

## FlexPay™ IV Encore® 700 S Export Bank Note Acceptor (E-BNA) Upgrade Kit for E-CIM™



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# SECTION 1 - INTRODUCTION

## Purpose

This manual provides instructions to install an Export Bank Note Acceptor (E-BNA) Kit on Encore® 700 S E-CIM™.

## Intended Users

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

## Required Tools

The following is the list of required tools:

- Phillips® and Flat-blade Screwdrivers
- M5 and M8 Nut Driver and Socket Set

## Minimum Software Requirement

FlexPay™ IV CRIND® Software Version 42.05.14

## Configured Kits - Parts List

### Bezels with Export BNA Door

Sr. #	Bezel Part Number	Bezel Type	Display Size
1	M14479A191 and 193	1 and 2 boot	5.7-inch Display
2	M14483A191 and 193	1 and 2 boot	10.4-inch Display
3	M14481A19X	3 and 4 boot	5.7-inch Display
4	M14485A19X	3 and 4 boot	10.4-inch Display

## Required Installation Kits

Kit #	Item #	Part Number	Description	Qty
Kit 1	1	M10646A001	Assy, Cash Acceptor	1
	2	M10669A002	Cable, Export BNA Vanguard	1
	3	Q12845-58	Screw Sems Ph Phil M4 X 10Mm Stl Zn Pl	4
	4	M02160A001	Cable, Security Switch Interface, Encore-500	1
Kit 2	1	M10465A001	Assy, Support Mei Cash Acceptor	1
	2	M00417B009	Screw, Metric M8 X 18 Thread Forming	3
	3	M00417B101	Screw, Metric M5 X 10 Thread Forming	3

## SECTION 1 - INTRODUCTION

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Kit #	Item #	Part Number	Description	Qty
Kit 3	1	M10458A001	Assy, Mei Cash Acceptor	1
	2	M00417B009	Screw, Metric M8 X 18 Thread Forming	4
	3	M16064B001	Cable Mount, Adhesive	2
Other	1	Q12542-25	Lock for Cash Acceptor Door	1

## SECTION 2 - IMPORTANT SAFETY INFORMATION

### 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)



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

#### Read the Manual

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

#### Follow the Regulations

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

#### Replacement Parts

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

#### Federal Communications Commission (FCC) Warning

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

#### Safety Symbols and Warning Words

This section provides important information about warning symbols and boxes.

##### Alert Symbol



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

##### Signal Words

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



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



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



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

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

## SECTION 2 - IMPORTANT SAFETY INFORMATION

### 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 fluid 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.



## SECTION 3 - REMOVING COMPONENTS

### Before You Begin

#### CAUTION



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

3

To prepare the site and unit for the installation:

- 1 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. Ensure that you carry the recommended spare parts to the installation site.

*Note: 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.*



- 2 Read all the safety information found in *MDE-3804 Encore and Eclipse™ Start-up/Service Manual* and “Important Safety Information” on [page 3](#). Perform a Job Safety Analysis (JSA) before beginning the installation.

- 3 Inform the manager.
- 4 Barricade the unit to be worked on.
- 5 Remove power to the unit at the breaker panel. Follow OSHA lockout/tagout procedures.



#### WARNING

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

## SECTION 3 - REMOVING COMPONENTS

### Lower Hydraulic Panel

To remove the lower hydraulic panel:

- 1 Remove the lower hydraulic panel.

*Note: Place the lower panel safely to the side.*

**Figure 1: Removing Lower Hydraulic Panel**



- 2 Open the main door.

## SECTION 3 - REMOVING COMPONENTS

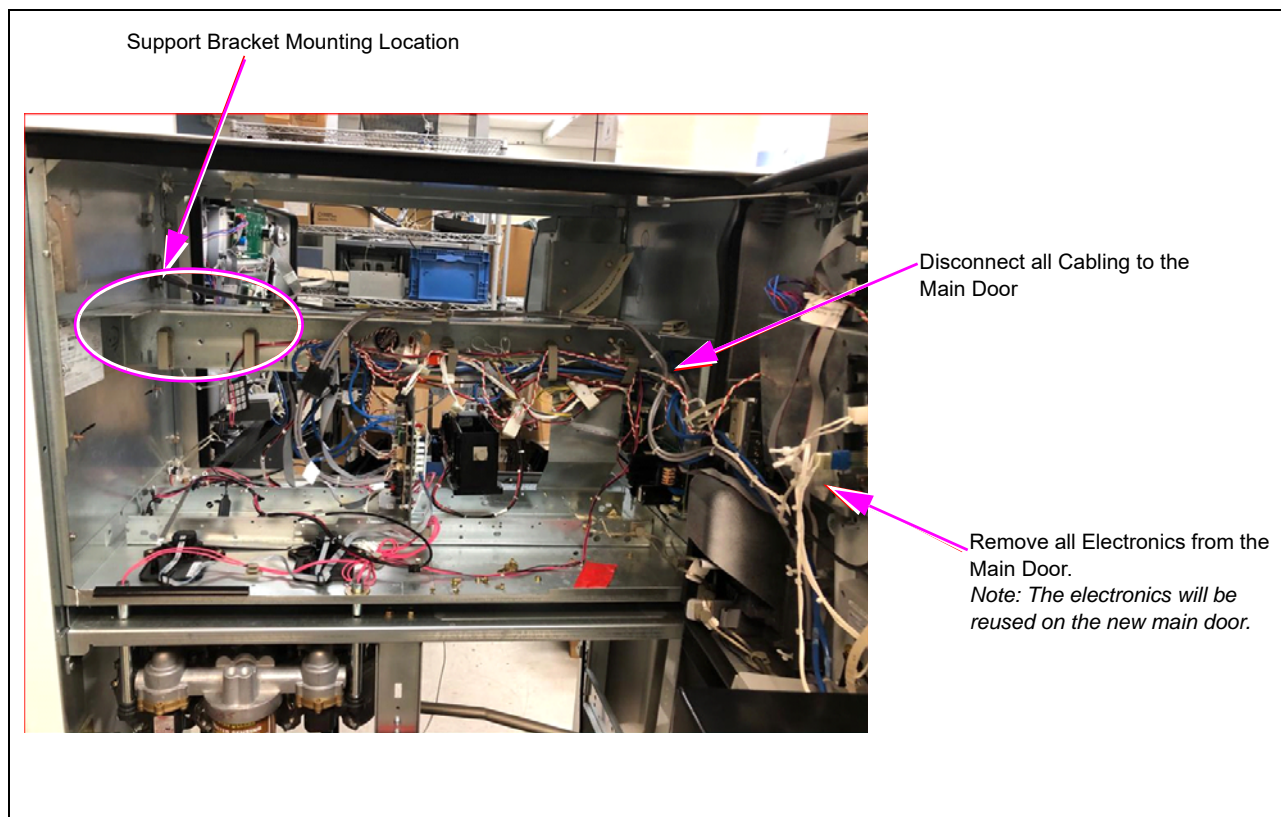
### Cables and Electronics

*Note: Work on one side at a time to ensure that the components do not get swapped from door to door.*

To remove the cables and electronics:

- 1 Disconnect all cabling from the main door (see [Figure 2](#)).
- 2 Remove all the electronics [money/volume display, totalizers, Price Per Unit (PPUs), etc.] from the main door.  
*Note: The electronics will be reused on the new main door. Place them safely to the side.*
- 3 Remove cable clamps and re-route cables as needed to make space for mounting the support bracket on the T- rail (it is called a “T-rail” because that is the shape of the cross-section).

