

RETROFIT KIT INSTRUCTIONS

NCR OPTIC 5 FOR GVR ENCORE 300 500

Kit Number: 6001-0003-8801

497-0513341
Issue B



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Preface

Audience

This book is written for end users (System Administrator and Maintenance Technician), NCR Field Engineering, and VAR/OEM Hardware and System Integrators

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Safety and Compliance Information

This section introduces the hazards and safety precautions associated with installing, inspecting, maintaining or servicing the Encore 300 and 500. Before proceeding, check the relevant hazard and safety information. Fire, explosion or electrical shock could occur and cause death or serious injury if these safe service procedures are not followed.

All work must be carried out in accordance with NFPA (National Fire Protection Association) 30, 30A, and 70, and any local authority.

Preliminary Precautions

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

Emergency Total Electrical Shut-Off

Locate the forecourt emergency fuel shut-off valves and electrical isolation breakers. Understand how to use these, should they be required. Locate the switch or circuit breakers that shut-off all power to all fueling equipment and dispensing devices.

Total Electrical Shut-Off Before Access

Any procedure requiring access to electrical components or the electronics of a pump/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 the Encore 300 and 500.

Evacuation, Barricading, and Shut-Off

Any procedures requiring accessing a pump/dispenser head requires the following three actions:

- An evacuation of all unauthorized persons and vehicles
- Using safety tape or cones as barricades to the effected units
- A total electrical shut-off of the affected unit(s)

Safety Equipment

Throughout the Disassembly and Installation procedures of the OPT Retrofit Kit involves working with and around hazardous materials and apparatuses. Use of proper safety equipment such as ANSI (American National Safety Institute) Personal Protective Equipment such as safety glasses, insulated gloves, and protective footwear.

Read the Manual

Read, understand and follow this manual and any other labels or related materials supplied with the equipment. If you do not understand a procedure, call NCR. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

Follow the Regulations

Regulations in OSHA (Occupational Safety and Health Administration), national, state and local codes, including customer requirements 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 and may affect the safe use and operation of the equipment.

Safety Symbols and Terminology

Signal Words



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



Caution: Designates a hazard or unsafe practice which may result in minor injury, property or equipment damage.



Note: To emphasize points or remind installer of something, or to indicate the possibility of minor problems in the outcome of what installer is doing.

Out of Box Failure (OBF)

If you experience an out of box failure (OBF) during installation or staging related to a missing, wrong or defective unit or item, simply provide NCR with a detailed description of the issue and the item will be replaced free of charge. For assistance with this process send an email to CustomerSat.Retail@ncr.com with the following details:

- NCR Sales Order # (Sales Order # are located on the box)
- Date of Product Installation
- Product Model #
- Unit Serial #
- NCR part # of defective/missing/wrong component
- Description of Failure (please be specific. For example: “display will not power on”)
- Customer/Requestor’s contact name, phone number and/or e-mail address
- Address to ship replacement part(s)

Transport the product in its original packaging to prevent impact damages.

If you do not have access to a computer, you may leave a voice message at: 1-800-528-8658 (USA), or (International) +1-770-623-7400. When leaving a message, please provide a phone number and/or an email address so NCR can contact you if additional details are needed.



Note: Used equipment that experiences a failure does not qualify as an OBF and should go through the NCR warranty process.

Warranty

Warranty terms vary by region and country.

All parts of this product that are subject to normal wear and tear are not included in the warranty. In general, damages due to the following are not covered by the warranty.

- Improper or insufficient maintenance
- Improper use or unauthorized modifications of the product.
- Inadequate location or surroundings.

For detailed warranty arrangements please consult your contract documents.

Returning Defective Hardware for Service

Use the following procedure to report/return defective hardware.

Call the *NCR Customer Care Center* at 1-800-262-7782 and have the following information available when you place the call.

- Class/Model number of the defective equipment
- Serial Number of the defective equipment
- Equipment location in the store
- Description of the problem, including any system error codes, error condition, or guidance to the area of failure.

The NCR Agent will provide you with a work order number, which serves as your Return Material Authorization (RMA). Please provide the RMA on the outside of the shipping box.



Note: A work order must be opened for each device that is shipped for repair.

OPTIC 5 Encore 300 500 Kit Contents

Additional Required Kits



Note: One per dispenser.

Additional Required Retrofit Kit	UL Listing Information	Amount required
Dispenser Cub	UL Listed by Report Retrofit Kit Part Number 6009-0008-8801 (InvencoLink Converter)	One per dispenser. to be Installed on Side A PSU Bracket.

Encore Upgrade Kit Contents



Note: One kit per side of the dispenser.

Part Number	QTY	Description
497-0513438	1	PSU Assembly
006-8617730	2	PSU Nuts
497-0513385	1	Encore AC Power Adapter Cable
497-0514686	1	Encore 300 Comm Adapter Cable (Only used on 300 Pump, Side A only)
497-0513679	1	Encore 500 Comm Adapter Cable (Only used on 500 Pump, Side A only)
497-0514570	1	Encore AC Adapter Y Cable (Side A option only)
497-0513383	1	Cat-5e Data Cable(6ft, red)
497-0513384	1	Cat-5e Network Cable (6ft, yellow)
497-0513545	1	OPTIC 5 Encore 300/500 Door
497-0512520	2	Encore 300 Hinge Bracket (Lower bracket stays installed)
006-8625157	6	1/4" Hex Screw Bolt

Tools Required

The following tools are required to mount the OPTIC Door Upgrade onto a GVR Encore fuel dispenser:

- Safety Glasses
- GCBO Key
- GVR 751 Key
- Medium Flathead Screwdriver
- #6 (or small) and medium Phillips Screwdriver
- Socket Wrench and Assorted Hex Sockets or Nut Drivers
 - 1/4" and 7/16" (Could vary by pump)s
- Wire Stripper and Cutter
- Needle-Nosed Pliers
- UL Listed Crimp-on Fork Connectors/Terminals
- Small Wire/Zip-tie Clippers



Warning: Do NOT use power tools if working on a fuel station forecourt. Any spark could cause an explosion.

Recommended Materials

The following tools are not provided in the kit:

- Cable Restraints or Zip Ties
- Cloth Rags
- All-Purpose Lubricant
- Adhesive Remover
- Rust Penetrator Oil

Uninstall the Encore 300 500 Inner Electronic Door

Open the dispenser

1. Remove power from dispenser
2. Open the Inner Electronic door.
3. Identify Side A of the dispenser.
 - a. The jumper is on the Side A Customer Node installed on the JP1 jumper terminal.



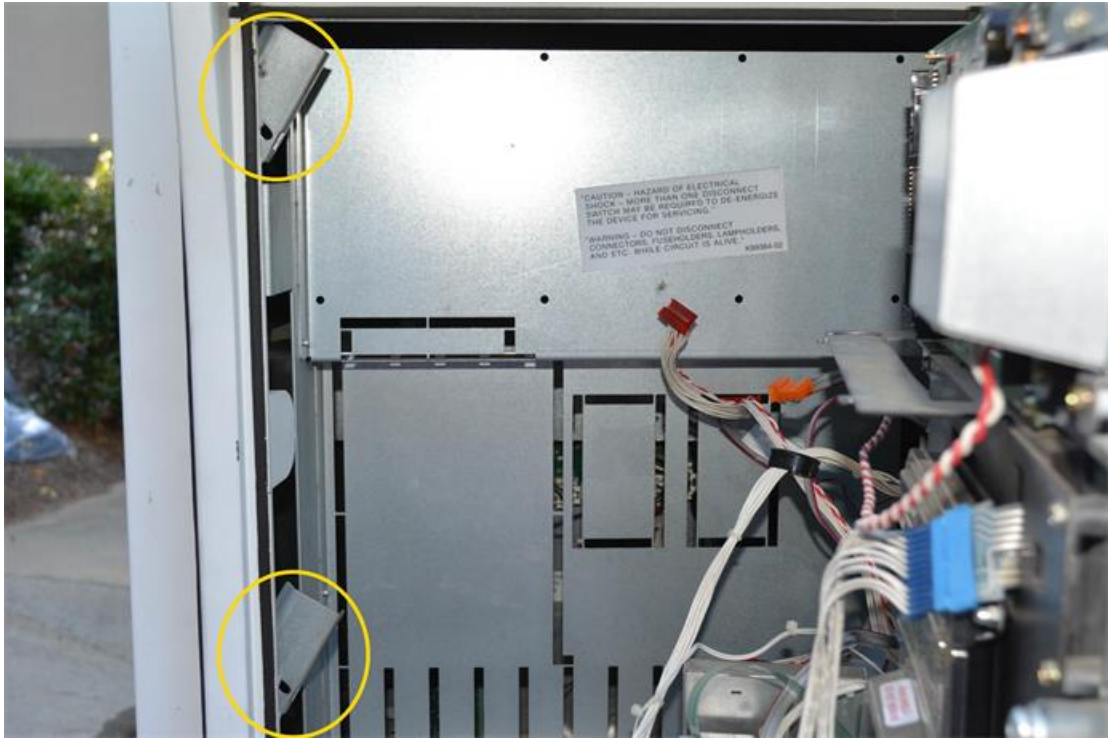
Encore 300 Dispenser

- b. The jumper is on the Side B Customer Node installed on the J5 jumper terminal.



Encore 500 Dispenser

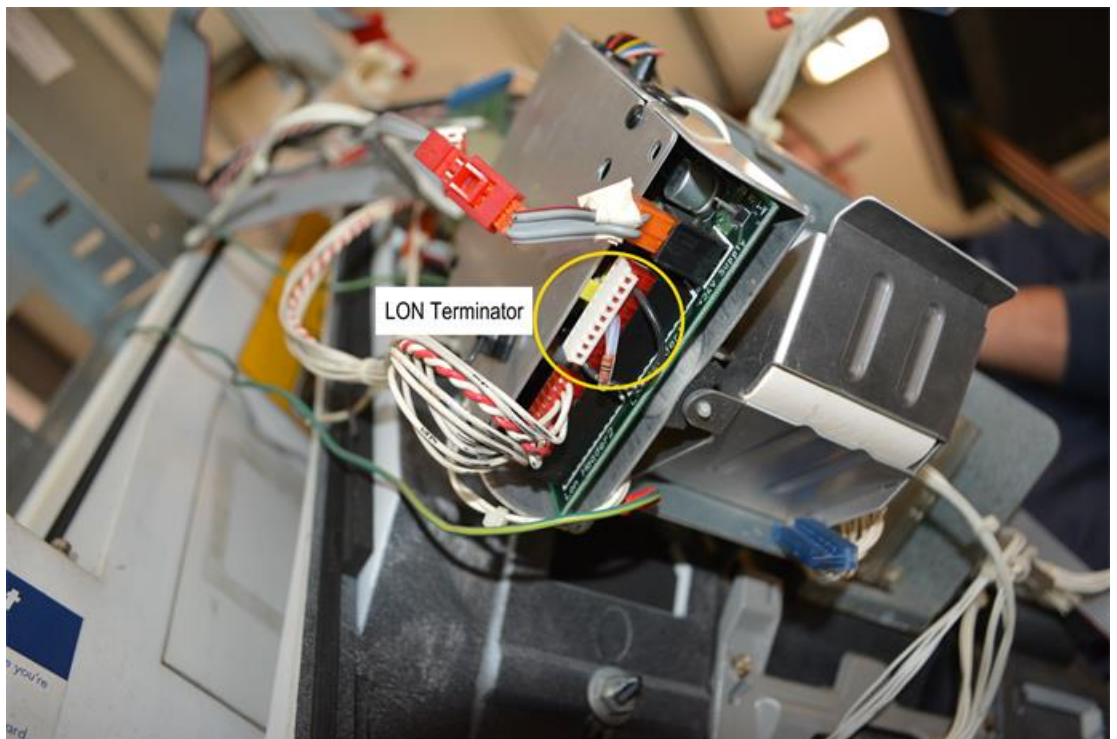
4. Disengage the side paddles inside the electronics cavity and open the main dispenser door.



