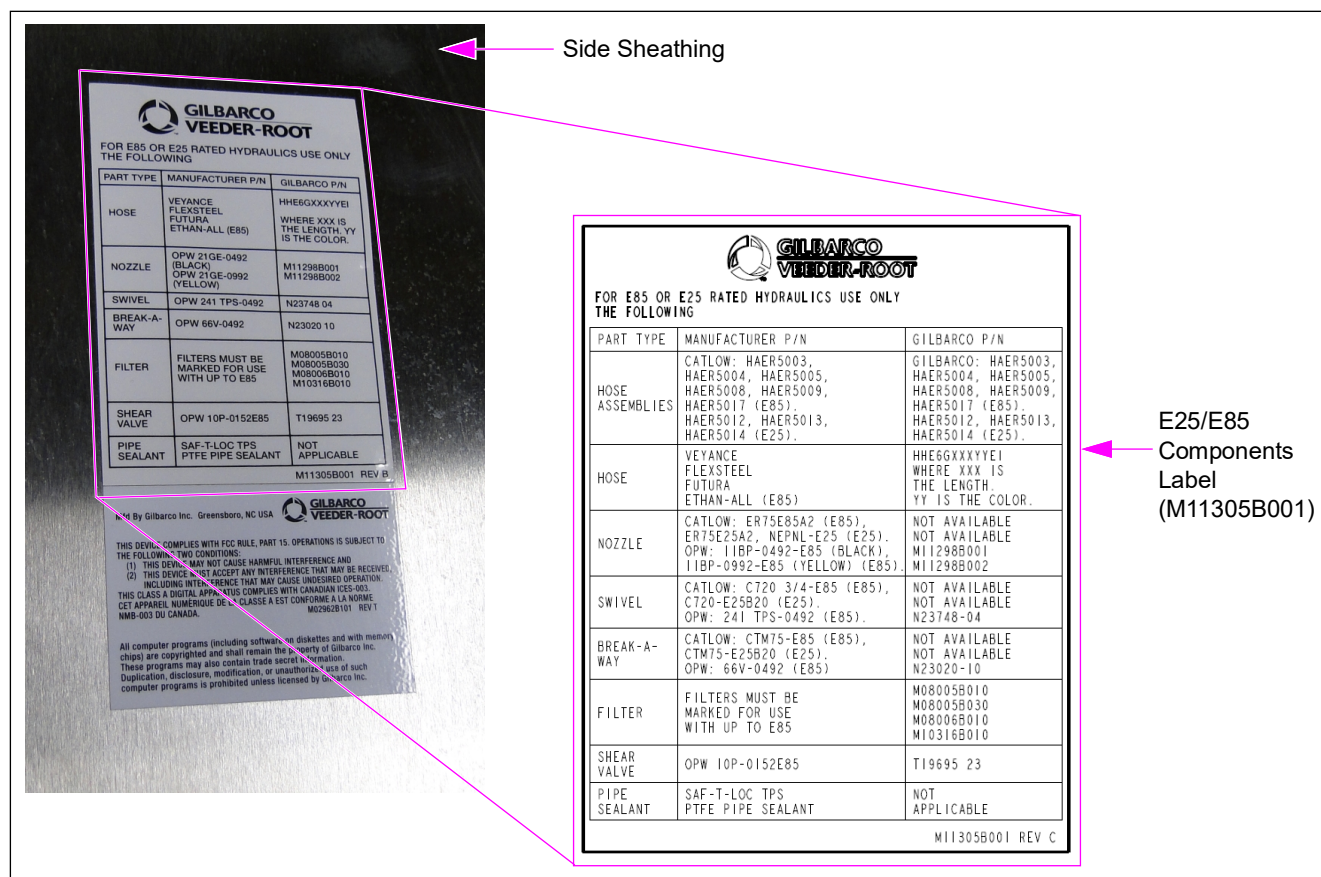
**Figure 39: Adding UL-listed by Report Label**



- 2 Close the door to the CD module.
- 3 Open the shear valves.
- 4 Re-pressurize the unit.
- 5 Restore power to the unit.
- 6 Authorize a sale and turn on the shear valves.
- 7 Check for leaks. Examine all the liquid joints for signs of leakage.
- 8 Purge the air from the unit (25 gallons).
- 9 Calibrate the unit.
- 10 Dispose properly any leftover parts or hydraulic components that were removed during the retrofit.
- 11 Reinstall the upper housing cover and canopy.
- 12 Reinstall the inner side sheathing.

- 13 Apply the E25/E85 Components Label (M11305B001) on the side sheathing (see Figure 40).

Figure 40: Applying E25/E85 Components Label



- 14 Install the lower panel.

Installing the E85 Retrofit Kit (M19499K001) on Encore units is now complete.

*Note: Following conversion to E85 fuel, filters are likely to become clogged with loosened deposits or sediment. It is recommended to replace the filter shortly following fuel conversion.*



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7300 West Friendly Avenue · Post Office Box 22087

Greensboro, North Carolina 27410

Phone (336) 547-5000 · <http://www.gilbarco.com> · Printed in the U.S.A.

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