Installation

Introduction

This manual provides installation instructions for Kit M04489K00X for Encore® Pumps/ Dispensers. The Kit M04489K004 contains the printer parts and hardware required for installation in an Encore 500 equipped with CRIND® Control Node 2. The Kit M04489K005 contains the printer parts and hardware required for installation in an Encore 500 equipped with CRIND Control Node 1.

Required Reading

Before installing these kits, the installer must read, understand, and follow:
- This manual
- NFPA 30A, The Automotive and Marine Service Station Code
- NFPA 70, The National Electric Code
- Applicable federal, state and local codes and regulations

Failure to do so may adversely affect the safe use and operation of the equipment.

Note: This kit must be installed by a Gilbarco Authorized Service Contractor (ASC) to ensure warranty.

Related Documents

The following documents are related to the installation of the USB Printer Kits M04489K00X.

Document Number	Title	GOLD® Library
MDE-3804	Encore and Eclipse® Series Start-Up/Service Manual	Encore and Eclipse
MDE-3893	Encore/Eclipse Owners Manual	Encore and Eclipse
PT-1936	Encore Illustrated Parts Manual	Parts Manual

Required Tools

The following tools are needed to install the Encore USB Printer Kits M04489K00X:

- 1/4-inch nut driver (long nut driver or driver with extension)
- 8-mm nut driver (long nut driver or driver with extension)
- Sharp knife
- Chamfer tool

Parts List

The Encore USB Printer Kit M04489K004
The following table lists the parts for the Encore USB Printer Kit M04489K004.

Description	Part Number	Quantity
Assembly, Printer Module	M04119A001	2
PCA, SMART Connect™	M03893A001/ M04915A001*	1
Cable, USB 610mm	M03695B004	1
Cable, USB 2135mm	M03695B003	2
Cable, +24V Hengstler	M04405A001	1
Cable, +24V Hengstler	M04405A002	1
Bracket, Printer Bezel	M03534B001	2
Gasket, Printer	M00325B002	4
Cable, Ground Hengstler	M04431A001	2
Kit, Speaker Retrofit	M04435K001	2
Cable, Speaker/Wire	M00636A001	1
Bracket, Speaker Retrofit	M04432B001	1
Screw, Sel Tp Hex Hd 6-20X	Q11677-24	1
Standoff, circuit board	Q10651-02	4
Cutting Tool	M04770B001	1

*The kit may contain either M03893A001 or M04915A001.

The Encore USB Printer Kit M04489K005
The following table lists the parts for the Encore USB Printer Kit M04489K005.

Description	Part Number	Quantity
Assembly, Printer Module	M04119A001	2
PCA, CRIND Control Node 3	M04108A001	1
Cable, USB 2135mm	M03695B003	2
Cable, +24V Hengstler	M04405A001	1
Cable, +24V Hengstler	M04405A002	1
Bracket, Printer Bezel	M03534B001	2
Gasket, Printer	M00325B002	4
Cable, Ground Hengstler	M04431A001	2
Kit, Speaker Retrofit	M04435K001	2
Cable, Speaker/Wire	M00636A001	1
Bracket, Speaker Retrofit	M04432B001	1
Screw, Sel Tp Hex Hd 6-20X	Q11677-24	1
Cutting Tool	M04770B001	1

Important Safety Information

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 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 only these cashier station "stops."

Evacuation and Barricading

Any procedures performed on or near the pump/dispenser (but not requiring accessing the pump/dispenser or STPs) requires the following actions:

- An evacuation of all unauthorized persons and vehicles
- Using safety tape or cones as barricades to the effected units

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 Call 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

There is applicable information in: NFPA 30A: *Automotive and Marine Service Code*; NFPA 70: *National Electrical Code (NEC)*; OSHA regulations; and federal, state, and local codes which 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 that follow must be followed to prevent death, injury or damage to the equipment

- **DANGER -** This signal word is used to alert you to a hazard to unsafe practice which will result in death or serious injury
- **WARNING -** This alerts you to a hazard or unsafe practice that could result in death or serious injury.
- **CAUTION** with Alert symbol - This signal word designates a hazard or unsafe practice which may result in minor injury.
- **CAUTION** without Alert symbol - When used by itself, CAUTION designates a hazard or unsafe practice which may result in property or equipment damage.