5. Place in the prop rod if present.

Uninstall Reused Electronic Door Components

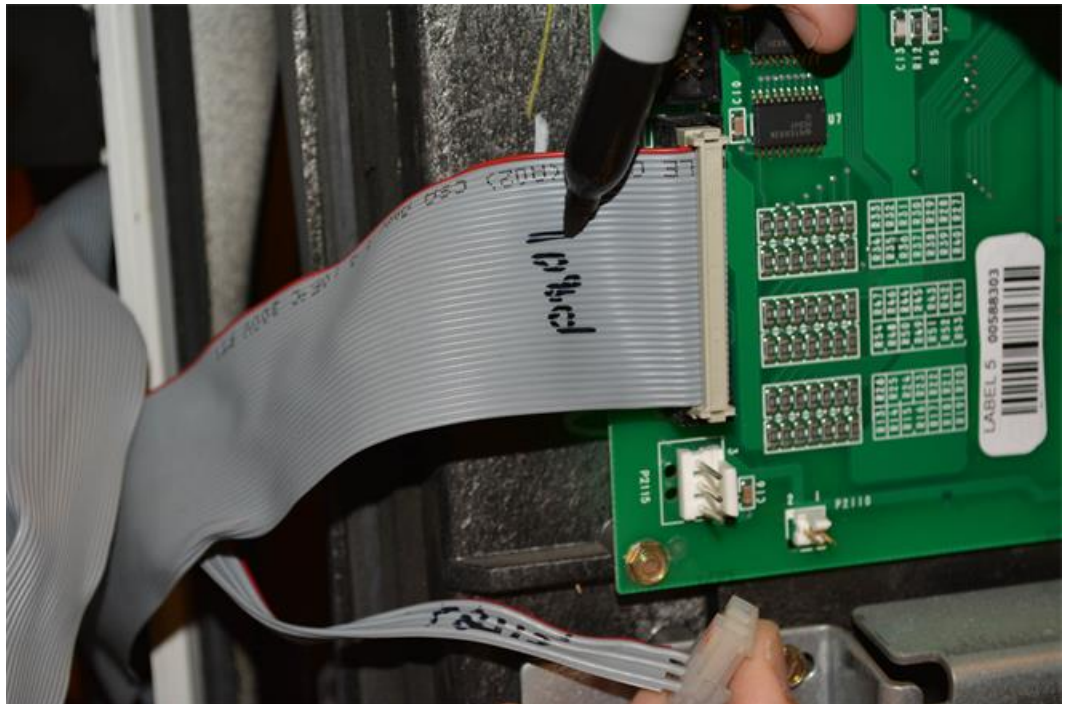
1. If uninstalling from a 500 dispenser with a LON cable harness, remove the LON terminator from the Printer (if present) and retain.



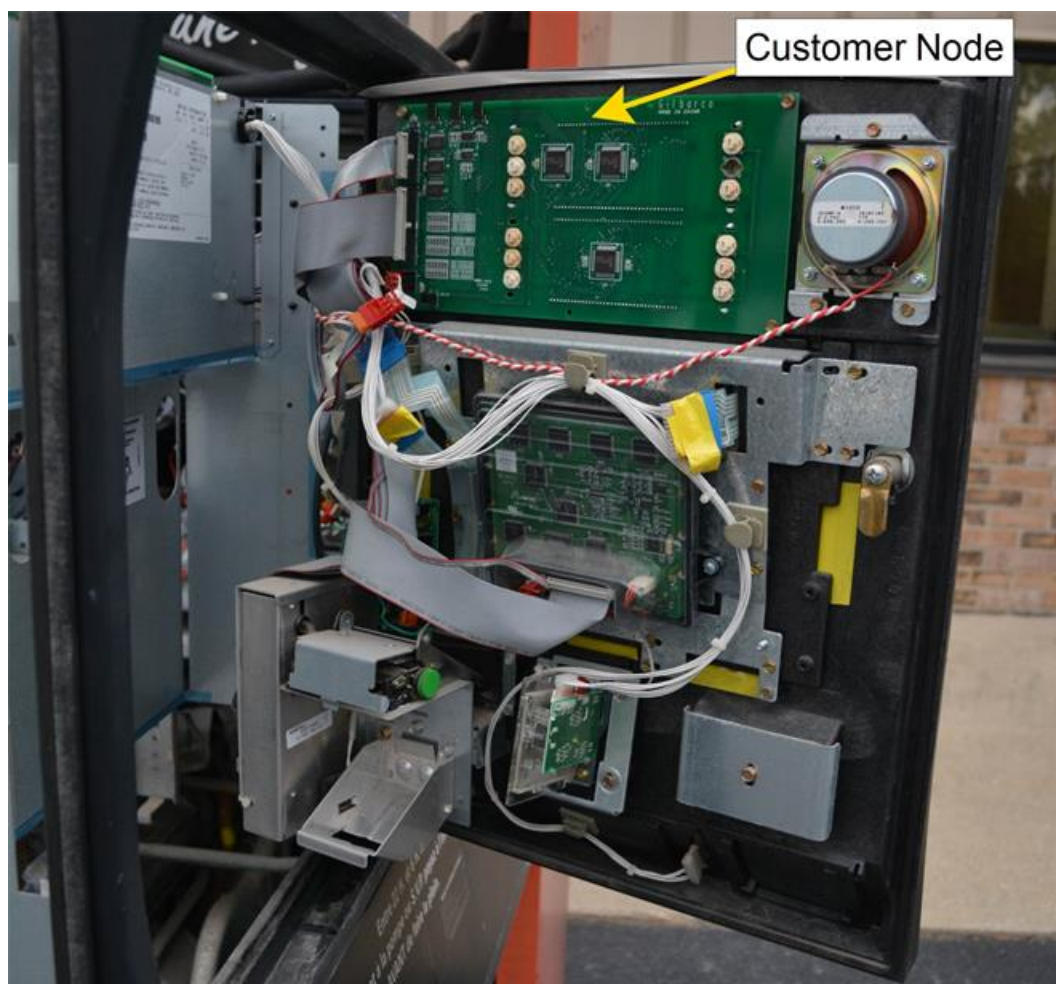
2. Track the LON cable from the printer to the customer node, remove the LON connection on the customer node and replace with the retained LON terminator.
3. Remove the customer Node.
 - a. Mark all cables and connections to the customer node.



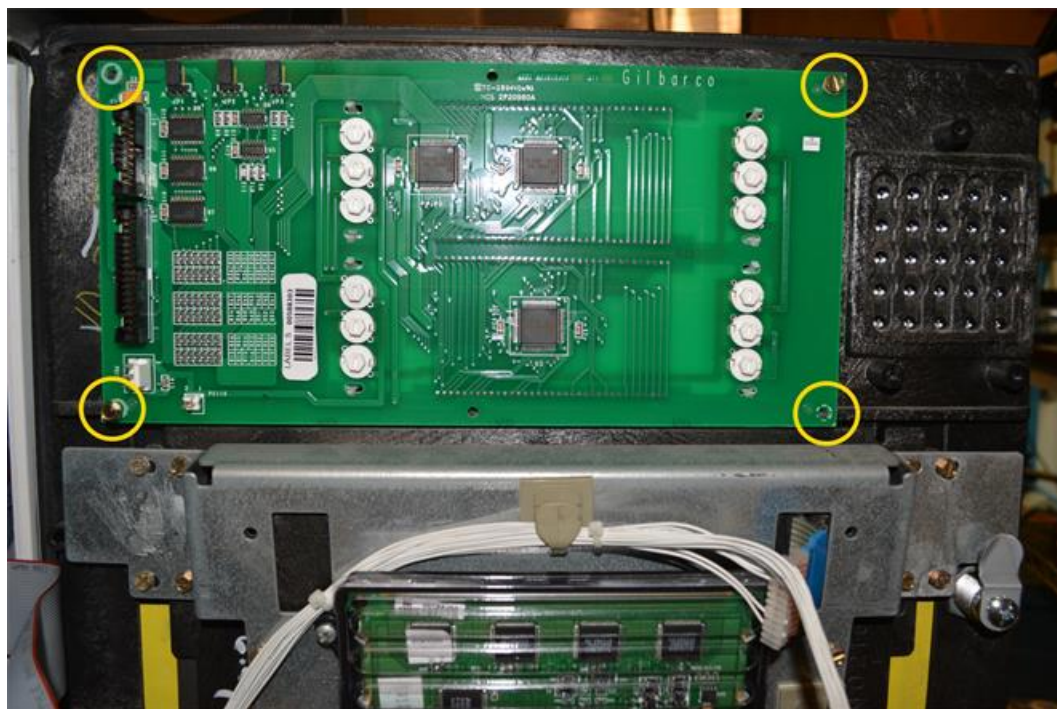
Note: For a 300 dispenser, mark the P801, P804A, and P2115. For a 500 dispenser, mark the LON Header 1 (P2109), LON Header 2 (P2112), PPU (P2101), +9.4VAC (P2115), and Manager Keypad (A-Side Only) (P2108).



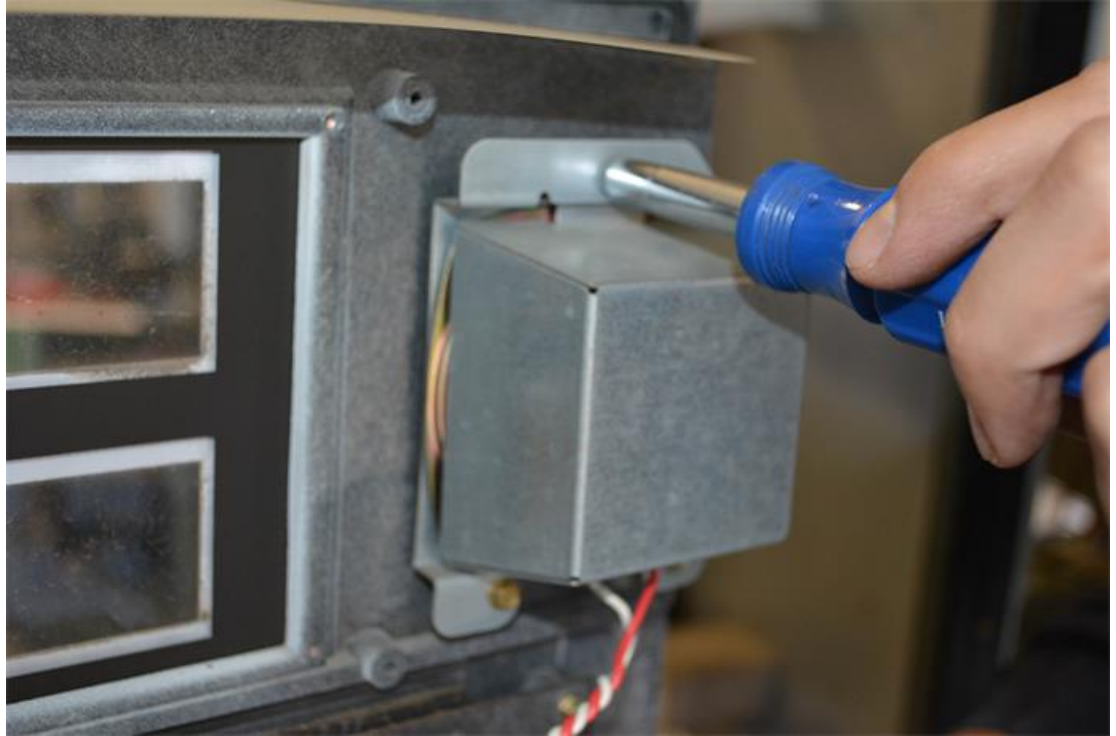
- b. disconnect all cables attached to the customer node.



- c. Remove and set aside the customer node and retain. Discard the hardware.



4. Remove the Speaker (if present).
 - a. Remove the three screws holding the speaker bracket to the electronic door and retain the hardware. Place the speaker and bracket into the electronic door cavity and retain.