**Figure 2: Disconnecting Cables**



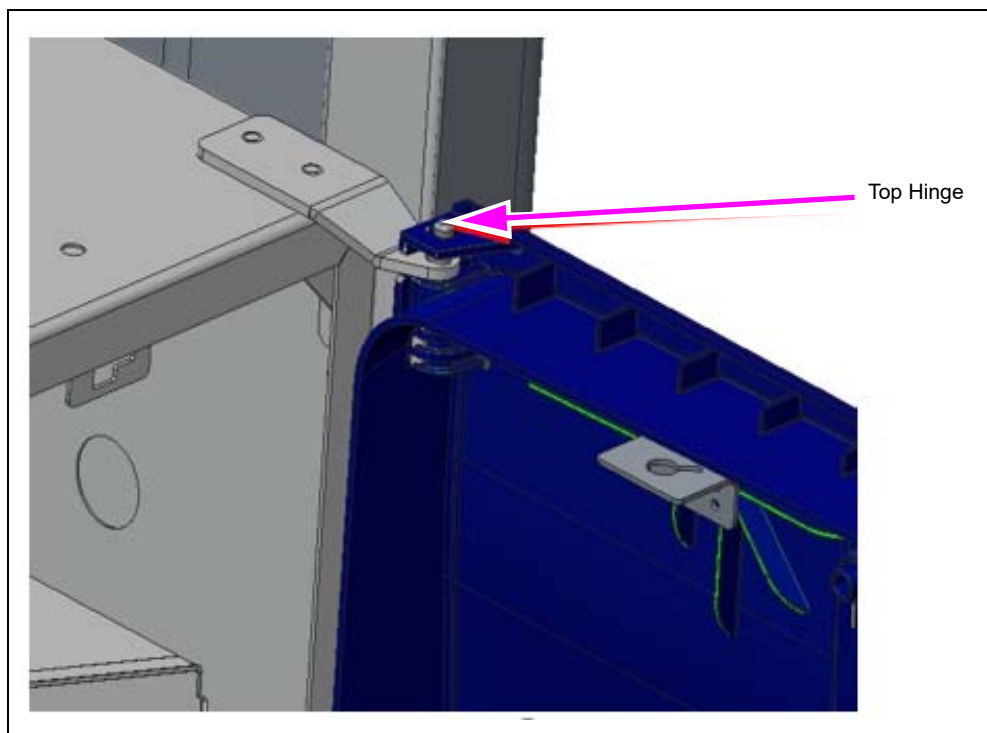
## SECTION 3 - REMOVING COMPONENTS

### Main Door

To remove the main door:

- 1 Open both doors. Push the CD top cover to the other side to expose the top hinge.
- 2 Remove the main door prop rod.  
*Note: Retain the main door prop rod for reinstallation.*
- 3 While supporting the main door, pull out the top hinge pin and remove the main door from the dispenser.

**Figure 3: Pulling Top Hinge Pin**



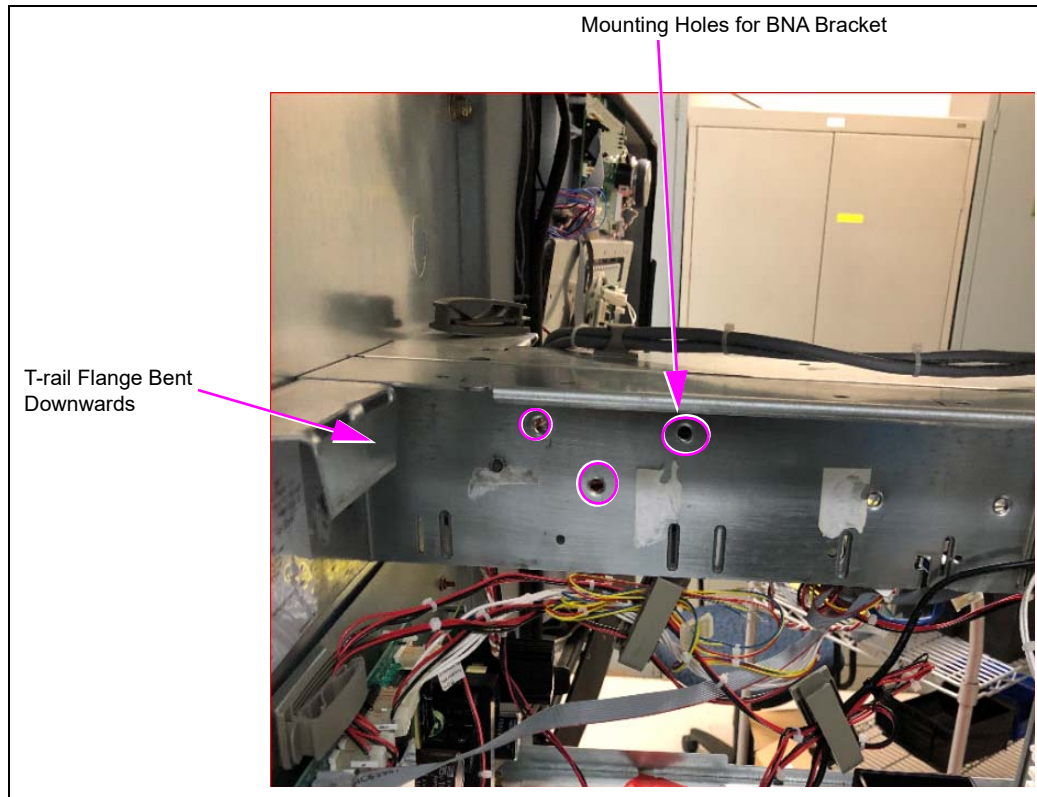
## SECTION 4 - INSTALLATION

### E-BNA Bracket and Vault

To install the E-BNA bracket:

- 1 Bend the T-rail flange downward (see [Figure 1](#)) so that the E-BNA Support Bracket aligns with the mounting holes present on the T-rail.