Prevent Explosions and Fires

Fuels and their vapors will become explosive if ignited. Spilled or leaking fuels cause vapors. Even filling customer tanks will cause explosive vapors in the vicinity of dispenser or island.

No Open Flames

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 fuels and their vapors. After getting 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. Be familiar with Cardiopulmonary Resuscitation (CPR) methods if you are working 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 tag out and lock out procedures. If you are not familiar with this requirement, refer to information in the service manual and OSHA documentation.

Working With Electricity Safely

Be sure to use safe and established practices in working with electrical devices. Poorly wired devices may cause a fire, explosion or electrical shock.
- Be sure grounding connections are properly made.
- Make sure that sealing devices and compounds are in place.
- Be sure not to pinch wires when replacing covers
- Follow OSHA Lock-Out and Tag-Out requirements. Station employees and service contractors need to understand and comply with this program completely to ensure safety while the equipment is down.

Informing Emergency Personnel

Compile the following information for emergency personnel:
- Location of accident (e.g. address, front/back of building, etc.)
- Nature of accident (e.g. possible heart attack, run over by car, burns, etc.)
- Age of victim (e.g. baby, teenager, middle-age, elderly)
- Whether or not victim has received first aid (e.g. stopped bleeding by pressure, etc.)
- Whether or not victim has vomited (e.g. if swallowed or inhaled something, etc.)

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

Installing the M04489K004/M04489K005 Kit

The following procedures describe installing the Encore USB Printer Kit M04489K004 or M04489K005 in an Encore unit.

1 Read all instructions before beginning installation.

2 Observe and execute all safety precautions and procedures before, during and after installation.

3 Obtain permission from station Operator/Manager to remove pump/dispenser from service and obtain key to the Customer Interface Module (CIM) door.

4 Remove power from the pump/dispenser.

5 Using the key, open the CIM doors on both sides of the unit.

Installing the USB Printers

1 On side 1 of the unit, locate the existing (Fujitsu) printer on the CIM door (Figure 1).

Figure 1: The existing printer mounted on CIM door.

2 Disconnect the power cable (Figure 1) from the printer and the LON Bus cable from both the printer and from the M01785A001 Door Node 2.

3 Move the M00605 Terminator from the new printer to the plug where LON Bus cable was just disconnected from Door Node 2.

4 Using the 8mm nut driver with extension, remove the three M5 printer mounting screws and remove the printer. Save the screws for reuse later.

5 Using the 1/4-inch nut driver, remove the four bracket mounting screws (two are visible on Figure 1) and remove the printer bracket. Save the screws for reuse.

6 Using the Chamfer cutting tool, insert the tool through the printer mounting slot in the CIM door. Hold the tool as shown in Figure 2 (also hold other end of tool) and shave off material from the top of the slot until the blade of the tool fits vertically in the slot and a chamfer is cut on the upper edge of the slot.

Figure 2: Cutting Chamfer in the Printer Slot
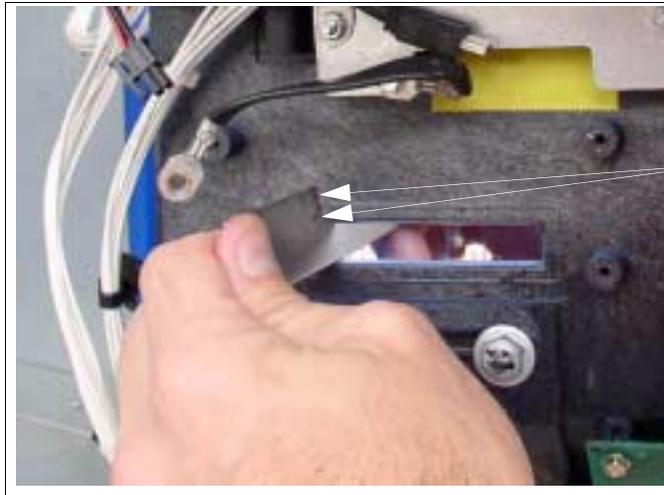
Should fit flush after shaving

7 Using a sharp instrument (such as a knife) or a file, trim out access material in the corners of the slot as shown in Figure 3.