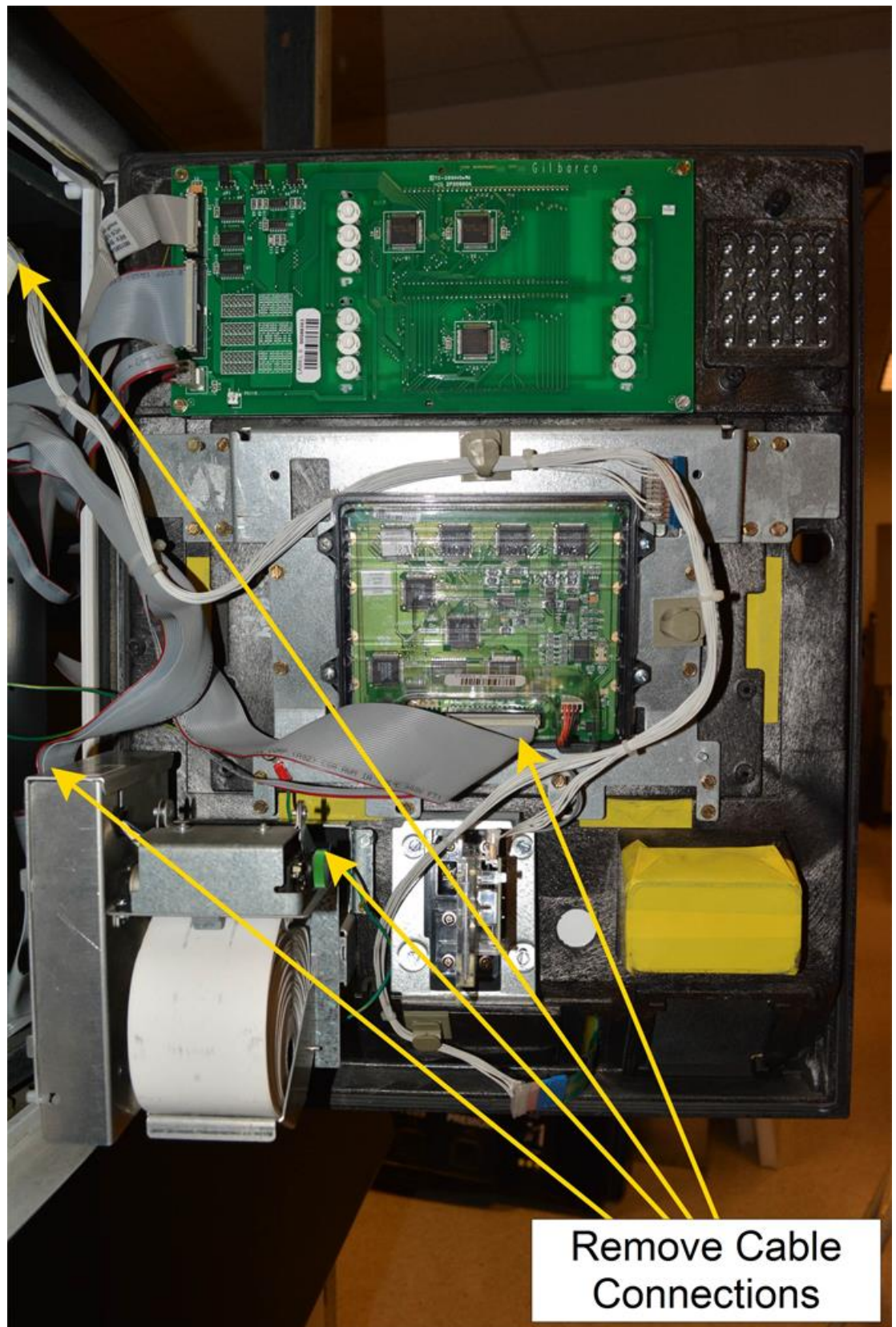


Uninstall the Electronics Door

1. Disconnect all cables and grounding wires (on the inner electronics door only) from components not being reused. Uninstall all cables from any cable restraints when removing cables from components.

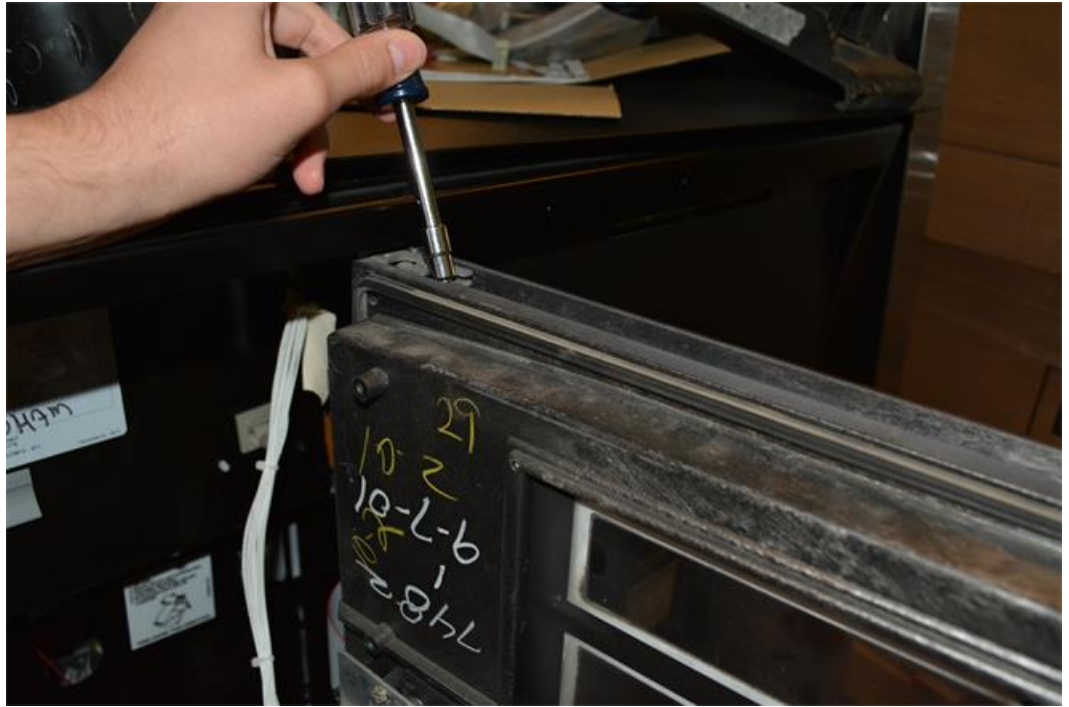


Note: To disconnect the printer cables, the printer may have to be removed.



2. Remove the Electronics Door.

- a. Use a 1/4" Nut Driver to remove the two bracket hex screws holding the top hinge of the Electronics Door.



- b. Tilt the door forward out of the dispenser door and lift up to disengage the lower hinge pin. The upper bracket will be loose and could slip out of the door.



- c. Discard the door, attached components, and upper hinge bracket.
- d. Clean all gasket, debris, and adhesive material from the inner section of the dispenser around the opening of the electronics door.

Proceed to the Installation section.

Encore 300 500 Installation process

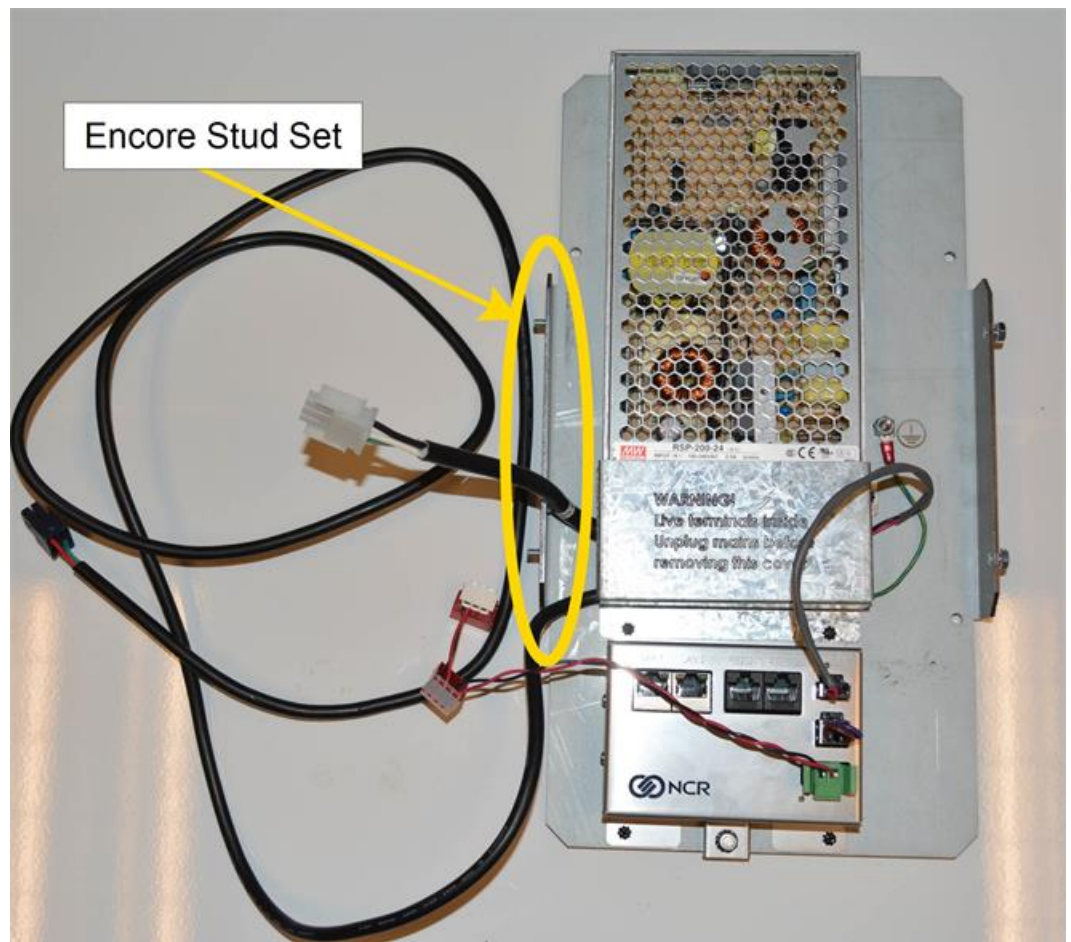
Install the Power Supply (PSU) Assembly (497-0513438)

Prepare the power supply brackets

1. Install the Cub on one universal Power Supply Bracket. This bracket will now become the Side A PSU bracket. Follow the Cub Installation Instructions (497-0514466). Acquire the Cub Retrofit Kit, UL Listed by Report Retrofit kit part number 6009-0008-8801.
2. The second power supply bracket with no Cub is now the Side B universal Power Supply Bracket.

Install the PSU Assembly

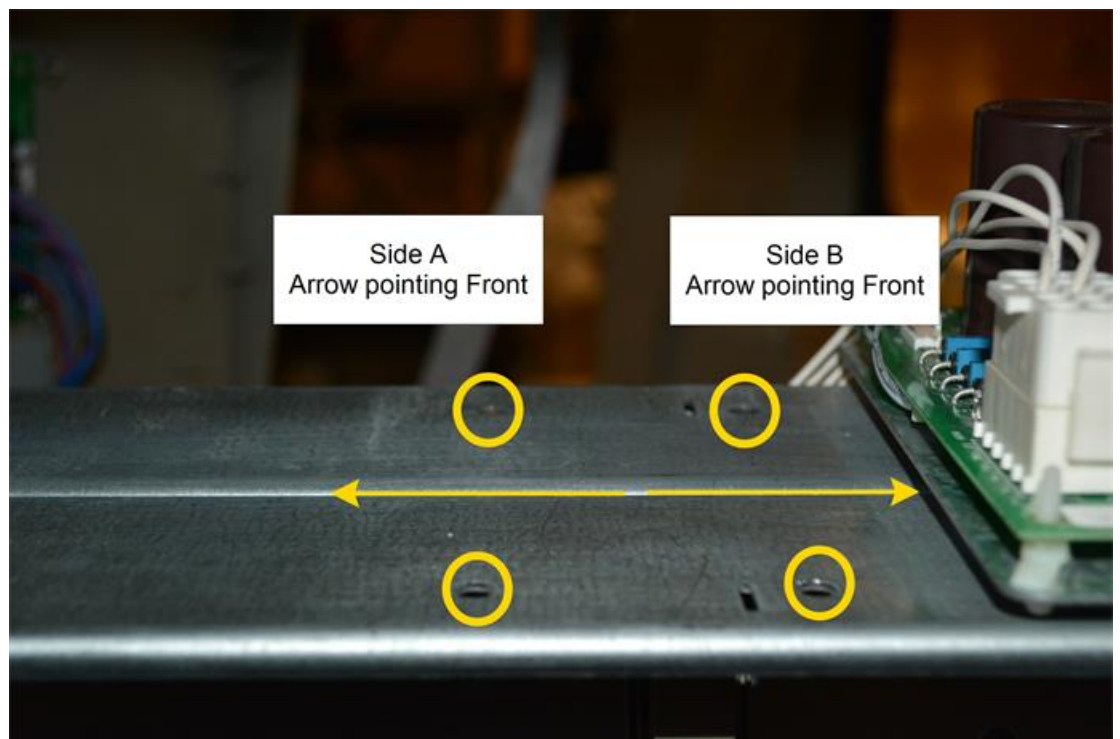
1. Identify the correct Encore stud set on the universal Power Supply Bracket.



