

Introduction

Purpose

This manual provides instructions to install the FlexPay[™] II CRIND® Retrofit Kits in Encore® 500 S and E-CIM[™] 5.7-inch and 10.4-inch color screen units. The FlexPay II CRIND, the same as used in Encore 700 S, provides a more secure payment platform, which is EMV®-certified and Payment Card Industry PIN Entry Device (PCI PED)-certified.

Intended Users

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

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Required Tools

The following tools are required for installing the FlexPay II CRIND Retrofit Kit in Encore 500 S and E-CIM units:

- Phillips® and Flat-blade Screwdrivers
- 1/4-inch Socket Set (Nut Driver)
- 7- and 8-mm Socket (Nut Driver or Set Socket)
- Diagonal Cutters
- Needle Nose Pliers
- 1/4-inch Hexagonal-head Security Screwdriver
- CRIND Diagnostic Card (Q12534-170)

Configured Kits - Parts List

FlexPay II CRIND upgrade kits are configured based on the serial number of the unit for which they are intended. Therefore, the parts list may vary for each configured kit and unit/option type.

For a complete parts list of the configured kit, refer to the build ticket that was provided with the kit. For more information about the build ticket, refer to "Appendix B: Build Ticket Information and Parts Group List" on page 58.

For detailed block diagrams of cable connections, refer to "Appendix C: Block Diagrams" on page 60.

For additional parts details, contact the distributor or Gilbarco Customer Service. Also, refer to *PT-1936 Encore Series Pumps and Dispensers Illustrated Parts Manual*.

FlexPay II Part Numbers for E-CIM Retrofit Kit

The FlexPay II part numbers for the E-CIM retrofit kit are listed for reference only. Some of these parts may not have details, depending on options. Refer to "Appendix B: Build Ticket Information and Parts Group List" on page 58. For identifying orderable spare parts, refer to *PT-1936 Encore Series Pumps and Dispensers Illustrated Parts Manual*.

Location	Description	Part #	Notes
On E-CIM	E-CIM Insert for 5.7"	M14235A9X2	0= scanner hood, 1 = none
Assembly	E-CIM Insert for 10.4"	M14234A9X2	0= scanner hood, 1 = none
	Main Central Processing Unit (CPU) Board, FlexPay Control Board (FCB)	M09115A001	
	10.4" Softkeys	M10206B00X	1= right, 2 = left
	5.7" Softkeys	M01254A003	
	Intercom Interface Board	M09751A002	1 per door
	5.7" Display	M10369B00X	Ampire AM320240NSTNQW16H
	10.4" Display	M14004A00X	Kyocera® TCG104VGLPANN-ANXX
	Peripheral Interface PCB (PIP) 2	M12806A001	
	Intercom Interface Board	M14595A001	1 per dispenser
	Americans with Disabilities Act (ADA) Keypad	M12287B001	
	Card Reader, Secure, PCI 2	M10728B001	
	Bar Code Scanner with Interface Board	M07662A002	M10402A001 Interface Board
	Card Reader, Secure, PCI 2, EMV	M12492B001	
	Speaker	M09259A001	
	Call Button Board	M04528A001	
	Card Reader, Secure, PCI 2, EMV	M12492B001	
	Encrypted PIN Pad 2.0	M10661B002	
	Contactless Reader	M11697B001	
	Beeper Board	M09232A002	
	TRIND®	M06143A00X	Includes M06100A00X Reader Board and M06074A001 Antenna (1,3 = Red, 2,4 = Amber)

Location	Description	Part #	Notes
M12760A001 or	Fuse Board	M05748A001	
M14576A001	Hub Interface PCB (HIP) 2	M12760A001	p/o M12760A001
	Dispenser Communication Module (DCM)	M11071A001	Optionally p/o M12760A001
	Phoenix supply	M04161B001	p/o M12760A001 and M14576A001
	DCM2	M14576A001	p/o M14576A001
	DCM2.2	M15341A101	p/o M15737A001
	Secure System on Module (SSoM)	M14579A101	p/o M14576A001
Separate Location	Heater	M07333A001	Includes Sunon [®] Fan #SP100A1123XBT and Heater Dekko #490590

Related Documents

Document Number	Title	GOLD℠ Library
MDE-3804	Encore and Eclipse® Start-up/Service Manual	Encore and EclipseService Manual
MDE-4366	USB Printer Maintenance Guide	Encore and Eclipse
MDE-4609	Heater/Fan Kit (M07333K00X) Installation Guide for Encore 300/The Advantage® Series [with FlexPay EMV (Canada Only)] and Encore S/Encore 500 Units	 Advantage and Legacy[®] Encore and Eclipse FlexPay EMV
MDE-4902	Encore 700 S Start-up and Service Manual	CRIND and TRINDEncore and Eclipse
MDE-4917	FlexPay Connect Distribution Box Installation Manual	FlexPay Connect
MDE-5314	Insite360 [™] Encore Remote Management Installation, Start-up, and Service Manual	Flex Pay EPP and SCRFlexPay IV
MDE-5349	Insite360 Encore Power Supply Retrofit Kit Installation Instructions	Encore and EclipseService Manual
PT-1936	Encore Series Pumps and Dispensers Illustrated Parts Manual	Encore and EclipseEncore and Eclipse InstallersParts Manual

Abbreviations and Acronyms

Term	Description
ADA	Americans with Disabilities Act
ASC	Authorized Service Contractor
BOM	Bill of Materials
BRCM	Back Room Communication Module
CAT-5	Category 5
CCN	CRIND Control Node
CD	Computer Display
CIM™	Customer Interface Module
CPU	Central Processing Unit
CRIND	Card Reader in Dispenser
DCM	Dispenser Communication Module
E-CIM	Enhanced Customer Interface Module
EMV	Europay®, MasterCard®, and Visa®
EPP	Encrypting PIN Pad
ESD	Electrostatic Discharge
FCB	FlexPay Control Board
GCM	Global Contactless Module
GOLD	Gilbarco Online Documentation
HCR	Hybrid Card Reader
HIP	Hub Interface PCB
IP	Internet Protocol
LON	Local Operating Network
MOC	Major Oil Company
MTA	Mass Terminal Assembly
NGPM	Next Generation Payment
OLC	Over Legacy Cable
OSHA	Occupational Safety and Health Administration
РСВ	Printed Circuit Board
PCI	Payment Card Industry
PCI PED	Payment Card Industry PIN Entry Device
PCN	Pump Control Node
PIP	Peripheral Interface PCB
POS	Point of Sale
PPU	Price per Unit
SCR	Secure Card Reader
SPP	Secure Payment PCB
SSoM	Secure System on Module
TRIND	Transmitter/Receiver in Dispenser
UL®	Underwriters Laboratories
UPT	Unattended Payment Terminal
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).

\Lambda 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 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.





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.

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

\Lambda 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)



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.

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.



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.



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

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

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 unit for the upgrade, proceed as follows:

- **1** Inform the manager.
- **2** Barricade the unit to be worked on.
- **3** Remove power to the Encore 500 S or E-CIM unit at the breaker panel. Follow OSHA lockout/tagout procedures.
- **4** Read all the safety information found in *MDE-3804 Encore and Eclipse Start-up/Service Manual*.
- **5** Isolate two-wire cable to the unit.

