

## Introduction

### Purpose

This document provides instructions to install a FlexPay™ EMV® CRIND® Retrofit Kit (EPK EMV ADV) in The Advantage® Series units.

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### Required Tools

The following tools are required for the installation of the kit:

- 1/4" Nut Driver
- 9/32" Nut Driver
- 5/8" Nut Driver
- Phillips® Head Screwdriver
- Pneumatic Hand Drill with 1/4" Drill Bit

### Parts List - EPK EMV ADV

#### Hub Interface (HIP) Assembly

Part Number	Description	Quantity	
		2-sided Kit	1-sided Kit
M10279A001	Assembly, EMV HIP	1	1
M00414B002	Nut, Metric, Flange M6	1	1
M00415B004	Screw, Metric, Flange M6	1	1
M10326A001	Cable, Two-wire E300, and Advantage	1	1

#### FlexPay Door Assembly

Part Number	Description	Quantity	
		2-sided Kit	1-sided Kit
M08418B001	Auxiliary Keypad	2	1
M08409A002	Cable, Auxiliary Keypad	2	1
M07793A001	PCA, Spot Interface (SIP)	2	1
M07946A001	Cable, Two-wire/Cash A/SP	2	1

Part Number	Description	Quantity	
		2-sided Kit	1-sided Kit
M07947A001	Cable, Spot Power, EMV	2	1
M07949A001	Cable, Spot to SIP TCR	2	1
M07974A001	Cable, DC Power SIP, EMV	2	1
M07979A002	Cable, HIP to SIP Serial	2	1
Q13850-10	Cable, Work Area 6 feet	2	1
M10158B001	Bracket, SIP Mounting	2	1
M04431A005	Cable, Ground EMV Display	2	1
M08083B002	Gasket Display	2	1
M07999B001	Reader, Secure Tribrid	2	1
M07702A011	Cable, TCR/SP Interface	2	1
M07709A001	Cable, Encrypted Card	2	1
M08452B001	Bracket, Card Reader	2	1
N23505-02	Gasket, Card Reader	2	1
M08003B001	Keypad, Spot X-M08003K00	2	1
M08084B001	Gasket, Keypad	2	1
M07956A002	Cable, Spot Secure Keypad	2	1
M04431A003	Cable, Ground Hengstler®	2	1
Q11677-24	Screw	16	8
M00414B005	Nut	12	6
Q10651-02	Standoffs	8	4
Q11677-28	Screw	2	1
M08001A001	Spot Display (Generic)	2	1
~OR~	~OR~		
M08001A002	Spot Display (Global Pay)		
M09117B001	Label	2	1

### Optional: USB Printer Upgrade Components

Part Number	Description	Quantity	
		2-sided Kit	1-sided Kit
M10063A001	Assembly, Advantage Hengstler	2	1
M00414B001	Nut, 5 mm	8	4
M00415B003	Screw, 5 mm X 16	8	4

### Optional: Printer Adapter Components

Part Number	Description	Quantity	
		2-sided Kit	1-sided Kit
M10216A001	PCA, UPP	2	1
M10347B001	Plate, UPP Board Mounting	2	1
Q10651-02	Standoffs	16	8
T18172-G3	Printer Bracket	2	1

## Optional: TRIND® Adapter Components

Part Number	Description	Quantity	
		2-sided Kit	1-sided Kit
M08472A002	PCA, TRIND/Spot Interface	1	1
M08520A002	Cable, Gateway to TRIND	1	1
M08521A001	Cable, TRIND Spot	1	1
M05859A001	Cable, Power Supply	1	1
Q10651-02	Standoffs	4	4

## Optional: Contactless Card Reader Components

Part Number	Description	Quantity	
		2-sided Kit	1-sided Kit
M04124A004	Cable	2	1
K85492-56	Tape	4	2
Q13558-04	Cable Mount	8	4
M05170A001	Antenna	2	1
MDE-4199	Contactless SMART Card Retrofit Kit M05205K00X Installation Manual	2	1

## Optional: Contactless Card Reader Components Narrow Frame Units Only

Part Number	Description	Quantity	
		2-sided Kit	1-sided Kit
T20416-GX	Right Access Door w/CSC	2	1
T20262-G1	Main Display	2	1
T17622-G9	Assy, Reflector, and Backlight PCB	6	3
R19211-041	Filter LCD Display	6	3

## Related Documents

Document Number	Title	GOLD Library
MDE-4199	Contactless SMART Card Retrofit Kit M05205K00X Installation Manual	<ul style="list-style-type: none"> <li>• Encore and Eclipse</li> <li>• Advantage and Legacy</li> </ul>
MDE-4771	FlexPay CRIND Start-up/Service Manual	FlexPay

## Abbreviations and Acronyms

<b>Term</b>	<b>Description</b>
CIM™	Customer Interface Module
CRIND	Card Reader IN Dispenser
CSC	Contactless SMART Card
EMV	Europay, MasterCard®, and Visa®
HIP	Hub Interface PCB
OSHA	Occupational Safety and Hazard Association
PCA	Printed Circuit Assembly
PCB	Printed Circuit Board
POS	Point Of Sale
SIP	Serial Interface PCB
TRIND	Transmitter/Receiver IN Dispenser

# Important Safety Information

**Note: Save this Important Safety Information section in a readily accessible location.**

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

## Preliminary Precautions

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

## Emergency Total Electrical Shut-Off

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

**⚠ WARNING**

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

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

## Total Electrical Shut-Off Before Access

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

## Evacuating, Barricading and Shutting Off

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



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

## Read the Manual

Read, understand and follow this manual and any other labels or related materials supplied with this equipment. If you do not understand a procedure, call a Gilbarco Authorized Service Contractor or call the Gilbarco Support Center at 1-800-800-7498. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

## Follow the Regulations

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

## Replacement Parts

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

## Safety Symbols and Warning Words

This section provides important information about warning symbols and boxes.

### Alert Symbol



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

### Signal Words

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



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



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



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

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

## Working With Fuels and Electrical Energy

### Prevent Explosions and Fires

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

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

## Important Safety Information

### No Open Fire



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

### No Sparks - No Smoking



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

### Working Alone

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

### Working With Electricity Safely

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

### Hazardous Materials

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

#### WARNING

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

#### WARNING

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

## In an Emergency

### Inform Emergency Personnel

Compile the following information and inform emergency personnel:

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

#### WARNING



Gasoline 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



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

#### WARNING



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

#### WARNING



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

#### WARNING

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

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

### Lockout/Tagout

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

# Installing the FlexPay EMV CRIND Retrofit Kit in The Advantage Series Units

## Installing the FlexPay EMV CRIND Door on The Advantage Series Units

Before you begin, read and understand the safety information.

Inform the Manager that the power will be removed and remove all the power supplied to the unit at the breaker located in the building. Block off the unit from customers.

To install the new FlexPay EMV CRIND door on the The Advantage Series units, proceed as follows:

- 1 Remove power to The Advantage Series unit. Follow OSHA Lock-out and Tag-out procedures.