**Figure 1: Electronics Cabinet**

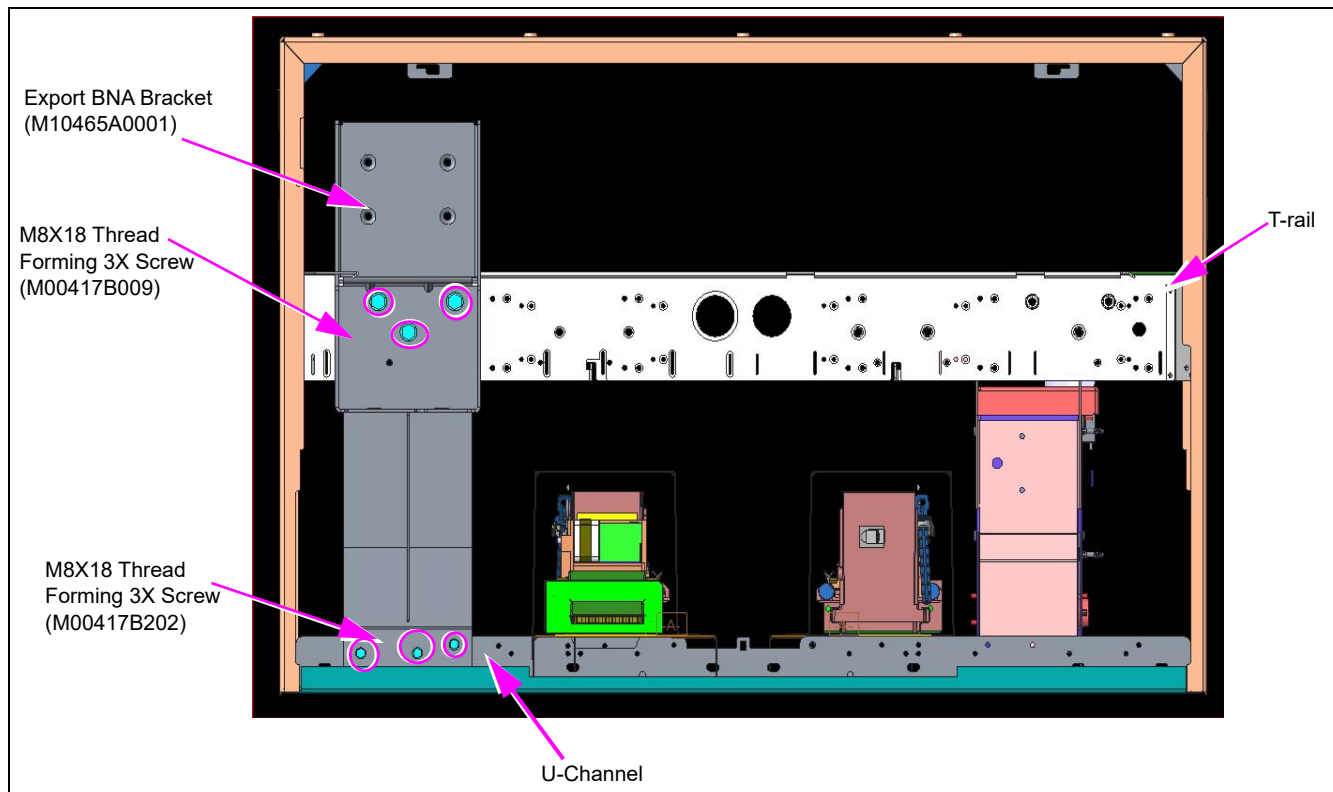


- 2 Position the E-BNA Bracket (M10465A001) on the T-rail and the U-channel in the electronics cabinet [to the left of the printer (see [Figure 2](#) on [page 10](#))].

## SECTION 4 - INSTALLATION

- 3 Mount the E-BNA bracket using M00417B009 M8 (3X) and M00417B101 M5 (3X) screws as shown in the following figure.

**Figure 2: Mounting BNA Bracket**



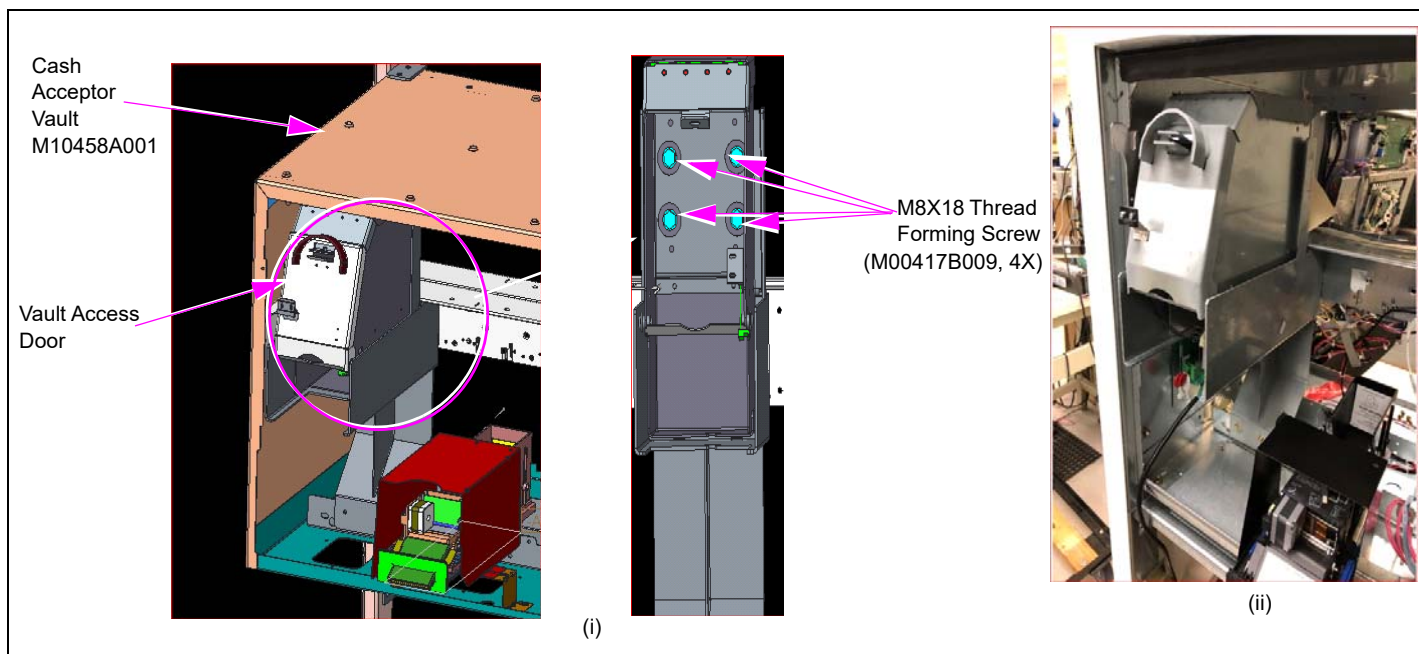
To install the E-BNA Vault:

- 1 Locate and unpack the E-BNA Vault Assembly (M10458A001).
- 2 Open the vault access door.

