

## Introduction

### Purpose

This manual provides instructions to use the 5.7-inch Display Assembly (M13754A002 and M13754A004) to replace a defective display for FlexPay™ II or FlexPay IV CRIND®.

### Intended Users

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

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## Required Tools

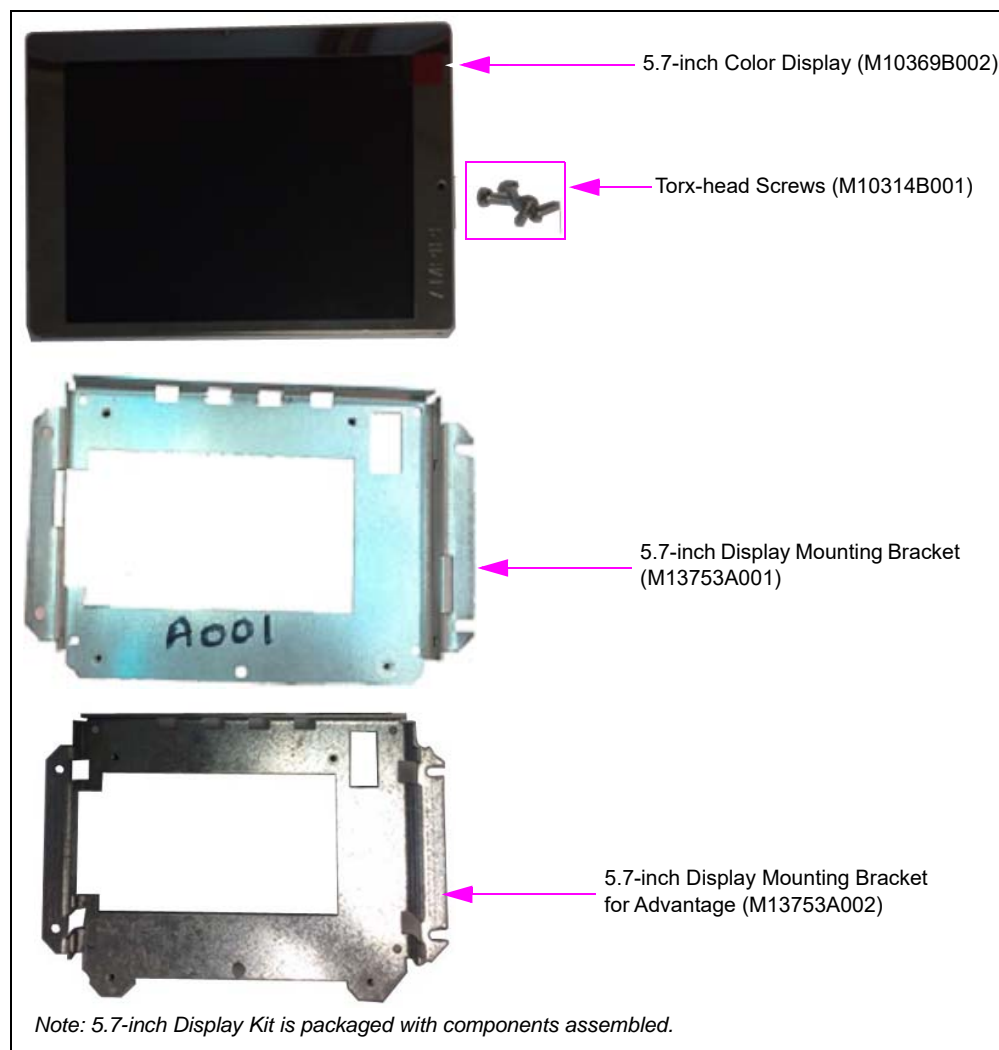
The following tools and materials are required for installing the 5.7-inch display assembly:

- Standard and Metric Socket Set
- Phillips® Screwdriver (#1 and #2 sizes)
- T10 Torx Driver
- T15 Torx Driver
- Torque Wrench

## Parts List

The following tables list the parts included in the 5.7-inch display assembly (see [Figure 1](#) on [page 2](#)):

M13754A002			
Item #	Description	Part Number	Quantity
1	Screw, Socket Pan-head Torx M3 x 8	M10314B001	4
2	Display, Color 5.7-inch	M10369B002	1
3	Circuit Board Support	Q10651-11	1
4	Mounting Bracket, 5.7-inch Display	M13753A001	1
M13754A004 for Advantage			
Item #	Description	Part Number	Quantity
1	Screw, Socket Pan-head Torx M3 x 8	M10314B001	4
2	Display, Color 5.7-inch	M10369B002	1
3	Mounting Bracket, 5.7-inch Display	M13753A002	1

**Figure 1: 5.7-inch Display Assembly Components**

## Related Documents

Document Number	Title	GOLD <sup>SM</sup> Library
MDE-3804	Encore <sup>®</sup> and Eclipse <sup>®</sup> Start-up/Service Manual	<ul style="list-style-type: none"><li>• Encore and Eclipse</li><li>• Service Manual</li></ul>
MDE-4902	Encore 700 S Start-up and Service Manual	<ul style="list-style-type: none"><li>• Encore and Eclipse</li><li>• CRIND and TRIND<sup>®</sup></li></ul>
MDE-5221	FlexPay IV CRIND Start-up Manual	FlexPay IV

## Abbreviations and Acronyms

Term	Description
ASC	Authorized Service Contractor
CPR	Cardiopulmonary Resuscitation
CRIND	Card Reader in Dispenser
DEF	Diesel Exhaust Fluid
ESD	Electrostatic Discharge
FCB	FlexPay Control Board
GOLD	Gilbarco Online Documentation
NEC®	National Electrical Code
NFPA®	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
PCB	Printed Circuit Board
PIP	Peripheral Interface PCB
STP	Submersible Turbine Pump
TAC	Technical Assistance Center
ZIF	Zero Insertion Force

# Important Safety Information

**Notes: 1) Save this Important Safety Information section in a readily accessible location.**

**2) Although DEF is non-flammable, Diesel is flammable. Therefore, for DEF cabinets that are attached to Diesel dispensers, follow all the notes in this section that pertain to flammable fuels.**


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



## Preliminary Precautions

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

## Emergency Total Electrical Shut-Off

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

**WARNING**



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

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

## Total Electrical Shut-Off Before Access

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

## Evacuating, Barricading, and Shutting Off

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



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

## Read the Manual

Read, understand, and follow this manual and any other labels or related materials supplied with this equipment. If you do not understand a procedure, call the 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.

## 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.



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 birth defects or other reproductive harm.

#### ⚠ WARNING

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



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.

### Inform Emergency Personnel

Compile the following information and inform emergency personnel:

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

#### ⚠ WARNING



Gasoline/DEF ingested may cause unconsciousness and burns to internal organs. Do not induce vomiting. Keep airway open. Oxygen may be needed at scene. Seek medical advice immediately.

