

Introduction

Purpose

This manual provides instructions to install the FlexPay™ EMV® CRIND® E-CIM™ Upgrade Kit (EPK EMV ECIM) on the Encore® S E-CIM unit.

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Required Tools and Materials

Following tools and materials are required for installing the FlexPay EMV CRIND E-CIM Upgrade Kit (EPK EMV ECIM):

- Phillips® Screwdriver
- 1/4-inch Socket (Nut Driver)
- Socket Set, mm
- Diagonal Cutters
- Double-sided Tape
- Needle-nose Pliers
- Wrench

Parts List

Following table lists the parts included in the FlexPay EMV CRIND E-CIM Upgrade Kit (EPK EMV ECIM):

Hub Interface PCB (HIP) Assembly

Item	Description	Part Number	Quantity	
			Single-sided	Dual-sided
1	Assembly, EMV HIP	M07931A002	1	1
2	Cable, SMART Connect™	M07970A001	1	1
3	Cable, Special Two-wire	M00491A001	1	1
4	Nut, Metric	M00414B005	3	3

EMV Door Assembly

Item	Description	Part Number	Quantity	
			Single-sided	Dual-sided
1	Door, Main E-CIM, with Boots	M08057A901 ~OR~ M08057A931	1	2
2	Display, EMV Generic ~OR~ Display, EMV Global Pay	M08001A001 ~OR~ M08001A002	1	2
3	Keypad, 7-key Option	M07754B002	1	2
4	Cable, 7-button Keypad	M07957A005	1	2
5	Screw Self-tapping Hexagonal-head 6-20X	Q11677-26	21	42
6	PCA, SPOT Interface (SIP)	M07793A002	1	2
7	Cable, Two-wire/Cash A/Spare Data, EMV	M07946A001	1	2
8	Cable, SPOT Power, EMV	M07947A001	1	2
9	Cable, SPOT to SIP TCR™	M07949A001	1	2
10	Cable, DC Power SIP, EMV	M07974A001	1	2
11	Assembly, Bracket Electrostatic Discharge (ESD) Grounding	M08191A002	1	2
12	Cable, HIP to SIP Serial	M07979A002	1	2
13	Cable, Work Area 6'	Q13850-10	1	2
14	Cable, Ground EMV Display	M04431A002	1	2
15	Nut, Metric, Flange	M00414B005	3	6
16	Gasket Set	M13128K004	1	2
17	Card Reader, Hybrid Card Reader 2 (HCR 2)	M12492B001	1	2
18	Cable, MagTek HCR 2 EMV	M07702A023	1	2
19	Bracket, Card Reader	M13380B001	1	2
20	Screw Self-tapping Hexagonal-head 6-20X	Q11677-28	1	2
21	Encrypted PIN Pad SPOT M4	M13118B001	1	2
22	Cable, SPOT Secure Keypad	M07956A002	1	2
23	Cable, Ground Hengstler®	M04431A003	1	2
24	Assembly, Speaker	M08072A001	1	0
25	Rain Shield	M13847A001	1	2

Global Contactless Module (GCM) Option

Item	Description	Part Number	Quantity	
			Single-sided	Dual-sided
1	Assembly, GCM	M12027A001	1	2
2	Cable, OTI to SPOT	M11964A001	1	2
3	Screw Self-tapping Hexagonal-head 6-20X	Q11677-26	4	8

Printer Assembly

Item	Description	Part Number	Quantity	
			Single-sided	Dual-sided
1	Assembly, Printer 6-inch Sliding	M07885A001	1	2
2	Screw Self-tapping Hexagonal-head 6-20X	Q11677-24	1	2
3	Cable, Universal Serial Bus (USB)/Ground/+24 V	M06745A003	1	2
4	Label, Paper Loading	M06807B004	1	2

TRIND® to EMV Interface (Optional Units with TRIND)

Item	Description	Part Number	Quantity	
			Single-sided	Dual-sided
1	TRIND/SPOT Interface	M08472A002	1	1
2	Cable, Gateway to TRIND	M08520A002	1	1
3	Cable, TRIND/SPOT	M08521A001	1	1
4	Cable, Power Supply	M05859A001	1	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-4771	Encore S Enhanced FlexPay EMV CRIND Start-up/Service Manual	<ul style="list-style-type: none"> FlexPay Encore and Eclipse
MDE-4785	FlexPay Outdoor Payment Terminal - Canada Installation and Service Manual	FlexPay
PT-1936	Encore Series Pumps and Dispensers Illustrated Parts Manual	<ul style="list-style-type: none"> Parts Manual Encore and Eclipse Encore and Eclipse Installers
PT-1937	Encore 300, Encore 500/500 S, Encore 550, Encore 700 S, Eclipse Recommended Spare Parts Manual	<ul style="list-style-type: none"> Parts Manual Encore and Eclipse

Abbreviations and Acronyms

Term	Description
CCN	CRIND Control Node
CD	Computer Display
CRIND	Card Reader in Dispenser
E-CIM	Enhanced Customer Interface Module
EMV	Europay®, MasterCard®, and Visa®
ESD	Electrostatic Discharge
GCM	Global Contactless Module
GOLD	Gilbarco® Online Documentation
HCR	Hybrid Card Reader
HIP	Hub Interface PCB
LON	Local Operating Network
OSHA	Occupational Health and Safety Administration
PCB	Printed Circuit Board
PCN	Pump Control Node
POS	Point of Sale
PPU	Price per Unit
SIP	SPOT Interface PCA
TCR	Tribrid Card Reader
TRIND	Transmitter/Receiver in Dispenser
UL®	Underwriters Laboratories
USB	Universal Serial Bus

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.

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

CAUTION



A properly grounded 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 Read and understand all safety information in *MDE-3804 Encore and Eclipse Start-up/Service Manual*.
- 2 Inform the manager.
- 3 Barricade the unit to be worked on.
- 4 Remove power to the unit at the breaker panel. Follow OSHA lockout/tagout procedures.