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.

Notes: 1) The procedural steps for installing the FlexPay II CRIND Retrofit Kit for Encore 500 S unit are on page 8.

2) The procedural steps for installing the FlexPay II CRIND Retrofit Kit for E-CIM unit is on page 17.

Installation

IMPORTANT INFORMATION

Ensure that the unit is functional. Check with the manager for any existing operational issues. If the unit has any special features, such as TRIND, barcode scanner, and so on, verify proper operation before removal. Print a system health report to verify printer and CRIND functions.

- Notes: 1) Before starting the installation, perform an inventory of the parts list provided. Ensure that there is no damage to the parts and that all the parts are accounted for based on the Bill of Materials (BOM) shipped with the kit.
 - 2) Retain all parts (including cables, nuts, bolts, screws, and so on) that are removed. These are required in case the unit must be reverted to the original as a fallback mitigation.
 - 3) If the FlexPay II CRIND Retrofit Kit includes the optional Insite360 Encore Power Supply, refer to MDE-5349 Insite360 Encore Power Supply Retrofit Kit Installation Instructions (included) for power supply installation instructions.

FlexPay II CRIND Retrofit Kit in Encore 500 S Unit

Note: The procedural steps for installing the FlexPay II CRIND Retrofit Kit for E-CIM unit is on page 17.

High-Level Overview of Kit Installation

IMPORTANT INFORMATION

Ensure that the unit is functional. Check with the manager for any existing operational issues. If the unit has any special features such as TRIND, barcode scanner, and so on, verify proper operation before removal. Print a system health report to verify the printer and CRIND functions.

The following is a high-level overview of the FlexPay II CRIND Retrofit Kit installation in Encore 500 S unit:

Note: If upgrading a unit that previously had no CRIND, disregard the steps for removing old CRIND components and proceed with installation of the new CIM door, printer, and HIP, refer to "Removing Door" on page 12.

- 1 Replace the entire main door with the latest E-CIM style doors.
- **2** Remove the CRIND Control Node (CCN) assembly and replace it with the HIP assembly or DCM2/DCM2.1/DCM2.2 assembly.
- **3** Install a space heater for 10.4-inch or 5.7-inch color screen units (if applicable). *Note: Space heater is optional for both 10.4-inch and 5.7-inch color screen units.*
- 4 Add the mailbox-style Universal Serial Bus (USB) printer assemblies.
- **5** Remove and set aside the components from the main door for reuse. For example, door node, Price per Unit (PPU) board, totalizers, and so on.
- 6 Run the cables, make the connections, and dress the cables neatly. Figure 1 on page 9 shows an example of good cable routing (cables secured in cable clamps and twist-ties).

7 Program and start up the CRIND.

Figure 1: Example of Good Cable Routing



Removing PPU Board

To remove the PPU board, proceed as follows:

- **1** Remove the card reader.
- **2** Remove the following cables from the PPU board:
 - PPU backlight power (J2202)
 - PPU data (J2201)
 - Pump handle
- **3** Remove and discard the three screws that secure the PPU board (see Figure 2). These three screws will NOT be used on the new door.
- 4 Open the printer door to remove the PPU board.

Notes: 1) Retain the PPU board for future use.2) The new door requires a 1/4-inch screw that is provided in the kit.

Figure 2: Removing 1 of 3 Screws of PPU Board



5 Carefully lift the PPU board out of the tray and place it in a safe place for future use.

Removing Pump Handle Boot Switch(es) and Totalizers

To remove the pump handle boot switch(es) and totalizers, proceed as follows:

- *Note: Ensure that all the cables going to the door from the Computer Display (CD) module are disconnected before attempting to remove the door.*
- 1 Remove the pump handle boot switch(es) and then remove the totalizers [assembly (two screws)].

Note: Retain the boot switches and totalizers (assembly) for the new door.

Figure 3: Pump Handle Boot Switch and Totalizers



2 Remove the grade select buttons and their bases from the front of the main door for reuse on the new E-CIM door. Retain all hardware for reuse.

Removing Door Node

Note: Retain the door node and screws for reuse.

To remove the door node, proceed as follows:

- Remove the Cable Assembly (M06115A001 or M06115A002) that carries data and power from the door node to the PPU board. These cables can be discarded. *Note: A new M06115A003 Cable is provided in the kit and is already connected to the door.*
- 2 Remove all the cables from the door node before removing the door node.
- 3 If the door node has CROWN lighting pins, remove the CROWN lighting pins from the door node using diagonal cutters as close to the board as possible (see Figure 4 on page 11).

IMPORTANT INFORMATION

For every door, inspect the door node. Ensure that there are no CROWN lighting pins at the connector (associated with door node 3). If CROWN lighting pins/connector are present on the door node (see Figure 4 on page 11), carefully remove and discard the pins. It is important to have them removed. There is a potential for damaging the door node if these pins are not removed.

Figure 4: CROWN Lighting Pins



4 Remove the door node by removing the four screws that secure it. Retain the screws and door node for future use.

Note: Before you remove the main door, ensure all cables going to the door have been disconnected.

 5 Remove any peripheral options, such as call button board, that will be reused from the door.
 Note: Not all CRIND options are directly transferrable to the FlexPay II CRIND platform. The options that are not transferrable will be provided in the kit.

For peripheral options, refer to "Appendix A: Peripheral Options" on page 45.

Removing Prop Rod

To remove the prop rod, lift it upwards and then pull it out of its housing slot (see Figure 5). *Note: Retain the prop rod for future use.*



Figure 5: Removing Prop Rod

Removing Door

To remove the existing door from the unit, proceed as follows:

- *Note: Ensure that all the cables going to the door from the CD module are disconnected before removing the door.*
- 1 After all the components that will be reused are removed from the door, remove the existing door from the unit (see Figure 6).
 - Note: After you open both the doors completely, the top sheathing must slide over enough to remove the pin. If not, you may have to remove the inner sheathing so that you can slide the top cover and access the pin.



Figure 6: Removing Pin from Existing Door

2 Remove the pin at the upper door hinge. Ensure that you hold the door steadily with one hand while removing the pin.

Note: Use both the hands to remove the pin if someone else is holding the door. Otherwise, the door may fall off the unit and get damaged.

- 3 After you remove the pin, lift the door from the lower mounting hinge and move to a safe location.*Note: Retain all the parts in case you must revert to the original equipment for any reason.*
- 4 Install the new retrofit door onto the unit by reversing steps 2 to 3. Insert the lower portion of
- the door in the lower hinge and then place the pin in the upper hinge (see Figure 6).
- 5 Repeat door removal and installation for both sides.
 Note: The doors you received in the kit are side-specific. Ensure that the correct door is installed on the correct side of the unit. The side of the unit where the calibration switch is located is identified as side A. For Applause™ Media System supported units, the side A door to install will have a Local Operating Network (LON)-to-USB board installed to the left of the door node.

After the door is in place, install all the following parts removed previously:

• Door node

Note: Ensure that the correct door node is put on the correct side and ensure that the CROWN lighting pins have been removed (if applicable).

• PPU board

Note: Use the 1/4-inch screws provided in the kit. DO NOT use the screws taken out previously from the PPU board.