#### ⚠ WARNING

DEF generates ammonia gas at higher temperatures. When opening enclosed panels, allow the unit to air out to avoid breathing vapors. If respiratory difficulties develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention.

#### ⚠ WARNING



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

#### ⚠ WARNING



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

#### ⚠ WARNING



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

#### ⚠ WARNING

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

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

### Lockout/Tagout

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

## Before You Begin

For FlexPay II CRIND, read and understand all safety information found in *MDE-3804 Encore and Eclipse Start-up/Service Manual*.

For FlexPay IV CRIND, read and understand all safety information found in *MDE-5221 FlexPay IV CRIND Start-up Manual*.

### CAUTION



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

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

- 1 Inform the manager.
- 2 Barricade the unit to be worked on.
- 3 Remove power to the unit at the breaker panel. Follow OSHA lockout/tagout procedures.
- 4 Open the main dispenser door.
- 5 Match the parts received in the kit with [“Parts List”](#) on [page 1](#).



### WARNING

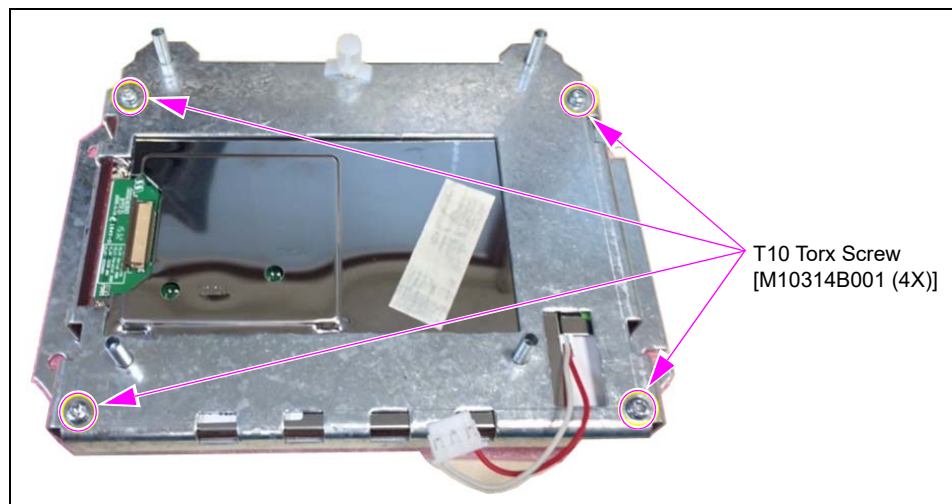
Failure to turn off the unit during the kit installation may cause injury or bodily harm from electrical shock. Ensure that all power to the unit is switched off before opening the door to the unit and during kit installation.

## Replacing 5.7-inch Display for FlexPay II CRIND

To replace the defective 5.7-inch display using 5.7-inch display assembly for FlexPay II CRIND, proceed as follows:

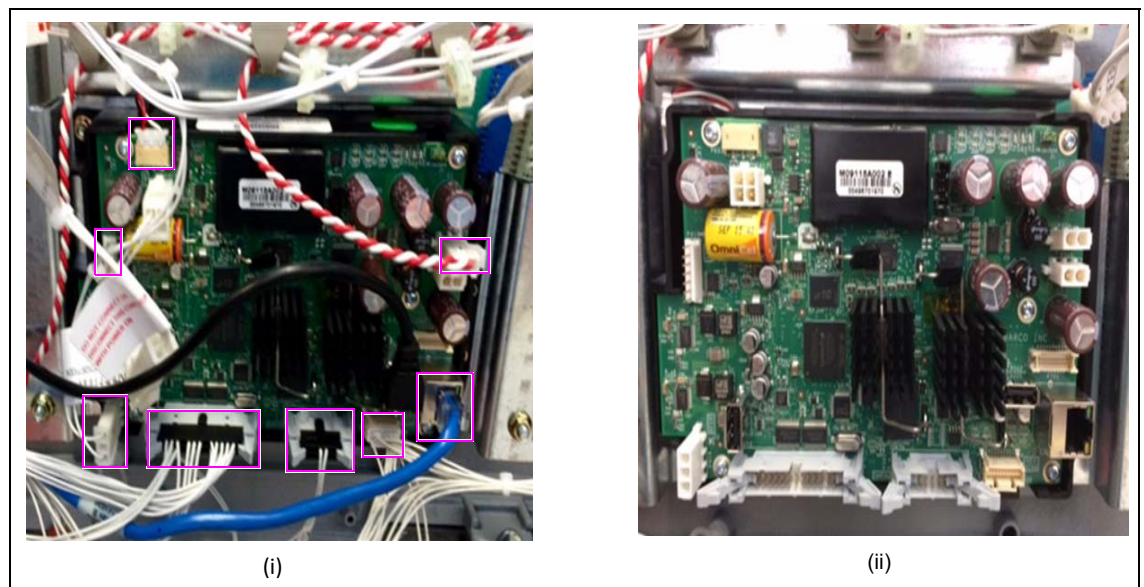
- 1 Unpack the new 5.7-inch display assembly.
- 2 Remove the 5.7-inch Display Mounting Bracket (M13753A002) from the 5.7-inch Color Display (M10369B002) by removing the M10314B001 T10 Torx Screws.  
*Note: 5.7-inch display mounting bracket is not used in this installation.*

**Figure 2: Removing T10 Torx Screws**



- 3 On the dispenser door, remove all the cables from the front side of the FlexPay Control Board (FCB) as shown in [Figure 3](#).