WARNING

Failure to turn off the unit during the installation of the kit 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 FlexPay EMV CRIND E-CIM Upgrade Kit (EPK EMV ECIM) on Encore S E-CIM Units

To install the FlexPay EMV CRIND E-CIM Upgrade Kit (EPK EMV ECIM) on Encore S E-CIM units, proceed as follows:

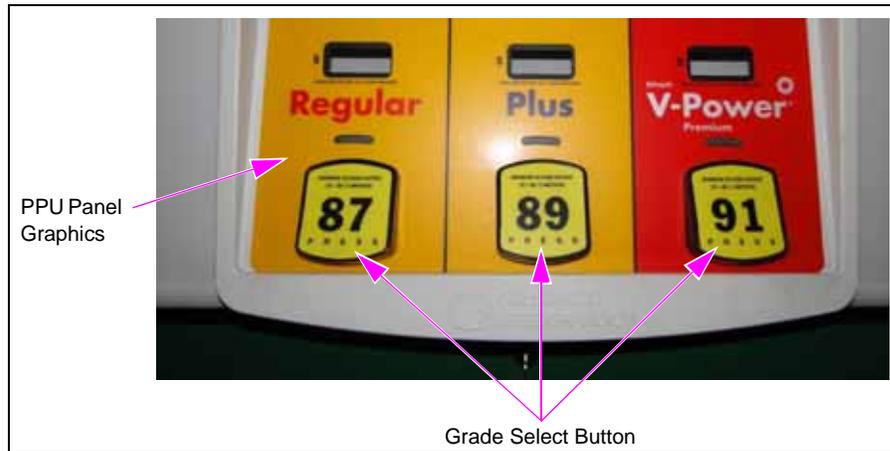
Removing Existing E-CIM Insert

To remove the existing E-CIM insert, proceed as follows:

- 1 Disconnect the following cables from all the peripherals on the door:
 - Door Node (Main Display)
 - Grade Select Buttons
 - Price per Unit (PPU) Panel
 - TRIND (if supplied)
 - Contactless Antenna (if supplied)

- 2 Remove the PPU panel graphics as shown in [Figure 1](#).

Figure 1: Removing PPU Panel Graphics



- 3 Remove and retain components from the door that must be reused on the new door. The following hardware components can be reused:
 - Door Node [Main Display (see [Figure 2](#))]
 - Grade Select Buttons (see [Figure 1](#))
 - PPU Panel (see [Figure 3](#) and [Figure 4](#) on [page 8](#))
 - TRIND (if supplied)
 - Contactless Antenna (if supplied)
 - Call Button Board
 - Weather Shield

Note: Do not reuse the card reader, or monochrome display.

Figure 2: Removing Screws from Door Node

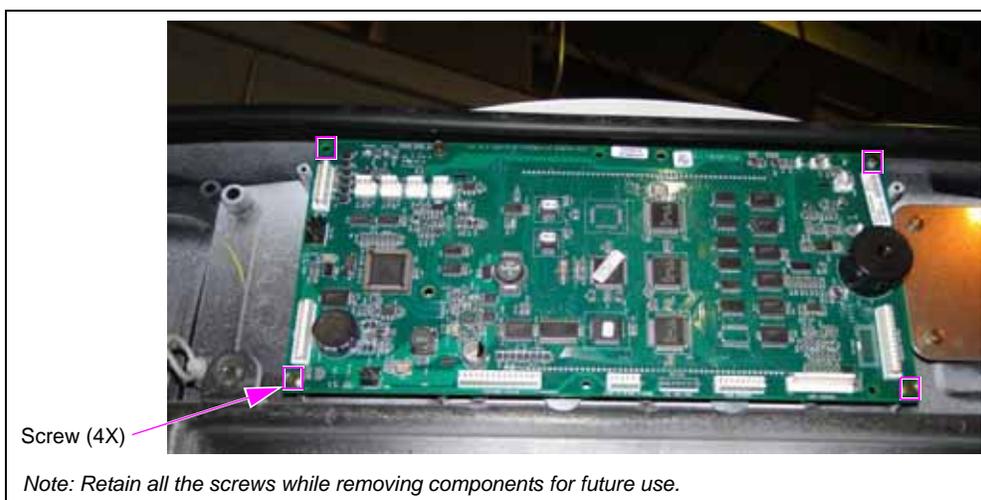


Figure 3: Removing Screws from PPU Panel

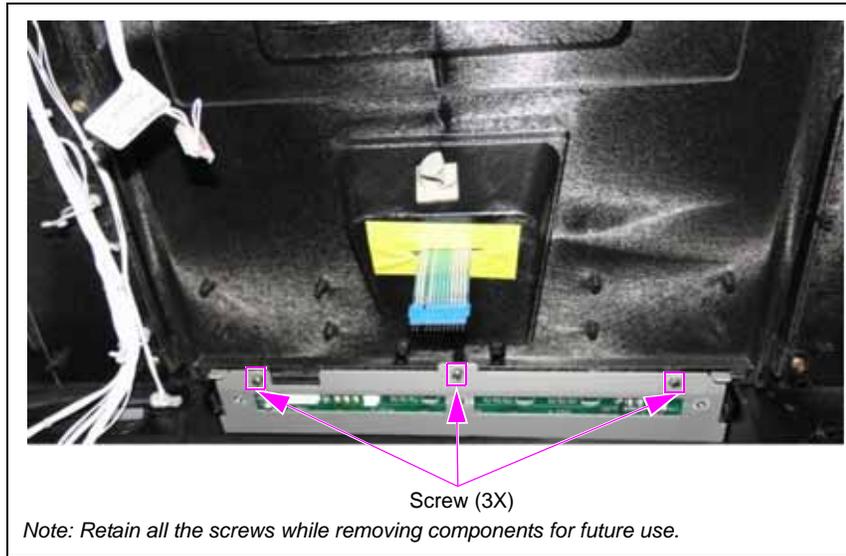
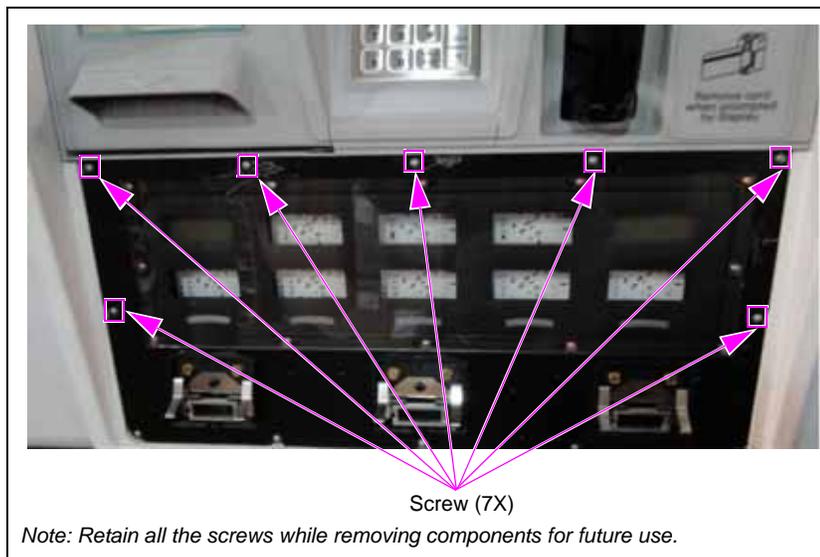