IMPORTANT INFORMATION

Failure to use the new 1/4-inch screws provided in the kit will damage the door.

- Totalizer assembly or totalizer bracket
- Pump handle switches
- Grade select bases and buttons Note: Carefully place the buttons in their correct location.
- Transfer any other options that may have been removed to the new door or add any CRIND options included in the kit. For peripheral options, refer to "Appendix A: Peripheral Options" on page 45.
- 6 Once the PPU board is installed, install the new card reader (including new gasket). *Note: New gasket and bracket are provided in the kit.*

Removing Underwriters Laboratories (UL) Buckets

Remove the UL buckets (one on each side) to allow room to install the mailbox-style printer assemblies. Retain the UL bucket with the UL label and serial number, and one Self-tapping Screw (M00417B101), then attach it inside the unit.

Note: The sides of the UL bucket must be removed before placing it in the unit. To remove the sides and bottom, bend them repeatedly to break them off [see Figure 7 (ii) and Figure 7 (iii)].

Figure 7: Removing UL Bucket



Attaching UL Bucket to T-rail

Attach the UL bucket to the T-rail using a self-tapping screw (retained earlier) to a safe place inside the unit, as shown in Figure 8.

Note: MET Label (M12707B003) is provided in the kit and it needs to be installed next to UL label.

Figure 8: Attaching UL Bucket to T-rail



Installing Printers

To install the printers, proceed as follows:

1 Ensure that the tab on the back side of the printer is inserted into the U-channel before inserting the four mounting screws [see Figure 9 and Figure 10 (i) on page 15].

Figure 9: Tab on Back Side of Printer



2 Install the new mailbox-style printer assembly to the unit air gap sheet-metal plate at the bottom of the CD module using the four 8-mm screws [see Figure 10 (ii)].

Figure 10: Mailbox-style Printer



Connecting 24 V Printer Power Cable Connector (M04405A00X)

To connect the 24 V printer power cable connector, proceed as follows:

- Note: If the FlexPay II CRIND Retrofit Kit includes the optional Insite360 Encore Power Supply, refer to MDE-5349 Insite360 Encore Power Supply Retrofit Kit Installation Instructions (included) for power supply installation instructions.
- 1 Connect the AC cable of the HIP assembly power supply to the AC distribution cable located within the unit.

Note: Older transformer assemblies do not have an AC distribution cable already located within the unit. This cable will be provided in the kit for installation.

2 Connect the 24 V printer power cable connector to P4 and P5 on the DIN rail power supply board [use existing 24 V connector/DIN rail power supply (see Figure 11)].



Figure 11: Connecting 24 V Printer Power Cable Connector

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Removing CCN Assembly

To remove the CCN assembly, proceed as follows:

1 Disconnect all the cables from the CCN.

Figure 12: Removing CCN Assembly



2 Remove the CCN assembly from the T-rail by removing the three nuts located at the bottom of the mounting bracket.

Note: Retain the nuts for mounting the HIP assembly.

To install HIP2/DCM2/DCM2.1/DCM2.2 assembly, refer to "Installing HIP 2/DCM2/ DCM2.1/DCM2.2" on page 23.

FlexPay II CRIND Retrofit Kit in Encore E-CIM Unit

Note: The procedural steps for installing the FlexPay II CRIND Retrofit Kit for Encore 500 S unit is on page 8.

IMPORTANT INFORMATION

Ensure that the unit is functional. Check with the manager for any existing operational issues. If the unit has any special features such as TRIND, barcode scanner, and so on, verify proper operation before removal. Print a system health report to verify printer and CRIND functions.

To install FlexPay II CRIND Retrofit Kit in Encore E-CIM unit, proceed as follows:

- Notes: 1) Before starting the installation, perform an inventory of the parts list provided. Ensure that there is no damage to the parts and that all the parts are accounted for, based on the BOM shipped with the kit.
 - 2) Retain all the parts (including cables, nuts, bolts, screws, and so on) that are removed. These are required in case the units must be reverted to original as a fallback mitigation.

High-Level Overview of Kit Installation

IMPORTANT INFORMATION

Ensure that the unit is functional. Check with the manager for any existing operational issues. If the unit has any special features such as TRIND, barcode scanner, and so on, verify proper operation before removal. Print a system health report to verify printer and CRIND functions.

The following is a high-level overview of the FlexPay II CRIND Retrofit Kit installation in Encore E-CIM unit:

- Notes: 1) If upgrading a unit that previously had no CRIND, disregard the steps for removing old CRIND components and proceed with installation of the new CIM door, printer, and HIP; refer to "Removing E-CIM" on page 19.
 - 2) If the FlexPay II CRIND Retrofit Kit includes the optional Insite360 Encore Power Supply, refer to MDE-5349 Insite360 Encore Power Supply Retrofit Kit Installation Instructions (included) for power supply installation instructions.
- 1 Remove and replace the E-CIM portion of the main door (not the entire main door).
- **2** Remove the CCN assembly and replace it with the HIP assembly or DCM2/DCM2.1/DCM2.2 assembly.
- **3** Install a space heater for 10.4-inch or 5.7-inch color screen units (if applicable). *Note: Space heater is optional for both 10.4-inch and 5.7-inch color screen units.*
- **4** Remove and set aside the components from the E-CIM door for reuse. For example, door node, PPU board, totalizers, and so on.
- **5** Run the cables, make the connections, and dress the cables neatly [cables secured in cable clamps and twist-ties (see Figure 13 on page 18)].

6 Program and start up the CRIND.

Figure 13: Example of Good Cable Routing



Removing Door Node

Note: Retain the door node and screws for reuse.

To remove the door node, proceed as follows:

- 1 Remove the soft keypad connector (P2106) from the door node.
- **2** Remove the push-to-start connector from P2111 on the door node.
- **3** Disconnect the J5 (24 V power cable) connector from the monochrome display. *Note: The J5 connector will not be used in the new kit.*
- 4 Disconnect the CN2 connector from the old card reader. *Note: The CN2 connector will not be used in the new kit.*
- 5 Disconnect the customer keypad connector from the keypad.*Note: The customer keypad connector will not be reused in the new kit.*
- **6** If the call button is installed, remove J902C from the call button board. This will be replaced by a new cable in the kit.

7 Remove the door node by removing the screws that secure it to the unit door. Retain the door node and screws for future use.

Figure 14: Removing Door Node



Removing PPU Board

To remove the PPU board, unbolt the PPU board by loosening and removing the three screws holding it.

Notes: 1) Retain the screws and PPU board for future use.

2) PPU can remain loose in the trough.

Figure 15: Removing 1 of 3 Screws of PPU Board



Removing E-CIM

To remove the E-CIM, proceed as follows:

- 1 Disconnect all the cable connections from the electronics on the E-CIM door.
- **2** Remove the grade select buttons. The grade select bases can remain in position.
- **3** Remove the PPU graphic to gain access to each five E-CIM mounting screws on the front of the main door.

4 Loosen and remove the five screws in the top row on the front of the unit (see Figure 16). *Note: Retain the screws for future use.*



Figure 16: Loosening and Removing Screws

5 Loosen and remove each 1/4-inch screw connecting the E-CIM to the unit door and remove the screws holding the CIM door [see Figure 17 (i)].