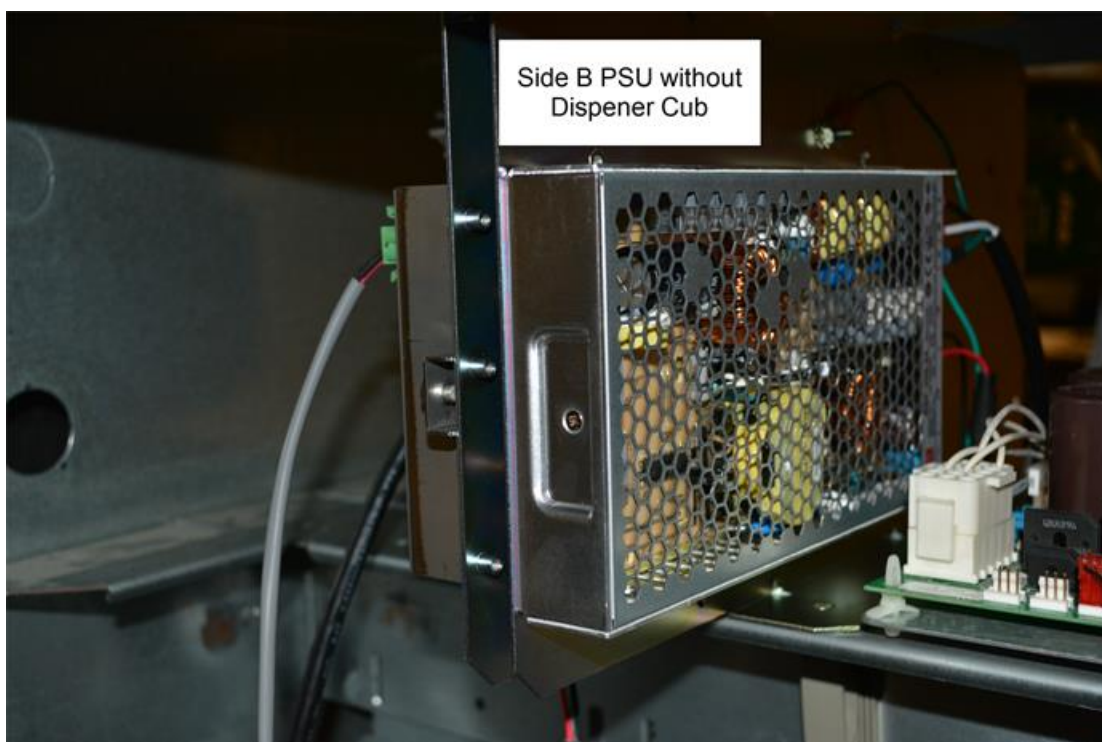
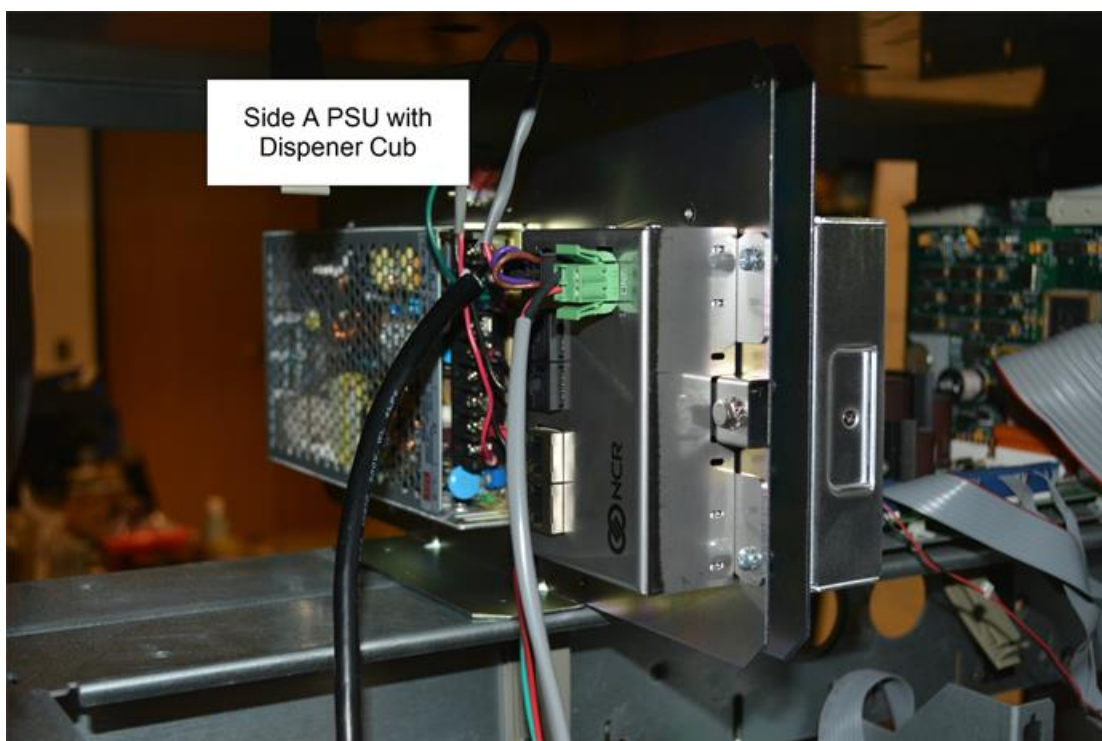
Note: The correct studs will be labeled "ENCORE" as below.



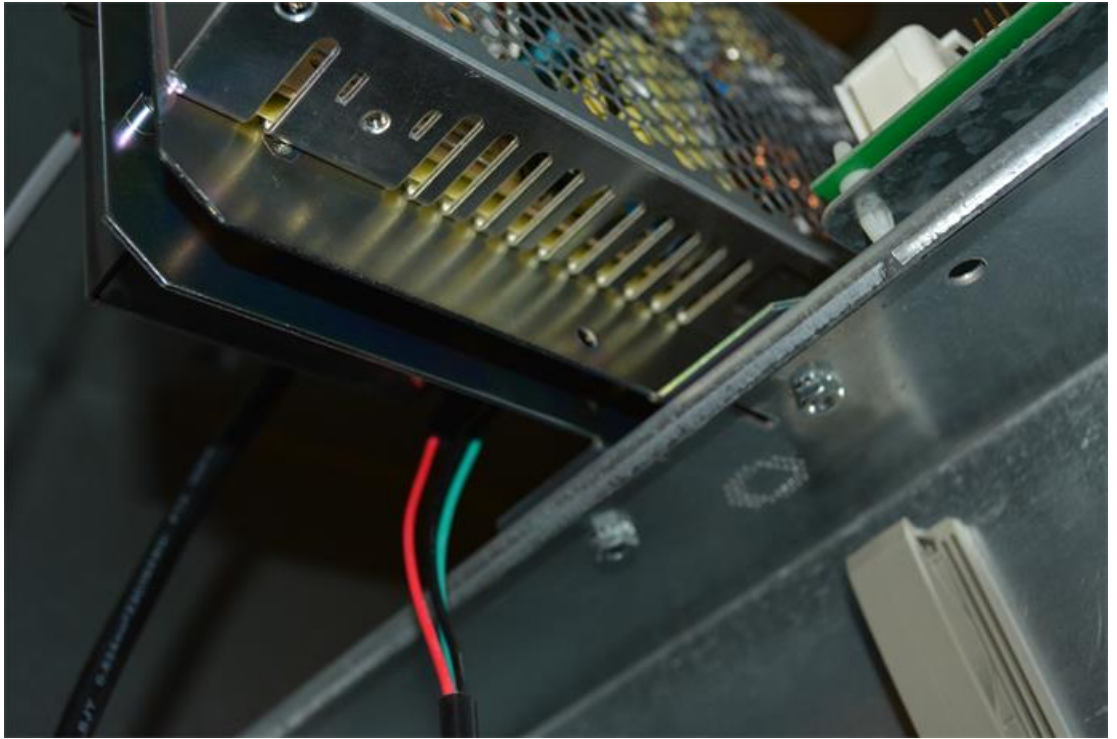
2. Place the studs into holes on the Encore electronic rail. install on the side closest to the Comm connection.



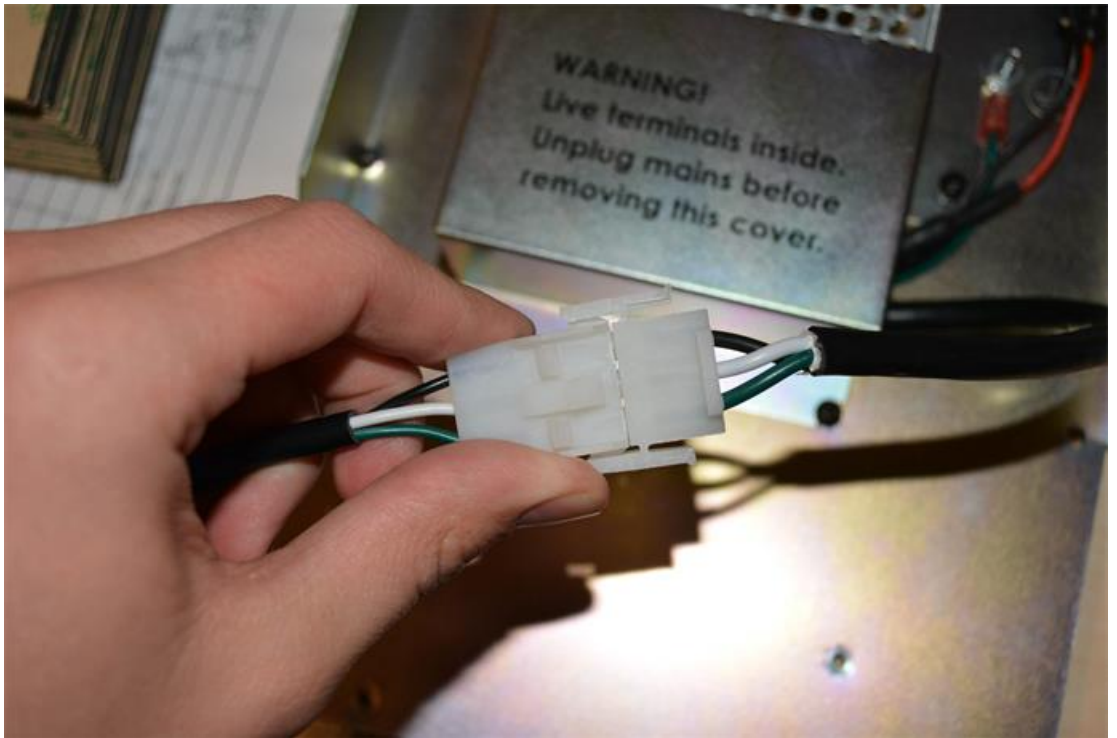
3. When looking from Side A, the power supply for Side A will be mounted in the third set of holes from the left. The power supply for side B will be mounted in the next set of holes with the backs facing each other.



4. Secure in place with the two supplied nuts (006-8617730) per Universal Power Supply Bracket (four nuts total).



5. Install the single connector end of the Encore adapter cable(497-0513385) to the PSU universal plug connector.



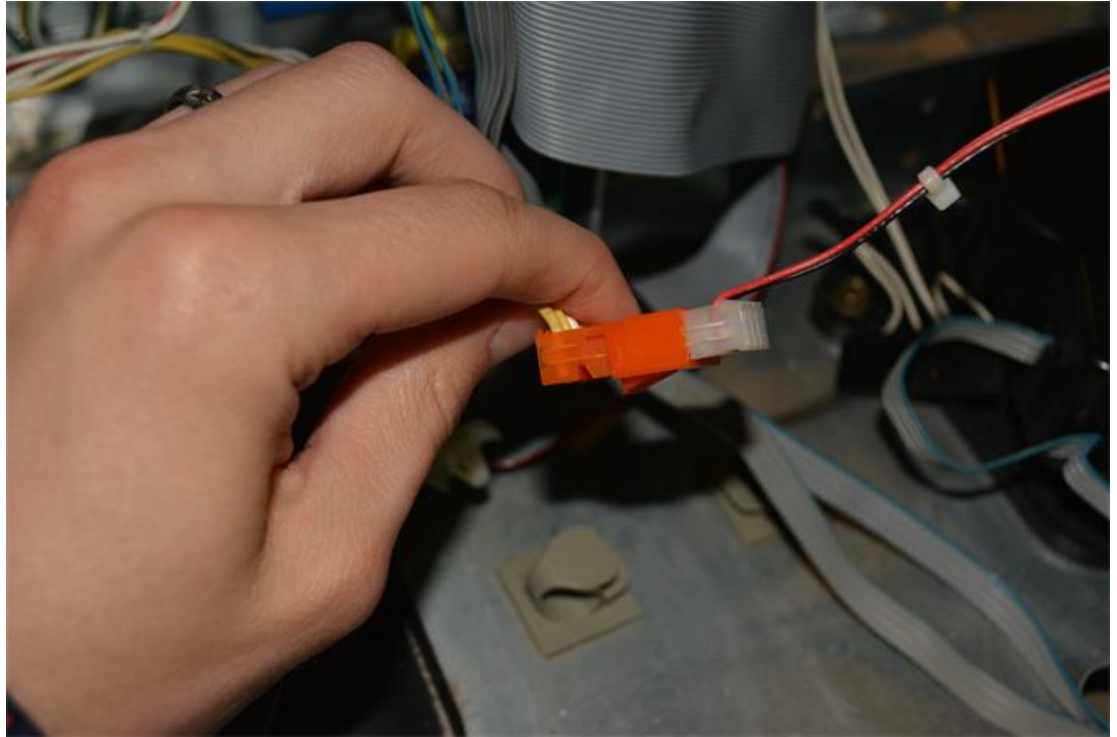
Install the Comm Cable to the Dispenser Cub



