

Introduction

Purpose

This manual provides instructions to install the Satellite Indicator Light with Valve Control Kit (M14365K001) in Encore® 500/700 S Ultra-Hi™ units with Sandpiper™ (SP) III electronics in master or combo configurations built after August 2012. This kit is used to place a light on the master unit which indicates when the satellite unit is being used. The satellite indicator light illuminates on the master when the handle on the satellite is raised, signaling the customer that the satellite unit is ready to dispense or is in the process of dispensing.

Note: For Encore 300/500 Ultra-Hi units built before August 2012, refer to MDE-4266 Encore Ultra-Hi Satellite Indicator Light with Valve Control Kit (M04239K001).

If the customer needs to use only the master unit, the indicator light allows the monitoring of the satellite and alerts the customer that the satellite is being accessed. Satellite in use indicators on the master and/or fences are required in almost every state in the United States.

The valve control portion of this board is used to obtain independent operation, allowing the dispensing of fuel from the satellite or master, but not from both at the same time. In this configuration, the master will stop dispensing as long as the satellite pump handle is lifted. Master operation will resume when the satellite pump handle is lowered. Simultaneous operation (that is, both master and satellite dispensing at the same time) can be achieved by leaving the P322 connector and jumper in place.

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Required Tools

Following tools are required to install the Satellite Indicator Light with Valve Control Kit:

- Nut Driver Set (Metric)
- Pin Extractor
- Flat-blade Screwdriver
- Pair of Pliers
- Wire Cutter/Stripper

Parts List

Following table lists the parts included in the Satellite Indicator Light with Valve Control Kit:

Item	Description	Part Number	Quantity
1	Encore Ultra-Hi Transformer Assembly	M02370A001	1
2	Encore Ultra-Hi Satellite Cable	M02371A002	1
3	Encore Ultra-Hi Valve Intercept Cable	M04218A002	1

Item	Description	Part Number	Quantity
4	Metric with External Hexagonal Lockwasher Nut, (SEMS)	Q12885-03	2
5	Dual Locking Support Post	Q10651-52	4
6	Printed Circuit Assembly (PCA), SP-III SAT IND with Valve Control	M12985A001	1

Important Ordering Information

Brand panel graphics are specific to customer requirements. A new brand panel graphic must be ordered separately and may require a new template. For location on unit, see [Figure 1](#) on [page 6](#).

Kit Requirements

Following table lists the kit requirements for each system type:

Dispenser Type	Number of Kits
Dual Master	2
Single Master	1
Combo	1

Related Documents

Document Number	Title	GOLD SM Library
MDE-3804	Encore and Eclipse® Start-up/Service Manual	<ul style="list-style-type: none"> Encore and Eclipse Service Manual
MDE-4266	Encore Ultra-Hi Satellite Indicator Light with Valve Control Kit (M04239K001)	Encore and Eclipse
MDE-4625	Graphic Panel Application for The Advantage® Series, Encore, Eclipse, and Encore S	<ul style="list-style-type: none"> Encore and Eclipse Advantage & Legacy® Models
PT-1936	Encore Series Pump and Dispenser Illustrated Parts Manual	<ul style="list-style-type: none"> Encore and Eclipse Encore and Eclipse Installers Parts Manual

Abbreviations and Acronyms

Term	Description
ESD	Electrostatic Discharge
GOLD	Gilbarco® Online Documentation
I.S	Intrinsic Safety
OSHA	Occupational Safety and Health Administration
PCA	Printed Circuit Assembly
PPU	Price per Unit
SAT RTN	Satellite Return
SEMS	Pre-assembled Washers and Screws/Nuts
SP	Sandpiper

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 a Gilbarco Authorized Service Contractor or call the Gilbarco Support Center at 1-800-800-7498. 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.

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.

Important Safety Information

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

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.

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 lips, 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.

Before You Begin

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

CAUTION



A properly grounded Electrostatic Discharge (ESD) wrist strap must be worn while servicing any electronic devices or components. Failure to use electrostatic precautions may damage electronic components and void warranty.

To prepare the site and dispenser for the upgrade, proceed as follows:

- 1 Inform the store manager at the site.
- 2 Barricade the unit to be worked on.
- 3 Remove power to the unit at the breaker panel. Follow OSHA lockout/tagout procedures.
- 4 Isolate two-wire to the unit.

WARNING

Failure to turn off the unit during 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 kit installation.

Installing Satellite Indicator Light with Valve Control Kit for Encore S Bezels

Following sections provide information on installing the SP III satellite indicator light on the master side of Encore S unit, connected to a satellite dispensing unit.