Figure 3: Cleaning Corners in the Printer Slot

8 Clean up all material removed with the cutting tools.

9 Connect one end of the M04431A001 ground cable to the CIM door as shown in Figure 4 and place the other end as shown to be connected to the printer bracket screw.

Figure 4: Ground Cable Connections at CIM Door.

Ground Cable Connection

M04431A001 Ground Cable

10 Peal the protective cover from a M00325B002 printer gasket and stick to one side of the M0353B001 printer bracket. Repeat the procedure and stick the gasket on the other side of printer bracket (bracket is sandwiched between two gaskets - very important for good water seal).

11 Using the screws saved in Step 4, mount the printer bracket (Figure 5) at the four screw holes where old printer was mounted. Connect the ground cable to the upper left screw holding the bracket. Do not overtighten screws as they may strip in the plastic CIM door.

Figure 5: USB Printer Mounting Bracket

Ground cable connects here*

New USB printer bracket

USB printer mounting holes
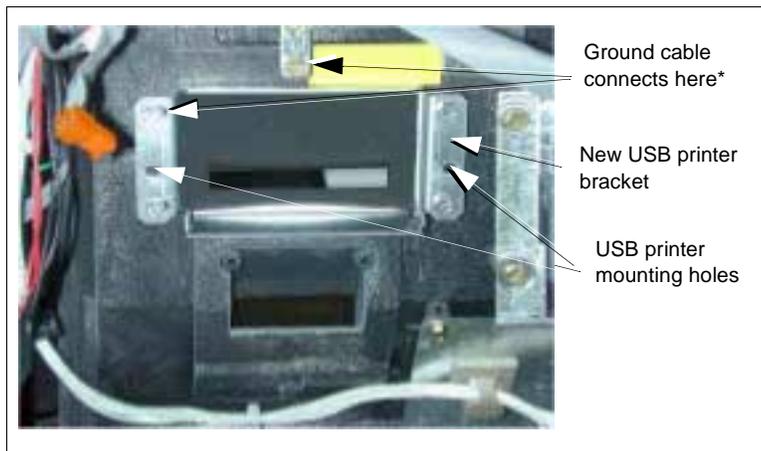
*Ground cable not shown here (shown in Figure 4)

CAUTION

When handling the USB printer, do not apply pressure to the labelled area above the paper insert slot on the upper portion of the printer (Figure 6). There are components under the label that may be damaged. Grasp the printer on the sides.

Figure 6: USB Printer Labelled Area

Labelled area
(Do not apply pressure here)

12 Mount the USB Printer by sliding the chute through the CIM door opening and aligning the mounting holes in the printer with the mounting holes in the mounting bracket. The bracket is designed to support the printer while you secure it in place.

13 Using a long nut driver (or nut driver with an extension) and two of the screws saved in Step 3, start the mounting screws (Figure 7). Start both screws before tightening. You may need to push down on the top of the printer and push the printer against the mounting bracket tightly to get screws aligned and started into the mounting holes.

Figure 7: Printer Mounting Screws

Printer Mounting
Screw

Printer Mounting
Bracket
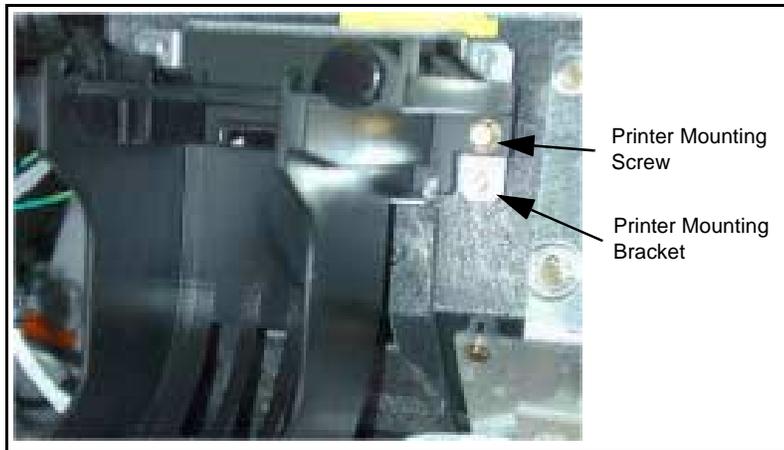
14 In the kit, locate the M04405A001 (for side A of dispenser) or M04405A002 (for side B of dispenser) power cable and the M03695B003 USB cable.