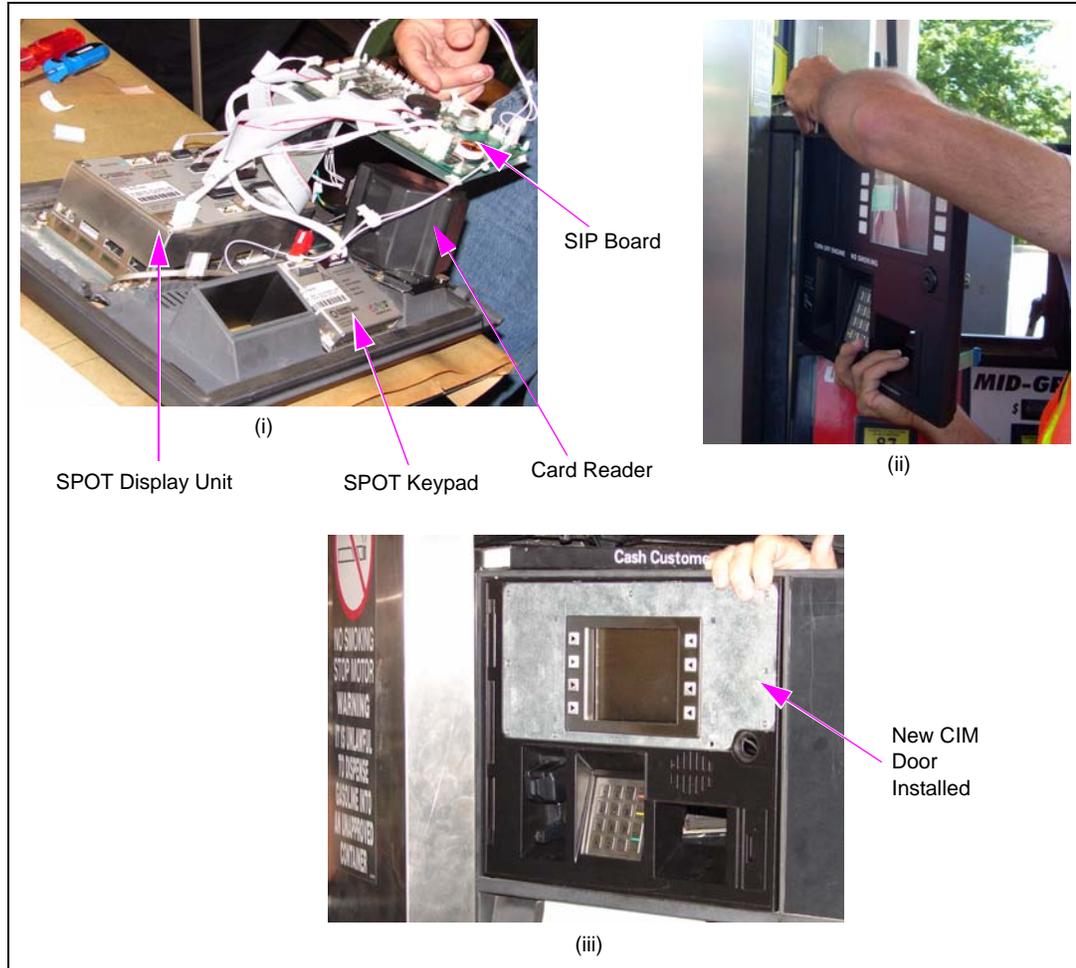
### **WARNING**

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

- 2 Open the left option door and disconnect cables from the keypads, CRIND Display, Card Reader, and Contactless SMART Card (CSC) Antenna (if present).
- 3 Open the main door and pull the hinge pin up through the hole in the Customer Interface Module (CIM) door. Remove the CIM door.

- 4 Place the new left option door in the opening. Reinsert the hinge pin to secure the new left option door.

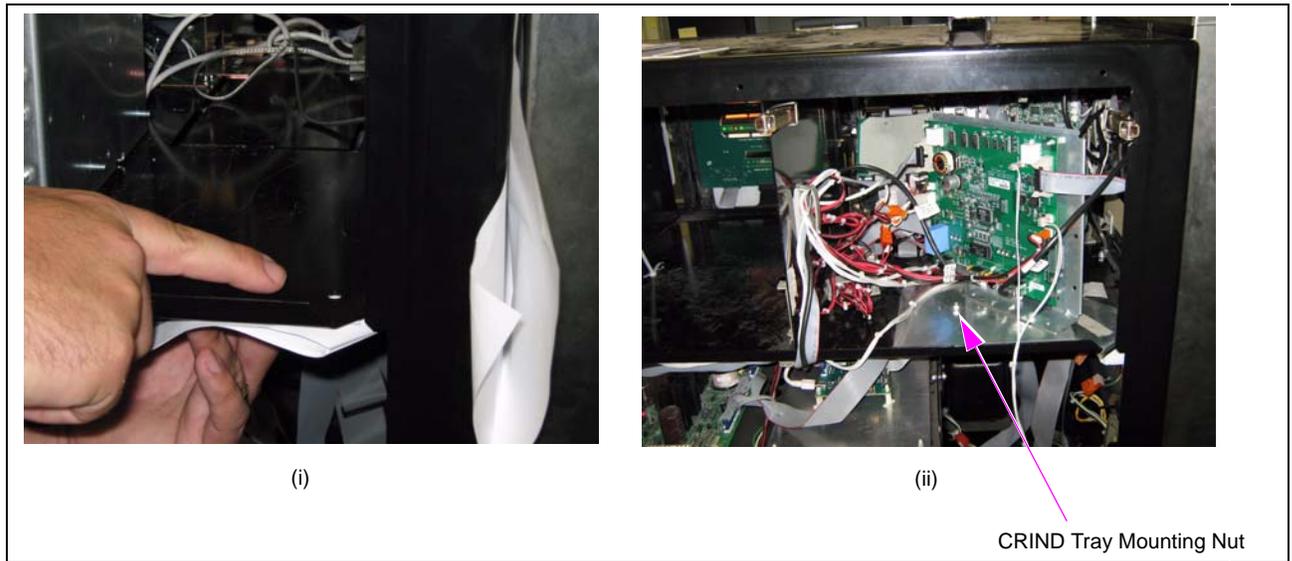
Figure 1: Installing the CIM Door



## Installing the FlexPay EMV HIP Assembly

Orient the FlexPay EMV HIP Assembly as shown in (ii) of Figure 2 and insert the screw and nut provided through the hole.

**Figure 2: Installing the FlexPay EMV HIP Assembly**



*Notes: 1) The CRIND tray mounting nut must be removed and reinstalled, if required (see (ii) of Figure 2).*

*2) You may have to drill a hole to mount the HIP Assembly on earlier models with the “U-shaped” CRIND device.*

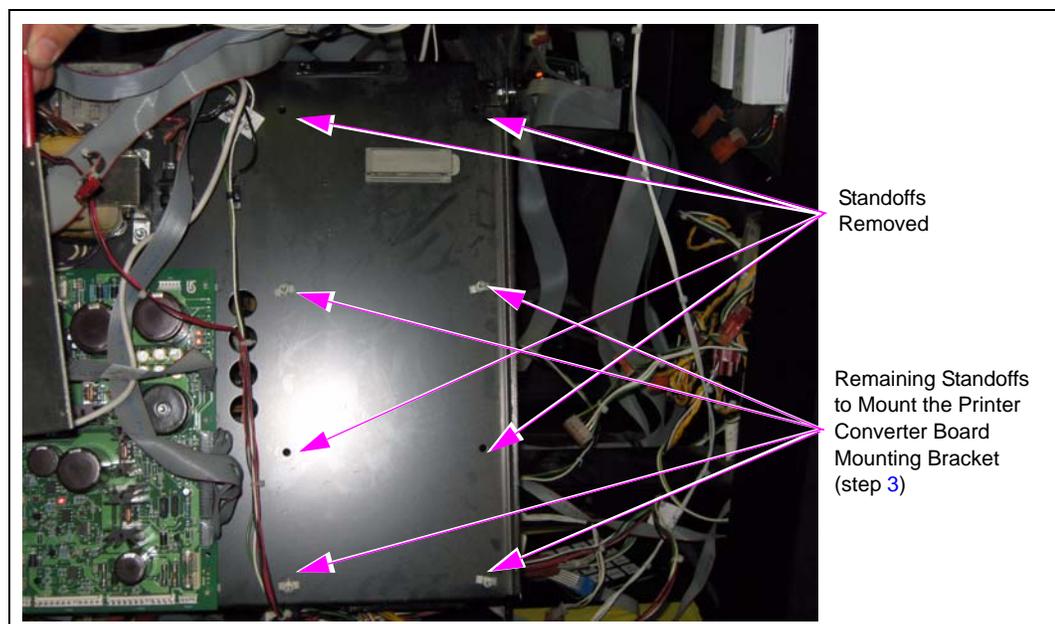
## Removing the Existing CRIND Electronics from the Cabinet

### FlexPay EMV CRIND Retrofit Kit without a New Printer

If your kit has been provided with a new printer, proceed to “[FlexPay EMV CRIND Retrofit Kit with a New Printer](#)” on page 18. If your kit is NOT provided with a new printer, proceed as follows:

- 1 Remove CRIND Logic Boards and the four standoffs shown in [Figure 3](#). Ensure that you retain the Printer Cables and the R20112-GX and R20113-GX Cables connected to positions P569 and P570 on the CRIND Regulator Board.