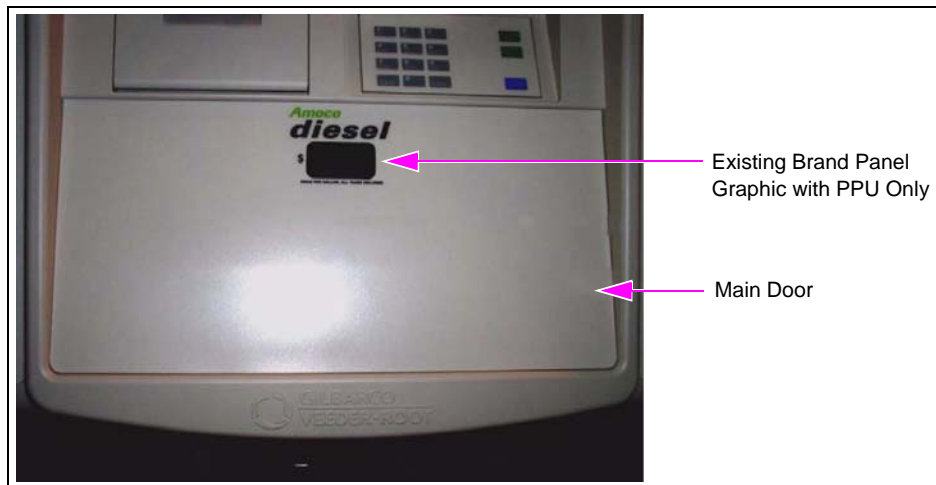
If the unit being upgraded does not have SP III electronics or if you are not sure, **DO NOT PROCEED**. Contact Gilbarco Technical Support at 1-800-743-7501.

Installing Satellite Indicator Light PCA

To install the satellite indicator light PCA on the door, proceed as follows:

- 1 Open the lower door and set aside.
- 2 Open the main door (see [Figure 1](#)).

Figure 1: Brand Panel Graphic with Price per Unit (PPU) Window

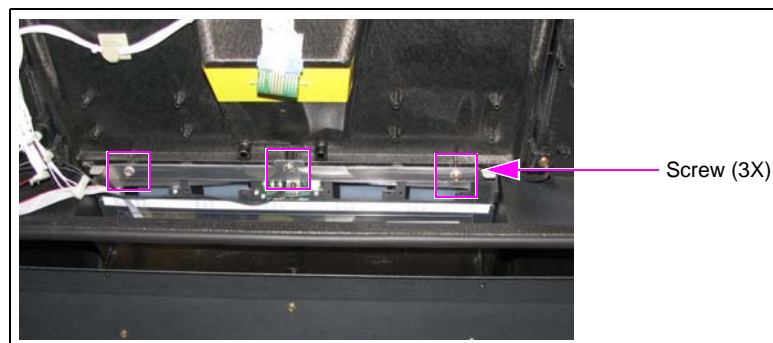


- 3 If the brand panel graphic on the door is to be replaced during the installation, proceed as follows:
 - Remove the existing brand panel graphic.
 - Ensure that the surface is clean.
 - Apply the new brand panel graphic.
 - Ensure that a window is available for satellite indicator light.

For more information on removing and installing the brand panel graphics, refer to *MDE-4625 Graphic Panel Application for The Advantage Series, Encore, Eclipse, and Encore S*.

- 4 If the unit being upgraded has a card reader, it has to be removed in order to remove the PPU panel. Opening the printer door may also be necessary to remove the PPU panel.
- 5 Using a flat-blade screwdriver or nut driver, remove the three screws that secure the PPU panel to the rear portion of the main door. Retain all hardware for the reassembly.

Figure 2: Removing PPU Panel



- 6 Disconnect the PPU panel ribbon cable from the door node PCA. Remove the PPU panel assembly from the main door.
- 7 Locate the appropriate window in the brand panel graphic and then locate the area on the panel where the satellite indicator PCA (see [Figure 4](#)) is to be mounted. Insert four dual locking support posts into the front portion of the panel (see [Figure 3](#)).