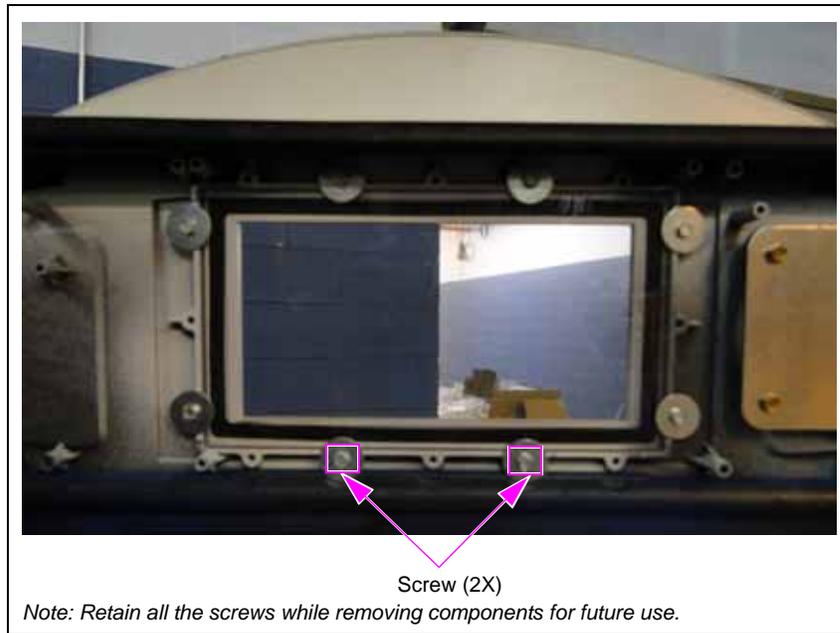
Figure 4: Removing Screws from PPU Panel



Note: Before you remove the E-CIM, ensure that all cables going to the door are disconnected.

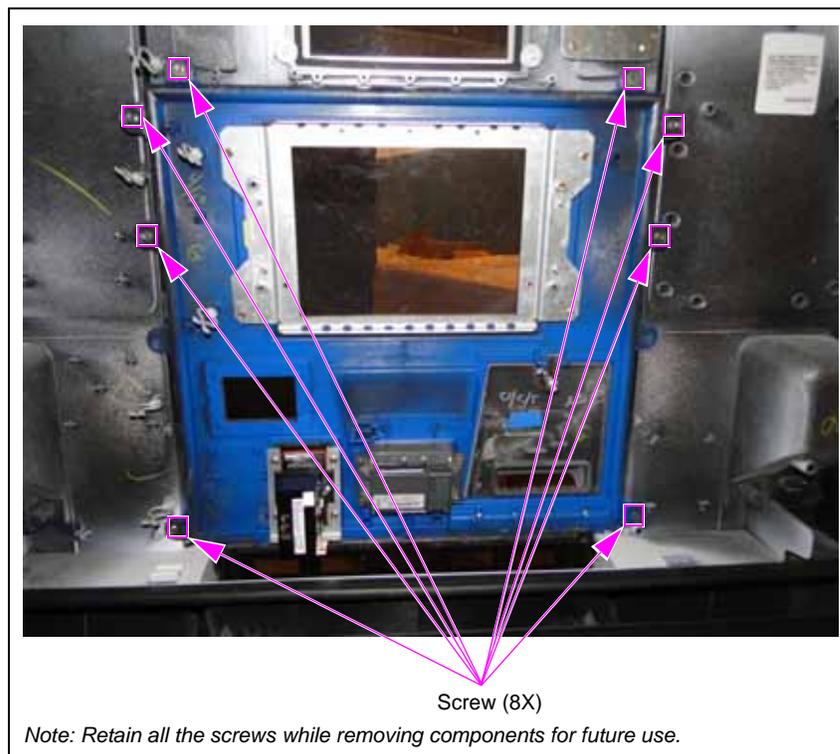
- 4 Remove the bottom screws of the main display lens as shown in [Figure 5](#).

Figure 5: Removing Bottom Screws of Main Display Lens



- 5 Remove the E-CIM by removing the screws shown in [Figure 6](#).

Figure 6: Removing Screws of E-CIM



Once all the necessary components have been removed including E-CIM, door will look like [Figure 7](#).

Figure 7: Encore S E-CIM Door



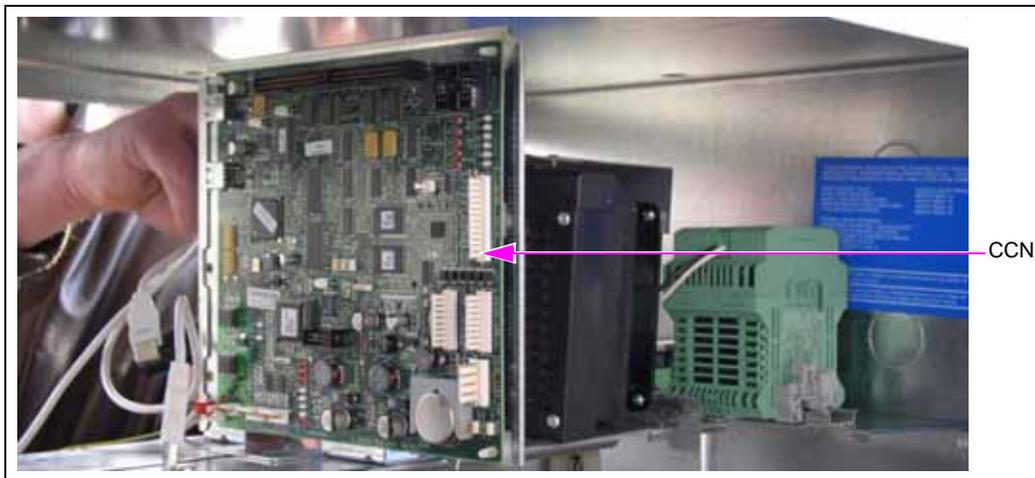
Removing CRIND Control Node (CCN)

To remove the CCN, proceed as follows:

- 1 Disconnect the cables from the existing CCN and remove the CCN assembly.
- 2 Remove the Local Operating Network (LON) cable from the CCN to Pump Control Node (PCN) and remove the LON cable from the PCN to side 1 door node (see [Figure 8](#)).

Note: The CCN cables are not reused.