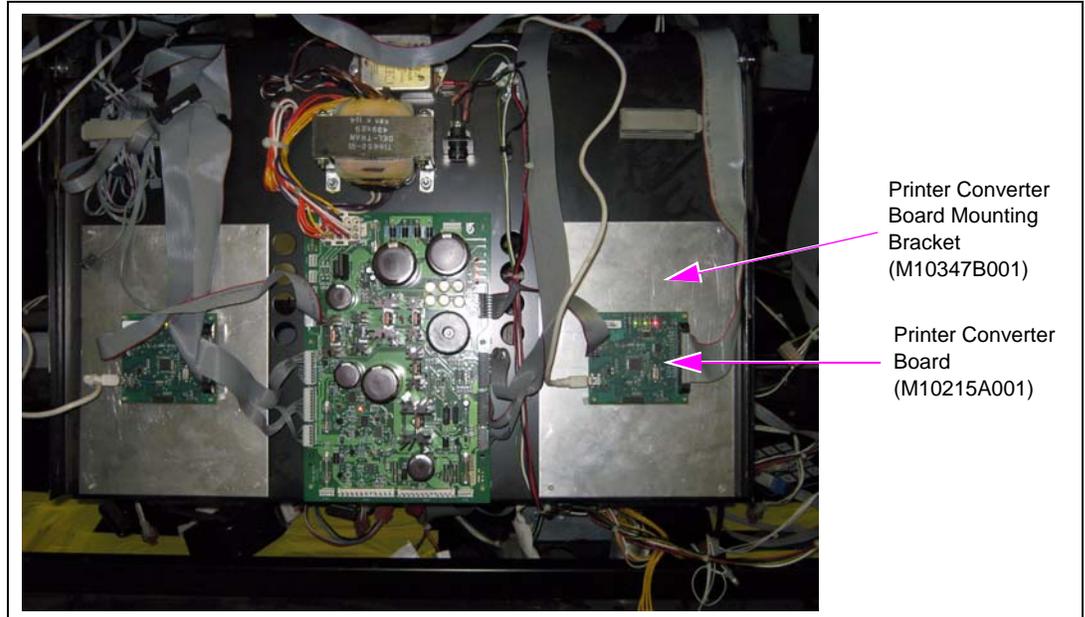
**Figure 3: Removing the CRIND Logic Board and Standoffs**



- 2 Remove the CRIND Cable Harness (for example, W03690-GXX).

- 3 Install the Printer Converter Board Mounting Bracket (M10347B001) using the four remaining standoffs (see [Figure 4](#)).

**Figure 4: Installing the Printer Converter Board Mounting Brackets**



- 4 Install the Printer Converter Boards (M10215A001) using the four standoffs (Q10651-102) provided (see [Figure 4](#)).  
*Note: The orientation of the boards must be such that the R20113-GX and R20112-GX Cables can connect to J1 connector on the Converter Boards.*
- 5 Connect the Printer Cable (previously connected to P257 on the CRIND Logic Board) to P102 on the new Converter Board.
- 6 Connect the mini USB Connector of the M06745A001 Cable to the P100 connector on the Printer Converter Board (see [Figure 4](#)).  
*Note: The other end of the USB Cable must route up through the Printer Cable opening above the CRIND tray and to the USB Printer port on the EMV display, mounted on the left option door. No other connections must be made using the M06745A001 Cable.*

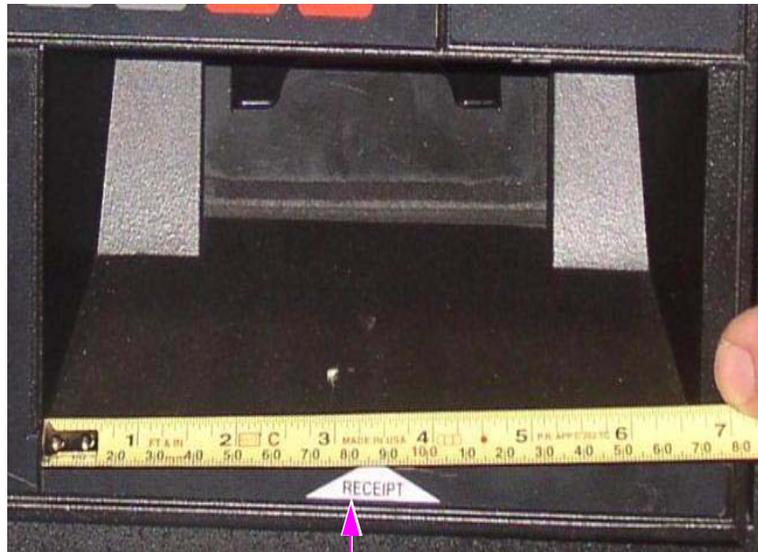
### Installing the New Printer Mounting Bracket

For models built prior to 1995, a new Printer Mounting Bracket is required if you are reusing the existing printer. Determine the date of manufacture by examining the dimension of the Printer Chute opening on the door (see [Figure 5](#)).

**Figure 5: Printer Chute Opening Dimensions**



Printer Chute Opening Dimension - Models Built Prior to 1995 (3.25")

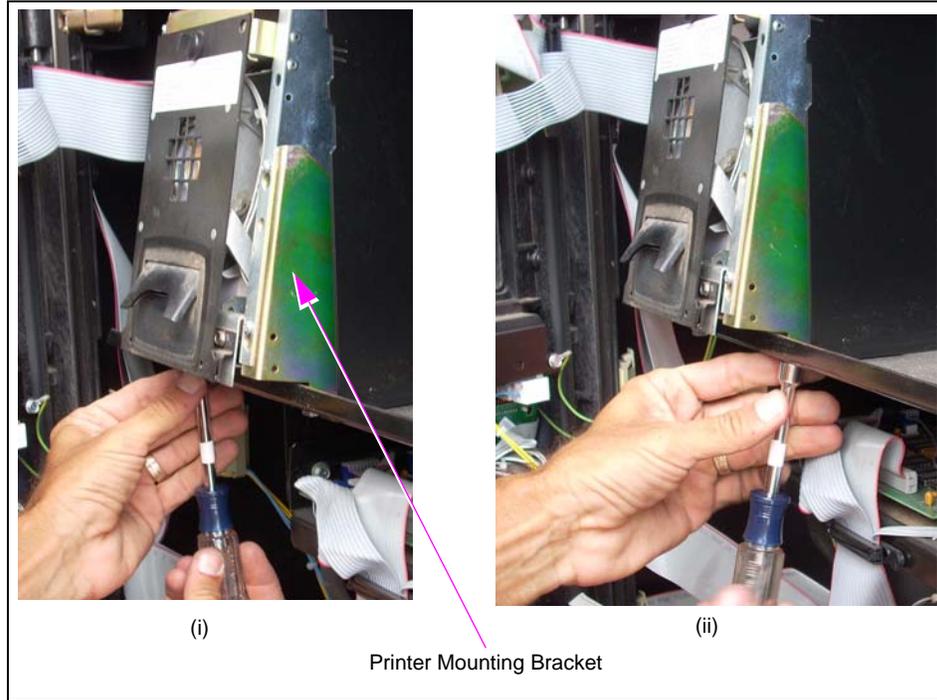


Printer Chute Opening Dimension - Models Built After 1995 (7")

To install the new Printer Mounting Bracket, proceed as follows:

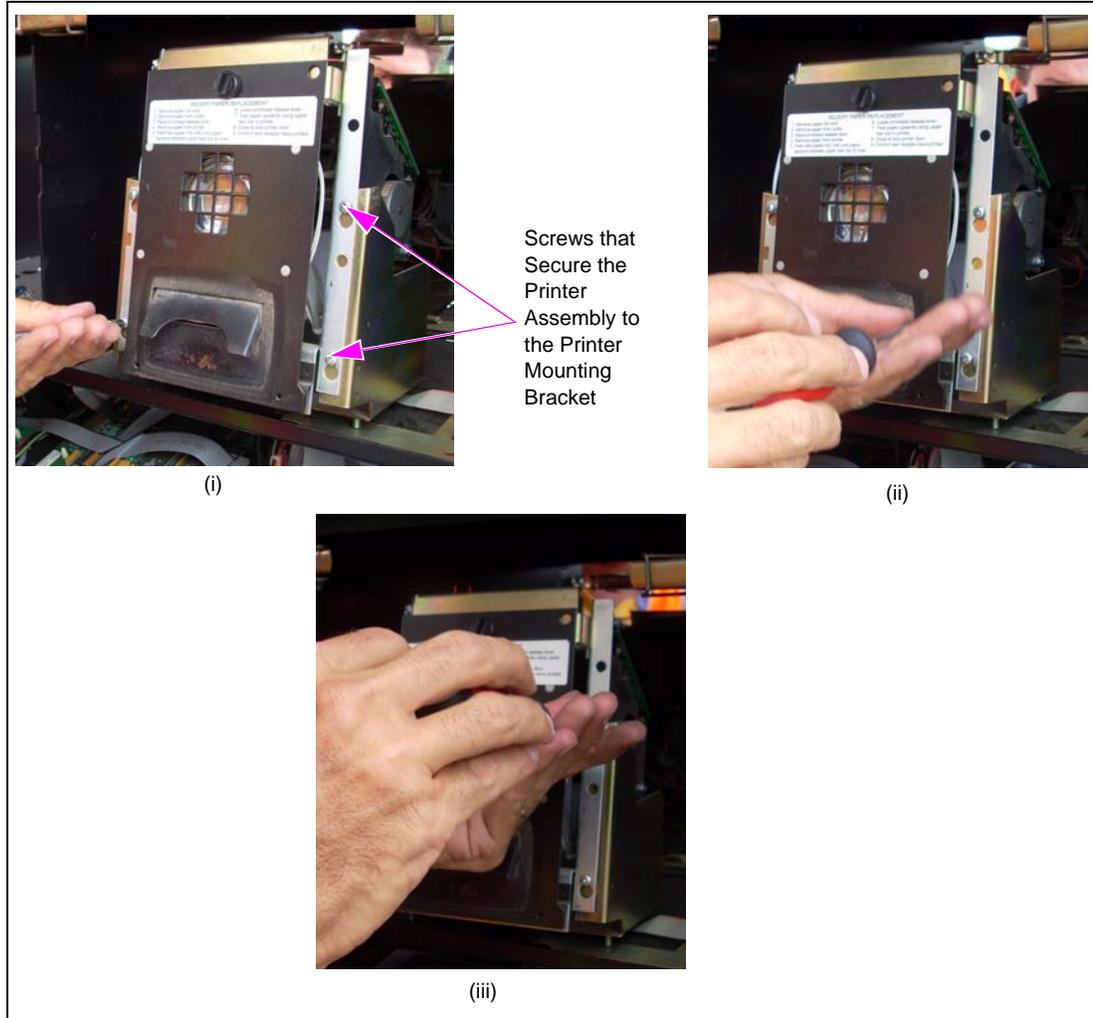
- 1 Remove the two screws that secure the Printer Mounting Bracket to the dispenser, using a 1/4" nut driver.

**Figure 6: Removing the Printer Mounting Bracket**



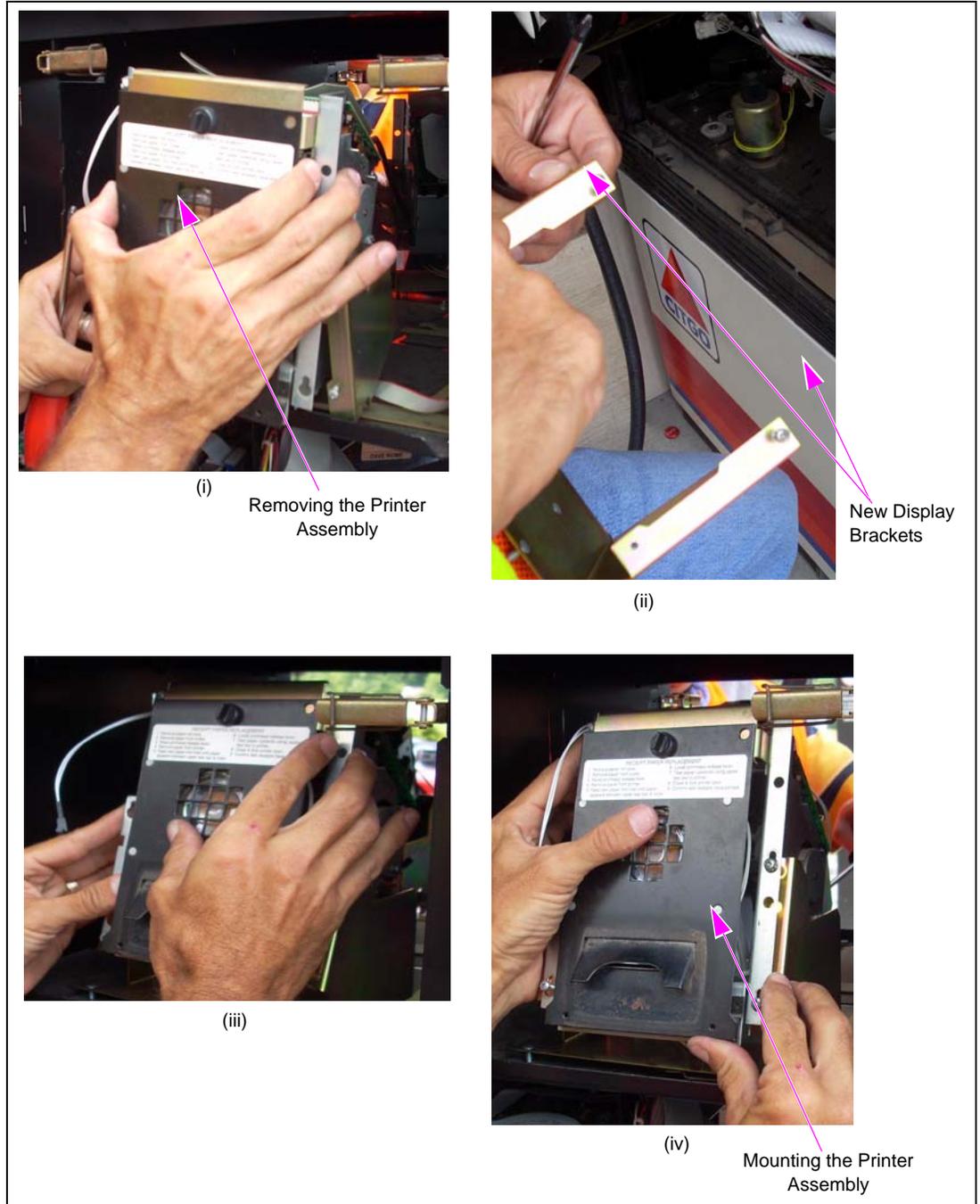
- 2 Remove the four screws that secure the Printer Assembly to the Printer Mounting Bracket, using a Phillips head screwdriver.