Figure 3: Mounting Area of Satellite Indicator PCA

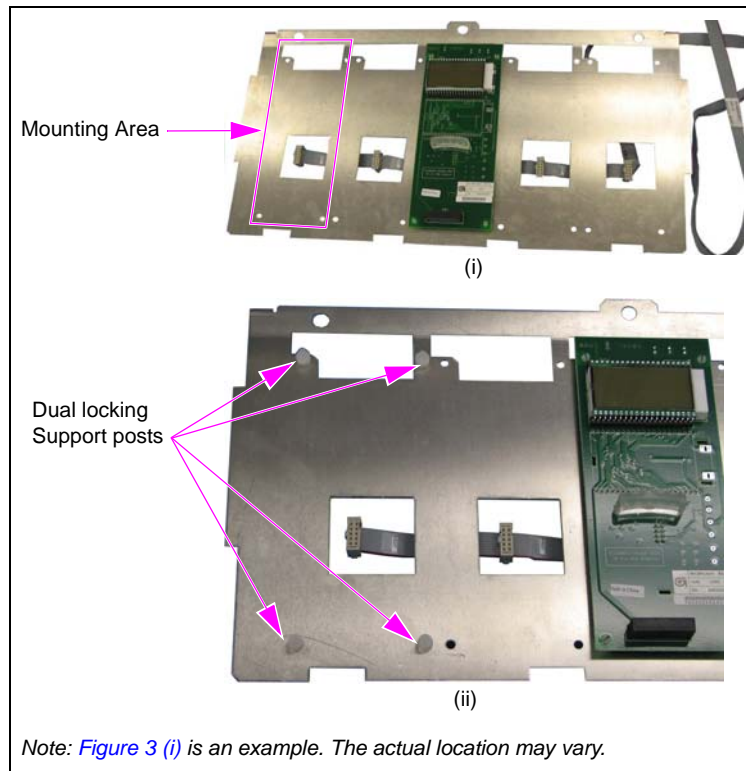
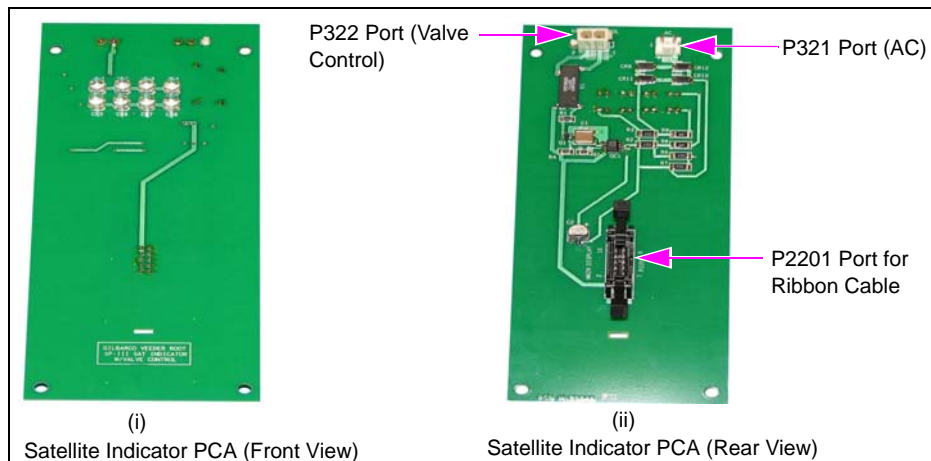
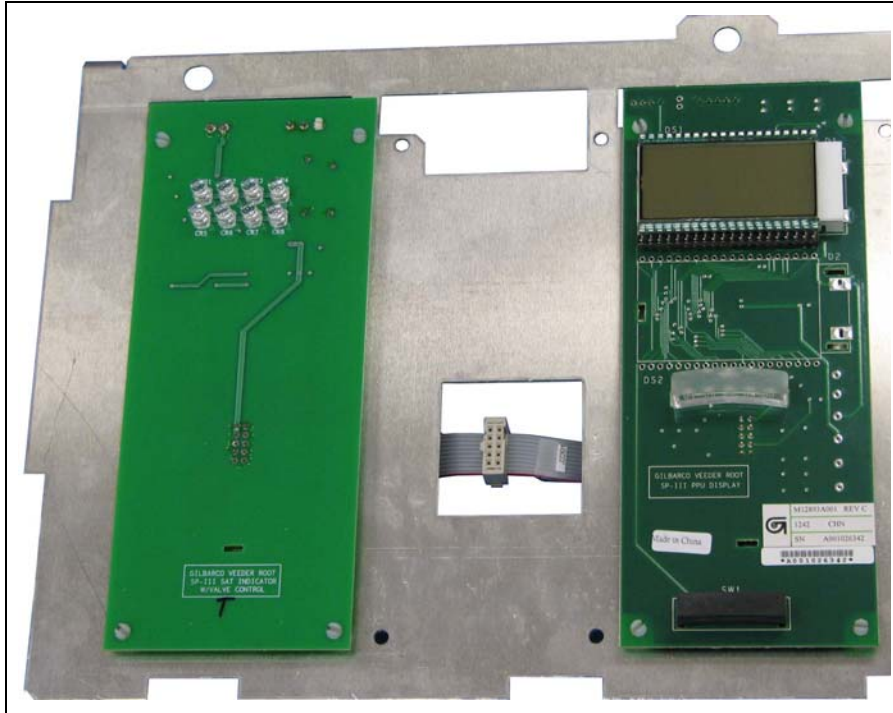