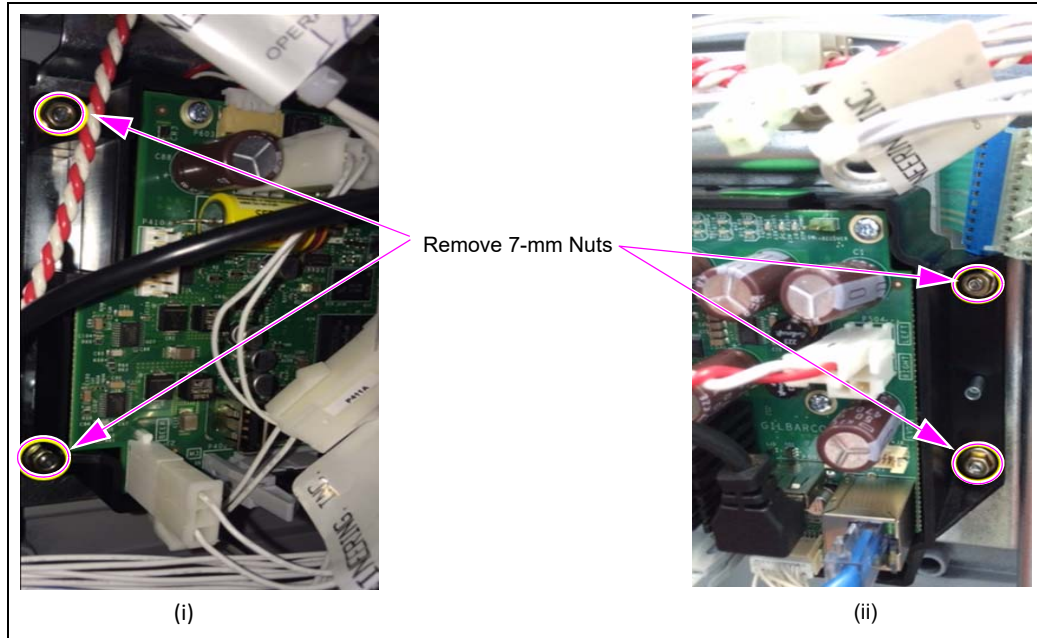
**Figure 3: Removing Cables from FCB**





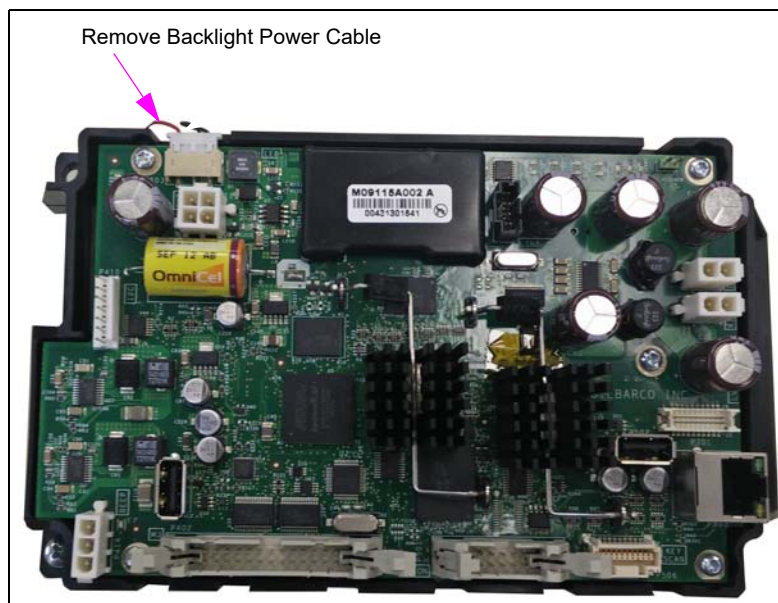
- 4 Remove the 7-mm nuts from plastic housing connecting it to the bracket and then place the plastic housing containing FCB and display on a smooth flat surface.

**Figure 4: Removing 7-mm Nuts**



- 5 Remove the backlight power cable.

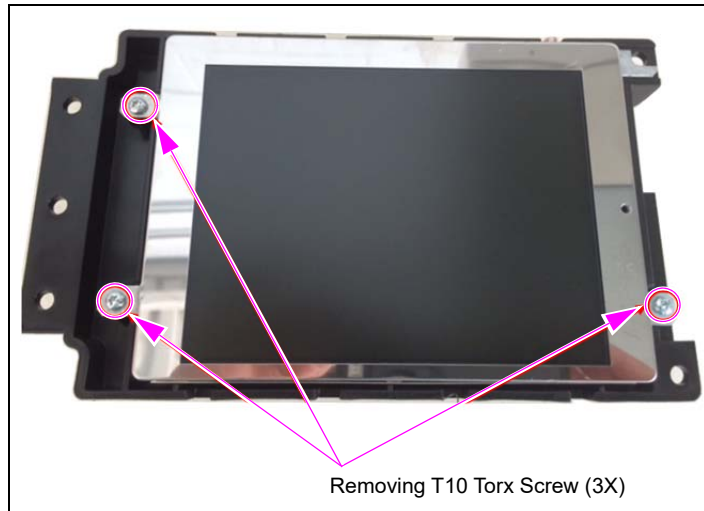
**Figure 5: Removing Backlight Power Cable**





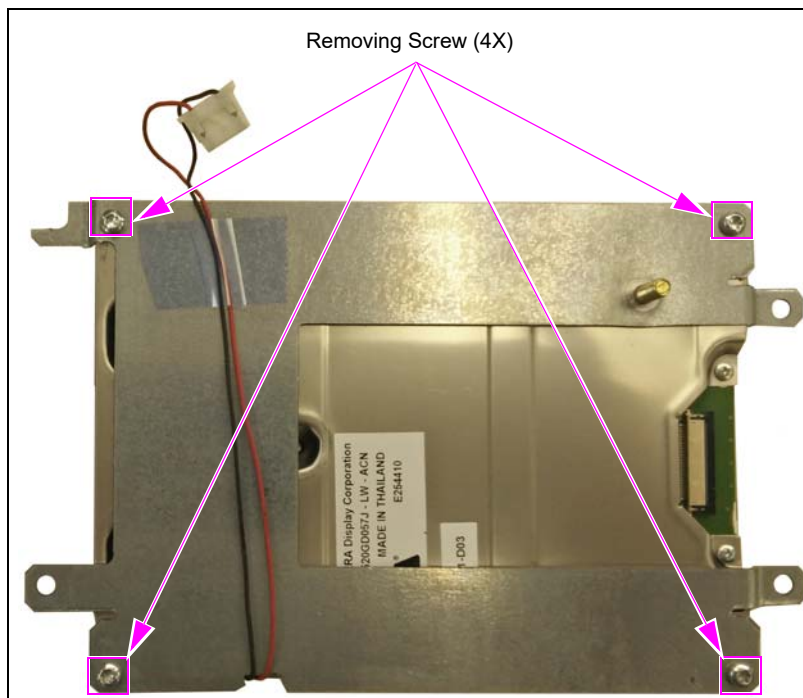
- 6 Remove the three T10 Torx Screws from the front side of the display/plastic mount configuration, to detach and expose the rear side of the FCB and display.

**Figure 6: Removing T10 Torx Screws**



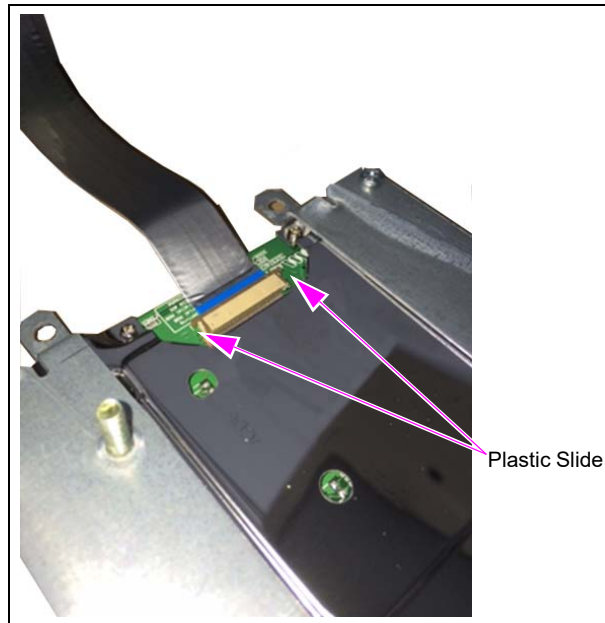
- 7 Remove screws holding bracket behind the display.