## SECTION 4 - INSTALLATION

3 Mount the vault on the support bracket using M00417B009 M8 (4X) screws.

**Figure 3: Mounting BNA Bracket**





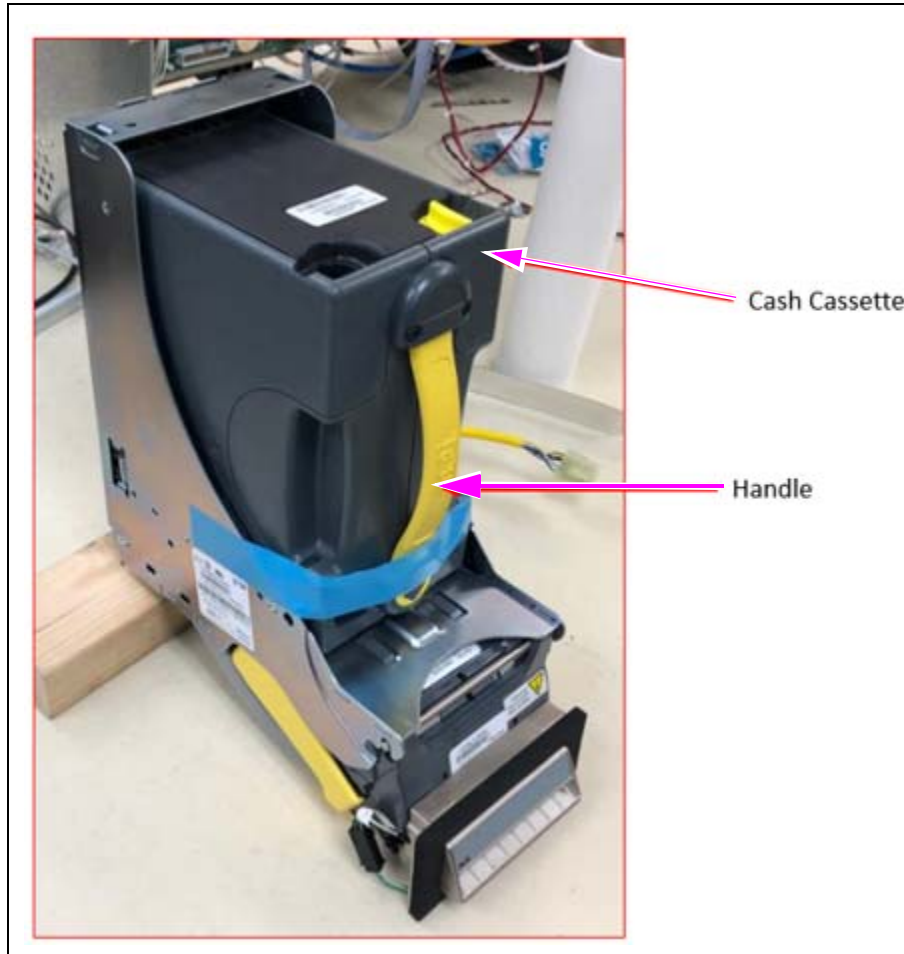
## SECTION 4 - INSTALLATION

### E-BNA Assembly

To install the E-BNA assembly:

- 1 Locate and unpack the E-BNA Assembly (M10646A001).
- 2 Remove the blue tape and pull the handle to remove the cash cassette.

**Figure 4: E-BNA Assembly**



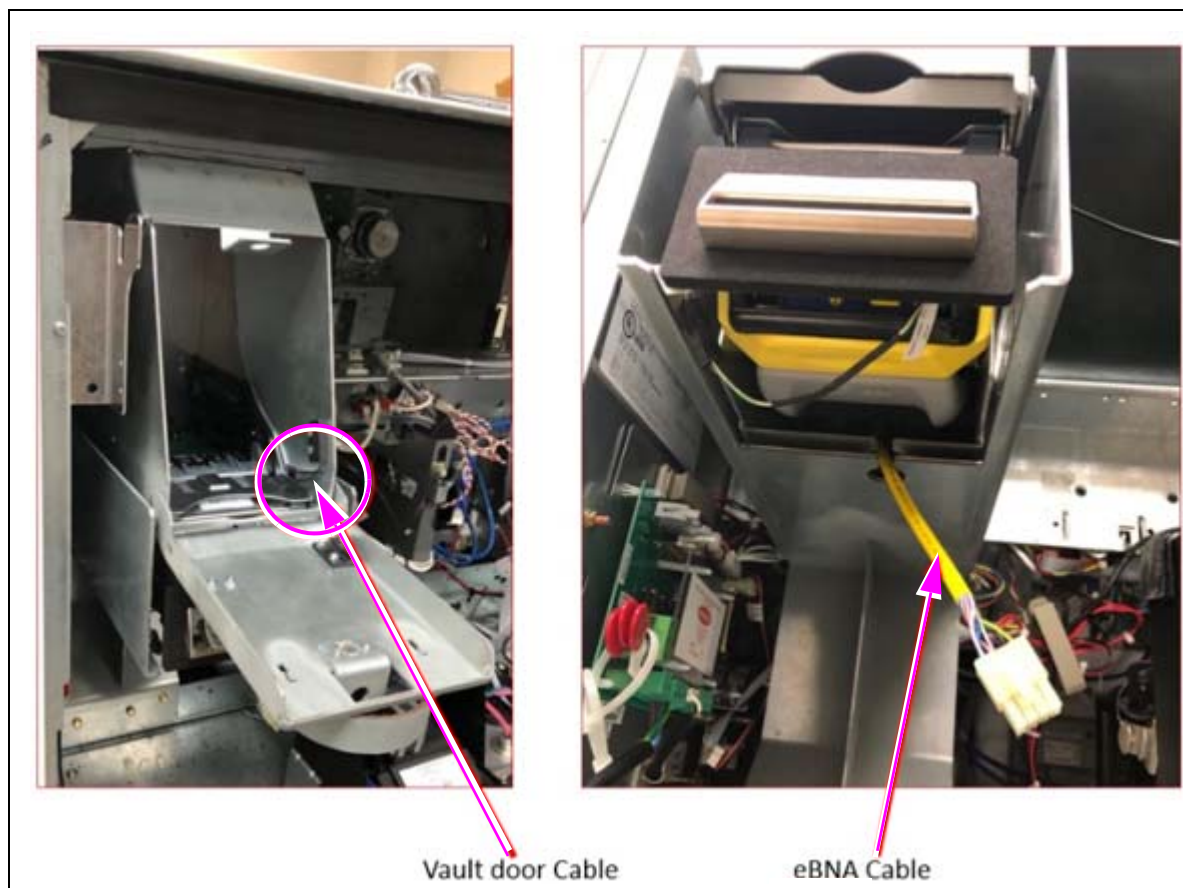
- 3 Ensure that the vault door cable is routing through the gap in the lower right corner of the vault. If required, secure the wires to the inside of the vault with tape to help prevent damage by the cassette.
- 4 Carefully insert the E-BNA (with cash cassette removed) into the vault from the underside.
- 5 Ensure that the vault door cable does not get damaged when you slide in the E-BNA.
- 6 Position the E-BNA yellow cable as shown through the sheet metal cutout.
- 7 Fix the E-BNA on to the vault using 3x M4 Phillips-head Screws Q12845-58.