Figure 4: Satellite Indicator PCA



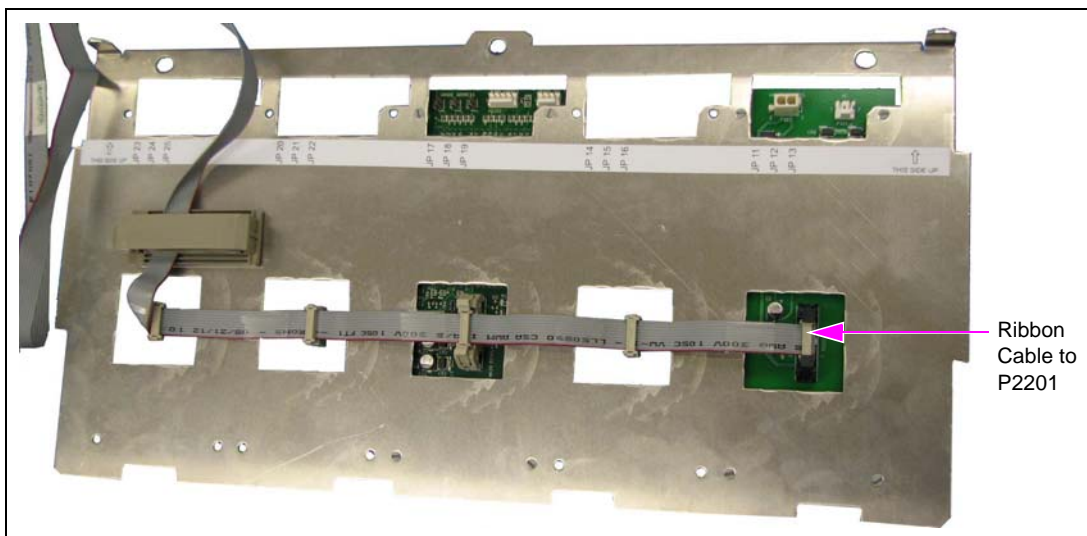
- Carefully press the satellite indicator PCA onto the dual locking support posts installed in step 7 on [page 7](#).

Figure 5: Installing Satellite Indicator PCA



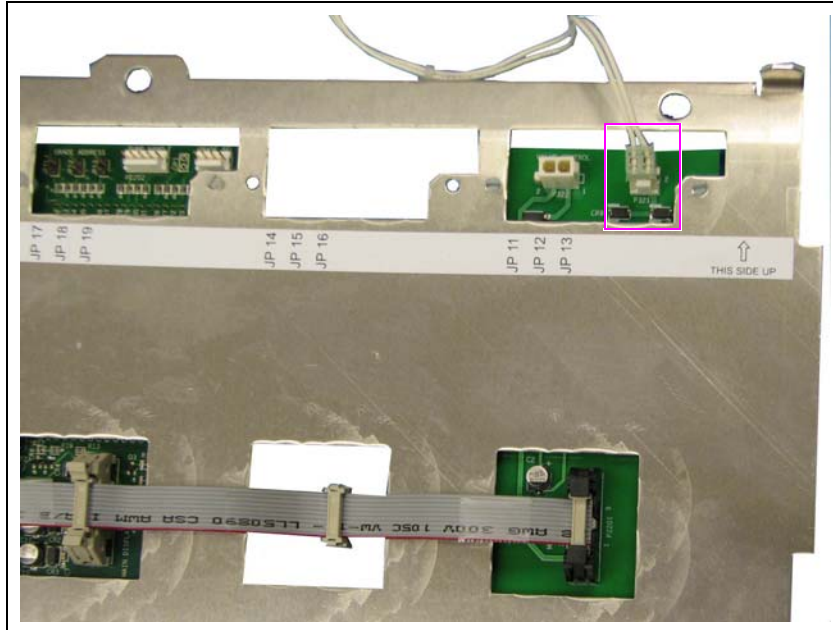
- Connect the ribbon cable to the P2201 port on the satellite indicator PCA.