**Figure 7: Removing the Printer Assembly**



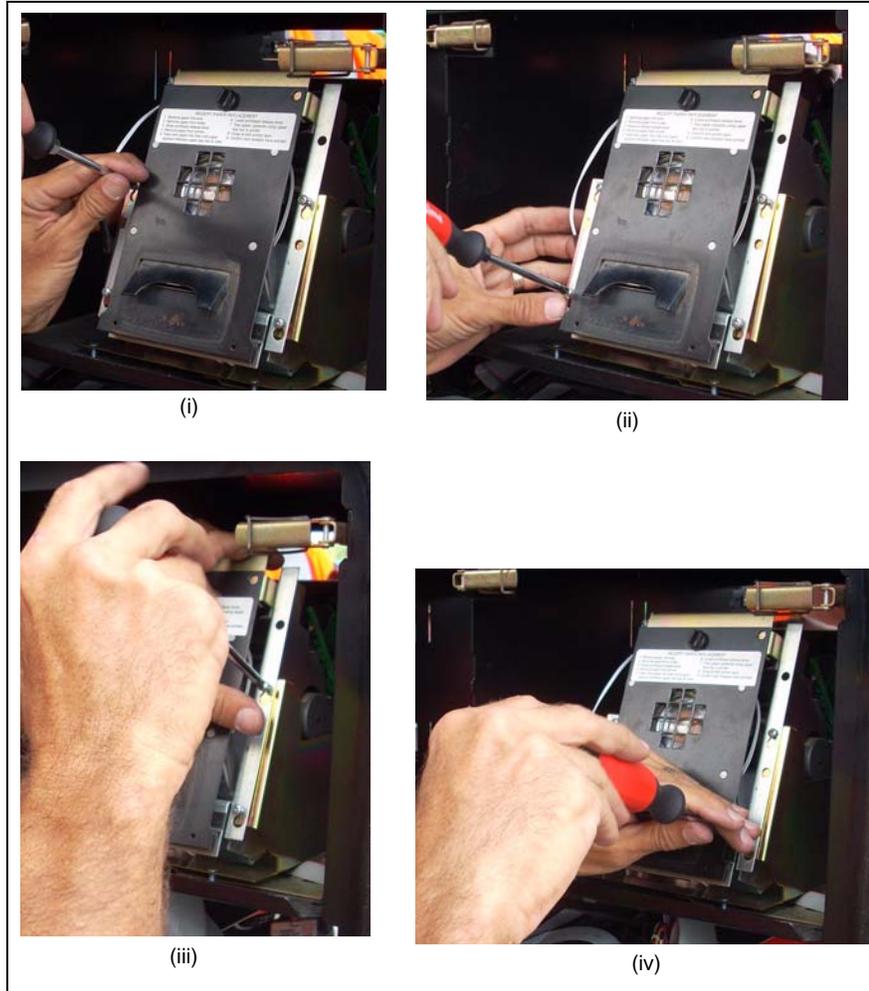
- 3 Remove the Printer Assembly and mount it on the new Printer Mounting Bracket (T18172-G3) provided with the kit.

**Figure 8: Mounting the Printer Assembly**



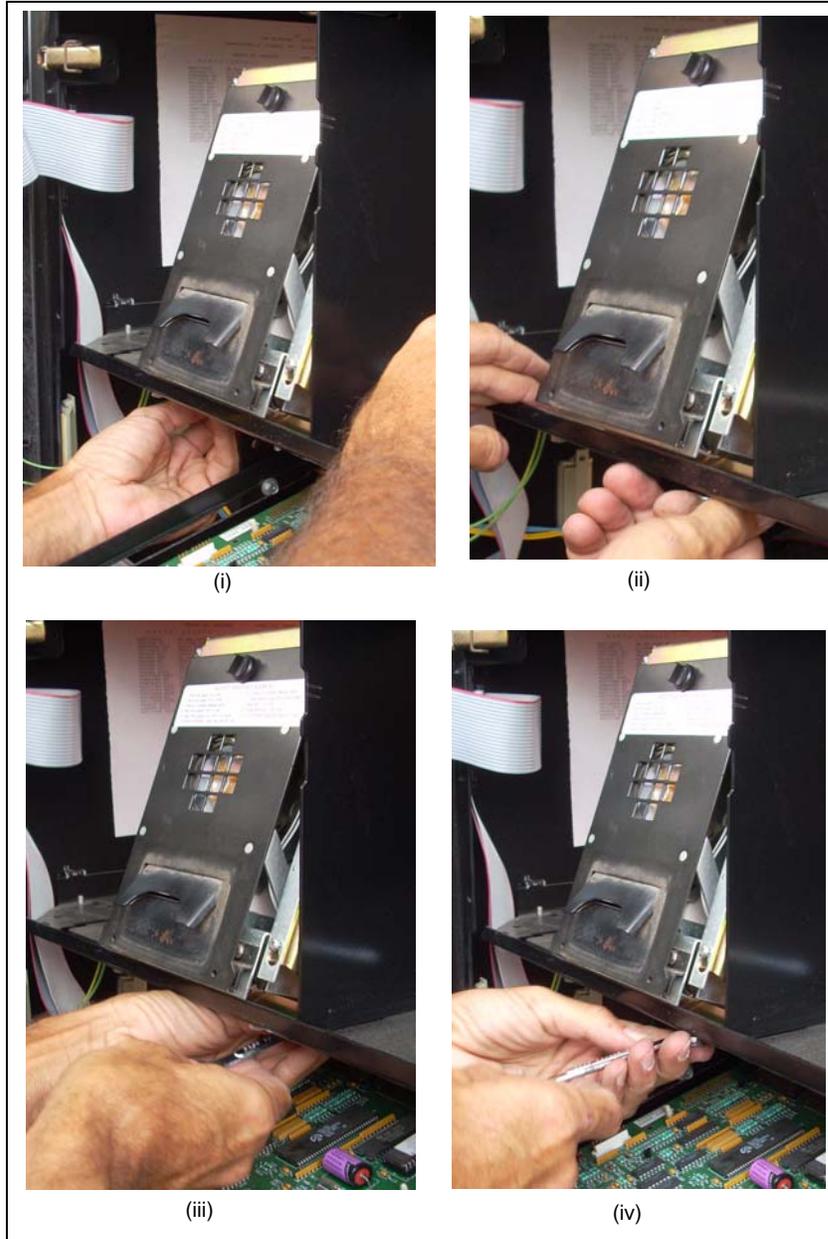
- Secure the printer to the new Printer Mounting Bracket by reinstalling the four screws, which were removed in step 2.

**Figure 9: Installing the Printer**



- 5 Secure the printer to the dispenser by reinstalling the two screws, which were removed in step 1.

**Figure 10: Installing the Printer Assembly**

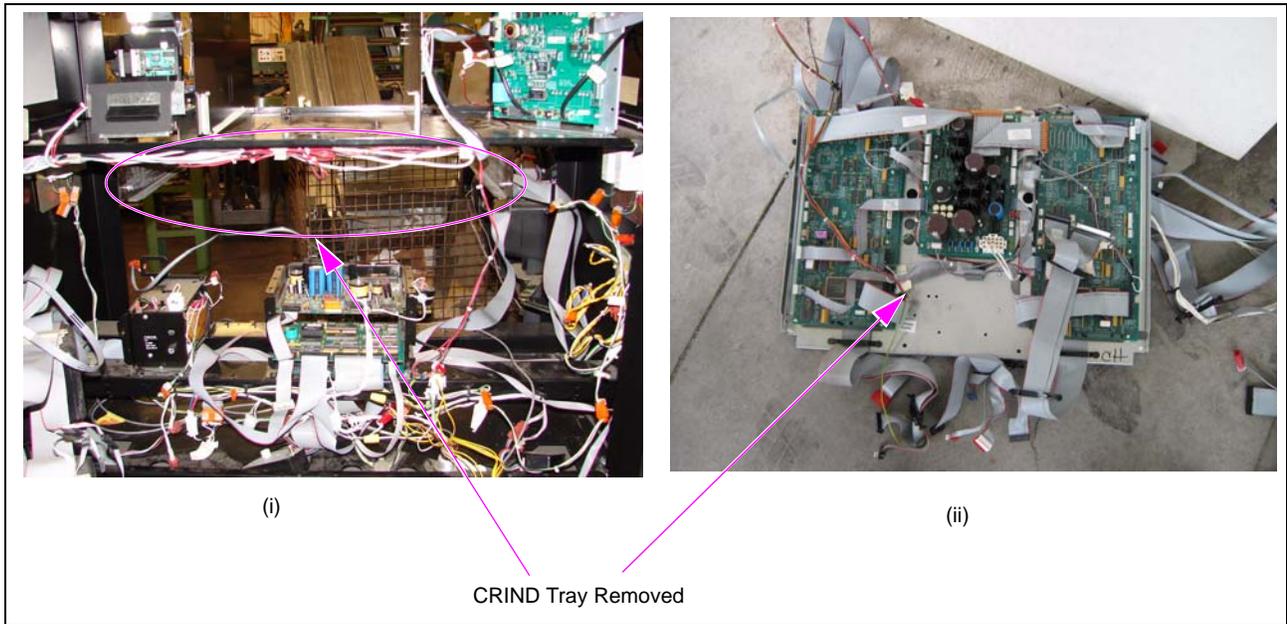


## FlexPay EMV CRIND Retrofit Kit with a New Printer

If your kit is provided with a new printer, proceed as follows:

- 1 Remove the entire CRIND tray, including all cables connected to the CRIND Regulator Board and CRIND Logic Boards.