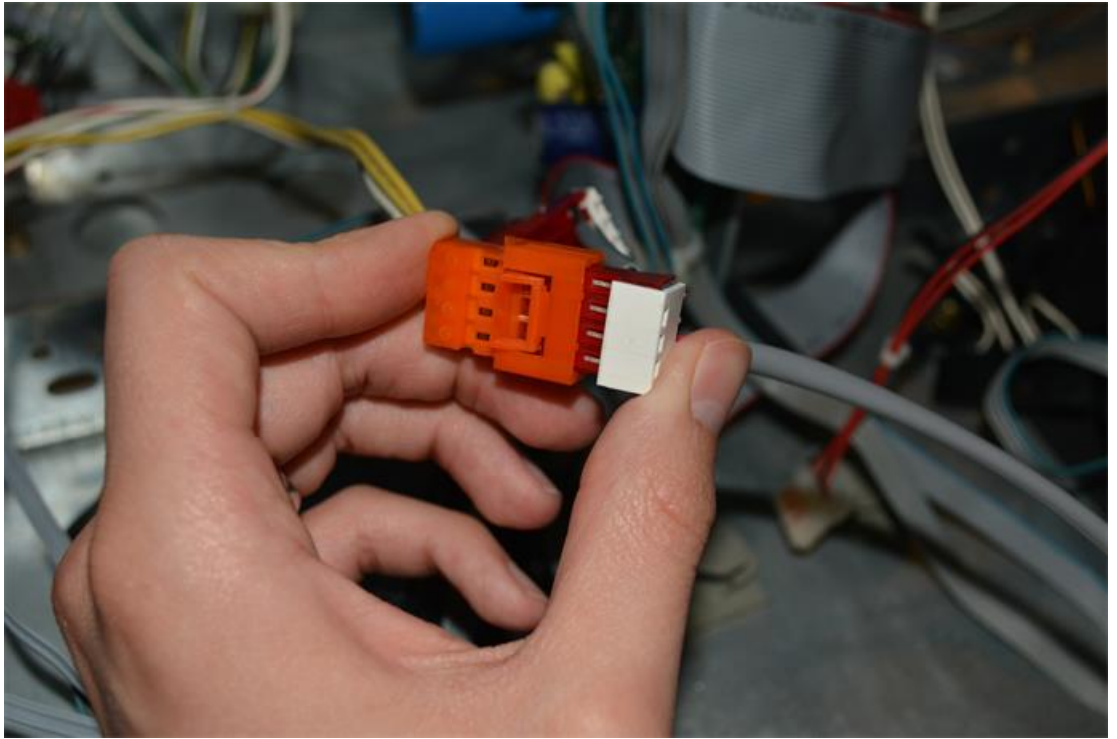
Note: This section is only needed during Side A Install.

Comm installation in an Encore 300 Dispenser

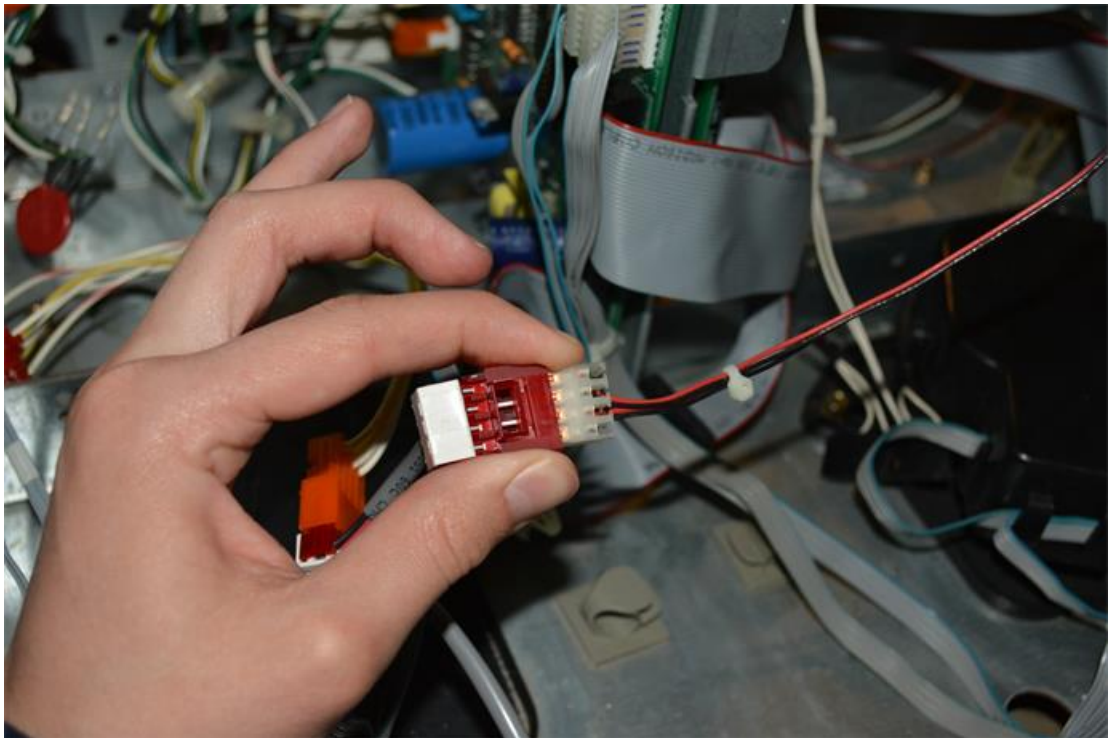
1. Plug in the green connector of the Encore 300 Comm adapter cable (497-0514686) to the Dispenser Cub.
2. Disconnect the white and yellow dispenser comm cable from the CRIND/dispenser two wire comm cable.



3. Connect the center connector end of the comm adapter cable to the orange female connector of the white and yellow dispenser comm cable.

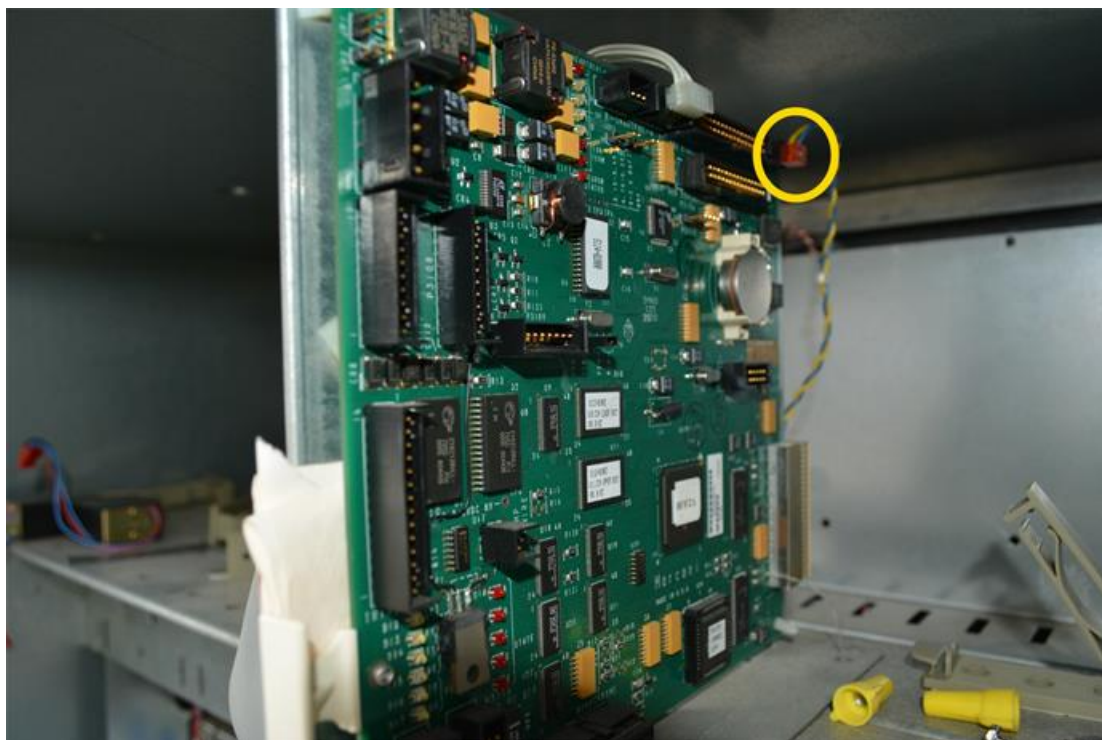


4. Plug in the end connector of the Comm adapter cable to the previously disconnected CRIND/dispenser two wire comm cable.



Comm installation in an Encore 500 Dispenser

1. Plug in the green connector of the Encore Comm adapter cable (497-0513679) to the Dispenser Cub.
2. Disconnect the Comm Two Wire from the CRIND control node board.



3. Plug in the Encore Comm adapter cable to the Comm Two Wire.

Install the Network Cables to the Dispenser CUB

1. Install the red CAT network cable (497-0513383) into the Cub RS232 1 terminal (for Side A).



Note: Use the RS232 2 terminal for Side B installation.

2. Install the yellow CAT network cable (497-0513384) into the Cub LAN 1 terminal (for Side A).

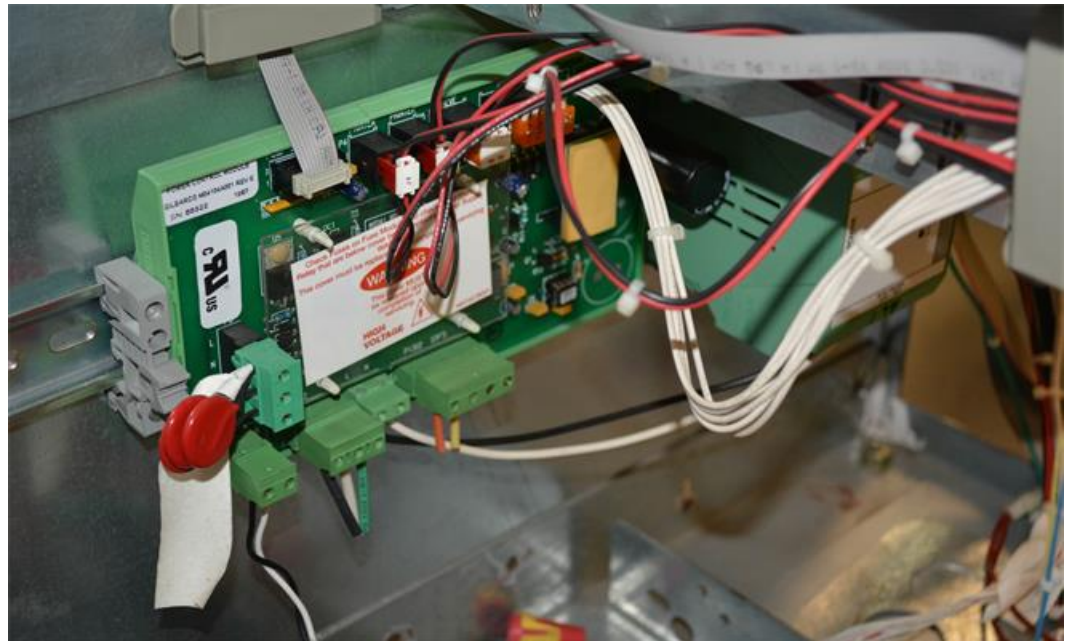


Note: Use the LAN 2 terminal for Side B installation.