Figure 6: Connecting Ribbon Cable



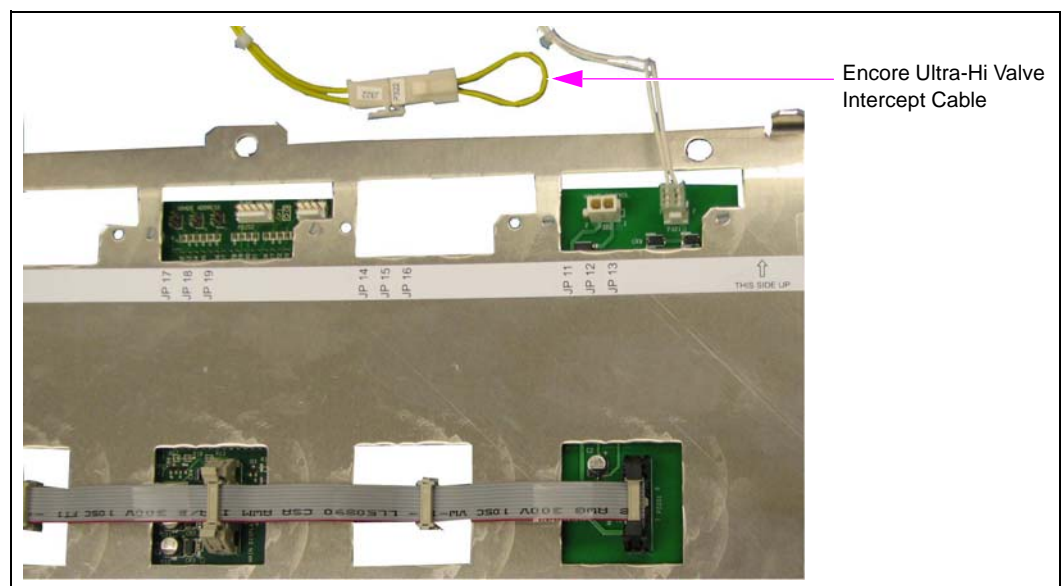
- 10 Connect the Encore Ultra-Hi Satellite Cable (M02371A002) to the P321 port on the satellite indicator PCA.

Figure 7: Connecting Encore Ultra-Hi Satellite Cable



- 11 On the Encore Ultra-Hi Valve Intercept Cable (M04218A002), leave the P322 port (supplied with cable) in place for simultaneous mode (master and satellite dispense at the same time), see [Figure 14](#) on [page 13](#).

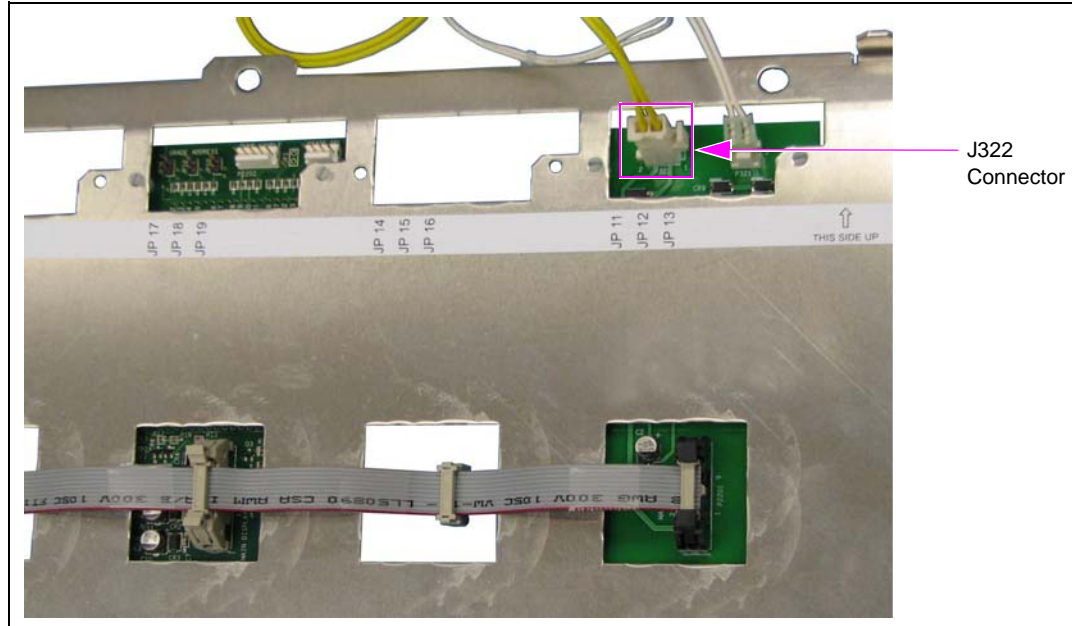
Figure 8: Encore Ultra-Hi Valve Intercept Cable