## SECTION 4 - INSTALLATION

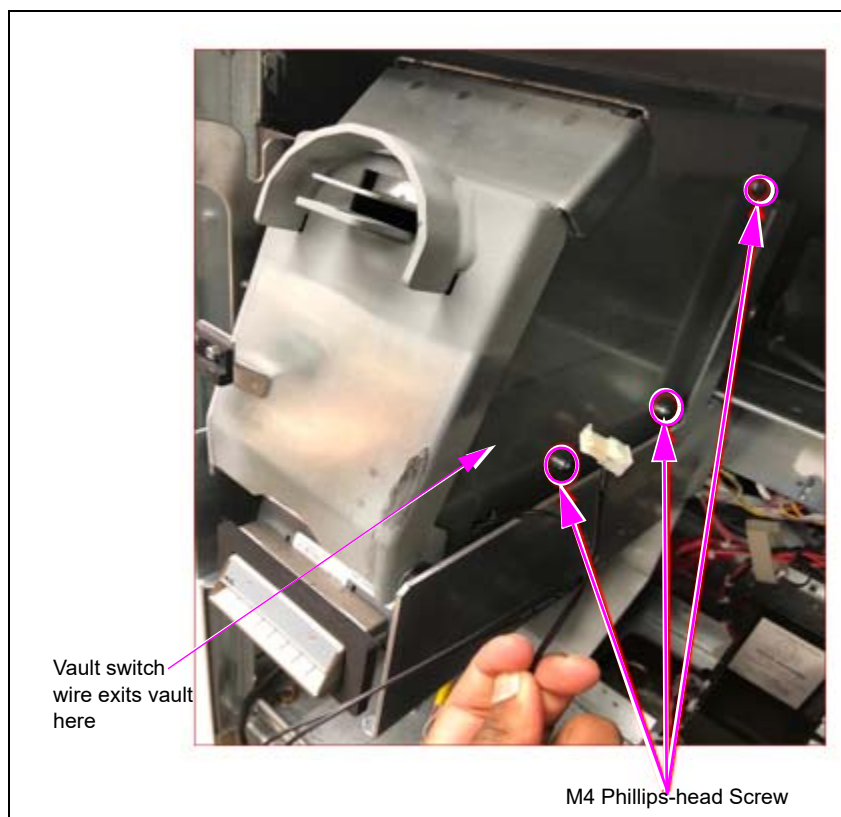
8 Reinsert the cash cassette.

Figure 5: E-BNA Installation in Vault Assembly



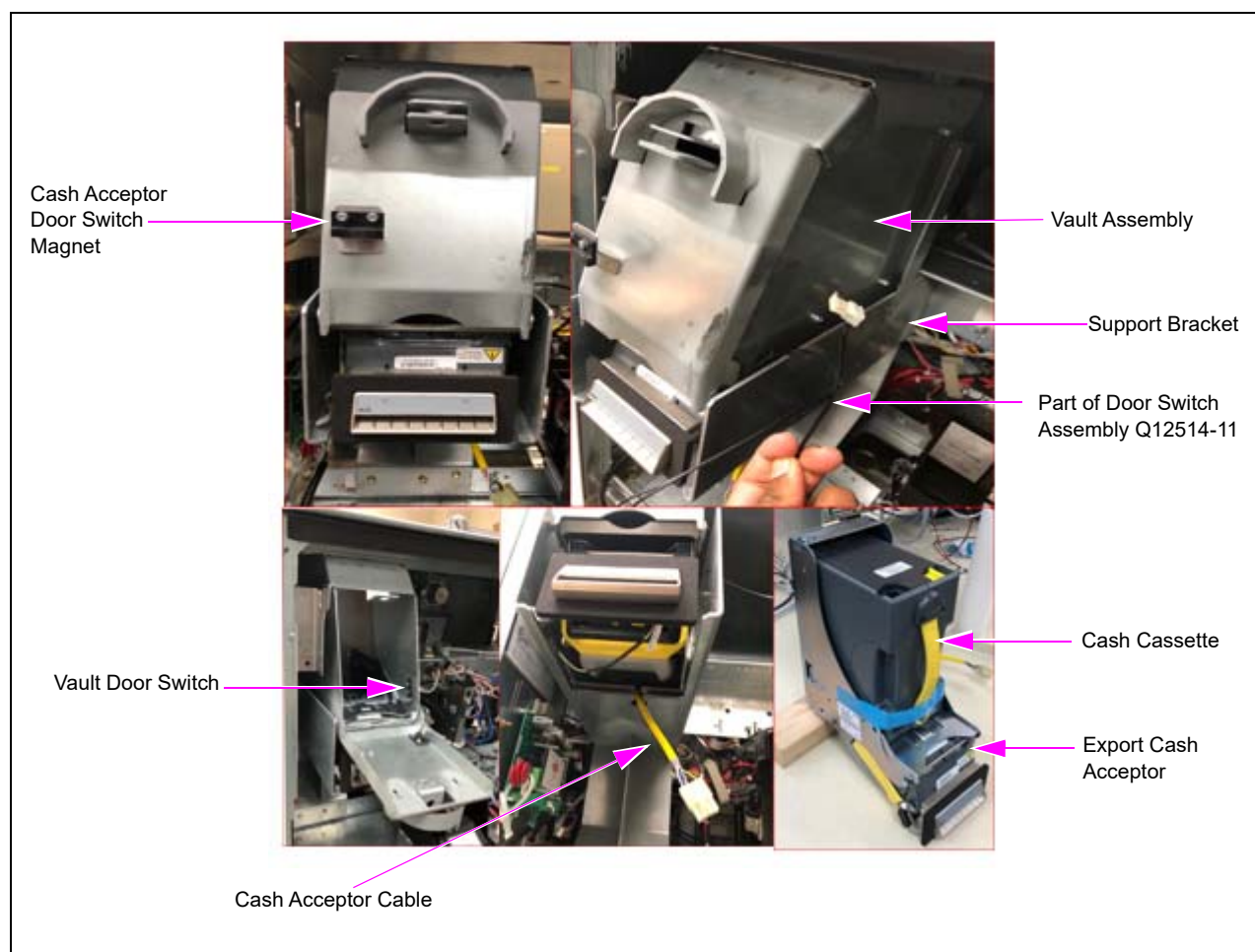
## SECTION 4 - INSTALLATION

Figure 6: E-BNA Installation in Vault Assembly



## SECTION 4 - INSTALLATION

Figure 7: Vault Detail Diagram

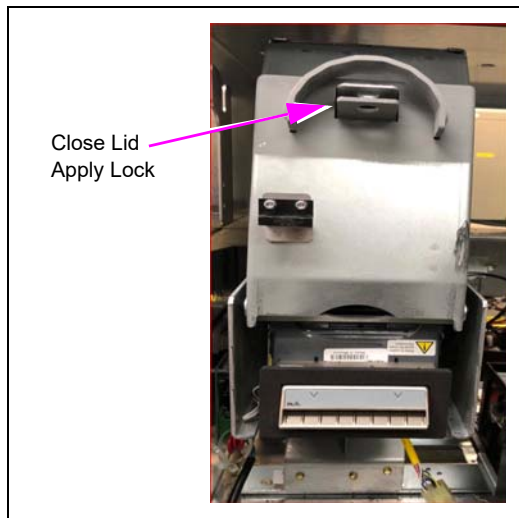


For FlexPay IV E-BNA wiring and main door switch cable diagrams, see [“Appendix: Wiring Diagram”](#) on [page 25](#).