Wiring in the Power Supply to the Pump Power Distributor for the First (Side A) PSU

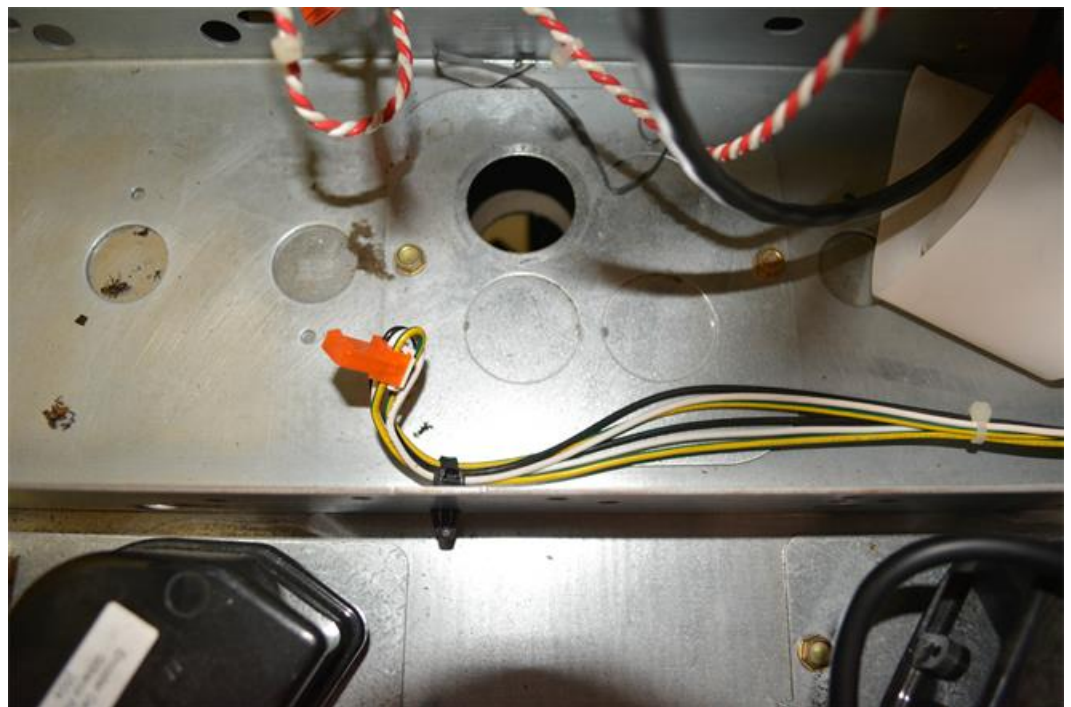
1. Identify the correct power distributor assembly.
 - a. Power Control Module upgraded distributor



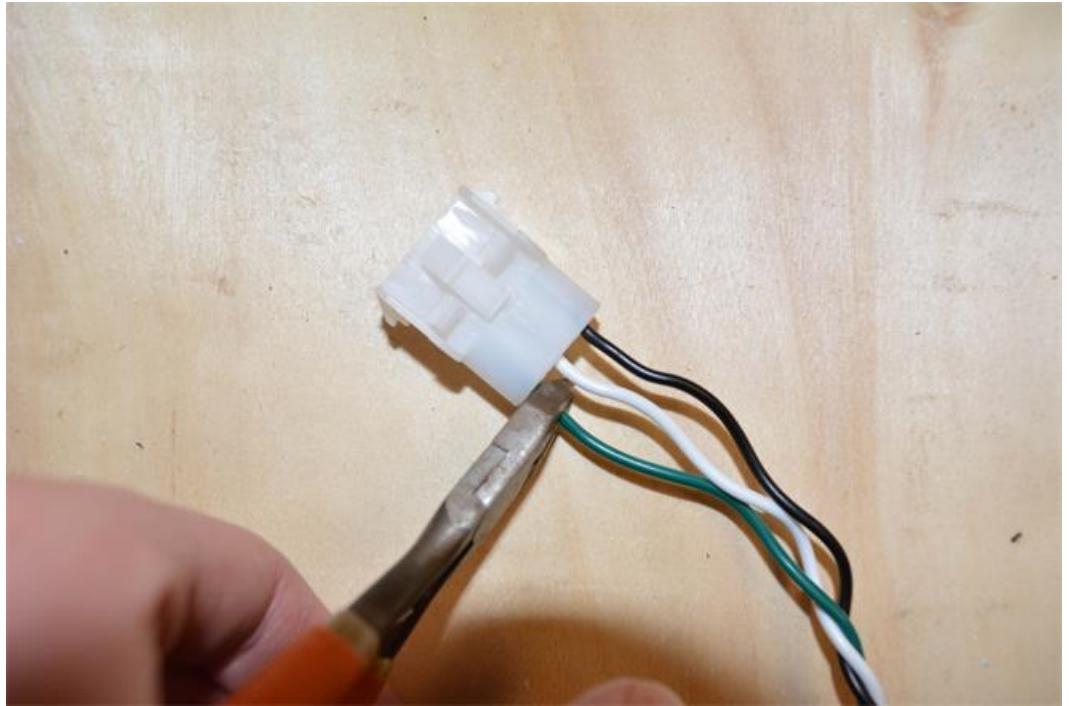
- b. AC Terminal Board



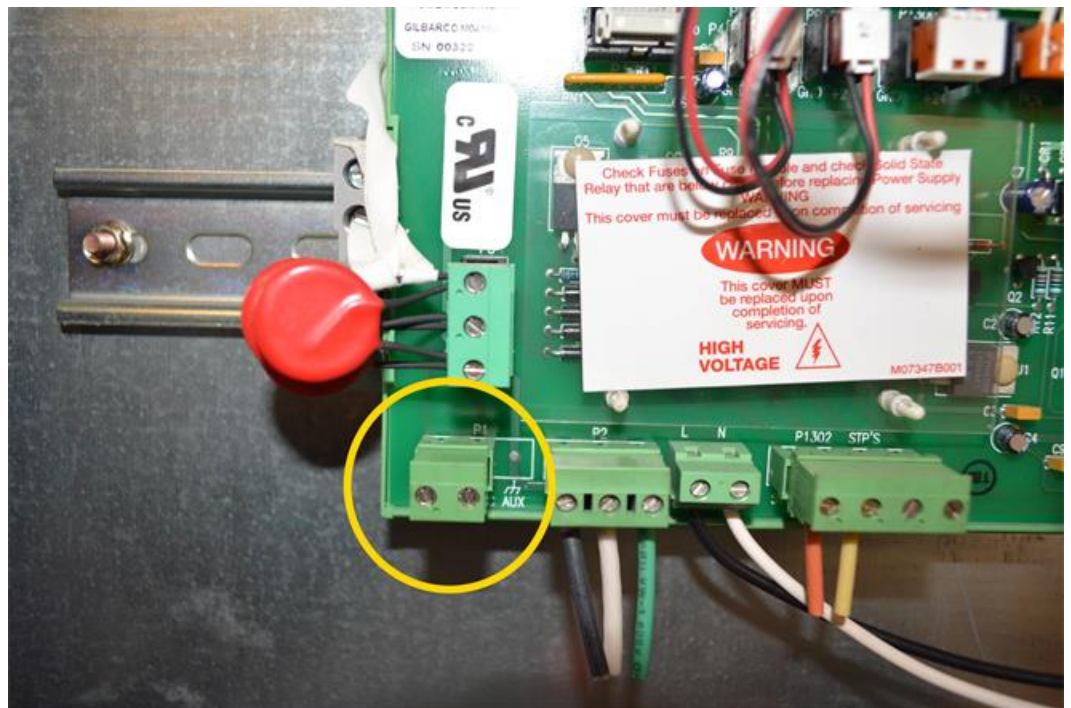
c. AC Bus Line (single cable bus connections)



2. follow the correct wiring steps for the corresponding power distributor assembly.
 - A. Power Control Module
 1. Install the Y cable (497-0514570) to the Encore adapter cable that was previously installed.
 - a. Cut off the far female end of the Y cable as close to the connector as possible.



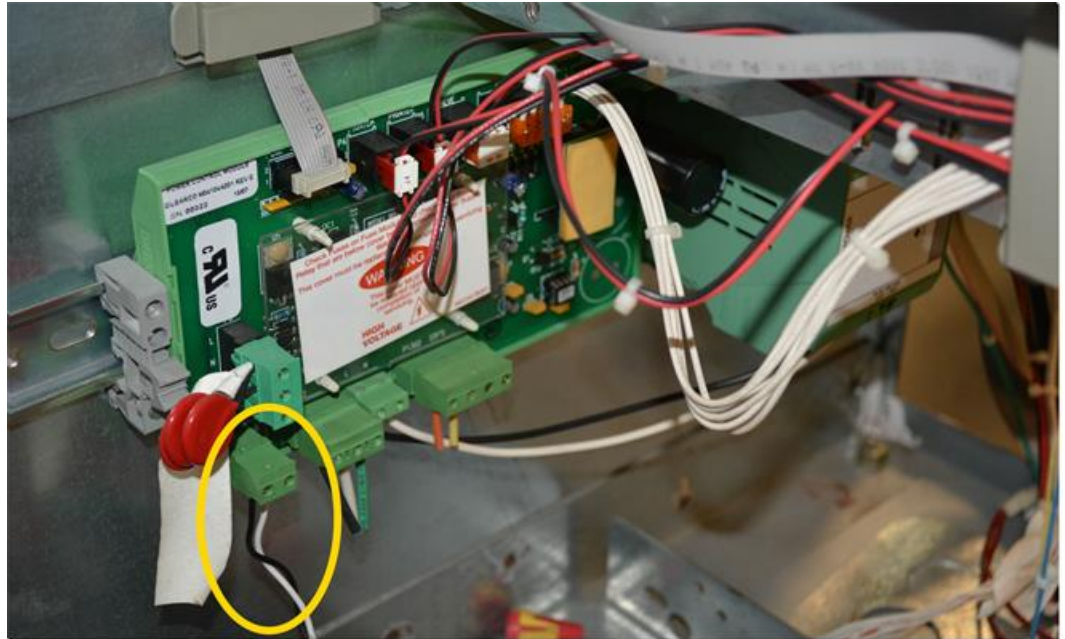
- b. Strip the wires and crimp on a UL Listed crimp on fork connector/terminal to the green ground wire.
- c. Identify the P1 terminal on the Power Control Module.



- d. Attach the corresponding leads on the adapter cable to the P1 two prong connector.



Note: Do not unplug the connector until the line and neutral terminals are identified. White corresponds to neutral and black corresponds to live.

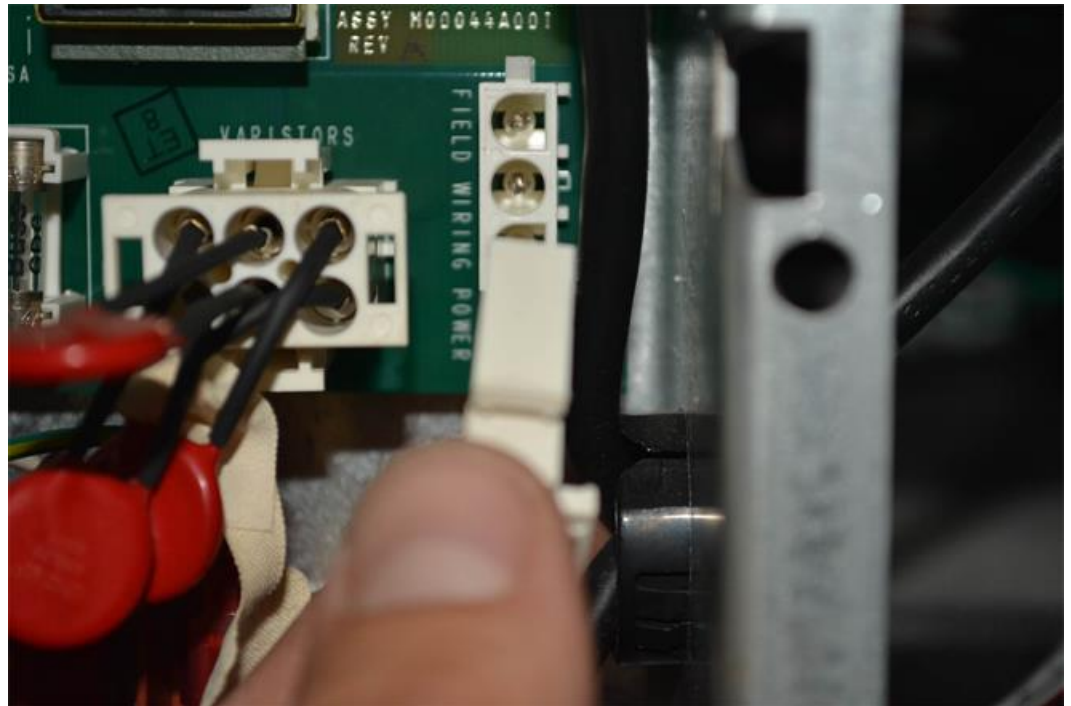


- e. Unscrew a bolt with attached ground. Add the new ground wire to floor of electric cabinet and re-tighten bolt.