**Figure 7: Removing Screws**



- 8 Detach the Zero Insertion Force (ZIF) Cable (M09224B001) that connects the display and FCB by disconnecting it from the rear side of the display.  
*Note: Slide the plastic slide away from the connector body.*

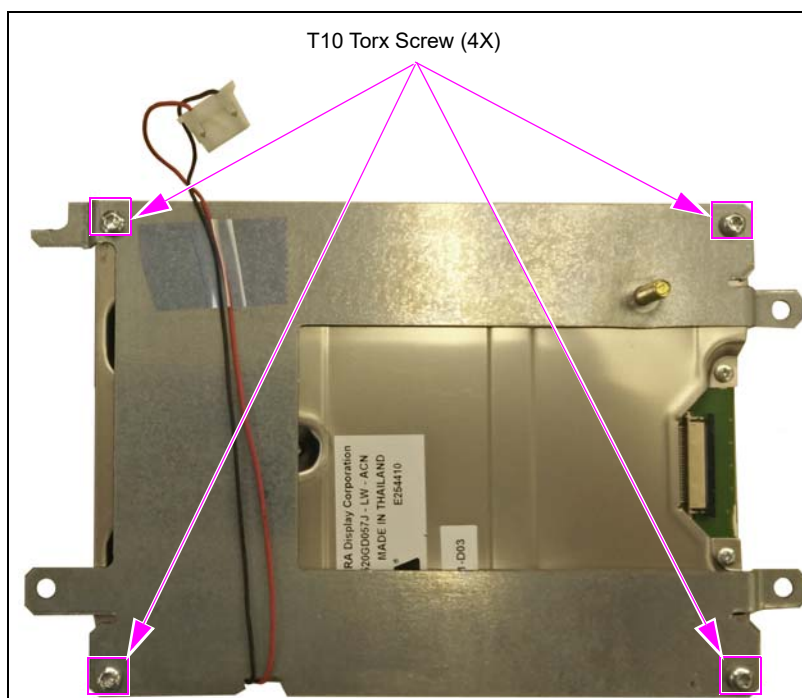
**Figure 8: Detaching ZIF Cable (M09224B001)**



Removing the defective display is now complete.

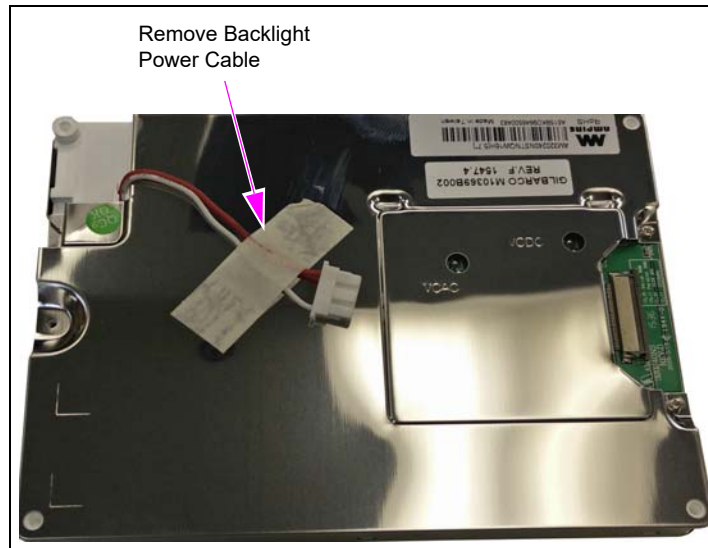
- 9 Mount bracket behind the new display with four T10 Torx screws.

**Figure 9: Mounting Bracket using Screws**



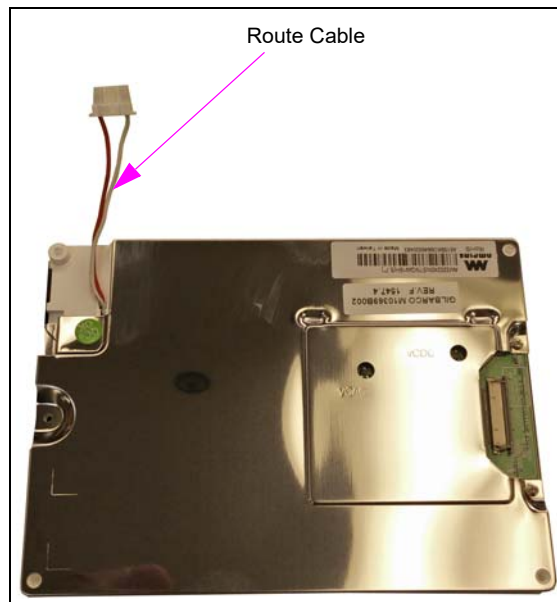
- 10 Remove tape holding backlight power cable behind the new display.

**Figure 10: Removing Tape Holding Backlight Power Cable**



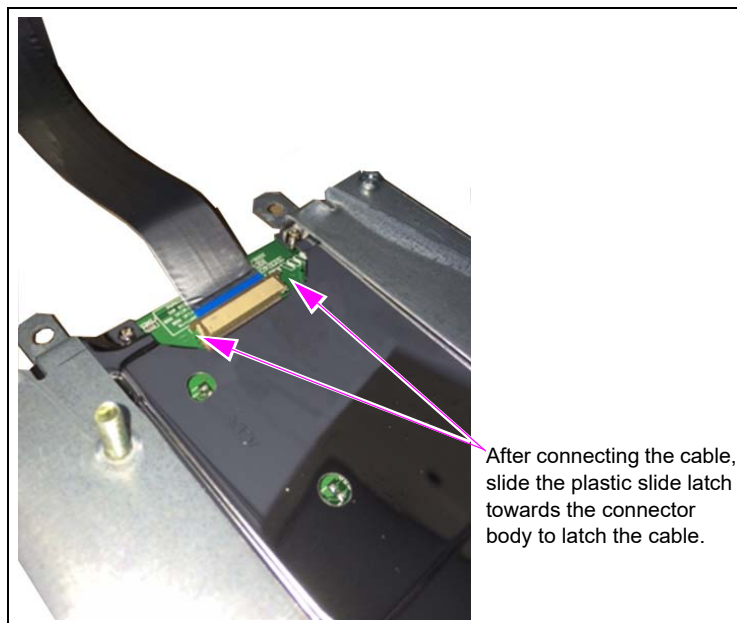
- 11 Route cable so that it exits the top of the display in the recessed area.