~OR~

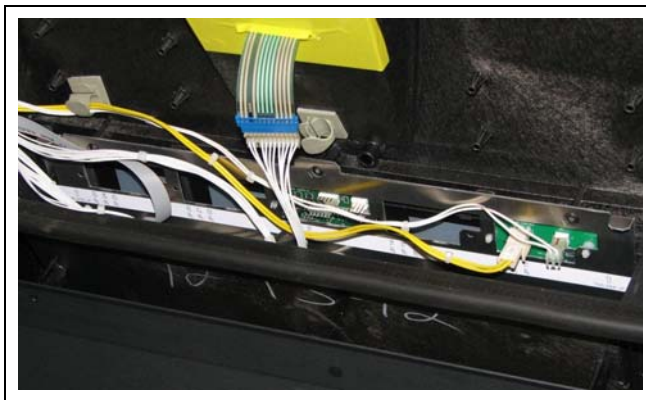
Remove the P322 port and connect J322 connector of the Encore Ultra-Hi valve intercept cable to the P322 port on the satellite indicator PCA for valve control or independent mode (can only dispense from the master if satellite is on-hook), see [Figure 14](#) on [page 13](#).

Figure 9: Connecting Encore Ultra-Hi Valve Intercept Cable to Satellite Indicator PCA



- 12 Place the PPU panel on the rear portion of the main door and fasten using the three screws that were removed in the step [5](#) on [page 6](#).

Figure 10: Securing PPU Panel



- 13 Reconnect the ribbon cable to the door node (disconnected in step [6](#) on [page 7](#)).
- 14 Route the satellite indicator PCA cables along the door through existing cable clamps. Ensure that the cables are not pulled on opening or pinched on closing the door.

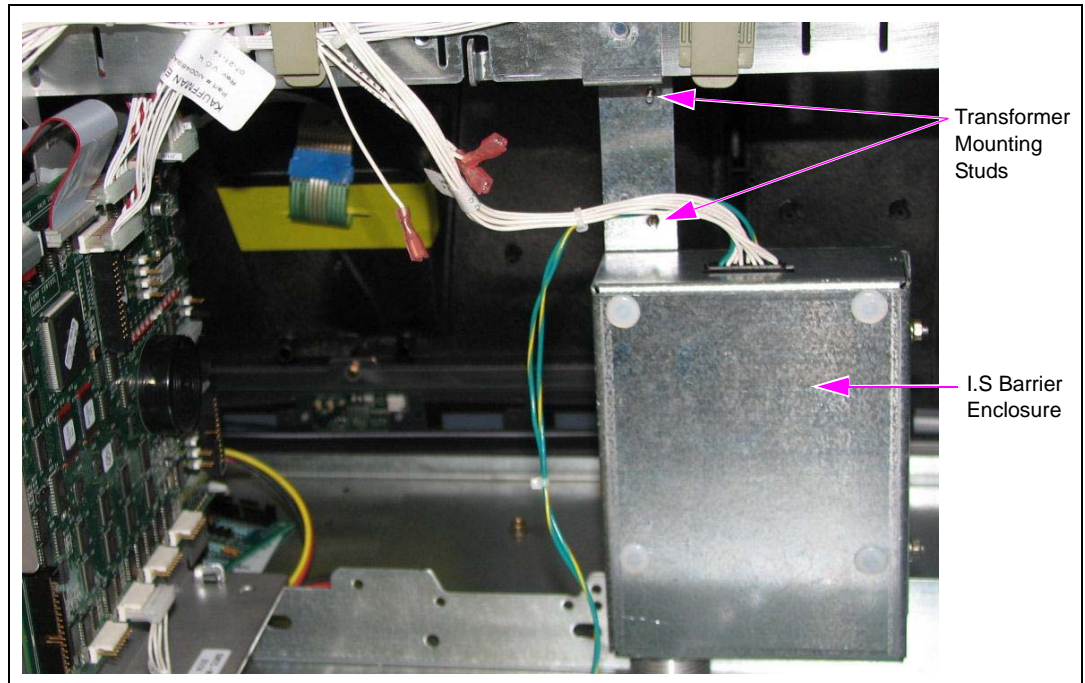
Installing indicator light PCA is now complete.

Installing Transformer (M02370A001)

To install the transformer, proceed as follows:

- 1 Locate the Intrinsic Safety (I.S) barrier enclosure and the mounting studs for the Transformer Assembly [M02370A001 (see [Figure 11](#))].