15 Route the cables in the cable ties on the back of the CIM door as shown in Figure 8. Note the type of plug on the ends of the cables and make sure the cables are oriented to place the plugs in the proper location.

Figure 8: Cable Routing on Back of Main Door

16 Connect the USB cable to the CRIND Control Node PCA, connect side 1 cable plug to P3120 (bottom) and side 2 cable plug to P3122 (top) as shown in Figure 9.

Note: If the unit is being updated from a CCN1 to CCN3, these connections can be made after the CCN3 has been installed.

Figure 9: USB Printer Cable Connection to CRIND Control Node

Side 2 Printer USB Cable Plug

Side 1 Printer USB Cable Plug
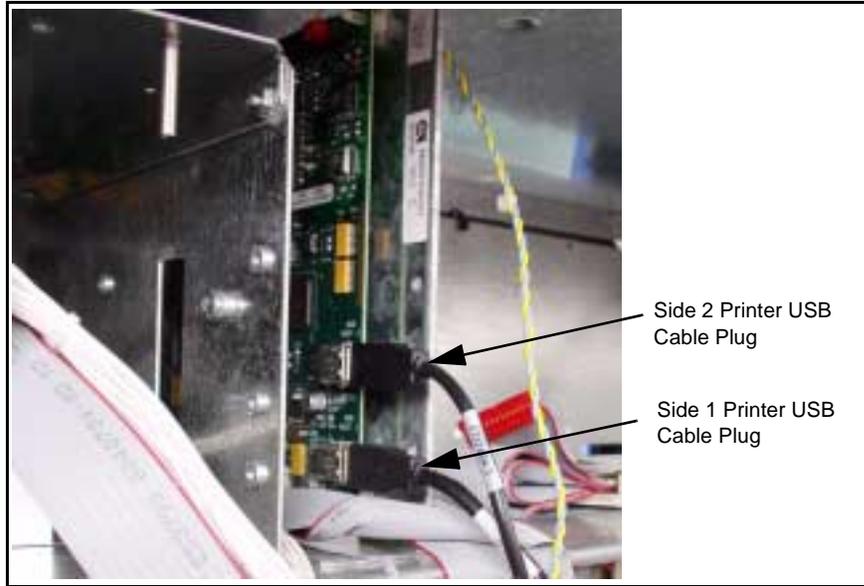
17 Connect J4 jack of the power cable (side A) to P3502A of the M02774A001 power supply PCA and J5 jack (side B) to P3502B cable jack J4 to Plug P4 and side 2 cable jack J5 to plug P5.)

Figure 10: Connection to Power Supply

P3502B - side 2 printer connection

P3502A - side 1 printer connection
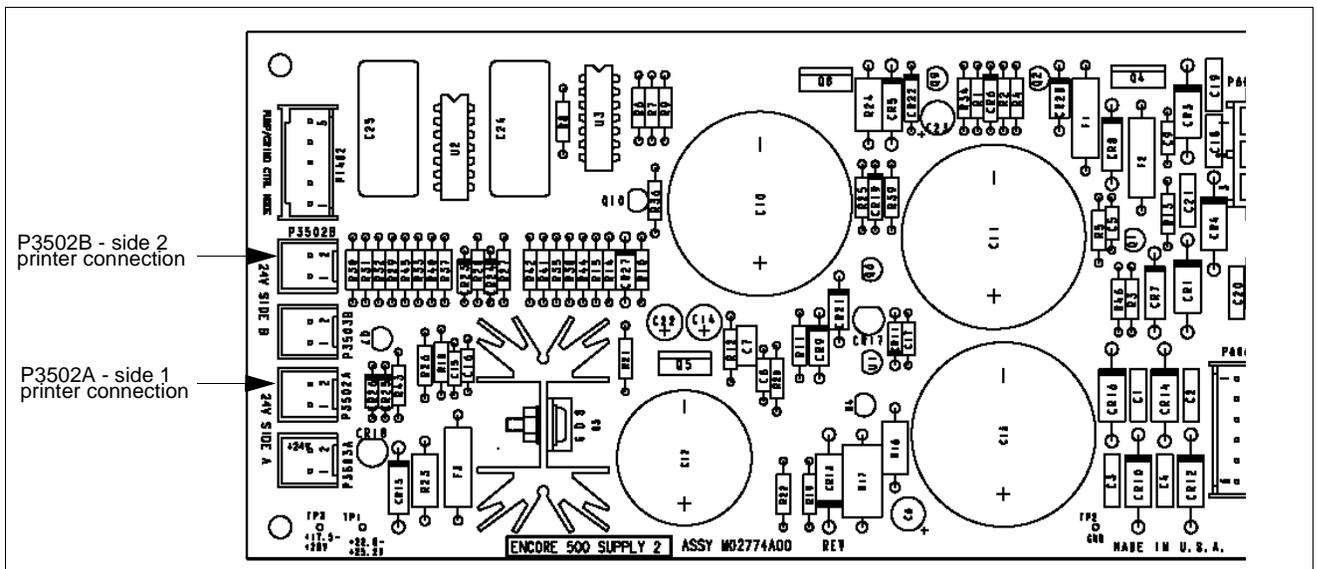
18 Connect the USB cable and power cable to the printer as shown in Figure 11. Be sure the connector is oriented as shown (the red wires and latch facing the paper feed).