Figure 17: Removing E-CIM

Note: Card reader, monochrome display, and auxiliary keypad can remain on the E-CIM to be removed. They can be discarded.

6 Carefully remove the E-CIM from the unit door.

7 Remove the display bracket on the new E-CIM by removing the four nuts for 5.7-inch display (see Figure 18), and for 10.4-inch display (see Figure 19).



Figure 18: Removing Nuts - 5.7-inch Display Bracket

Figure 19: Removing Nuts - 10.4-inch Display Bracket



8 Install the new E-CIM door using the 1/4-inch screws removed in step 5 on page 20 and leave the connections hanging this time [see Figure 19 (ii) on page 21]. *Note: Ensure that E-CIM door gaskets are in proper place before installing to the main door.*

Reinstalling Peripherals

Reinstall peripherals removed in "Removing Door Node" on page 24 through "Removing PPU Board" on page 25.

Note: For some peripherals, new components may be shipped with the kit depending on the types of options installed.

For peripheral options, refer to "Appendix A: Peripheral Options" on page 45.

Removing CCN Assembly

To remove the CCN assembly, proceed as follows:

1 Disconnect all the cables from the CCN.

Figure 20: Removing CCN Assembly



2 Remove the CCN assembly by removing the three nuts located at the bottom of the mounting bracket.

Note: Retain the nuts for mounting the HIP assembly.

Installing HIP 2/DCM2/DCM2.1/DCM2.2

Installing HIP 2 Assembly

To install the HIP 2 assembly, proceed as follows:

- Notes: 1) If using HIP 2, Applause Media System is initiated and displayed by monitoring the two-wire circuit. LON-to-USB board is not required.
 - 2) If the FlexPay II CRIND Retrofit Kit includes the optional Insite360 Encore Power Supply, refer to MDE-5349 Insite360 Encore Power Supply Retrofit Kit Installation Instructions (included) for power supply installation instructions.
- 1 Mount the HIP 2 assembly on the T-rail by using the three 7-mm nuts. *Note: Use the same hole pattern as the CCN assembly removed previously.*



Figure 21: Installing HIP 2 Assembly

2 Connect the AC Line Cable (M03689A003) of the DIN rail power supply to the AC Distribution Cable (M04406) located in the unit, where applicable.

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(s) opens and closes for service. The cables must be dressed neatly. Ensure that there is no interference after the cables are connected and routed.

Figure 22: Example of Good Cable Routing



3 Connect the Ethernet[®] cable from the FCB at P503 to the HIP 2 board at J312 (A, B, or D). Figure 23: Connecting Ethernet Cable



4 Connect J301A/B of M13120A001 Cable to the +24 V cable from the HIP 2 assembly power supply.

Making Two-wire Connections for HIP 2 Assembly

To connect the HIP 2 board with the Pump Control Node (PCN) and conduit, proceed as follows:

- *Note: Figure 24 represents the generic case. In Major Oil Company (MOC) configuration, these connections are still the same as there is no pump two-wire connection coming from the conduit. Therefore, in an MOC configuration do not perform step 5.*
- 1 Connect the J3105 (3 position) of CRIND two-wire cable from the conduit to P404 on the HIP 2 board.
- **2** Remove the J1109 connector of pump two-wire cable from the PCN.
- **3** Connect the J403 connector on the M00491A001 Cable to P403 on the HIP 2 board.
- 4 Connect the J402 connector to P1109 on the PCN.
- 5 Connect the J1109 connector of pump two-wire cable from the conduit to P405 on the HIP 2 board.*Note: Do not perform this step in the MOC configuration.*
- 6 Verify that a jump jack is populated at JP4 (on the HIP 2 board) in the MOC configuration.

Figure 24: HIP 2 Board Wiring Block Diagram

B19/B9	CRIND Two-wire	P404
A19/A9 Conduit	Pump Two-wire	HIP 2 P405
		P403
		M00491A001
		P402
		PCN

DCM2 Assembly (M14576A001)

The DCM2 is used when the back room is using HomePlug through a Back Room Communication Module (BRCM)2.

Removing HIP 1/HIP 2 Assembly

Note: Removing HIP 1/HIP 2 assembly does not apply to non-CRIND units.

To remove an HIP 1/HIP 2 assembly (if existing in the unit), proceed as follows:

- **1** Disconnect all the cables from the HIP 1/HIP 2.
- 2 Remove the three 7-mm nuts underneath the HIP 1/HIP 2 assembly. *Note: Retain the nuts for reuse.*

Figure 25: Removing HIP 1/HIP 2 Assembly



Installing DCM2 Assembly

To install the DCM2 assembly, proceed as follows:

- 1 Mount the DCM2 assembly on the T-rail by using the three 7-mm nuts removed earlier or provided in the kit.
- **2** Place the DCM2 assembly in the exact same location as the recently removed HIP 1/HIP 2 assembly.



Figure 26: DCM2 PCBA Board

Connecting Cables

To connect the cables, proceed as follows:

- If the DCM2 assembly has a Phoenix power supply:
 - Connect J301 of the M07973A003 Power Cable to P301 on the DCM2.
 - Connect P301A/B of M13120A001 on side A to J301A of M07973A003.
 - Connect P301A/B of M13120A001 on side B to J301A of M07973A003.

Note: Take special care to route the AC wiring away from DC.

- If the DCM2 assembly does not have a Phoenix power supply:
 - Connect P305 of M07973A004 to J305 on the M05547A00X.
 - Connect J401 of M07973A004 to P301 on the DCM2.
 - Connect P301A/B of M13120A001 side A to J301A of M07973A004.
 - Connect P301A/B of M13120A001 side B to J301A of M07973A004.
- **3** Connect J302A/B of M15242A001 to P302A of DCM2.

- 4 Connect J302A/B of M15242A001 to P302B of DCM2.
- **5** If M1521AXXX Cable is provided, connect J315 to P315 on the DCM2 and connect J111 to the PC Serial Connection or P1111 on the PCN. (This PCN connection is the same that was used for software updates.)

Making Two-wire Connections to DCM2 (Generic and MOC) To connect the DCM2 board with the PCN and conduit, proceed as follows:

- 1 Disconnect the existing two-wire cable from the HIP 1/HIP 2.
- 2 Remove the J1109 connector of the pump two-wire cable from the PCN.
- For Generic: Remove the two-wire cables from the conduit that are attached to A9, A19, B9, and B19 (see Figure 24 on page 25).
 For MOC: Remove the two-wire cables from the conduit that are attached to A9 and A19 (see Figure 29 on page 30).
- **4** Connect the wires labeled 'CRIND' and pump of the M02993A005 Cable to the two-wire cables coming out of the conduit. Connect the colored wires as follows:

For Generic:

- Connect the red wire to pump A9.
- Connect the mated yellow wire to pump A19 and CRIND B19.
- Connect the blue wire to CRIND B9.

For MOC:

- Connect the blue wire to CRIND A9.
- Connect the mated yellow wire to CRIND A19.
- **5** Connect the J300 connector on the M02993A005 to P300 of the DCM2 board.
- 6 Connect J403 of the M00491A001 Cable to P303 on the DCM2.
- 7 Connect the other end of the M00491A001 cable to the P1109 on the PCN.
 - *Notes: 1)* For Generic: Verify that a jump jack is not populated on JP4 (see Figure 27 on page 29).
 - 2) For MOC: Verify that a jump jack is populated on JP4 (see Figure 27 on page 29).