## SECTION 4 - INSTALLATION

- 9 Close the lid of E-BNA vault.

**Figure 8: Closing Lid of E-BNA Vault**



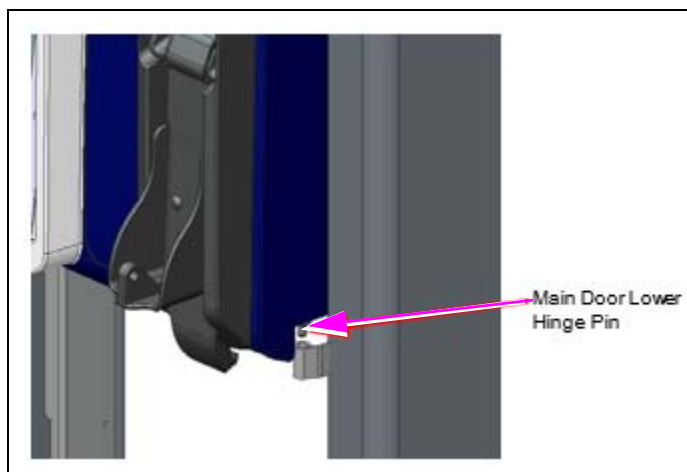
4

## Main Door

To install the main door:

- 1 Mount the main door to the dispenser. The main door comes with cash acceptor little door installed on it.
- 2 Insert the main door lower hinge pin into the lower hinge bracket.
- 3 Fix the Lock Q12542-25 provided in kit to the cash acceptor little door.

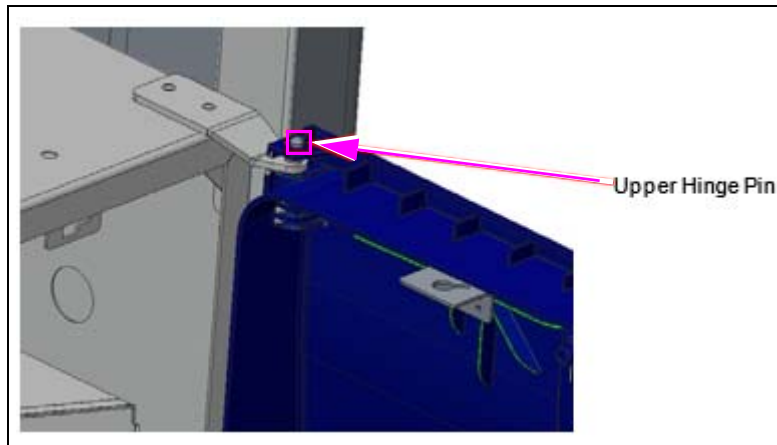
**Figure 9: Inserting Main Door Lower Hinge Pin**



## SECTION 4 - INSTALLATION

- 4 Insert the upper hinge pin.

**Figure 10: Inserting Upper Hinge Pin**



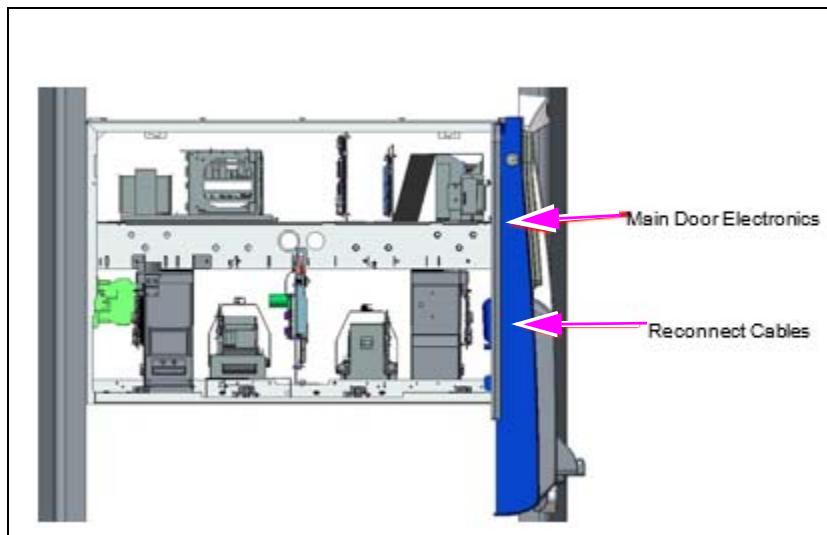
- 5 Reinstall the main door prop rod.

## Main Door Electronics

To install main door electronics, proceed as follows:

- 1 Reinstall the main door electronics, and then reconnect all cabling.