Figure 8: Removing CCN

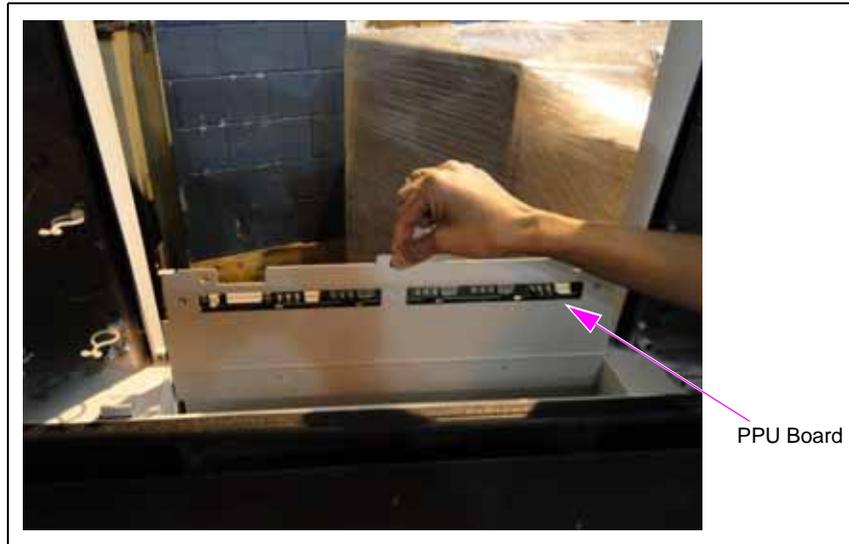


Installing FlexPay EMV CRIND E-CIM

To install the FlexPay EMV CRIND E-CIM, proceed as follows:

- 1 Place/drop the PPU board in the main door as shown in [Figure 9](#).

Figure 9: Placing PPU Board



- 2 Mount the supplied E-CIM (which comes with all the required electronics mounted to it) using the screws as shown in [Figure 10](#) and [Figure 11](#) on [page 12](#).

Figure 10: Attaching Screws to E-CIM

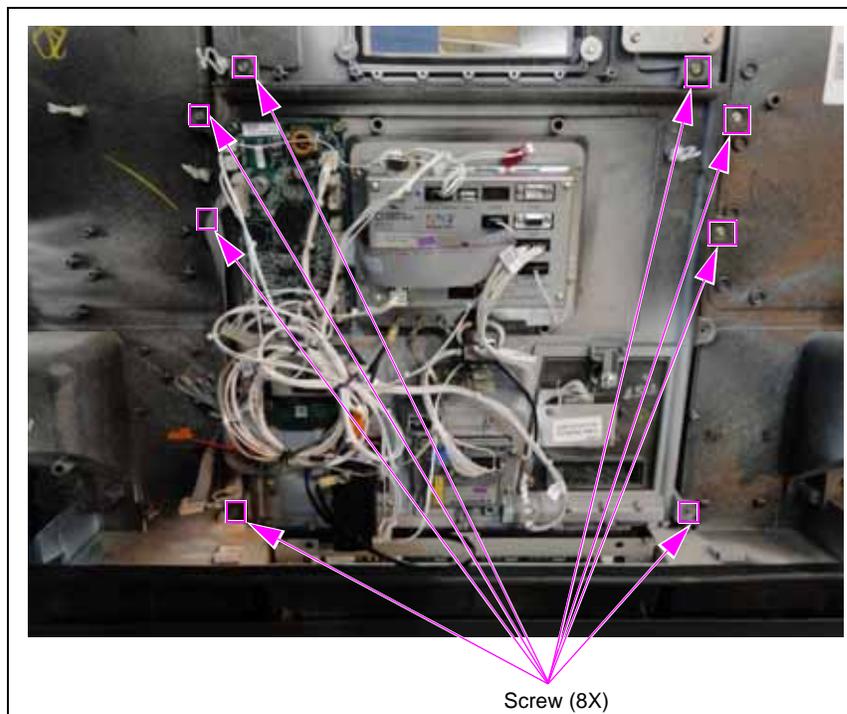
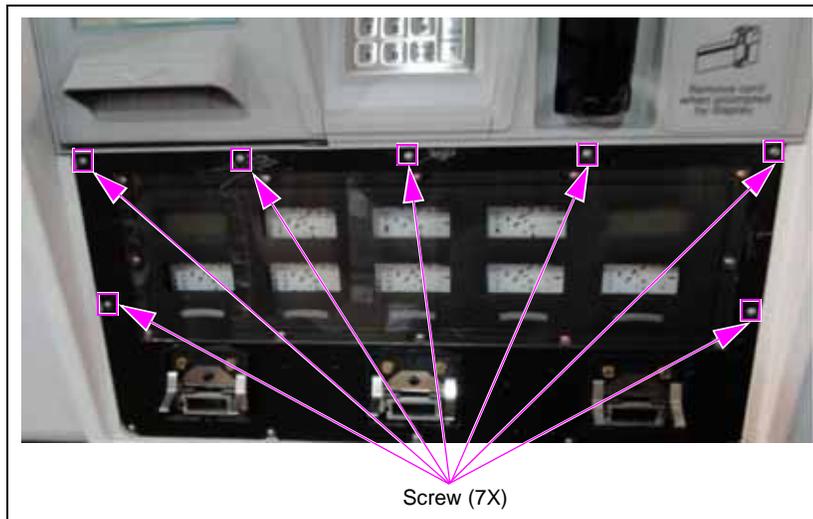
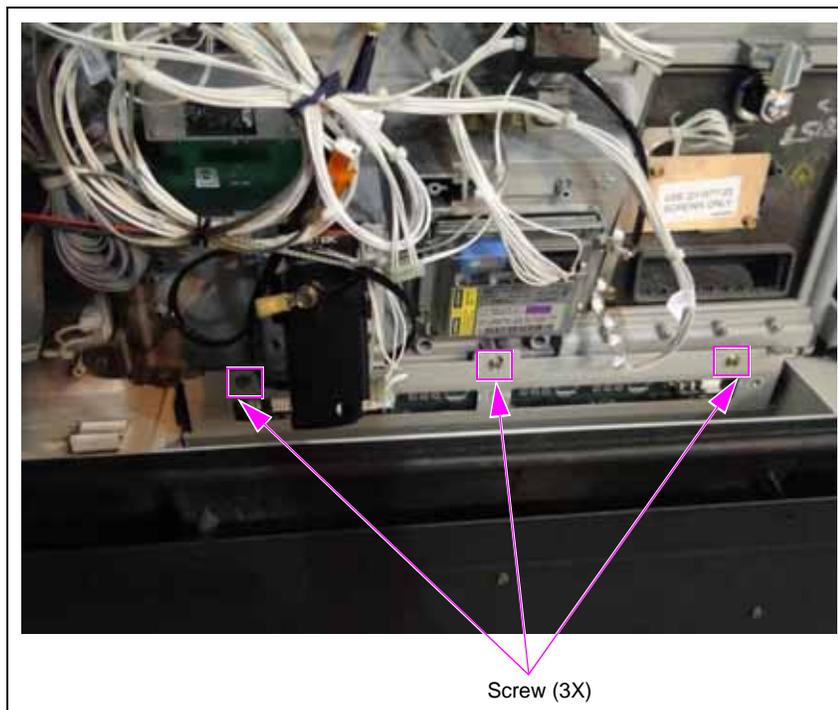


Figure 11: Attaching Screws to PPU Panel



- 3 Mount the PPU board using screws as shown in [Figure 12](#).