Figure 27: Generic/MOC Header Location

Note: When the DCM2 is used with a BRCM2 and high-speed data is merged to the existing two-wire, this connection becomes Over Legacy Cable (OLC) connection. The OLC connection always connects to pin 4 and pin 5 on P300.

Figure 28: DCM2 Board Wiring Block Diagram (Generic)





Figure 29: DCM2 Board Wiring Block Diagram (MOC)

DCM2 Connectors

The following table lists the port numbers and functions of DCM2 connectors:

	Port	
DCM2 Connector	Number	Function
3-pin Mass Terminal Assembly (MTA) .156"	P301	24 VDC power input.
2-pin MTA .156"	P306A	24 VDC power output (fused). This is primarily used to power the DCM in Applause Media System.
2-pin MTA .156"	P306B	24 VDC power output (fused).
5-pin MTA .100"	P300	Two-wire from Distribution Box (D-Box) [CRIND and Pump (Generic only)].
5-pin MTA .100"	P315	Remote management connection to PCN.
2-pin MTA .100"	P303	Two-wire to PCN.
8-pin MTA .100"	P302A	RS-232 pump and CRIND to FCB A.
8-pin MTA .100"	P302B	RS-232 pump and CRIND to FCB B.
	P304A/B	Ethernet connection to the back room. P304B is the optional discreet wire connection.
	J305C	Ethernet connection to FCB A.
RJ-45	J310B	Ethernet connection to FCB B.
	J303A	Laptop Service port.

DCM2 Jump Jacks

The following table lists the status and functions of jump jacks:

	On	Off	Function
J3	х		HomePlug active. P304 A/B disabled (for use with BRCM2).
		х	HomePlug inactive. P304A and P304B connects to Category 5 (CAT-5) running through the conduit for high speed connection (if used).
J4	х		Unit is connected to a Passport POS (MOC)
_		х	Unit is connected to a third party POS (Generic)

DCM2.1 Assembly

The DCM2.1 Board provides a high-speed data connection for the Applause Media System and future EMV applications. On the rear side of the M14576A001 DCM2 Board, there is an SSoM for Insite360 Encore.





For cable block diagram, refer to "Appendix C: Block Diagrams" on page 60.

Installing DCM2.2 Assembly

To install DCM2.2 assembly, proceed as follows:

- 1 Disconnect all the cables connecting the HIP 2, or DCM2/DCM2.1.
- **2** Remove the HIP 2/DCM2/DCM2.1 bracket located on the T-rail by removing the three 7-mm nuts as shown in Figure 31.

Figure 31: Removing 7-mm Nuts



3 Install the DCM2.2 assembly (see Figure 32) by reusing the three 7-mm nuts removed in step 2.



Figure 32: Installing DCM2.2 Assembly

- 4 Connect all the applicable cables to the DCM2.2 assembly as shown in Figure 33.
- **5** Install the 24 VDC M07973A006 Power Cable in place of M07973A004 and make the following connections:
 - Connect P305 to J305.
 - Connect J401 to P301 on the DCM2.2 assembly.
 - Connect power to each CRIND (J301A to P301A/B and J301B to P301A/B).
- **6** Connect the M15241A002 ZMODEM cable to P1111 on the PCN, to P315 (also labeled as ZMODEM Pump on the DCM2.2).



Figure 33: Connecting Cables to DCM2.2 Assembly

DCM2.2 Connector Table

The following table lists the port numbers and functions of DCM2.2 connectors:

DCM2.2 Connector	Port Number	Function
3-pin MTA .156"	P301	24 VDC power input
2-pin MTA .156"	P306A	24 VDC power output (fused). This is primarily used to power the DCM in Applause Media System.
5-pin MTA .100"	P300	Two-wire from D-Box [CRIND and Pump (Generic only)].
2-pin MTA .100"	P303	Two-wire to PCN
8-pin MTA .100"	P302A	RS-232 pump and CRIND to PIP3 A
4-pin	P333	Dedicated Home Plug
8-pin MTA .100"	P302B	RS-232 pump and CRIND to PIP3 B
	P304A/B	Ethernet connection to the back room. P304B is the optional discreet wire connection.
	J305C	Ethernet connection to CRIND A
	J310A	Ethernet connection to UX300/UX410 A
RJ-45	J310B	Ethernet connection to CRIND B
	J303B	Ethernet connection to UX300/UX410 B
	J303A	Laptop Service port 1
	J310A	Laptop Service port 2

DCM2.2 LED Indicators

Check the following LED indicators after DCM2.2 is power ON.

Function	Color	Control
CCP Power_Good LED	Green	Driven when 24 V DC is present
High-Speed Power LED	Green	ON: Power ready Flashing: Loading firmware OFF: Power not ready
High-Speed Status LED	Green	ON: High-speed link detected Flashing: TX or RX activity OFF: High-speed link not detected
Two-wire	Orange	Flashing: TX and RX (two-wire) detected ON: RX is solid and TX is OFF if there is an Open connection. Wire is not connected. OFF: No communication. Both TX and RX are OFF.
SSoM Activity	Green	ON: SSoM is detected Flashing: After SSoM registered
Router Enable	Green	ON: When the SSoM is installed and has Cloud connectivity
P304 ETH Link/Act	Orange	ON: When using CAT-5 configuration OFF: When using high speed (HomePlug)

DCM2.2 Jump Jacks

The following table lists the status and functions of jump jacks:

Connector	ON	OFF	Function
J3	Х		High-speed connection active. P304 A/B disabled.
		Х	High-speed connection inactive. P304A and P304B connects to Category 5 (CAT-5) running through the conduit for high speed connection (if used).
J4	Х		Unit is connected to a Passport POS MOC
		Х	Unit is connected to a third party POS (Generic)
J5	Х		VLAN is enabled
		Х	VLAN is disabled
J6	В		Install the Jump Jack on the B position for the 45 mA Current loop

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Field Communication Wiring

Depending on the dispenser type and whether or not it has factory-installed conduit, there are different specifications in the current loop wiring. For detailed diagrams, refer to "Dedicated High-Speed Wiring Block Diagram" on page 62 and "Non-Dedicated High-Speed Wiring Block Diagram" on page 63 in "Appendix C: Block Diagrams" on page 60.

Considerations

- P300 has the red/yellow and blue/yellow current loop inputs for both the pump and the CRIND, respectively.
- P303 is the current loop output to the pump. It must be used even in the Generic CRIND mode.
- **DCM2 Only:** J3 ON enables the high-speed connection shared with the red/yellow current loop wires. If it is ON, the J304A and B are disabled.
- **MOC/Generic Selection:** Made by installing J4 on the DCM2. Note that on the DCM2, installing this jumper shifts the CRIND two-wire to the red/yellow wires.

The following table lists wiring considerations:

Cable Part	Connections
M15241A001	Connect J315 of M15241A001 to P315 on the DCM2.1
	Connect J1111 of M15241A001 to P1111 of the PCN
M15241A002	Connect J315 of M15241A002 to P315 on the DCM2.2

Note: The above connections are applicable for E-CIM, E500, and E500 S (not applicable for The Advantage Series and E300).