Figure 11: Cable Connections to USB Printer
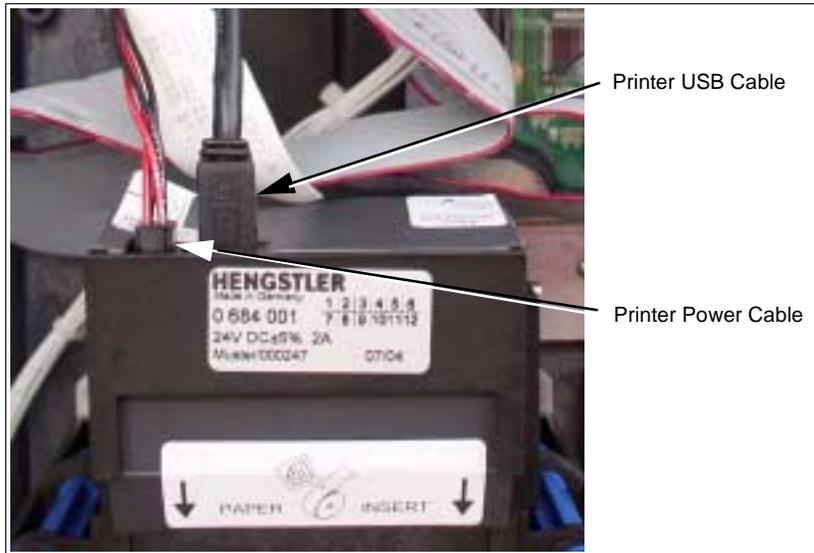
19 Repeat steps 1 through 16 for side 2 of the unit.

Installing CRIND Control Node 3 Printed Circuit Assembly

Note: Perform this procedure only on units converting from CCN1 to CCN3

1 **IMPORTANT:** Make a note of all connections to CRIND Control Node 1.

2 Remove all connections to CRIND Control Node 1 and remove the PCA from the standoffs.

3 Install the new CRIND Control Node 3 on the standoffs.

4 Reconnect all the connections removed from CRIND Control Node 1 in Step 2 to CRIND Control Node 3 following the notes taken when removed. Also, use the wiring block diagram M04455 shown in Figure 16 to aid in reconnecting the wiring.

Installing SMART Connect Printed Circuit Assembly

Note: Perform this procedure only on units equipped with CCN2.

1 In the kit, locate the M03893A001/M04915 SMART Connect Interface Board.

**2** Locate the four Q10651-02 circuit board standoffs in the kit.

3 At the M00291A001 Mounting Bracket in the Encore unit (bracket shown in Figure 12), insert the four standoffs into the mounting holes. The standoffs and card assembly are mounted on the opposite side of the mounting bracket from the CRIND Control Node 2.