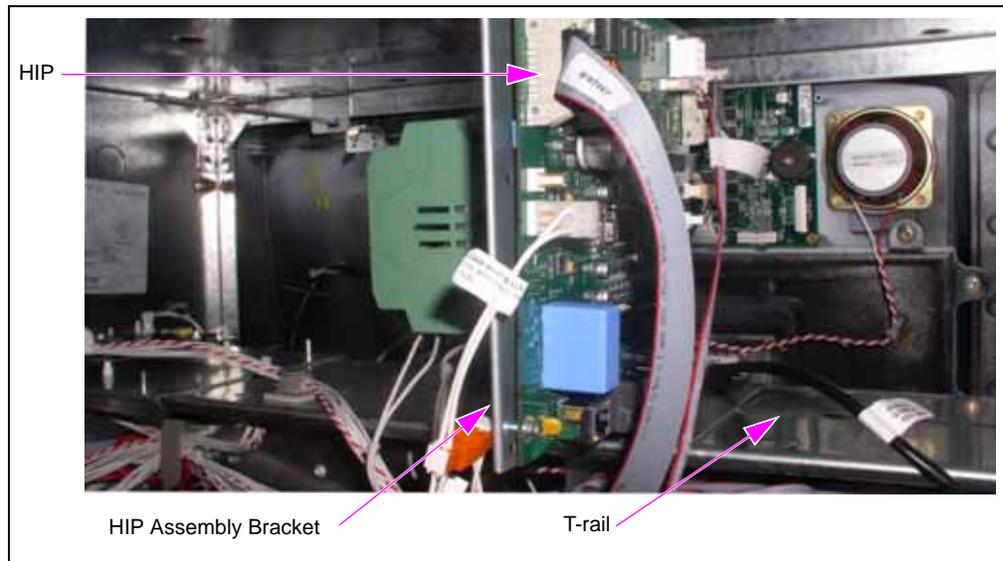
Figure 12: Attaching Screws to PPU Board



- 4 Install the bottom PPU lens screws (see [Figure 5](#) on [page 9](#)) previously taken out when removing the E-CIM.
- 5 Install the door node using the four screws that were taken out (see [Figure 2](#) on [page 7](#)) to remove the E-CIM.
- 6 Reinstall the grade button.
- 7 Apply the PPU panel graphics that was removed as shown in [Figure 1](#) on [page 7](#).

- 8 Reconnect all cables to the reinstalled components using the cables disconnected in step 1 on [page 6](#).
- 9 Mount the HIP assembly on the T-rail at the same spot where the CCN was previously mounted using three studs and three M00414B005 nuts on the HIP assembly bracket.

Figure 13: Installing HIP Assembly



- 10 Route the cables from the door and ensure that they are connected as per instructions in [“Connecting Cables from FlexPay EMV CRIND E-CIM”](#).

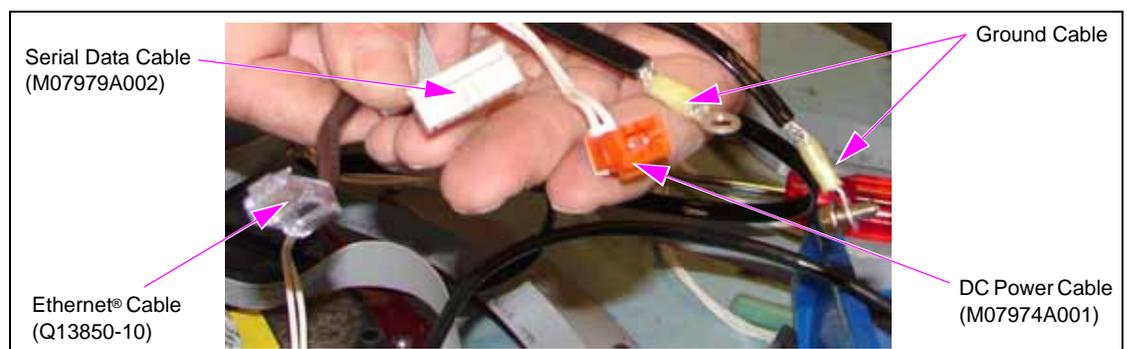
Connecting Cables from FlexPay EMV CRIND E-CIM

IMPORTANT INFORMATION

Cable routing is critical. It is very important to route and dress the cables properly. Exercise care in routing the cables, keeping in mind that the door opens and closes for service, and the option doors open for service. The cables must be dressed neatly. Ensure that there is no interference after the cables are connected and routed.

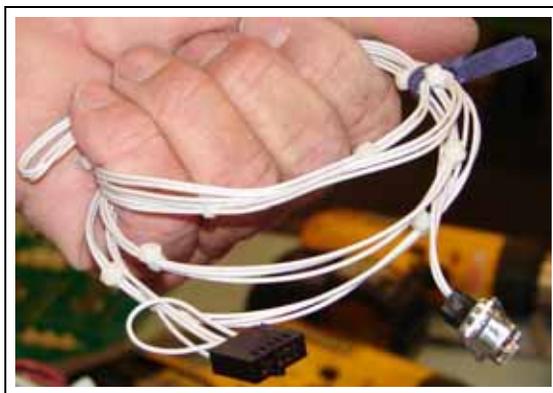
To connect cables from the FlexPay EMV CRIND E-CIM, proceed as follows:

Figure 14: Cables from SIP Board/FlexPay EMV CRIND E-CIM



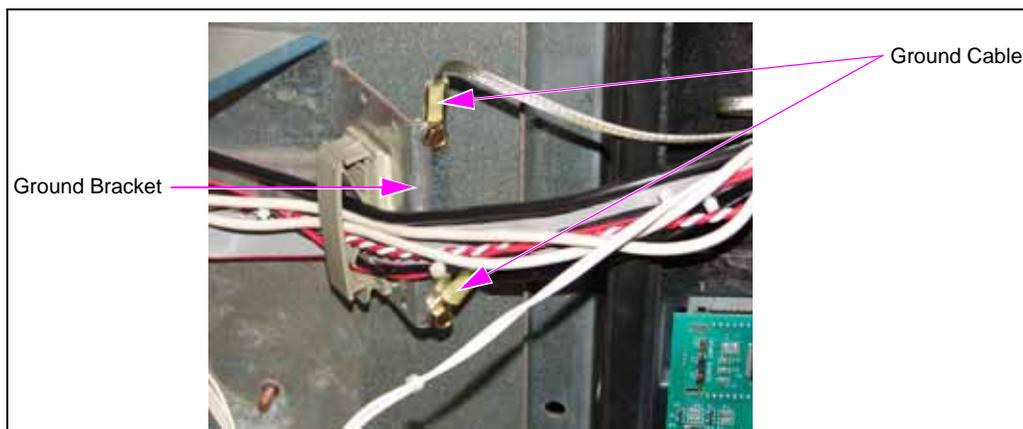
- 11 Connect the Serial Data Cable (M07979A002) from the SIP board on the FlexPay EMV CRIND E-CIM to the HIP assembly.
- 12 Connect the DC Power Cable (M07974A001) from the SIP board to the respective connector on the M07973A003 Power Cable on the HIP assembly (P301A/P301B to J301A/J301B).
- 13 Connect the Ethernet Cable (Q13850-10) from COM 5 port on the SPOT display to the respective port on the HIP assembly (A or B).
- 14 Connect the M07970A001 Cable from COM 1 port on the SPOT display unit to the base electronics on side A of the Encore S E-CIM dispenser (to J1111).