Wiring Requirements

For Passport

- **DCM2 Only:** CRIND two-wire connection must be on the red/yellow wires. This is significantly different from previous CRINDs to ensure high-speed connection.
- J4 (DCM2) or JP5 must be ON.
- If DCM2 high-speed connectivity is used, J3 must be ON.
- The pump two-wire input must be connected to P303.

For Generic CRIND

- CRIND two-wire must be connected to the blue/yellow wires. Pump two-wire must be connected to the red/yellow wires.
- J4 must be out.
- If DCM2 high-speed connectivity is used, J3 must be ON.
- The pump two-wire input is driven by P303.







Figure 35: Wiring Diagram for Factory-installed Conduit Wiring (DCM2)



Figure 36: Generic/MOC Header Location









Non-Dedicated High-Speed Field Wiring (DCM2.2 Only)

If you are not using the dedicated high-speed connection, refer to the following figures.







Figure 40: MOC/Passport Type Configuration



Dedicated High-Speed Field Wiring (Non-POS) Instructions (DCM2.2 only)

MOC/Passport

If you are using the dedicated high-speed (HomePlug) connection (MOC/Passport type configuration), refer to the following:

Figure 41: MOC/Passport Type Configuration



The following table lists wiring details for MOC mode:

Cable Part	Connector	Color	Description
M02993A006	P333.1	Yellow	High Speed
M02993A006	P333.2	Yellow	High Speed
M02993A006	P333.3	Red	CRIND+
M02993A006	P333.4	Blue	CRIND-

Generic

If you are using the dedicated high-speed connection (Generic type configuration), refer to the following:

Connect the M02993A006 Dedicated High-Speed (HomePlug) Cable (M02993A006) from P333 on DCM2.2 to the dedicated high-speed connection from the back room as shown in Figure 42.

Figure 42: Generic Type Configuration



Cable Part	Connector	Color	Description
M02993A005	P300.1	Red	CRIND+
M02993A005	P300.3	Yellow	CRIND-
M02993A006	P333.1	Yellow	High Speed
M02993A006	P333.2	Yellow	High Speed
M02993A006	P333.3	Red	Pump+
M02993A006	P333.4	Blue	Pump-

The following table lists wiring details for Generic mode:

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(s) opens and closes for service. The cables must be dressed neatly. Ensure that there is no interference after the cables are connected and routed.

After making all cable connections, close the main door and open the printer door. Pull the sliding printer tray and ensure that there is no cable interference.

Figure 43 shows an example of good cable routing (cables secured in cable clamps and twist-ties).



Figure 43: Example of Good Cable Routing

- **2** Apply power to the unit with the two-wire connection still in the isolated position (this will prevent any premature POS downloading).
- **3** Ensure that the printer is loaded with paper.

- **4** Program the FlexPay II CRIND.
 - Notes: 1) With FlexPay II CRIND, remember to press **Enter** after each numeric keypress while in diagnostics.
 - 2) Each side of the unit is an individual CRIND. Therefore, programming must be done with a CRIND diagnostic card on each side individually.
 - 3) Some third-party POSs may need to be reprogrammed since the CRINDs are now individual CRIND on each side. They may need to be configured to be primary on both side 1 and 2.
- **5** Also, while enabling options such as TRIND, ensure to press **Enter** a second time before pressing **Cancel** to exit. Failure to do this will prevent enabling the options. Follow the instructions on the screen.
- 6 Set the CRIND ID.
- 7 Set the CRIND Mode.
- 8 Set the Applause Media System audio volume, if running Applause Media System. Start with "85" and adjust up or down depending on the ambient noise at the forecourt.
- **9** Set the CRIND Time in CRIND Config. menu. This is required for CRIND logs to be properly retrieved.
- **10** CRIND IP addresses follow a default pattern. It is not required to set the CRIND IP addresses if the CRIND IDs on the forecourt are set as follows: 1/2, 3/4, 5/6, and so on. Refer to *MDE-5314 Insite360 Encore Remote Management Installation, Start-Up, and Service Manual* for IP configuration information.

When CRIND IP Addresses Must Be Set Manually

In the following cases, CRIND IP addresses must be set manually:

- Different CRIND ID scheme
- Third-party POS starts at "0"
- Special non-default IP addresses are used at the site

After everything is programmed and enabled, proceed as follows:

- 1 Close the two-wire loop and initiate POS download.
- **2** Ensure that all the CRIND options are functional.
- **3** Verify communication with the POS.
- **4** Verify if paper is installed properly in the printer by observing transaction printout or CRIND printer test.
- **5** Run a debit transaction and verify operation.
- 6 Ensure that the unit is fully operational and all options are functional.

Registering Kits with Gilbarco Claims

To register the kits with Gilbarco claims, proceed as follows:

- 1 After the kits are successfully installed, register kits through web commissioning within 30 days.
- **2** Provide the correct model and serial numbers. The kit model numbers are as follows:
 - EPK NGPM 500 S
 - EPK NGPM ADV
 - EPK NGPM E-CIM
 - EPK NGPM ENC3
 - EPK NGPM ENC5

Note: Registering the kits ensures that proper warranty is applied.

Installing the FlexPay II CRIND Retrofit Kit in Encore E-CIM unit is now complete.

FlexPay II CRIND Start-up Checklist

IMPORTANT INFORMATION

- In Diagnostic Mode, press Enter after each character (for example, for CRIND ID 10, press 1 > Enter > 0 > Enter, and Enter).
- If the card reader is not responding, then close the main doors to eliminate any outside light intrusion.

Diagnostics Mode

- □ Program the CRIND Mode and CRIND IDs.
- □ Ensure that all CRIND keys function correctly (including softkeys and auxiliary keypad).
- \Box Set the audio level.
- \Box Set the personality screen (if applicable).
- \Box Set the unit IP addresses, if non-default values.
- □ Enable any options present on the CRIND.
- □ Run System Health Report (press **Clear** and swipe the CRIND diagnostic card, verify the settings, and ensure that the pump and door node versions are displayed).
- □ Verify if the cash acceptor alarm switches activate door alarms.
- □ Test video/audio (if customers have an Applause Media System).

Visual Checks, Transactions, and Training

- □ Ensure that no wires are trapped in hinges, gaskets, or visible from the exterior of the pump.
- □ Perform a CRIND transaction (both credit and debit).
- □ Ensure that the Applause Media System is present during a transaction.
- □ Ensure that the CRIND LEDs are functioning correctly.
- □ Ensure that all the Applause Media System hardware is powered up and operational (if applicable for Applause Media System).
- □ Verify if the ADA keypad functions properly (if present).
- □ Verify if the auxiliary keypad functions properly.
- □ Verify proper communication with the POS.
- □ Ensure that the CRIND prompting on the display, graphic quality, and Applause Media content are present (if applicable).
- □ TRIND: Verify the response obtained with hand-held transponder tester.
- D Power cycle the unit and verify if the unit is functioning properly after warmstart.
- □ Train the site personnel on how to order and load the CRIND paper. For more information, refer to *MDE-4366 USB Printer Maintenance Guide*.
- □ Verify that the jump jack is populated at JP4 (on HIP 2) in MOC configuration.