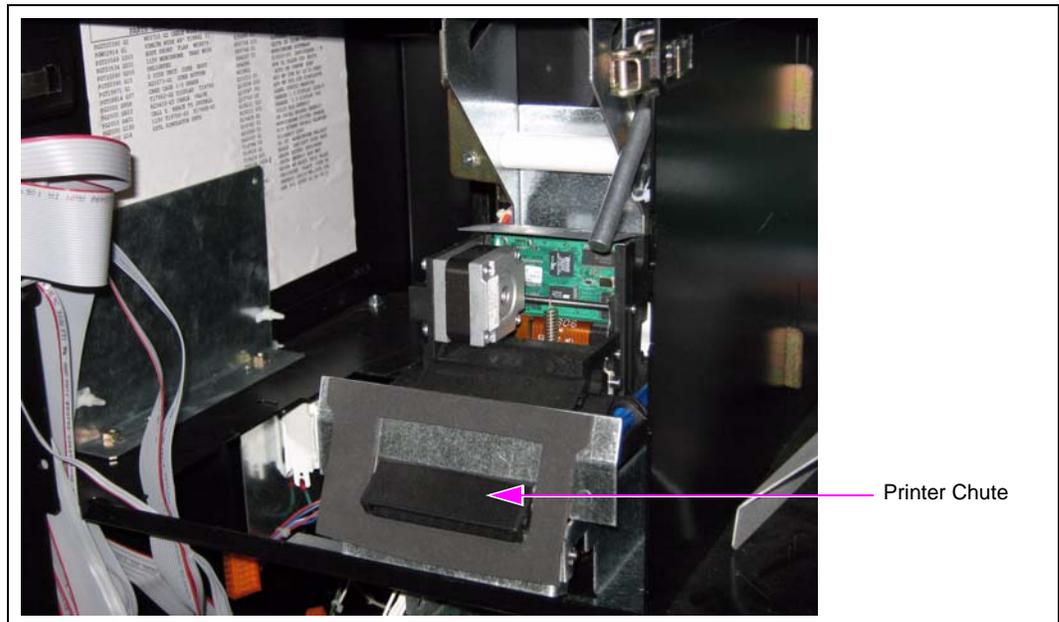
**Figure 11: Removing the CRIND Tray**



- 2 Remove the existing Printer and Printer Cables by removing the nuts beneath the Printer.

- 3 Install the new Printer using the nuts (M00414B001) and screws (M00415B003) provided. Align the printer base against the front lip of the printer tray. Before tightening the nuts, ensure that the Printer Chute aligns with the opening on the new left option door. If not, ensure that you use the correct holes to align the Printer, since each model of The Advantage Series may have a different hole pattern on the printer tray.

**Figure 12: Installing the New Printer**



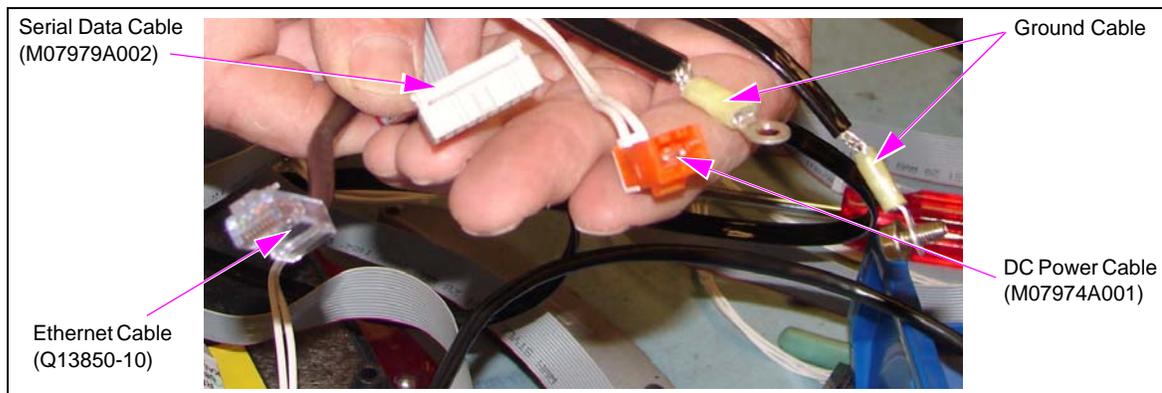
- 4 Route the USB portion of the M06745A001 Cable provided to the USB Printer port on the EMV Display mounted on the left option door. Connect the Printer Power Cable (M06745A001) to the respective connector on the Power Cable (M07973A003) on the HIP Board (PRT A and PRT B).

## Connecting Cables from the FlexPay EMV CRIND Door

To connect cables from the FlexPay EMV CRIND Door, proceed as follows:

- 1 Connect the Serial Data Cable (M07979A002) from the SIP Board on the FlexPay EMV CRIND Door to the HIP Board.

**Figure 13: Cables from the SIP Board/FlexPay EMV CRIND Door**



- 2 Connect the DC Power Cable (M07974A001) from the SIP Board to the respective connector on the Power Cable (M07973A003) on the HIP Board (P301A/P301B to J301A/J301B).
- 3 Connect the Ethernet Cable (Q13850-10) from COM 5 Port on the SPOT Display to the respective port on the HIP Board (A or B).
- 4 Connect the M10326A001 Cable from J404 to P404. Also connect J403 to P403.

## Making Two-wire Connections for Units Built from 1997

For units built from 1997, a P412 connector is present on four of the wires coming out of the main conduit. For such units that have the P412 connector, disconnect the P412 connector from its current mating connector. The new cable (M10326A001) that is supplied with the FlexPay EMV kit has a mating connector marked J412. Plug the J412 connector into the P412 connector.

## Making Two-wire Connections for Units Built prior to 1997

For units built prior to 1997, the P412 connector may not be present. Locate the wires marked P402-1, P402-2, P402-3, and P402-4.

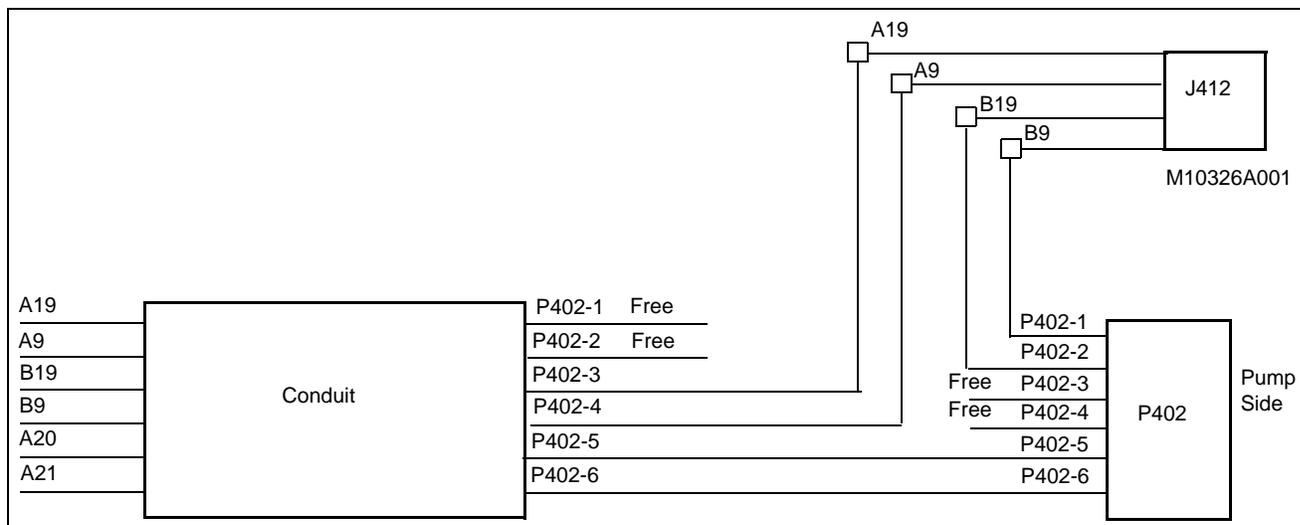
The wires are connected depending on the Point Of Sale (POS) type.