**Figure 11: Routing Cable**



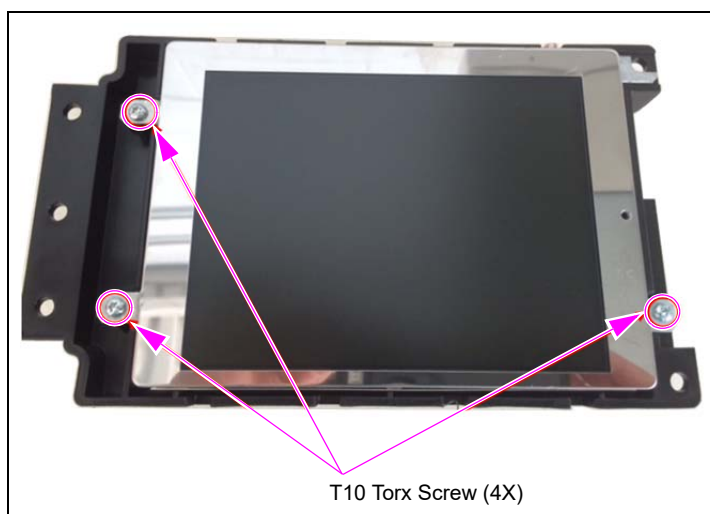
- 12 Connect the ZIF Cable to the new 5.7-inch color display and FCB from the rear side of the display.

**Figure 12: Connecting ZIF Cable**



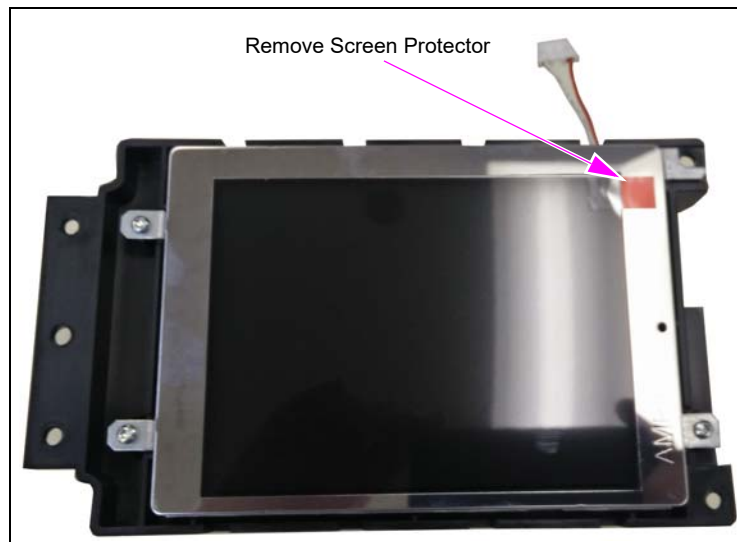
- 13 Attach the FCB and display assembly to the front side of display/plastic configuration using T10 Torx screws.

**Figure 13: Mounting T10 Torx Screws**



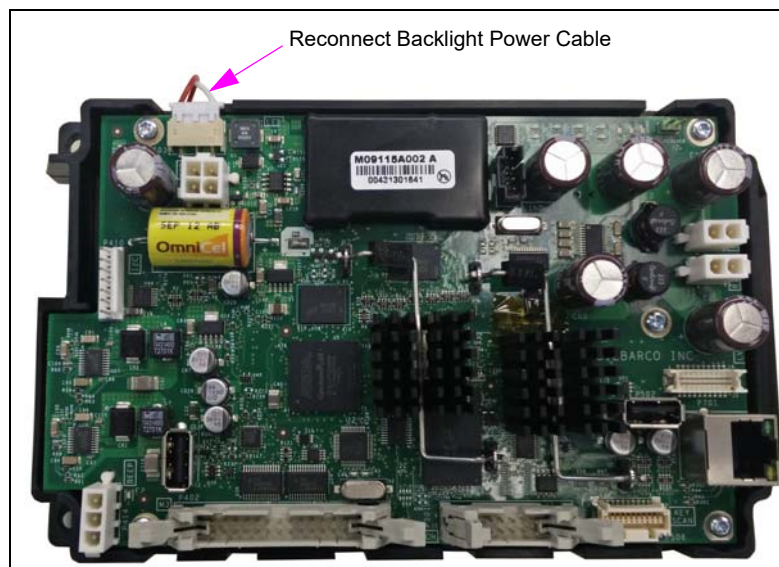
- 14 Remove screen protector by pulling gently on red tab.

**Figure 14: Removing Screen Protector**



- 15 Reconnect the backlight power cable.

**Figure 15: Reconnect Backlight Power Cable**



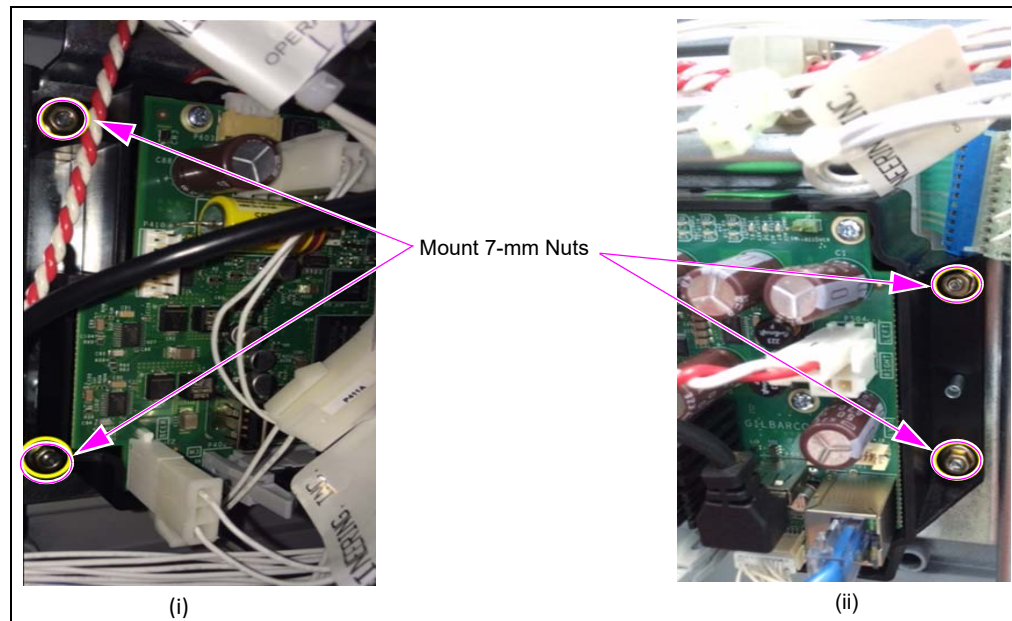


- 16** Reinstall the plastic mount configuration containing FCB and display assembly to the bracket using 7-mm nuts (see [Figure 16](#)). Tighten the nuts in a diagonal pattern with a torque wrench. **Do not overtighten the nuts.** Overtightening of the nuts can strip or break the screw bosses.