Grounding

Figure 44 shows a ground wire connected to the chassis. The 8-mm ground screw (2X) is provided in the kit.

Note: Fasten each ground cable individually to the chassis (one cable per ground screw).



Figure 44: Ground Wire Connected to Chassis

Appendix A: Peripheral Options

Installing Space Heater

To install the space heater, proceed as follows:

- 1 Insert the tab on the heater onto the top rail in the unit.
- 2 To secure the heater, put a nut on the other side of the stud and tighten it.

For more information, refer to *MDE-4609 Heater/Fan Kit (M07333K00X) Installation Guide* for Encore 300/The Advantage Series [with FlexPay EMV (Canada Only)] and Encore S/Encore 500 Units. Note: This manual is included in the kits that have a heater.

Figure 45: Installing Space Heater



Installing Speakers

To remove the old speakers, proceed as follows:

- 1 Remove the four screws holding the speaker and take out the old speakers from the door.
- 2 Install new speakers and secure using the four screws removed in step 1.

Figure 46: Installing Speakers



For cable block diagram, refer to "Appendix C: Block Diagrams" on page 60.

Installing PIP 2 Board (M12806A001)

To connect the PIP 2, proceed as follows: Note: 02.02.XX software version is needed for PIP 2.

To install the PIP 2 board (side A only), proceed as follows:

1 Install two Q10651-04 Stand-offs (see Figure 47) to mount the PIP 2 board.

Figure 47: Installing Stand-offs



2 Install the PIP 2 board (see Figure 48).

Figure 48: Installing PIP 2 Board



Figure 49: PIP 2 Printed Circuit Board (PCB)



PIP 2 Board Connections

The following table lists the connections on the PIP 2 board:

Connector	Port Number	Function
6-pin Plug	P202	Cash Acceptor
3-pin MTA	P203	PCN SMARTConnect [™]
6-pin MTA	P204	TRIND
9-pin MTA	P201	Barcode Scanner
2-pin Plug	P214	BEEP Connector
3-pin Plug	P311	Power IN
Mini USB	P312	USB IN

The following table lists the peripherals for the cables:

Part Number	Port Number	Function
M03184A00X	P202	Cash Acceptor
M07970A00X	P203	PCN SMARTConnect
R20773-GX	P204	TRIND
M08010A00X	P201	Barcode Scanner
M09267A00X	P214	BEEP Connector
M09794A00X	P311	Power IN

Note: Ensure to set the audio level and check that Applause Media System is working properly.

Installing BEEP Board

To install the BEEP board (side A only), proceed as follows:

- 1 Install two Q10651-04 Stand-offs (see Figure 50) to mount the BEEP board.
- **2** Install the BEEP board (see Figure 50).

Figure 50: Installing BEEP Board



Troubleshooting HIP 2/PIP 2/BEEP Board

The following table lists the symptoms, probable causes, and possible troubleshooting solutions for the HIP 2/PIP 2/BEEP board components:

Component	Symptom	Probable Cause	Possible Solutions	
HIP 2 Hardware	No power to the HIP	24 V power-in cable not connected.	Check D1 [+5 V Light Emitting Diode (LED)].	
(M12760A001)			Check power connection at P401 (+24 VDC in).	
			Check +24 V power with a voltmeter. If +24 V of power is not present, check +24 V power supply.	
	No power to the CRIND	24 V power-out cable not connected.	Check power connections at P402A and P402B.	
	FCBs or PIP		Check +24 V power with a voltmeter. If +24 V of power is not present, check +24 V power supply. If +24 V power is present, check +24 V power out with a voltmeter; if +24 V power is not present, replace the HIP board.	
	No Applause being displayed on the CRIND	In generic mode, the two-wire cable is connected to the PCN instead of P405.	Verify the two-wire connection, verify the two-wire pump cable is connected to P405, and ensure the connector is seated properly onto P405.	
			Verify the two-wire connections at P403 and P405 are not crossed. P403 should route to the PCN, whereas P405 routes to the POS.	
		CAT-5 cable unplugged at J412C, J312D, J312B, and J312A.	Verify the CAT-5 cable is connected to J412C (this is the Applause data-in cable from the DCM). Verify twisted-pair is connected to the DCM. Observe LEDs for each CAT-5 connection (D7-18). Verify connection if LEDs do not light. If the LEDs are on and the RJ-45 (CAT-5 cable) are connected, replace the HIP board.	
	No two-wire communication to the FCB	P302A and P302B not seated.	Verify connection at P302 A and B. Verify pins seating in the connector.	
	No two-wire communication in MOC mode	JP4 does not have a jump jack populated.	Populate a jump jack in JP4.	
	Cash acceptor inoperable	P404A and P404B not connected.	Verify connections at P404A and B. Verify pins are seated in the connectors, and replace the HIP board.	
PIP 2 Hardware (M12806A001)	No Beeper	P214 not connected.	Verify P214 connector seating is connected. Verify the BEEP cable from P214 is connected to the FCB.	
		Defective PIP board.	Replace the PIP board.	
	Beeper volume low/high	Jump jack setting.	Verify JP1 is installed and it is in the correct position.	
	No power	P311 not connected.	Verify connection at P311 and that the connector is seated. Check the 24V cable from the HIP board.	
	No peripheral function [barcode scanner, TRIND, Global Contactless Module (GCM), and cash acceptor]	No physical connection.	Verify P311 has power. Connection for each peripheral is connected or seated.	
	PIP 2 does not work	PIP 2 does not have minimum software V2.2.XX.	Install software V2.2.XX.	
BEEP Board (M09232A001)	No BEEP	P214 not connected.	Verify P214 connector seating is connected. Verify the BEEP cable from P214 is connected to the FCB.	
		Defective PIP board.	Replace the PIP board.	
	BEEP volume low/high	Jump jack setting.	Verify JP1 is installed and verify it is in the correct position.	

PIP 2 LED Functions

The following table lists the LED designations and its functions for PIP 2:

Color	Designation	Function	Description	
Green	D1	USB link to U2.	Lights green when USB link is established. This occurs when P312 is connected to the Secure Payment PCB (SPP). Otherwise the PIP 2 is held in reset.	
	D2	USB link to USB device on P308B.	Lights green when USB link is established. This occurs when P312 is connected to the SPP. Otherwise the PIP 2 is held in reset.	
	D4	USB link to USB device on P308A.	Lights green when USB link is established. This only occurs when a USB device is connected to the USB connector.	
	D5	USB link to USB device on P306B.	Lights green when USB link is established. This only occurs when a USB device is connected to the USB connector.	
	D7	USB link to USB device on P306A.	Lights green when USB link is established. This only occurs when a USB device is connected to the USB connector.	
	D8	USB link to USB device on P305.	Lights green when USB link is established. This only occurs when a USB device is connected to the USB connector.	
	D9	USB link to U1.	Lights green when USB link is established. This occurs when P312 is connected to the SPP. Otherwise the PIP 2 is held in reset.	
	D25	5 VDC Power "Good".	Lights when P311 is connected and +24 VDC is applied in the correct polarity.	
Yellow	D3	TX line - GCM communication.	Lights when TX data is sent to a peripheral.	
	D6	TX line - cash acceptor communication.	Lights when TX data is sent to a peripheral.	
	D10	RX line - GCM communication.	Lights when RX data is received from a peripheral.	
	D13	RX line - cash acceptor communication.	Lights when RX data is received from a peripheral.	
	D17	TX line - scanner communication.	Lights when TX data is sent to a peripheral.	
	D18	RX line - scanner communication.	Lights when RX data is received from a peripheral.	
	D30	TX line - TRIND communication.	Lights when TX data is sent to a peripheral.	
	D31	RX line - TRIND communication.	Lights when RX data is received from a peripheral.	
Red	D11	Over current LED - P308B.	Lights when a device causes an over current event.	
	D12	Over current LED - P306B.	Lights when a device causes an over current event.	
	D14	Over current LED - P305.	Lights when a device causes an over current event.	
	D16	Over current LED - P308A.	Lights when a device causes an over current event.	
	D20	USB hub suspend indicator.	Lights when the USB is in suspend mode (SW driven function if used).	
	D21	Over current LED - P306A.	Lights when a device causes an over current event.	
	D23	U1 suspend indicator.	Lights when the USB is in suspend mode (SW driven function if used).	
	D26	U2 suspend indicator.	Lights when the USB is in suspend mode (SW driven function if used).	

TRIND

To install the TRIND, proceed as follows: Note: If upgrading a unit with no CRIND, TRIND Kit must be ordered separately.

- 1 Remove the TRIND Light Indicator Assembly (M06143A00X) from the old CIM door.
- 2 Reattach the TRIND light indicator assembly to the new CIM door provided in the kit.
- **3** Connect the PIP using the TRIND Cable (R20773-G4). Connect J204 to P204.

Figure 51: Connecting TRIND Cable



4 Connect the J182 to P182 on the light indicator assembly.

Unit Heater

A space heater kit is optional for both the 10.4-inch and 5.7-inch color screens.

Refer to MDE-4609 Heater/Fan Kit (M07333K00X) Installation Guide for Encore 300/The Advantage Series [with FlexPay EMV (Canada Only)] and Encore S/Encore 500 Units, which will be included in the kits that contain a heater.

Barcode Scanner

To install the barcode scanner, proceed as follows:

Note: If upgrading a unit with no CRIND, barcode scanner components must be ordered separately.

- 1 Remove the barcode scanner from the unit by loosening and removing the 1/4-inch screws.
- 2 Complete the retrofit installation by installing the new CIM/E-CIM door.
- 3 Install the new Barcode Scanner Interface PCB (M10402A001) provided with the retrofit kit.

Figure 52: New Interface Board



4 Connect the barcode scanner cable to the PIP 2 (P201).

Figure 53: Connecting Barcode Scanner Cable



Note: Repeat the door installation for both sides.

Call Button

To install the call button, proceed as follows:

1 Install the two Q10651-02 Stand-offs on the FCB bracket [to the left of FCB (see Figure 54)].

Figure 54: Installing Stand-offs



2 Install the call button board.

Figure 55: Installing Call Button Board



3 Make the required connections to P902C.

Cash Acceptor with HIP 2 Board

Note: Cash acceptor must be installed after completing the installation of the FlexPay CRIND II Retrofit Kit.

Required Tools

- T-20 Security Bit
- 5/16-inch Nut Driver

To install the cash acceptor, proceed as follows:

1 Remove the LON-Serial Node PCB (M00122A002) and all cables connected to it (see Figure 56).

Figure 56: LON-Serial Node PCB



2 Remove the cash acceptor by removing the screws using a 5/16-inch nut driver (see Figure 57).



Figure 57: Cash Acceptor

3 Remove the four security screws using a T-20 security bit, to remove the cash acceptor from its metal housing (see Figure 58).



Figure 58: Security Screws on Cash Acceptor

- 4 Disconnect the AC power cable connected to the left side of the cash acceptor.
- **5** Connect the J1 (M03184A004) to P1 on the cash acceptor.
- 6 Connect the AC power cable connected to the left side of the cash acceptor.
- 7 Secure the four security screws using a T-20 security bit to mount the cash acceptor to its metal housing.
- 8 Install the cash acceptor by tightening the screws using a 5/16-inch nut driver.
- **9** Repeat steps 1 on page 54 to 8 for side B of the unit.

Installing Cables

To install the first set of cables, proceed as follows:

- 1 Connect the M03184A004 to HIP (P404A for side A or P404B for side B).
- 2 Connect the P192 of M03184A004 to J192 located on the left side of the cash acceptor.
- **3** Plug J2 or power cable to the existing AC distribution cable located within the unit.

To install the second set of cables, proceed as follows:

- 1 Connect the J202 to the PIP (P202) using the Cash Acceptor Cable (M09281A001).
- 2 Connect the J302 of M09281A001 to the 3-connector Ribbon Cable (Q10588-05) provided.
- **3** Connect the P302 Connector (Q10588-05) to the J302 connector on the M07702A016 Cable.





Appendix B: Build Ticket Information and Parts Group List

Figure 60 is an example of a built ticket. The parts group number (highlighted in Figure 60) and a description of each option are provided on the build ticket.

Figure 60: Example of Build Ticket



E-CIM Parts Groups

ltem#	Name of Option	Parts Group Number
1	Encore S E-CIM Bezels	M08483A9X2 or M08484A9X2
2	Beeper or PIP 2	PKM13415AXXX or PKM13416AXXX
3	Secure Card Reader (SCR) 2 or Hybrid Card Reader (HCR) 2 and Encrypting PIN Pad (EPP) 2	PKM07999A00X
4	HIP 2, and DCM (optional)	PKM13836A00X
5	FlexPay II, E-CIM Speaker	PKM01119A00X
6	E 500S E-CIM and Door Parts	PKM12771A001
7	Cabinet Heater	M07333K001
8	TRIND Lens, E-CIM	PKM09103A003
9	TRIND, E-CIM Next Generation Payment (NGPM) Upgrade	PKM00024A001
10	Scanner, E-CIM NGPM Upgrade	PKM07662A001
11	Note Acceptor, E-CIM NGPM Upgrade	PKM00434A001
12	EPP Heater Kit	M08631K001
13	Paint Conversion EPP	PK0999 01
14	GCM on E-CIM with NGPM	PKM12025A007
15	SCR Heater Kit	PKM11243A201
16	USB Printer, Sliding Assembly	PKM10352A007

When verifying to see if the kit contains all the necessary parts for installation, refer to the build ticket and look at each parts group and the parts included in each group.

Appendix C: Block Diagrams

HIP 2, PIP 2, DCM2.2, and BEEP Board Cable Connections

Figure 61: HIP 2/PIP 2/DCM2.2/BEEP Board - Cable Connections



Note: Cable part numbers vary depending on the kit type.

Figure 62: FlexPay UPT (Unattended Payment Terminal) Connections



Dedicated High-Speed Wiring Block Diagram



Figure 63: Block Diagram for DCM2.2 Two-wire Configuration (Dedicated)

Non-Dedicated High-Speed Wiring Block Diagram



Figure 64: Block Diagram for DCM2.2 Two-wire Configuration (Non-Dedicated)

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