**Figure 11: Reinstalling Main Door Electronics and Reconnecting Cables**

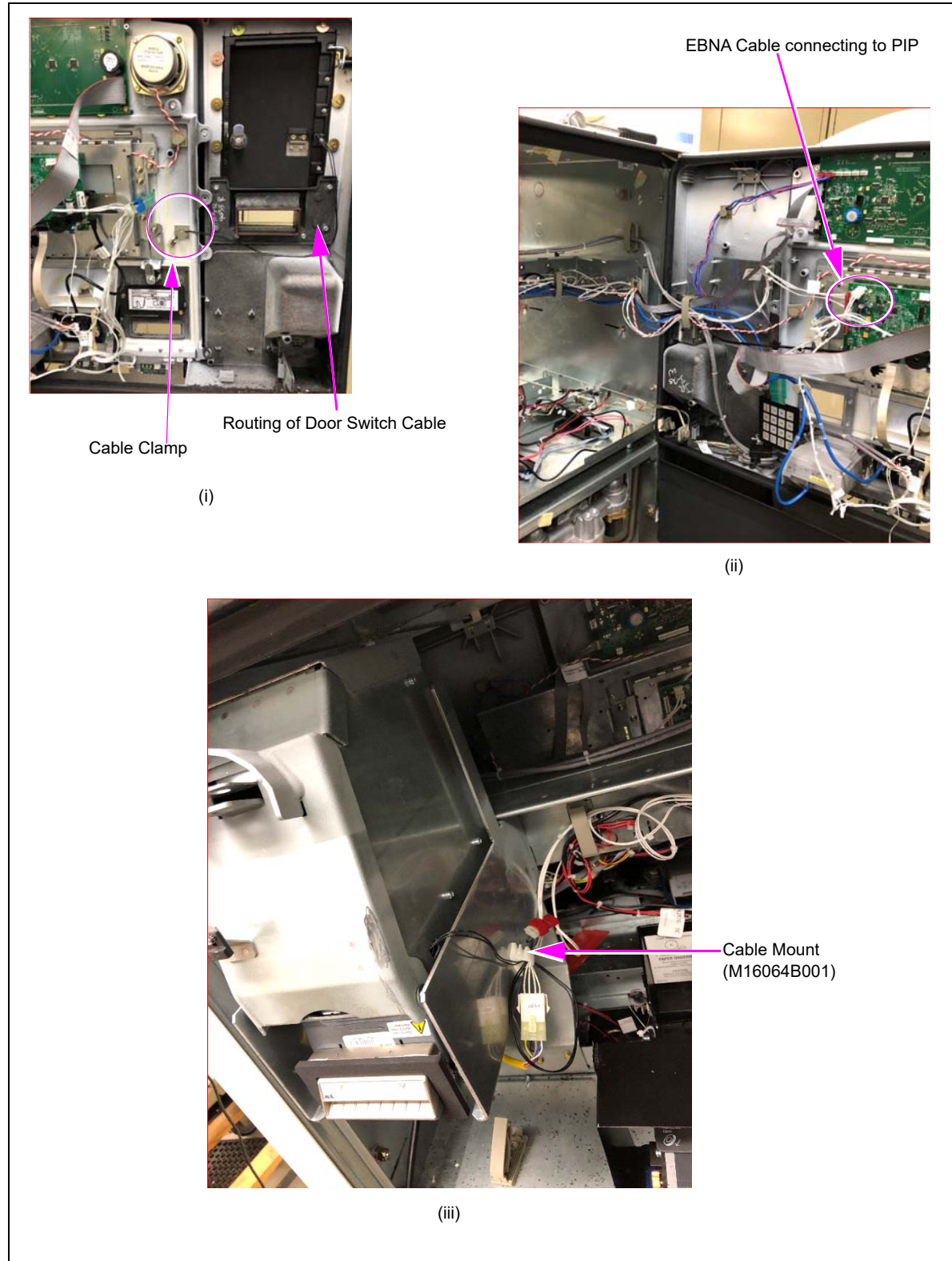




## SECTION 4 - INSTALLATION

- 2 Connect and route the E-BNA cable M10669A002 and Door Switch Cable M02160A001 as shown. Use cable clamp for routing the door switch cable.

Figure 12: E-BNA Cable Routing



## SECTION 4 - INSTALLATION

- 3 Repeat steps in “REMOVING COMPONENTS” on page 6 and “INSTALLATION” on page 9 for the other side of the dispenser.
- 4 Turn on BNA in the Device Config (green screen) > Device Selection in CRIND programming.
- 5 When installation is complete on the other side, slide the CD top cover back to its original position so that both of the top hinge pins on the door are covered.

## Completing Installation

4

To complete the installation:

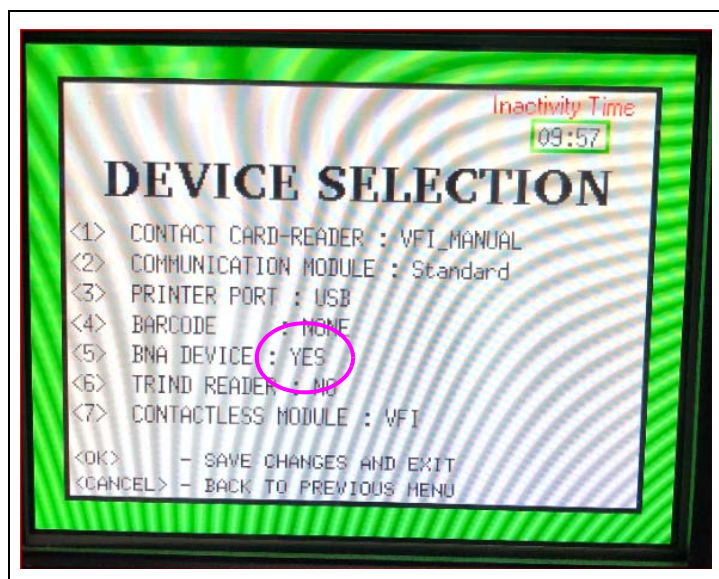
- 1 Inspect all the connections and cable routing before applying power.

### 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) open and close for service. The cables must be dressed neatly. Ensure that there is no interference after the cables are connected and routed.  
ESD ground straps can be bundled together, but need to be separated from data and power cables.

- 2 Activate the Flexpay IV CRIND and enable the BNA. For activation instructions, refer to *MDE-5221 FlexPay IV CRIND Start-up Manual*.

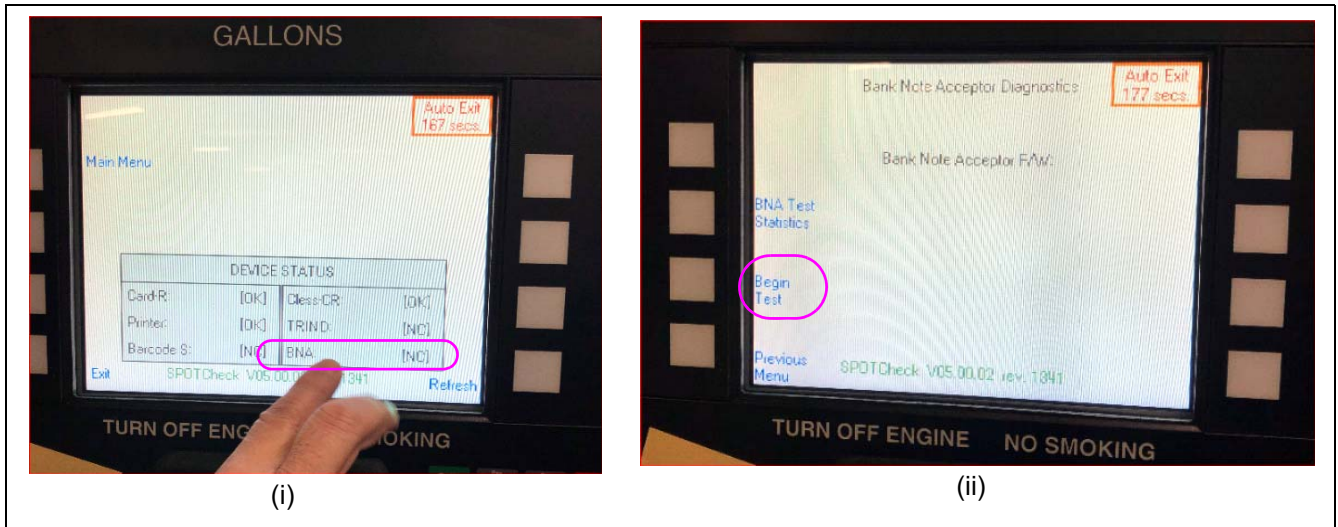
**Figure 13: Enabling BNA**



## SECTION 4 - INSTALLATION

- 3 After the E-BNA is enabled, using the SelfCheck option, validate the E-BNA functionality. In the test, the BNA TX and BNA RX Light Emitting Diode (LEDs) on the Peripheral Interface PCB (PIP) 3 will be active, and the green arrows on the front of the BNA will blink. You have the option to insert a bill and have it returned to you.