Figure 15: Connecting Cable from COM 1 Port



- 15 Connect the ground cable for the printer and SPOT display to the ground bracket on the CD module.

Figure 16: Connecting Ground Cable on Ground Bracket



- 16 Connect the CRIND two-wire cable from J404 to P404 on the HIP assembly (see [Figure 17](#)).

If you are using the G-SITE® or Passport® Point of Sale (POS) system, connect the two-wire cable from J403 on the pump control board to P403 on the HIP assembly.

Figure 17: Connecting CRIND Two-wire Cable from Pump Control Board to HIP Assembly

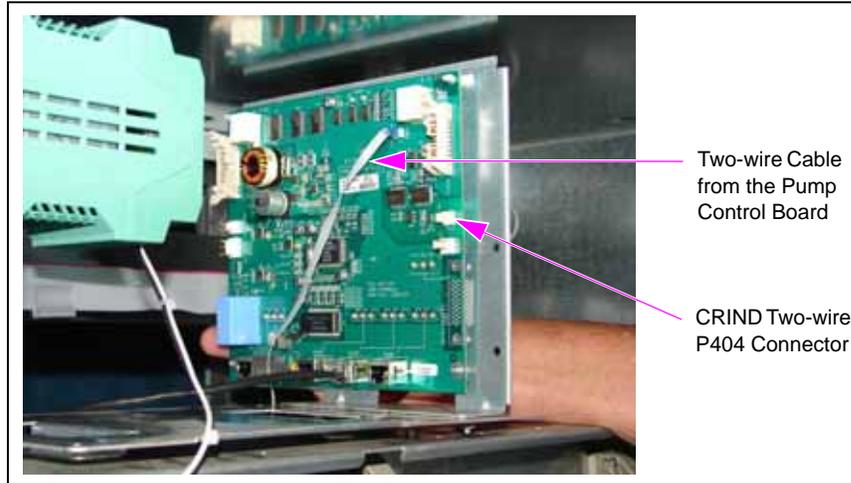


Figure 18: Upgraded FlexPay EMV CRIND E-CIM



- 17 Mount the Rain Shield (M13847A001), using the twist lock cable clips that are on the E-CIM door panel (note that the rain shield might already be installed). Place one edge of the shield on the door, pass the twist lock ends through the holes in the shield, and twist to lock. Then place the other edge and lock it in place. Wires should not be dressed under the upper edge of the rain shield (see [Figure 19](#)).

Figure 19: Mounting Rain Shield

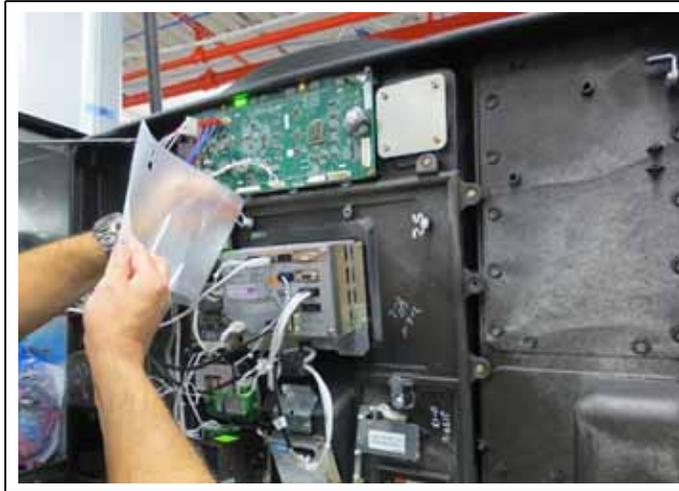
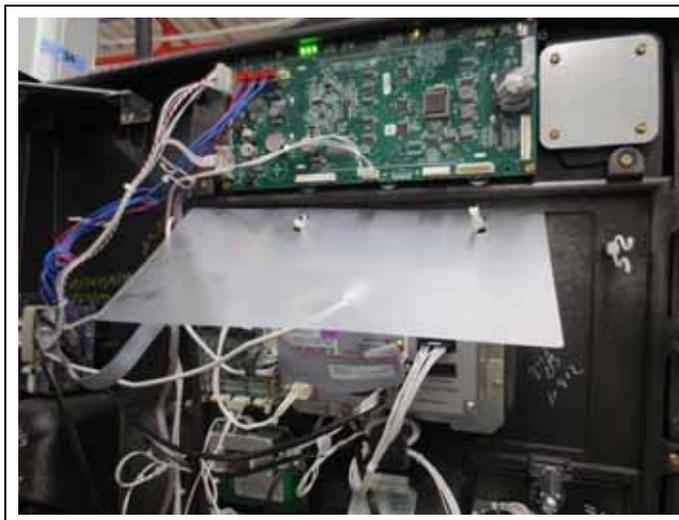


Figure 20: Rain Shield After Mounting



Completing Installation

After all connections are made and the unit is ready to power up, proceed as follows:

- 1 Reinspect all the connections and cable routing before applying power.

IMPORTANT INFORMATION

Cable routing is critical. It is very important to route and dress the cables properly. Exercise care in routing the cables, keeping in mind that the door opens and closes for service, and the option doors open for service. The cables must be dressed neatly. Ensure that there is no interference after the cables are connected and routed.

- 2 Apply power to the unit at the breaker panel.

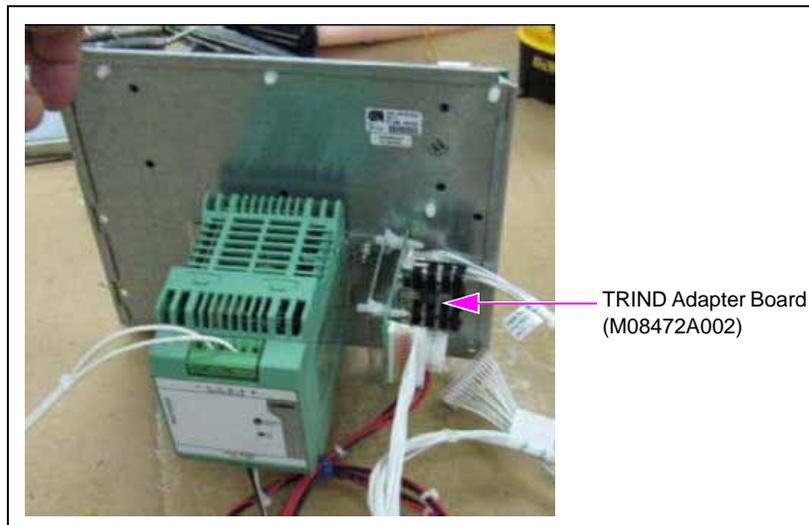
Installing the FlexPay EMV CRIND E-CIM Upgrade Kit on the Encore S E-CIM unit is now complete.