### Gilbarco POS

Cut or loosen the connections for the wires marked P402-1, P402-2, P402-3, and P402-4 coming from the main conduit. Clip off the four crimp nuts from the end of the M10326A001 Cable while being careful not to clip off the wire markings.

- 1 Connect the P402-1 wire on the pump side to the wire marked A19 on the new cable (M10326A001).
- 2 Connect the P402-2 wire on the pump side to the wire marked A9 on the new cable (M10326A001).  
*Note: The wires marked P402-1 and P402-2 will remain free on the main conduit side.*
- 3 Connect the P402-3 wire coming from the conduit to the wire marked B19 on the new cable (M10326A001).
- 4 Connect the P402-4 wire coming from the conduit to the wire marked B9 on the new cable (M10326A001).

**Figure 14: Gilbarco POS**



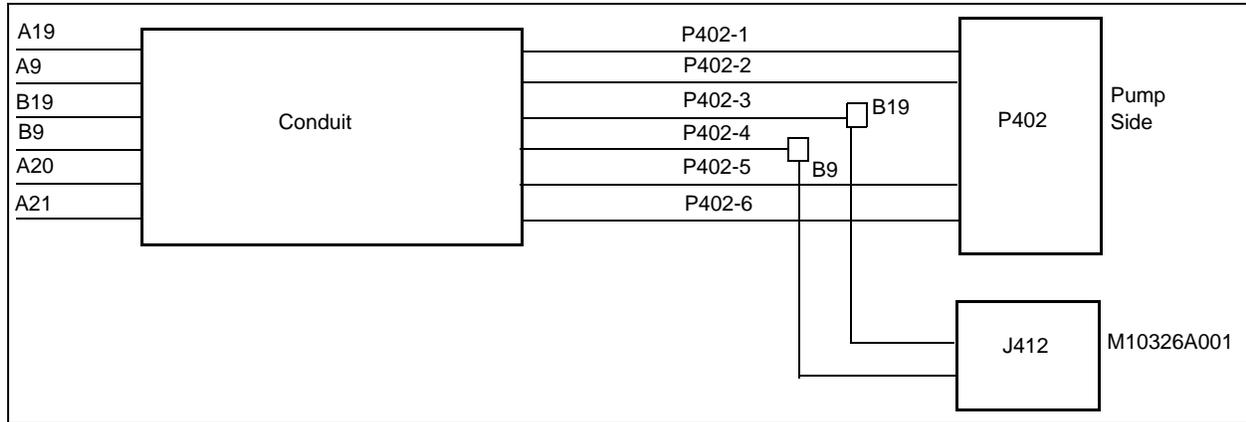
**Third-party (Generic) POS**

Cut or loosen the connections for the wires marked P402-3 and P402-4. Also, clip off the crimp nuts from the ends of the wires marked B19 and B9 on the M10326A001 cable.

- 1 Connect the P402-3 wire coming from the conduit to the wire marked B19 on the new cable (M10326A001).

- 2 Connect the P402-4 wire coming from the conduit to the wire marked B9 on the new cable (M10326A001).

Figure 15: Third-party (Generic) POS



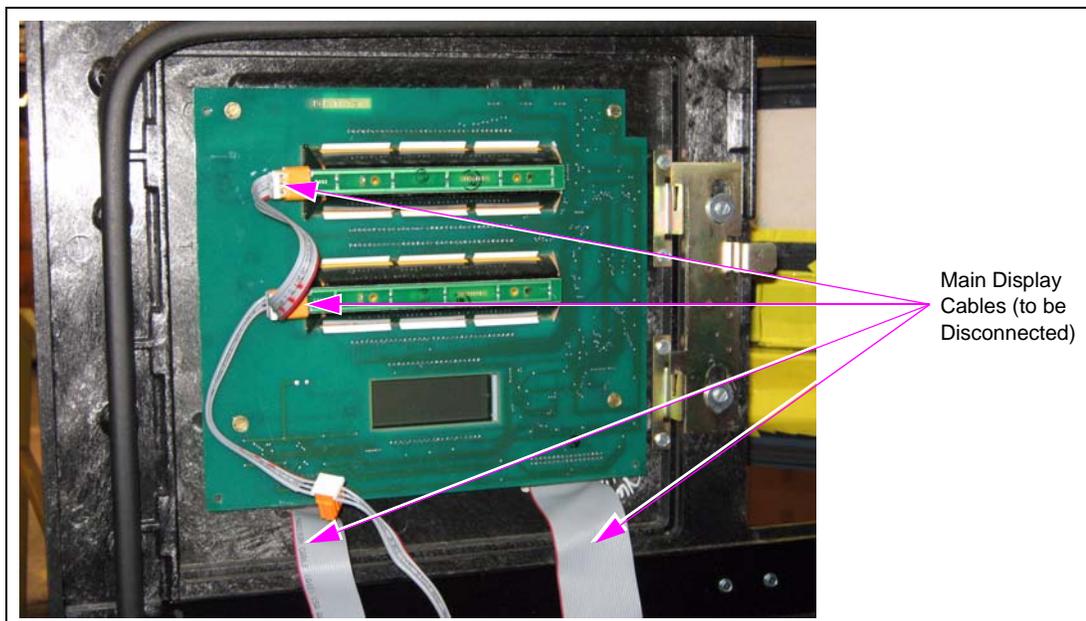
## Installing the CSC Reader Upgrade

For The Advantage Series units with wide frame, refer to MDE-4199 Contactless SMART Card Retrofit Kit M05205K00X Installation Manual.

For The Advantage Series units with narrow frame, proceed as follows:

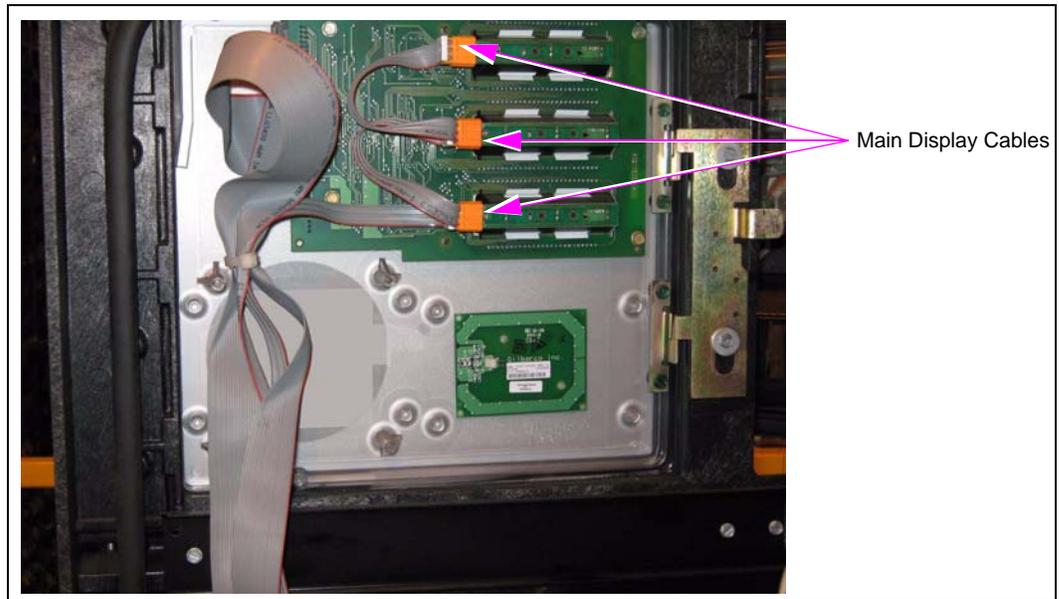
- 1 Disconnect the Main Display Cables from the main display (see [Figure 16](#)).