The following are the torque settings for the different door types:

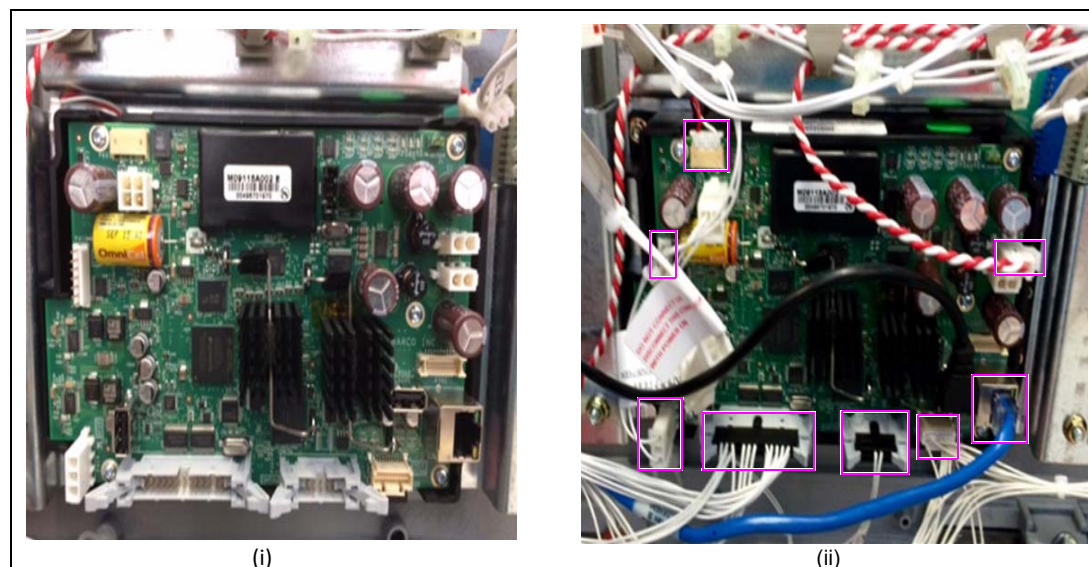
- Non-threaded insert doors: 16 in/lbs
- Threaded insert doors: 12 in/lbs

**Figure 16: Reinstalling Plastic Mount Configuration**



- 17** On the dispenser door, connect all cables from the front side of the FCB as shown in [Figure 17](#).

**Figure 17: Connecting Cables to FCB**





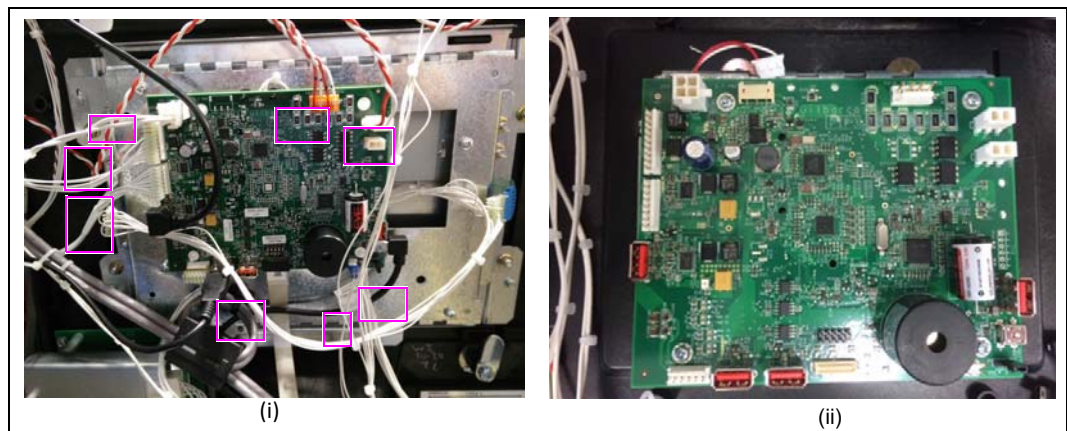
- 18 Ensure that all electrical components, screws, and cables are connected.
- 19 Reactivate the FlexPay II CRIND. To reactivate, refer to *MDE-3804 Encore and Eclipse Start-up/Service Manual* and *MDE-4902 Encore 700 S Start-up and Service Manual*.

## Replacing 5.7-inch Display for FlexPay IV CRIND

To replace the defective 5.7-inch display using 5.7-inch display assembly for FlexPay IV CRIND, proceed as follows:

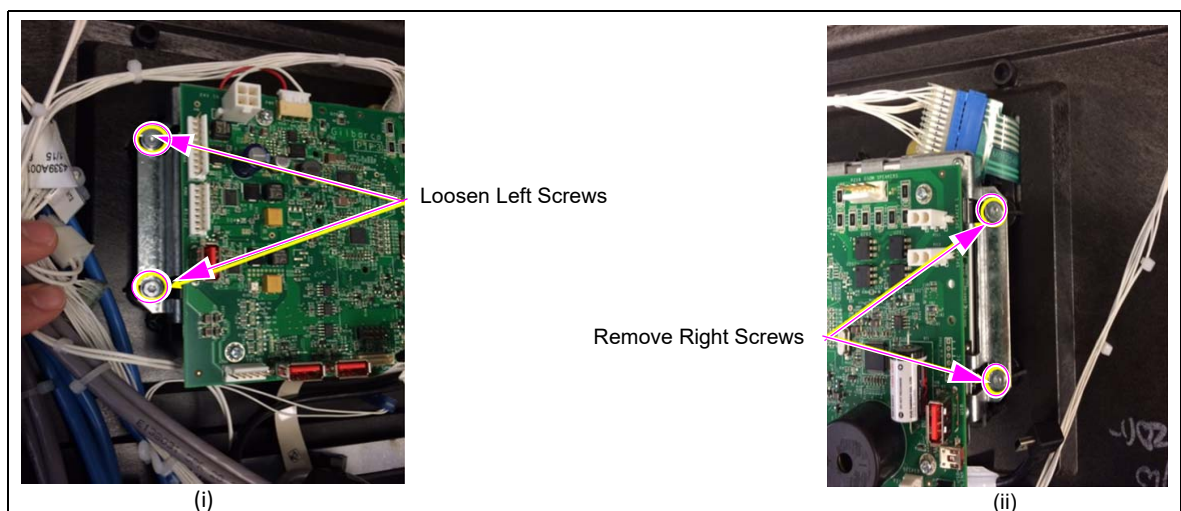
- 1 Remove the new 5.7-inch display from the display assembly. The remaining components in the assembly will not be used.
- 2 Remove all cables from the front side of the Peripheral Interface PCB (PIP)3.