Installing FlexPay EMV CRIND Retrofit Kit with Existing TRIND Option

To install the FlexPay EMV CRIND Retrofit Kit with existing TRIND option, proceed as follows:

- 1 Locate the TRIND Adapter Board (M08472A002) mounted on the HIP assembly.

Figure 21: TRIND Adapter on HIP Assembly



- 2 Connect the cables from the TRIND adapter board as follows (see [Figure 22](#) on [page 18](#)):
 - a Route the M05859A001 Cable to the HIP board and connect J414 to P402A or P402B on the HIP board.
 - b Route the M08520A002 Cable to the TRIND Gateway Board (T20678-G3) and connect J250 to P250 on the gateway board.

Completing Installation

After all connections are made and the unit is ready to power up, proceed as follows:

- 1 Reinspect all the connections and cable routing before applying power.

IMPORTANT INFORMATION
Cable routing is critical. It is very important to route and dress the cables properly. Exercise care in routing the cables, keeping in mind that the door opens and closes for service, and the option doors open for service. The cables must be dressed neatly. Ensure that there is no interference after the cables are connected and routed.

- 2 Apply power to the unit at the breaker panel.

Installing the FlexPay EMV CRIND Retrofit Kit with existing TRIND option is now complete.

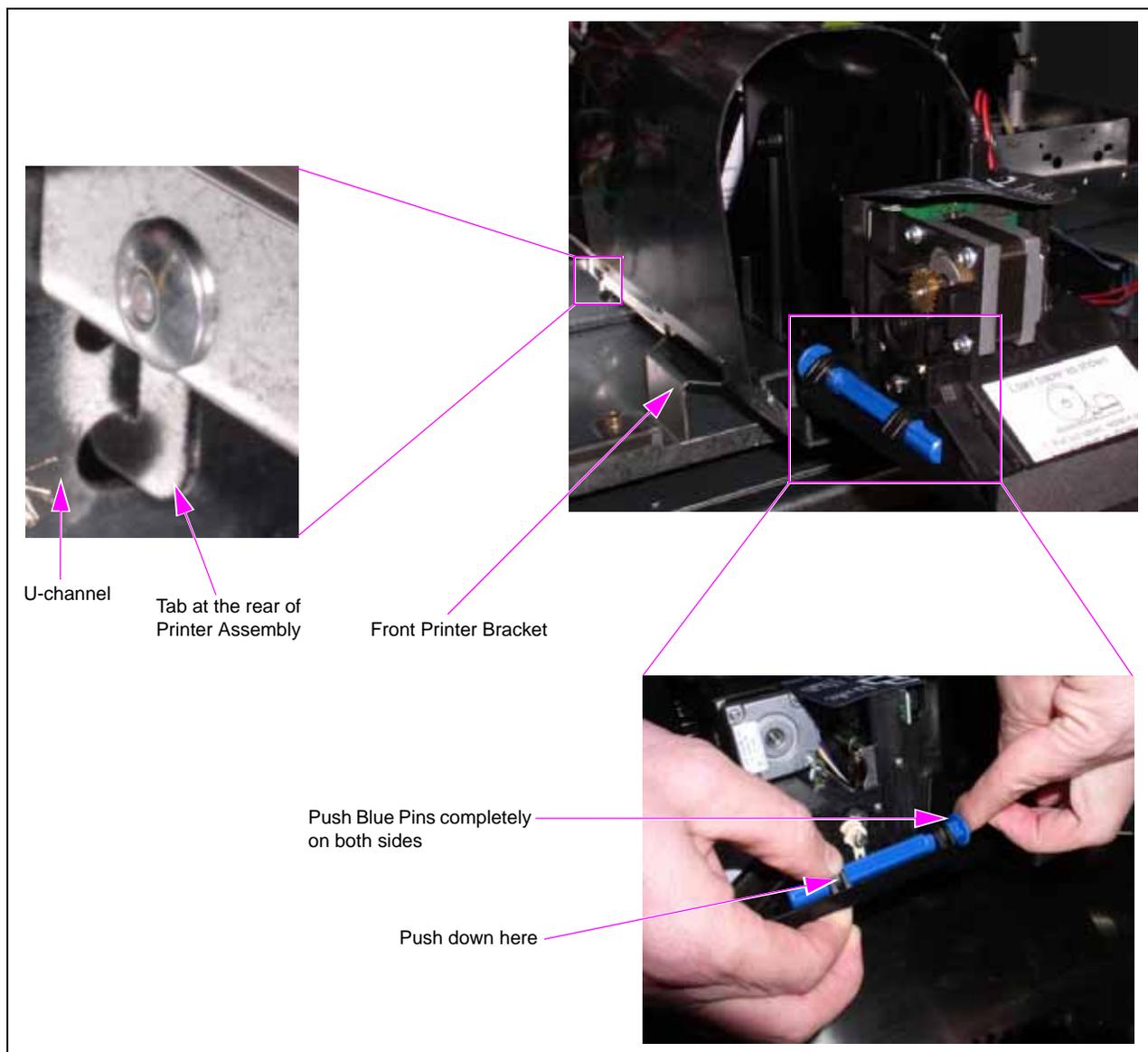
Appendix: Installing New Printers

Note: Install new printers only if the original unit did not have printers.