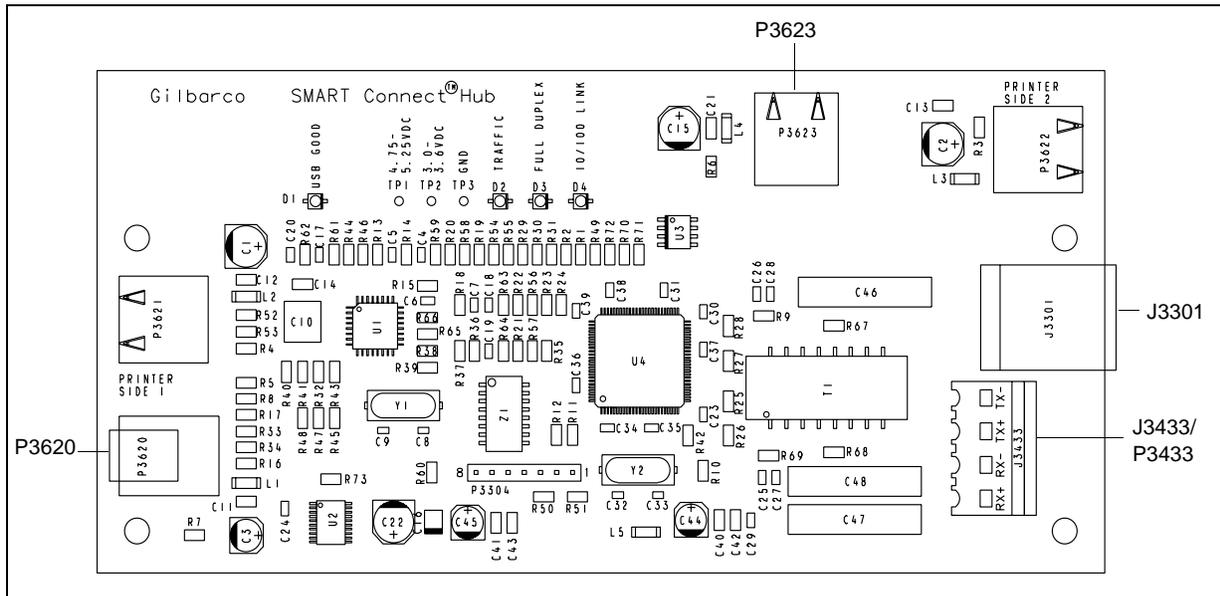**Figure 12: The M00291A001 Mounting Bracket Showing Mounting Holes**
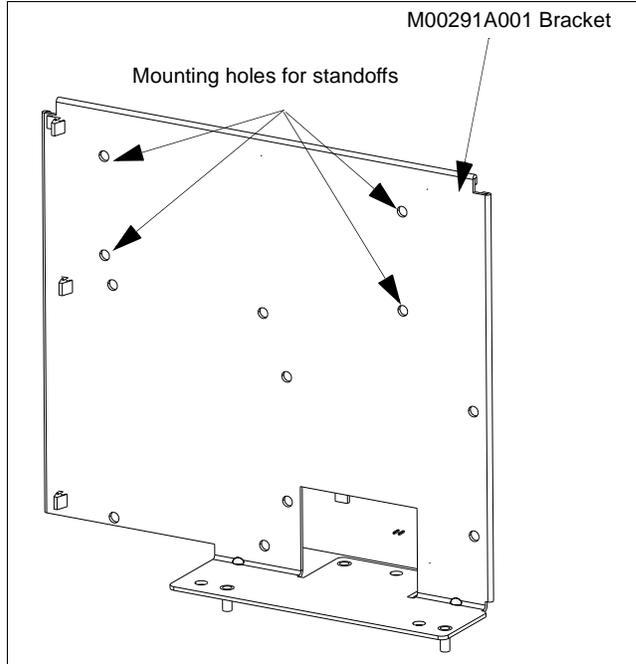
Place the M03893A001/M04915A001 Interface Board on the standoffs.

4 Locate the M03695B004 cable.
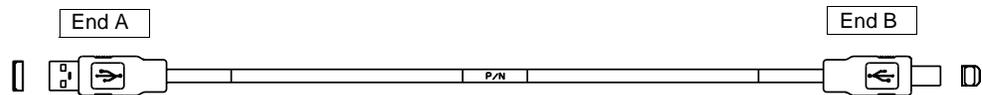
5 Connect End B of the M03695B004 cable to P3620 on the M03893A001/M04915A001 SMART Connect Interface Board (M03893A001 shown in Figure 13).