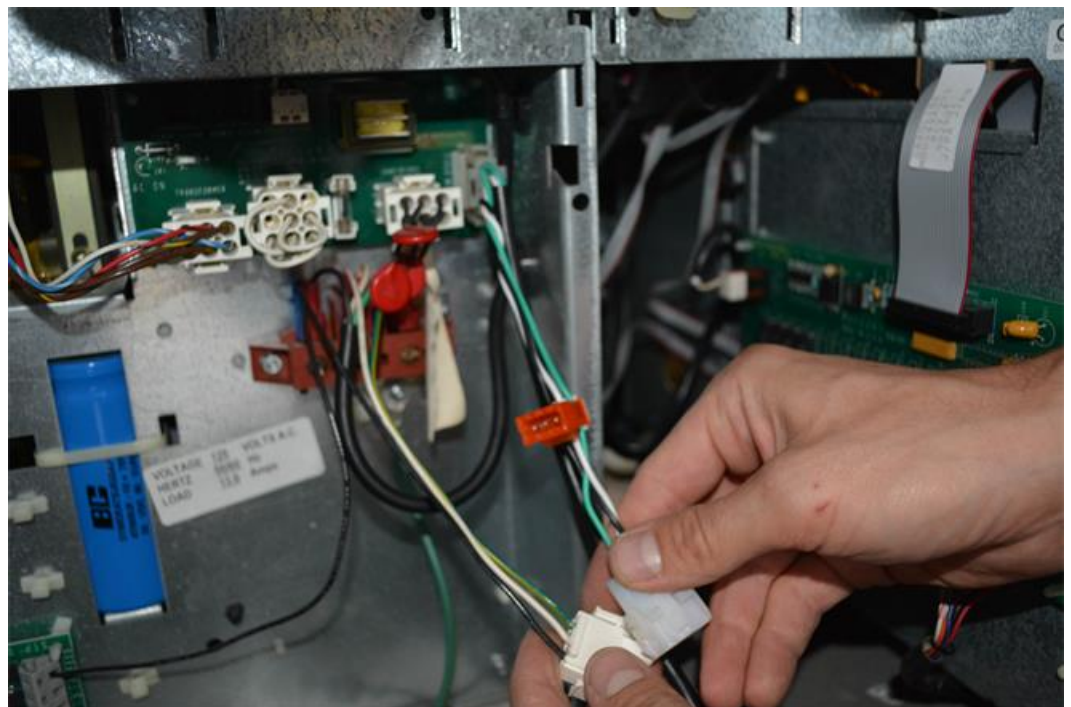


B. AC Terminal Board

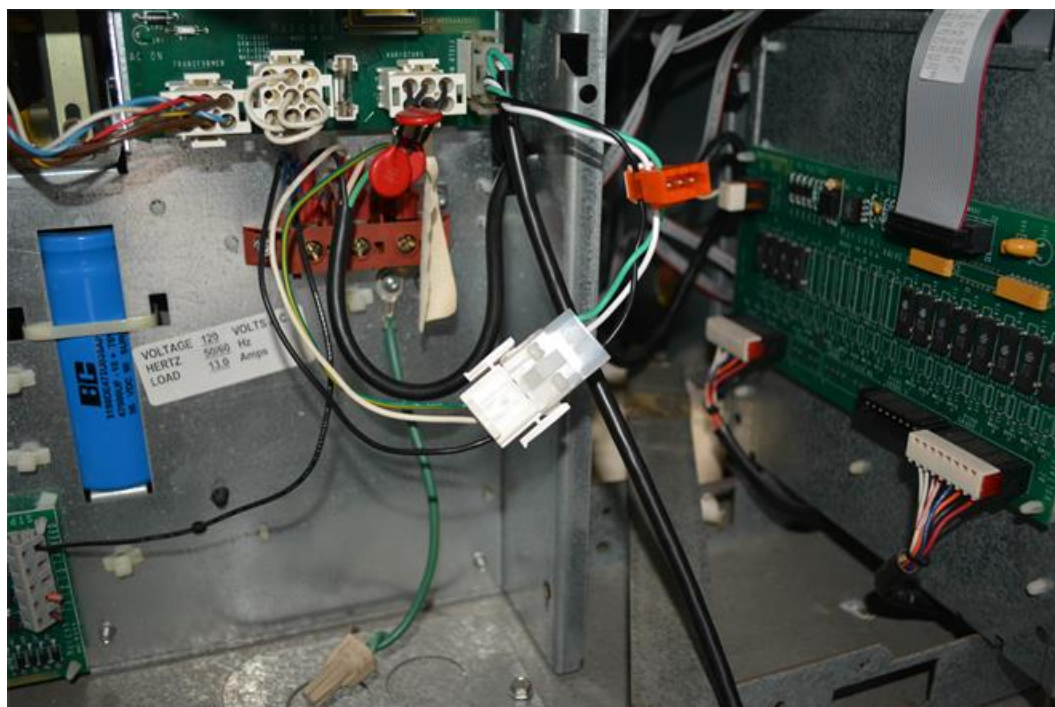
1. Plug in the Y cable (497-0514570) to the Encore adapter cable previously installed.
2. Unplug the main AC power cable from the AC Terminal Board and retain for reassembly.



3. Plug in the middle connector of the Y cable to the AC Terminal Board.

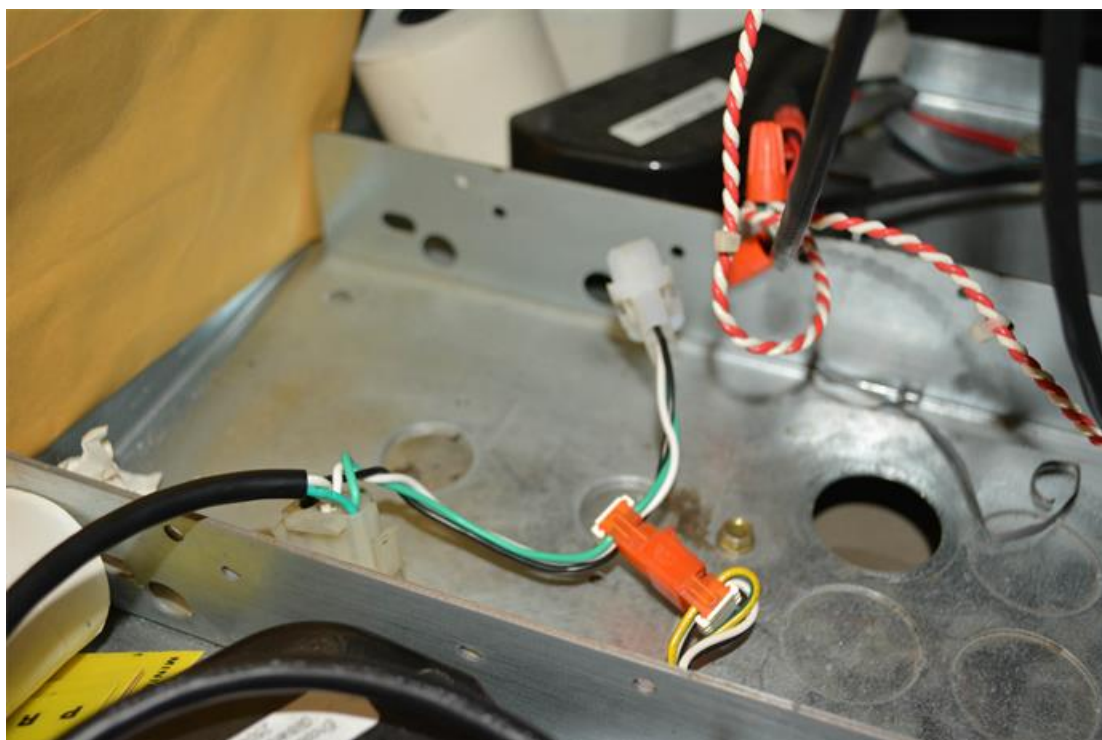


4. Attach the main AC power line previously unplugged from the AC board to the Y cable's far end pigtail.



C. AC Bus Line

1. plug in the previously installed Encore adapter cable's bus connector to the AC Bus Line.



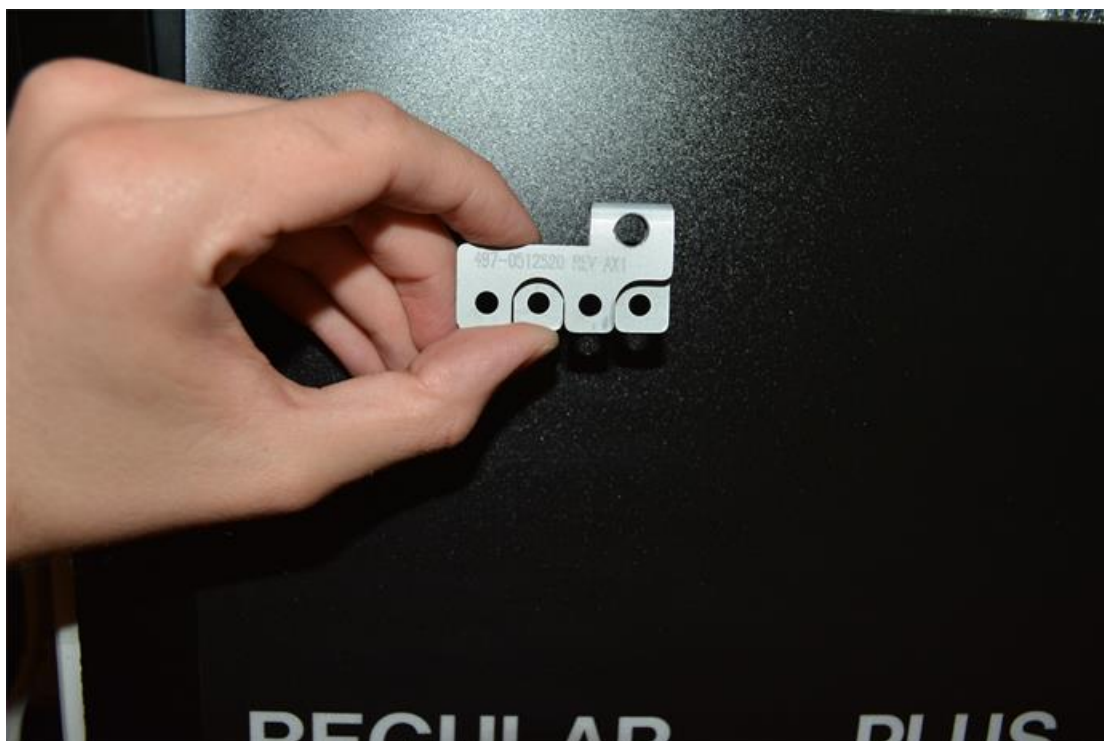
Wiring in the Power Supply to the Pump Power Distributor for Second Installed (B Side) PSU

Plug directly into the first PSU Adapter cable's AC Bus Connector.