**Figure 14: Validating E-BNA Functionality**



- 4 Close and lock the main door.
- 5 Reassemble the lower panels.

**Figure 15: Reassembling Lower Panels**



- 6 Apply graphics, if required.



## SECTION 4 - INSTALLATION

- 7 Upgrade to the latest available FlexPay IV software version and refer to *MDE-5221 FlexPay IV CRIND Start-up Manual* to enable the acceptor at the dispenser.
- 8 After all units have been upgraded, you may have to enable the note acceptors on the POS.

## SECTION 4 - INSTALLATION

### 4

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## SECTION 5 - REFERENCE INFORMATION

### Related Documents

Document No.	Title
MDE-3804	Encore and Eclipse Start-up/Service Manual
MDE-4366	USB Printer Maintenance Guide
MDE-4609	Heater/Fan Kit (M07333K00X) Installation Guide for Encore 300/The Advantage Series [with FlexPay EMV (Canada Only)] and Encore S/Encore 500/700/DEF Units
MDE-4736	FlexPay EPP Heater Kit, Card Reader Heater, and UPM Heater Kit Installation Instructions
MDE-4917	FlexPay Connect Distribution Box Installation Manual
MDE-5221	FlexPay IV CRIND Start-up Manual
MDE-5223	FlexPay IV CRIND Service/Troubleshooting Manual
MDE-5227	M7 Maintenance Tool User Guide
PT-1936	Encore Series Pumps and Dispensers Illustrated Parts Manual
PT-1937	Encore 300, Encore 500/500 S, Encore 700 S, Eclipse Recommended Spare Parts Manual

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### Abbreviations and Acronyms

Term	Description
ASC	Authorized Service Contractor
BNA	Bank Note Acceptor
BOM	Bill of Material
CRIND	Card Reader in Dispenser
D-Box	Distribution Box
DIN	Deutsche Industrie Norm
E-CIM	Enhanced Customer Interface Module
EMV	Europay®, MasterCard®, and Visa®
EPP	Encrypting PIN Pad
ESD	Electrostatic Discharge
JSA	Job Safety Analysis
LED	Light Emitting Diode
NEC®	National Electrical Code
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
PCB	Printed Circuit Board
PIP	Peripheral Interface PCB
POS	Point of Sale
PPU	Price per Unit
UPM	Universal Payment Module
USB	Universal Serial Bus

## SECTION 5 - REFERENCE INFORMATION

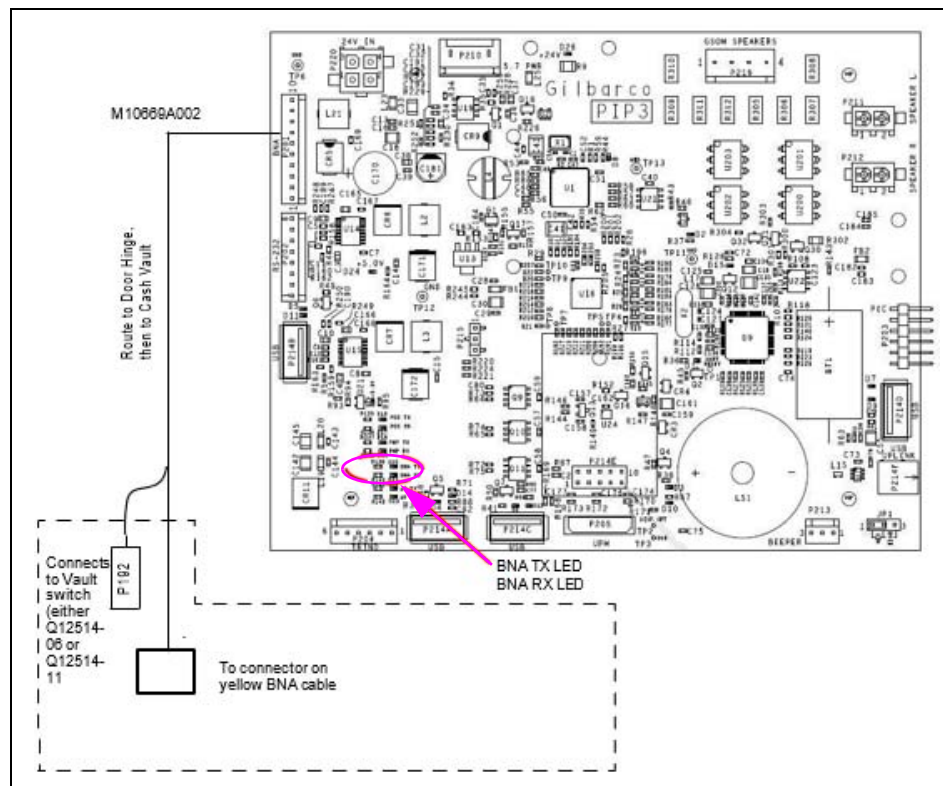
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## SECTION 6 - APPENDICES

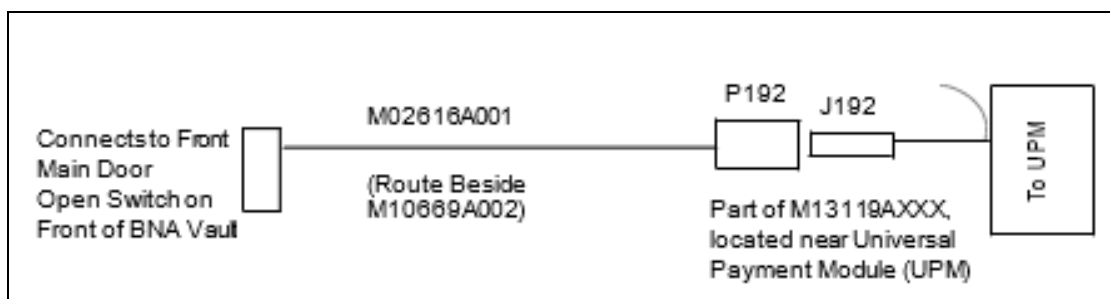
### Appendix: Wiring Diagram

Figure 1: FlexPay IV BNA Wiring Diagram



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Figure 2: Main Door Switch Cable Diagram



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MDE-5560A FlexPay™ IV Encore® 700 S Export Bank Note Acceptor (E-BNA) Upgrade Kit for E-CIM™