**Figure 18: Removing All Cables**



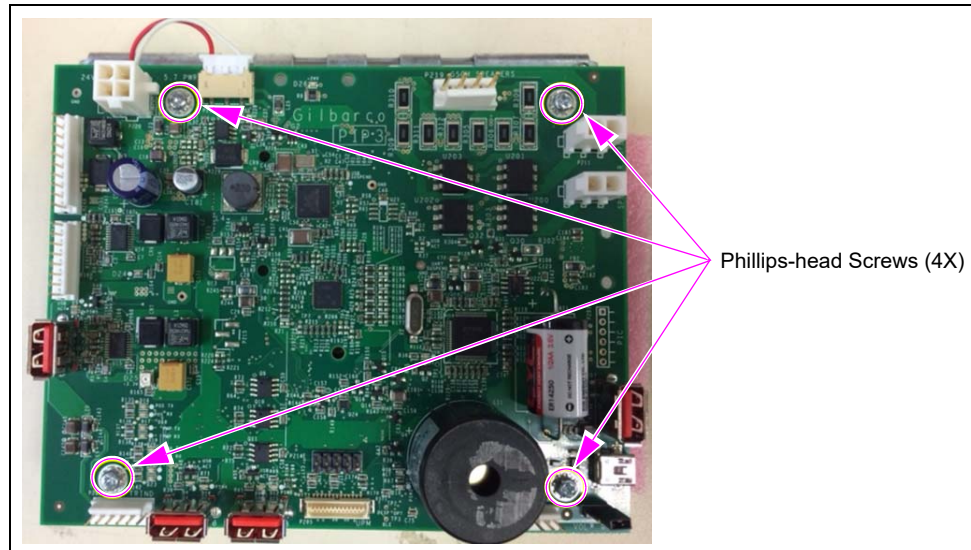
- 3 On the dispenser, loosen the two T15 Torx screws on the left and remove the two T15 Torx screws on the right of the display mounting bracket using a T15 Torx driver.  
*Note: If the dispenser has Phillips-head or hex-head screws due to production variation, then use a Phillips-head screwdriver or 1/4" socket to loosen and remove the screws.*

**Figure 19: Loosening and Removing T15 Torx Screws**



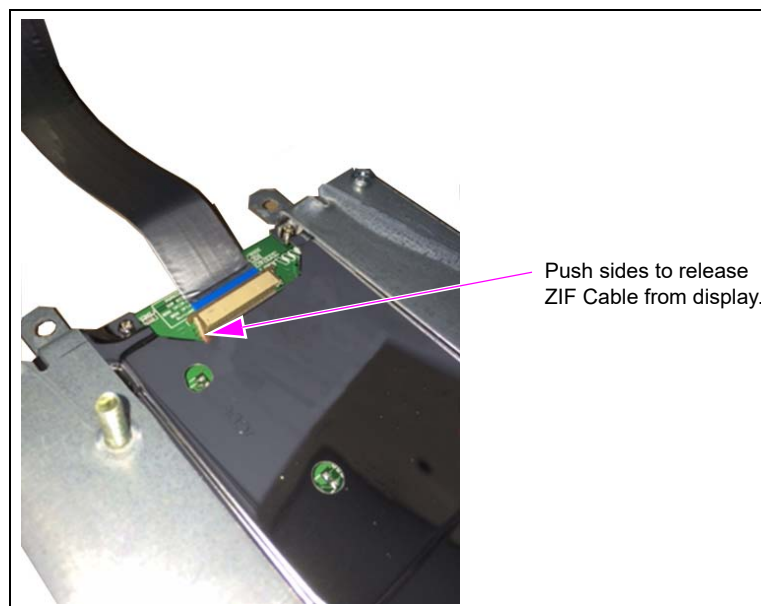
- 4 Remove the display bracket configuration from the door and place on a smooth flat surface.
- 5 Disconnect PIP 3 from the display bracket by removing the Phillips-head screws from the board.

**Figure 20: Removing Phillips-head Screws**



- 6 Detach the ZIF Cable (M14662B001) that connects display and PIP 3. Remove it from the rear side of the display to completely free PIP 3 from the display.

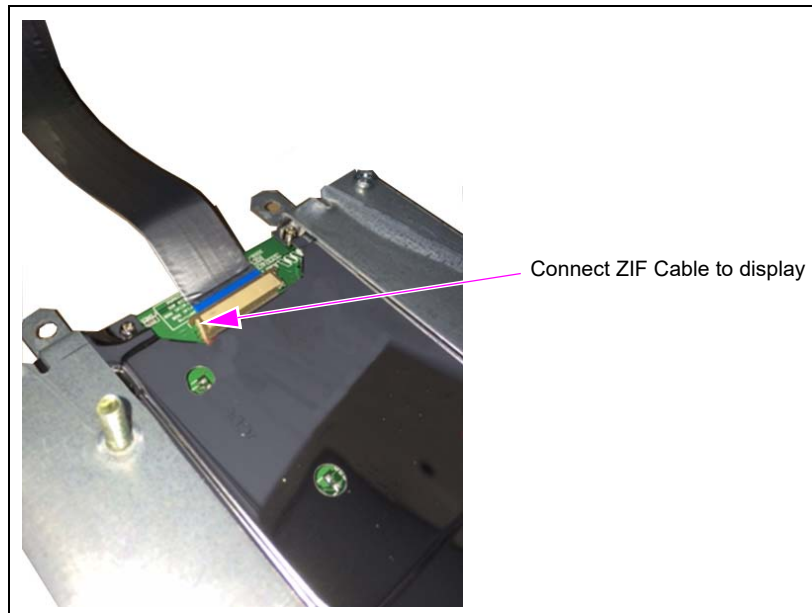
**Figure 21: Detaching ZIF Cable**



Removing the defective display is now complete.

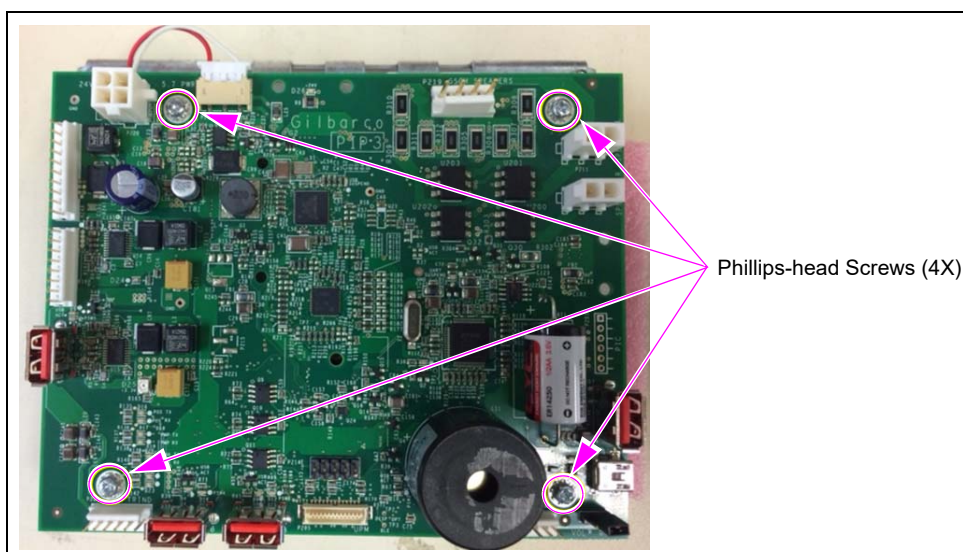
- 7 Mount the new display onto the display bracket using the four screws removed in step 3 on page 15.  
*Note: Ensure that you are using the correct display bracket for the dispenser. Use M13753A001 for Encore and M13753A002 for Advantage units. Refer to Figure 1 on page 2.*
- 8 Connect the ZIF Cable to the new display assembly and PIP 3 from the rear side of the display.