**Figure 13: The M03893A001 SMART Connect Interface Board**

6 Connect End A of the M03695B004 cable to P3120 on the M01753A001 CRIND Control Node.

Installing the Speaker Retrofit Kit

1 In the M04489K004 or M04489K005 kit, locate the M04435K001 Speaker Retrofit Kit.

2 On the back of the CIM door and to the left of the display (looking from back of door), mount the M04432B001 speaker bracket and the M00636A001 Speaker and cable assembly. Secure in place using the existing screws in the door. See Figure 14 for placement of bracket and speaker.

Figure 14: Placement of Speaker Bracket and Speaker
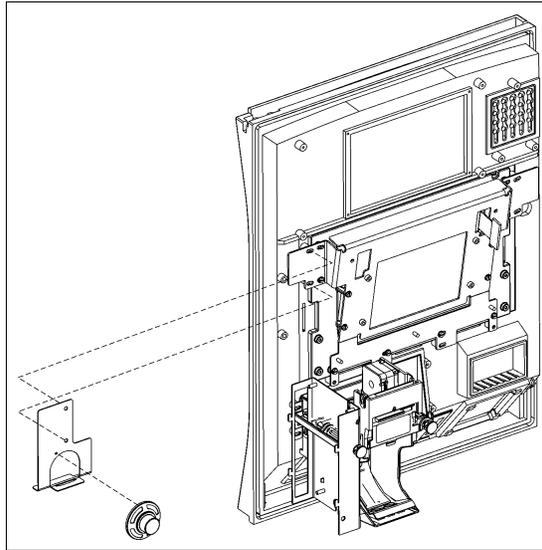
3 Connect the J2104 connector on the speaker and cable assembly to plug P2104 on the M01785A001 Door Node 2 (Figure 15).

4 Dress and secure the wires in existing cable ties.

Figure 15: M01785A001 Door Node 2
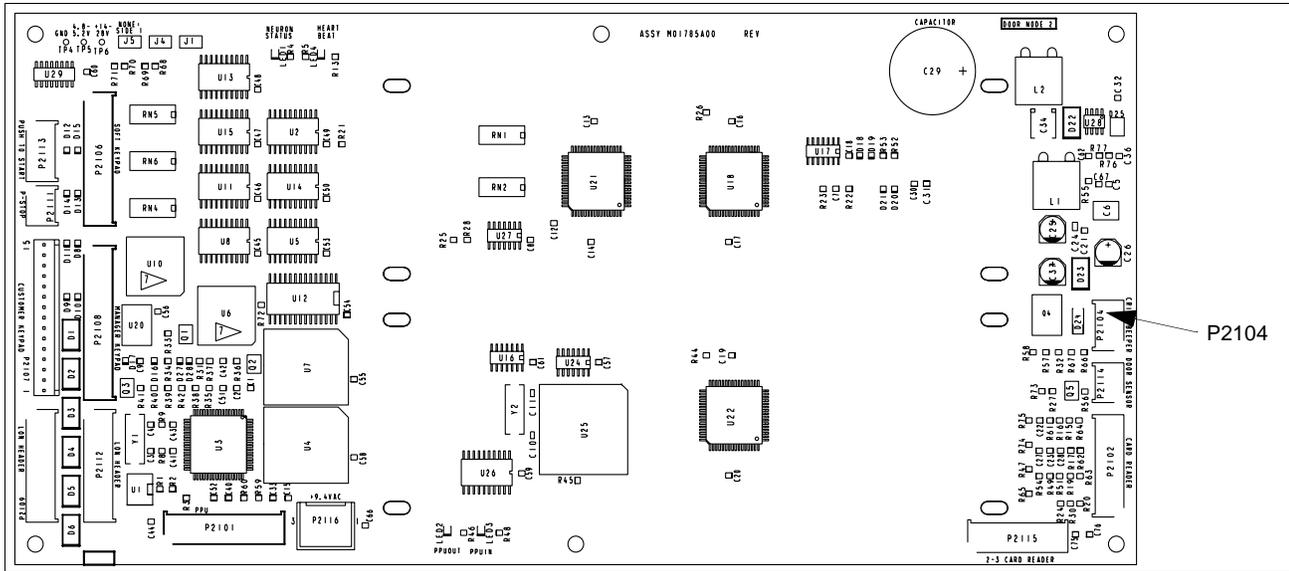
Restoring Power and Installing Printer Paper

1 Restore power to the unit. A red LED should be blinking two times per second on the USB printer. This means the printer is operational but out of paper.