To install new printers on both sides of the dispenser, proceed as follows:

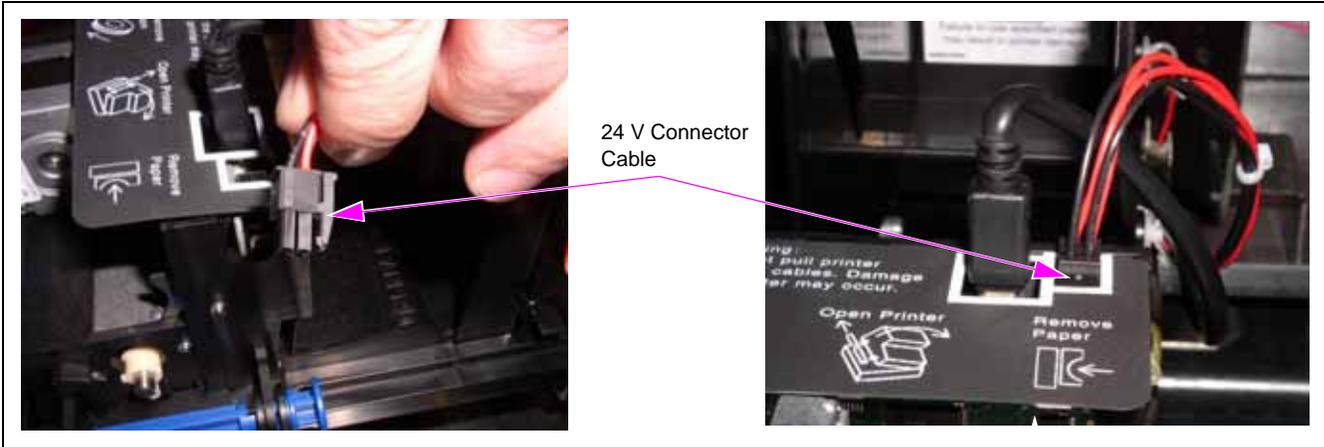
- 1 Insert the tab at the rear of the 6-inch printer assembly into the U-channel in the electronics cabinet (see [Figure 23](#)). Lower the front printer bracket into position and line up the four mounting holes in the CD module lower plate.
- 2 Ensure that you stay clear of existing cables. Do not pinch the cables between the mounting bracket and electronics cabinet.
- 3 Use the four screws removed in step 4 on [page 9](#) to secure the printer.

Figure 23: Installing New Printer



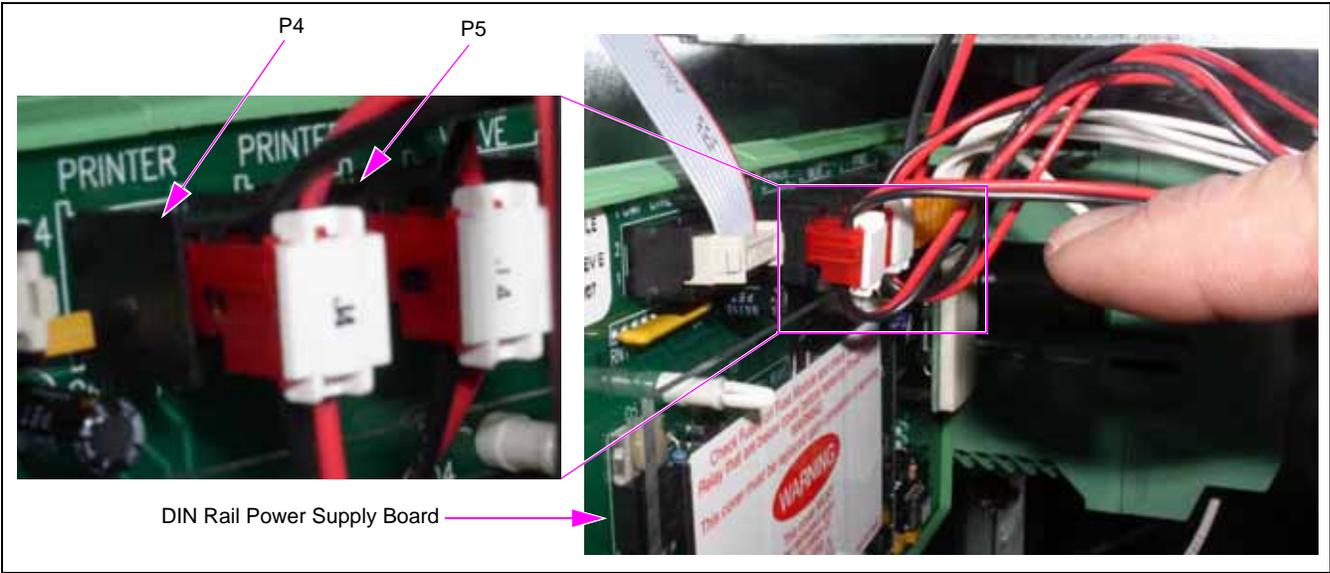
- 4 Connect the 24 V connector cable to the printer and USB connector (see [Figure 24](#)).

Figure 24: Connecting Printer Cables and Orientation of 24 V Connector Cable



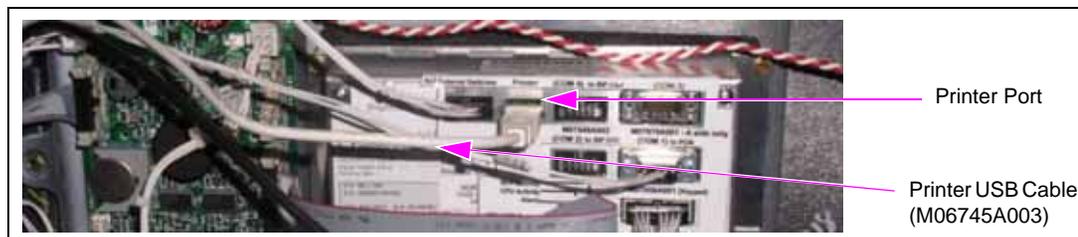
- 5 Connect the 24 V connector cable to P4 and P5 on the DIN rail power supply board [use existing Encore S 24 V connector/DIN rail power supply (see [Figure 25](#))].

Figure 25: Connecting 24 V Connector Cable



- 6 Connect the Printer USB Cable (M06745A003) to the printer port at the rear of the FlexPay EMV CRIND (see [Figure 26](#)).

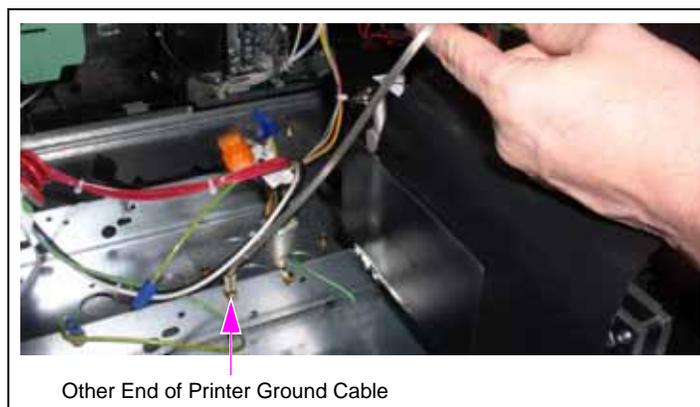
Figure 26: Connecting Printer USB Cable



Note: This step must be performed after you install the FlexPay EMV CRIND E-CIM (refer to “Installing FlexPay EMV CRIND E-CIM” on page 11).

- 7 Connect the printer ground cable and route the printer cables.
- 8 Connect the ground wire from the printer assembly to the U-channel to an available position [use 8 mm self-tapping screw (see [Figure 27](#))].

Figure 27: Connecting and Routing Printer Ground Cable



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