**Figure 22: Connecting ZIF Cable**



- 9 Connect the PIP 3 to the display bracket using the four Phillips-head screws from the board removed in step 5 on page 16.

**Figure 23: Mounting Phillips-head Screws**



- 10 Place the display bracket configuration on the door.



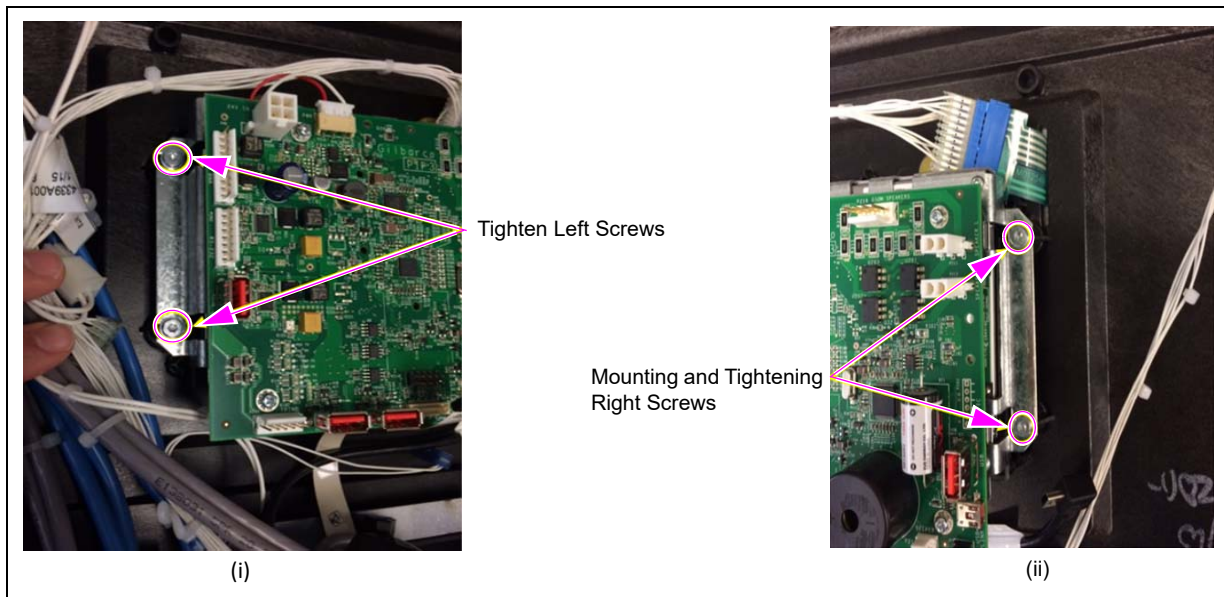
- 11 Mount the two T15 Torx screws on left side of the display mounting bracket and then tighten the four T15 Torx screws (two each on left and right side). Tighten the screws in a diagonal pattern with a torque wrench. **Do not overtighten the screws.** Overtightening of the screws can strip or break the card reader bosses.

The following are the torque settings for the different door types:

- Non-threaded insert doors: 16 in/lbs
- Threaded insert doors: 12 in/lbs

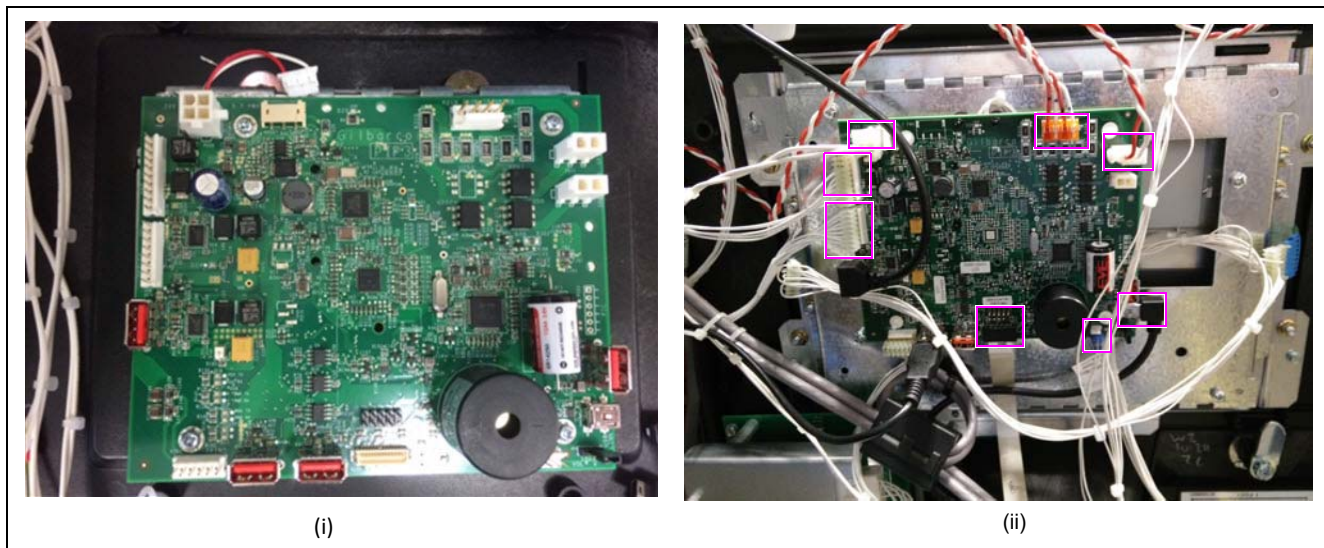
*Note: Due to production variations, some dispensers used hex-head or Phillips-head screws instead of Torx.*

**Figure 24: Tightening T15 Torx Screws**



- 12 Connect all the cables on the front side of the PIP 3.

**Figure 25: Connecting All Cables**



- 13 Ensure that all electrical components, screws, and cables are connected.
- 14 Reactivate the FlexPay IV CRIND. To reactivate, refer to *MDE-5221 FlexPay IV CRIND Start-up Manual*.

## Completing Installation

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

- 1 Reinspect all the connections and cable routing.

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.

- 2 Clean up the work site, removing all materials to be discarded and all tools.
- 3 Power on the unit at the breaker panel and reactivate the unit.
- 4 Observe the display after powering on. Ensure that the display is readable.
- 5 Put the unit back into service.

Replacing the 5.7-inch display is now complete.

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