2 Load paper in both printers following instructions on the printer.

3 Perform a printer test to verify that the printer is operational.The red LED should be blinking one time per second indicating paper is loaded and communication is good.
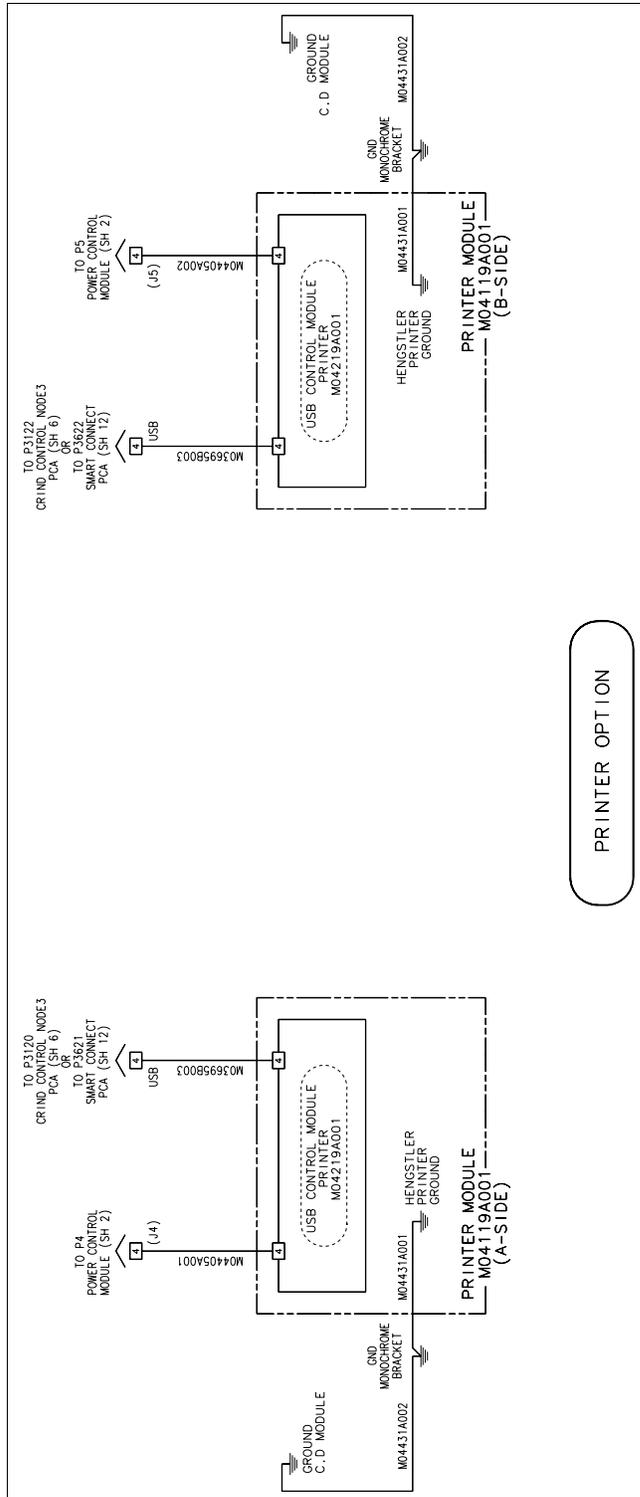
Reprogramming the Unit

Note: Reprogramming is required only if the CRIND Control Node was replaced. Laptop must be loaded with version V2.6.20 or higher of the Encore software.

1 Connect the laptop to Jack 3111 on CRIND Control Node.

2 Follow the procedures provided in MDE-3804, Encore and Eclipse Start-Up and Service Manual to update the software at the Encore pump/dispenser.

Completing the Installation

3 Remove from the site any equipment/materials that were removed from the pump/dispenser, unused materials, protective material used during assembly, and safety equipment.

4 Close and secure all unit doors.

Figure 16: Encore Block Diagram M04455 (Sheet 6)

Figure 17: Encore Block Diagram M04455 (Sheet 7)