Figure 11: I.S Safety Barrier Enclosure and Transformer Mounting Studs



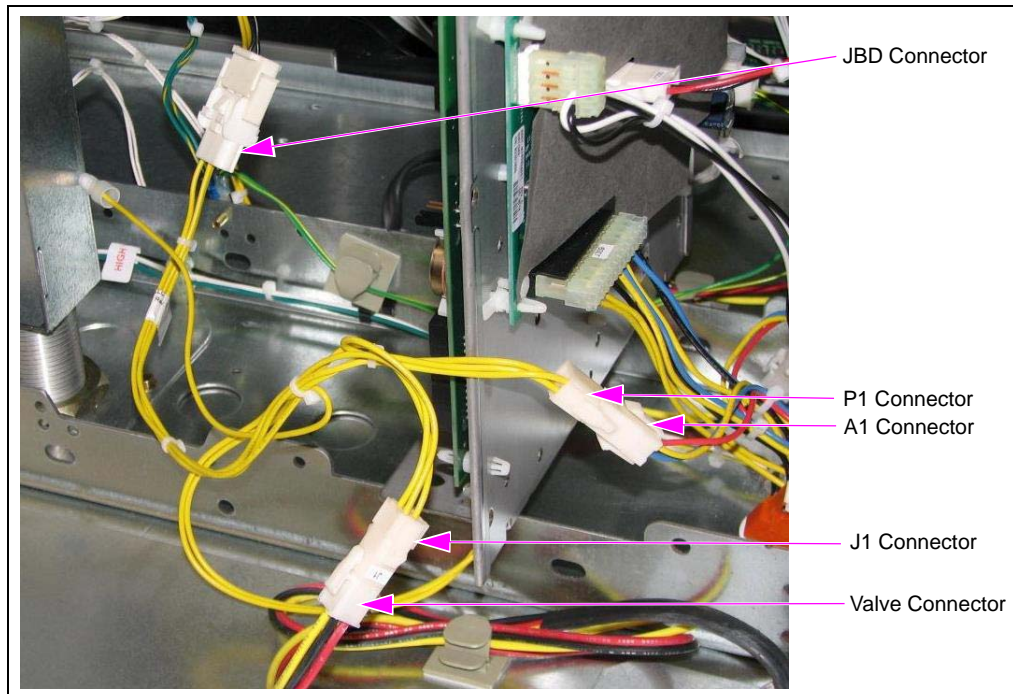
- 2 Install the transformer assembly on the mounting studs using Metric Hex Nuts (Q12885-03).

Making Wiring Connections

To make the appropriate indicator light wiring connections, proceed as follows:

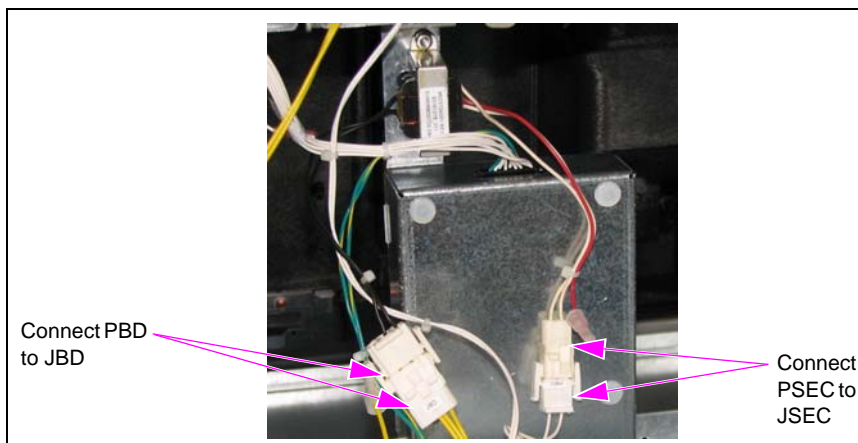
- 1 Locate the A1 valve connection and separate connectors.
- 2 Connect the Encore Ultra-Hi valve intercept cable between the valve and the valve control PCA by connecting the A1 connector to the P1 port and valve connector to the J1 connector on the cable.