Figure 16: Disconnecting the Display Cables



- 2 Remove the right access door by pushing the hinge pin up through the main door.
- 3 Install the new access door using the previously removed hinge pin.
- 4 Connect the Display Cable Connectors removed in step 1 (see [Figure 17](#)).

**Figure 17: Connecting the Display Cable Connectors**



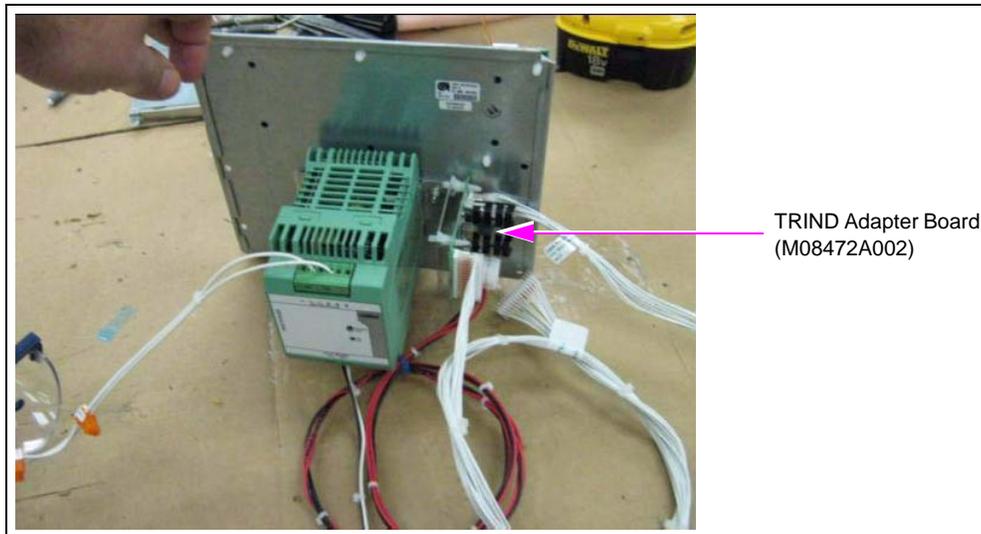
- 5 Route the Antenna Cable from the Card Reader to the CSC Antenna using the procedure provided in MDE-4199 Contactless SMART Card Retrofit Kit M05205K00X Installation Manual.

## Installing the FlexPay EMV Retrofit Kits with Existing TRIND Option

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

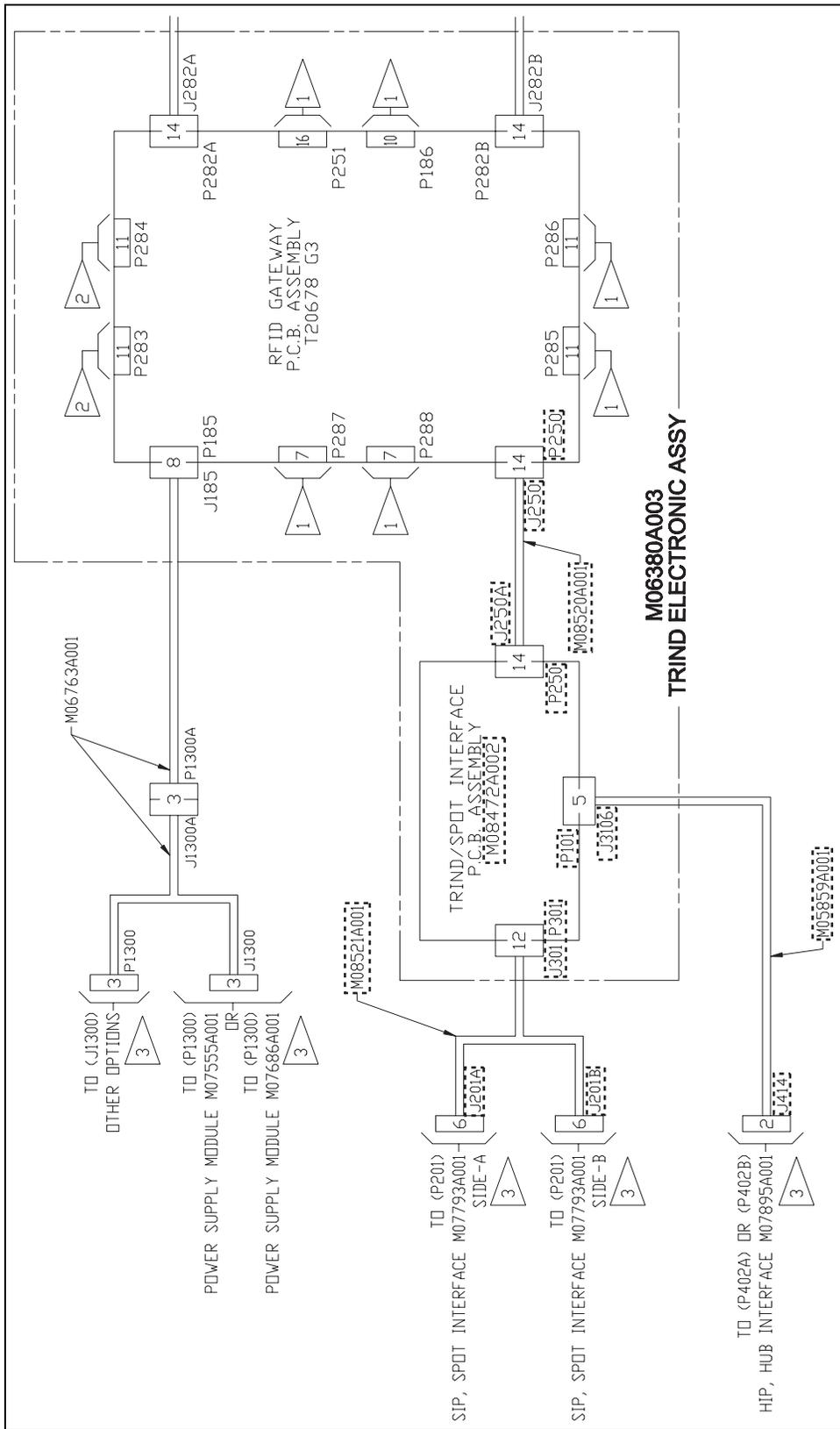
- 1 Locate the TRIND Adapter Board mounted on the HIP Assembly.

**Figure 18: TRIND Adapter on HIP Assembly**



- 2 Connect cables from the TRIND Adapter Board as follows (see [Figure 19](#) on [page 25](#)):
  - a Route the M05859A001 Cable to the HIP Board and connect J414 to P402A or P402B on the HIP Board.
  - b Route the M08520A002 Cable to the TRIND Gateway Board (T20678-G3) and connect J250 to P250 on the Gateway Board.
  - c Route the M08521A001 Cable to the SIP Boards (M07793A001) mounted on the Side A door and the Side B door. The J201A connector must be connected to P201 on the SIP Board mounted on the Side A door. The J201B connector must be connected to P201 on the Side B door.
- 3 Connect the two cables marked M07948A002 to each door assembly by plugging the end with COM 2 and COM 4 connectors to the EMV display connectors marked with the same designation. Plug the connectors on other end of the J103 and J105 Cable, and into the P103 and P105 connectors respectively on the SIP Board (M07793A001).

Figure 19: TRIND/SPOT Interface Board (M08472A002) Connections



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