Figure 12: Connecting Valves and Valve Control PCA



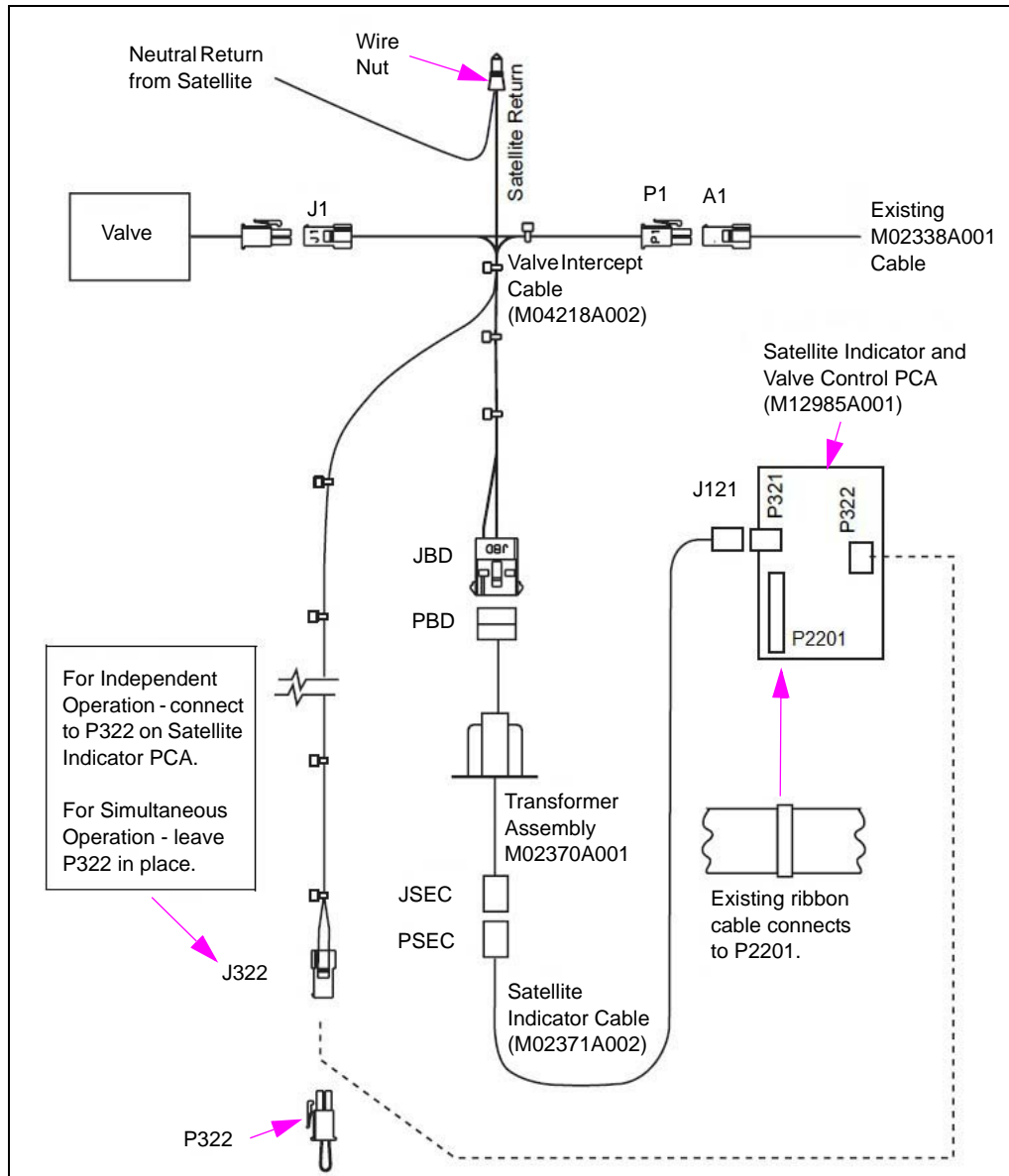
- 3 Connect JBD connector of the Encore Ultra-Hi valve intercept cable to the PBD port of the transformer assembly.

Figure 13: Connecting JBD Connector to PBD Port



- 4 Connect the PSEC port of Encore Ultra-Hi satellite cable to the JSEC connector of the transformer assembly.
- 5 Cut the wire nut of the Satellite Return (SAT RTN) wire from the Encore Ultra-Hi valve intercept cable and discard it.
- 6 Connect the neutral return from the satellite to the SAT RTN wire with new wire nut.

Figure 14: Satellite Indicator with Valve Control Wiring Diagram



Returning Unit to Operation and Testing

To return the unit to operation, proceed as follows:

- 1 Restore power to the dispensing unit that is being serviced.
- 2 Ensure proper operation of the satellite indicator light by authorizing the master and raising the pump handle on the master. The satellite indicator light must be lit when the satellite pump handle is activated while the master pump handle is up.
Note: This does not indicate flow, but only that the satellite pump handle is in the raised position.
- 3 If the valve control is used (independent mode), authorize the master and raise the pump handle on the master, then also raise the satellite pump handle. In this state, the satellite should dispense, but not the master. Lowering the satellite pump handle should allow the master to resume dispensing.

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