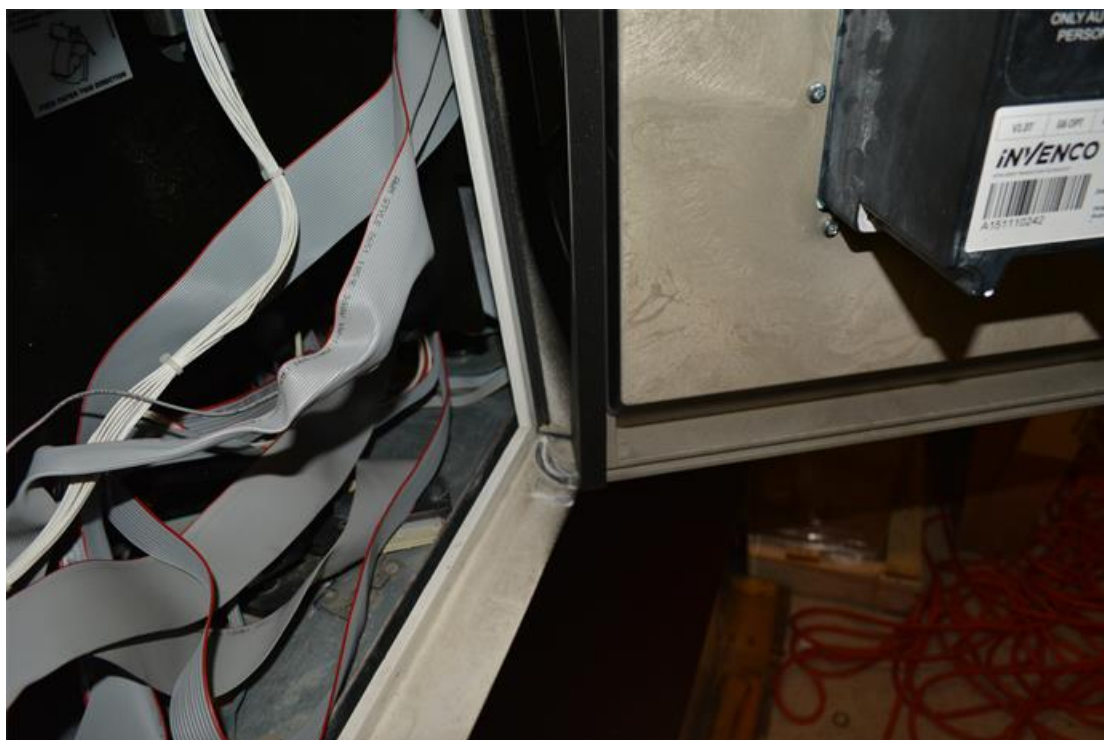


Install the new OPTIC 5 Door

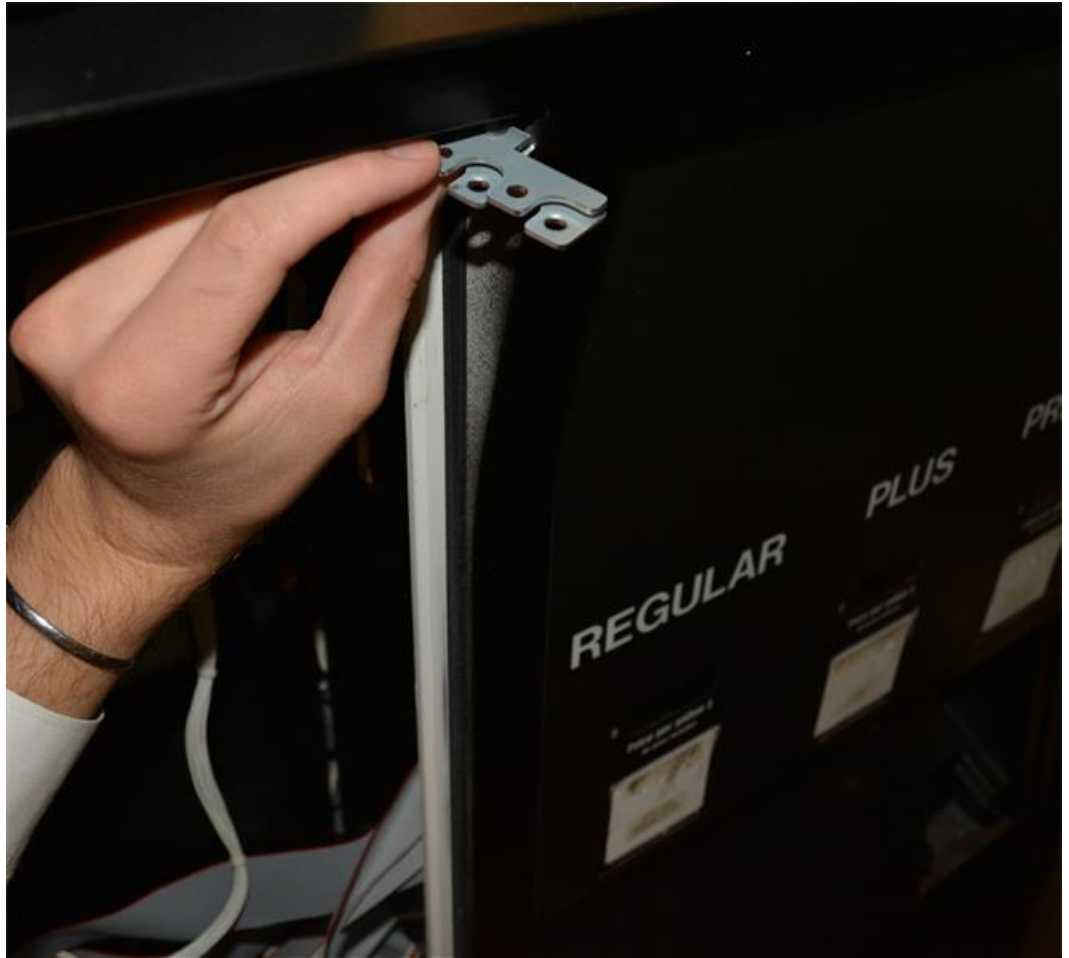
1. Acquire the new OPTIC 5 door (497-0513545) and hardware. Four parts are needed. The OPTIC 5 Encore 300/500 Replacement Door, the upper hinge bracket (497-0512520), and two hex screws(006-8625157).



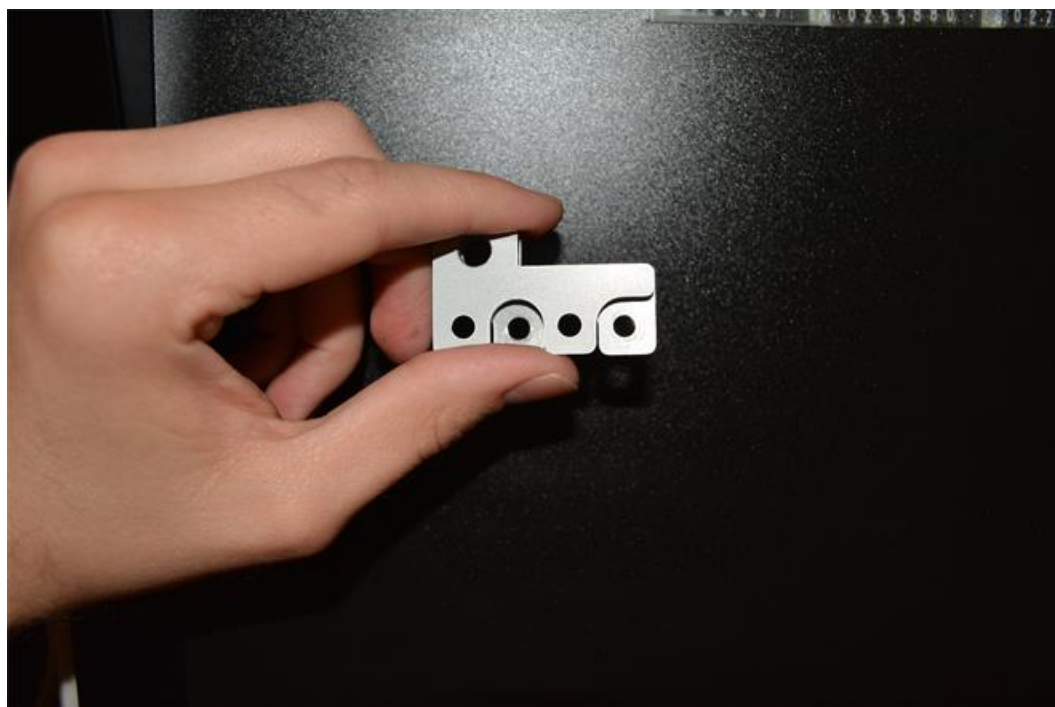
2. Slide in the OPTIC 5 Door onto the lower hinge pin.



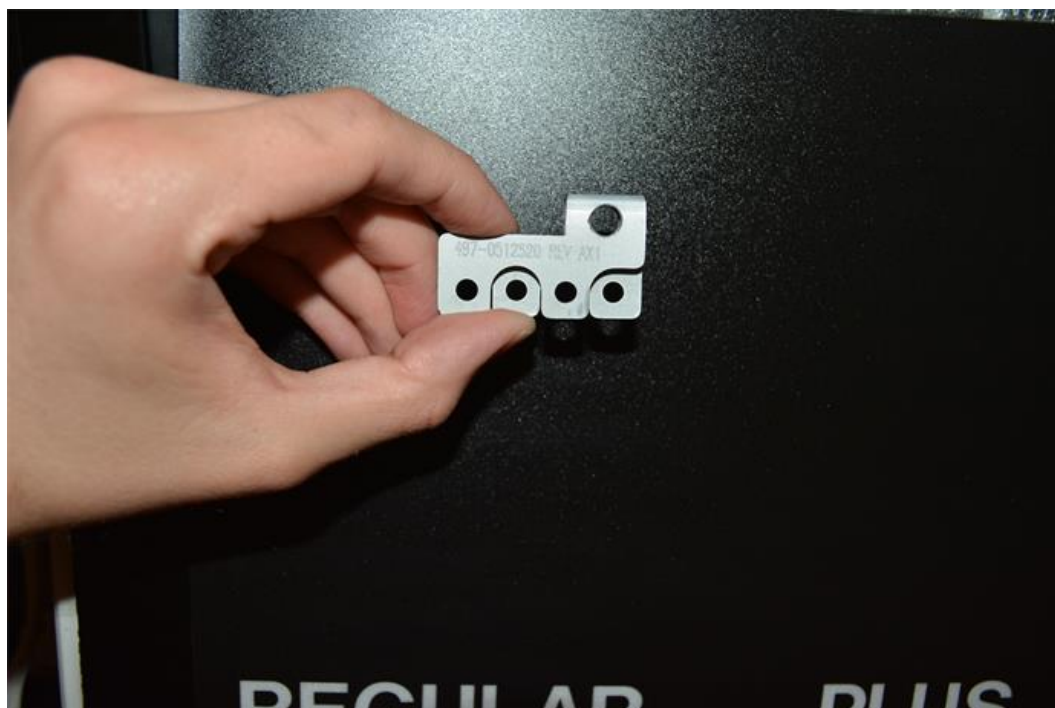
3. Place the top bracket onto the upper Hinge pin and hold in place.
 - a. Orient the hinge bracket. The "L tail" with the Hinge Pin hole should be pointing to the right.



- b. Verify the correct orientation by locating the part number imprint on the part. The imprint should be facing down when installed correctly.

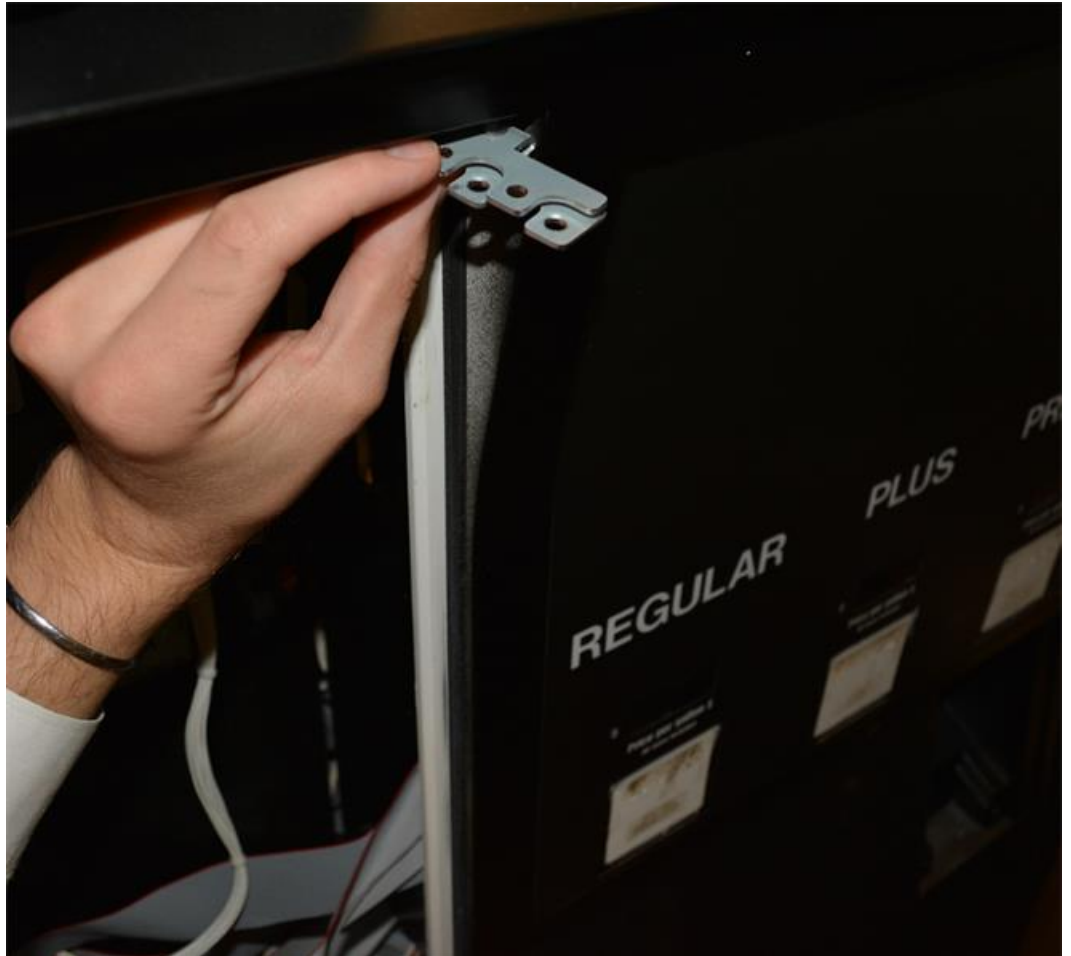


Top of Hinge Bracket

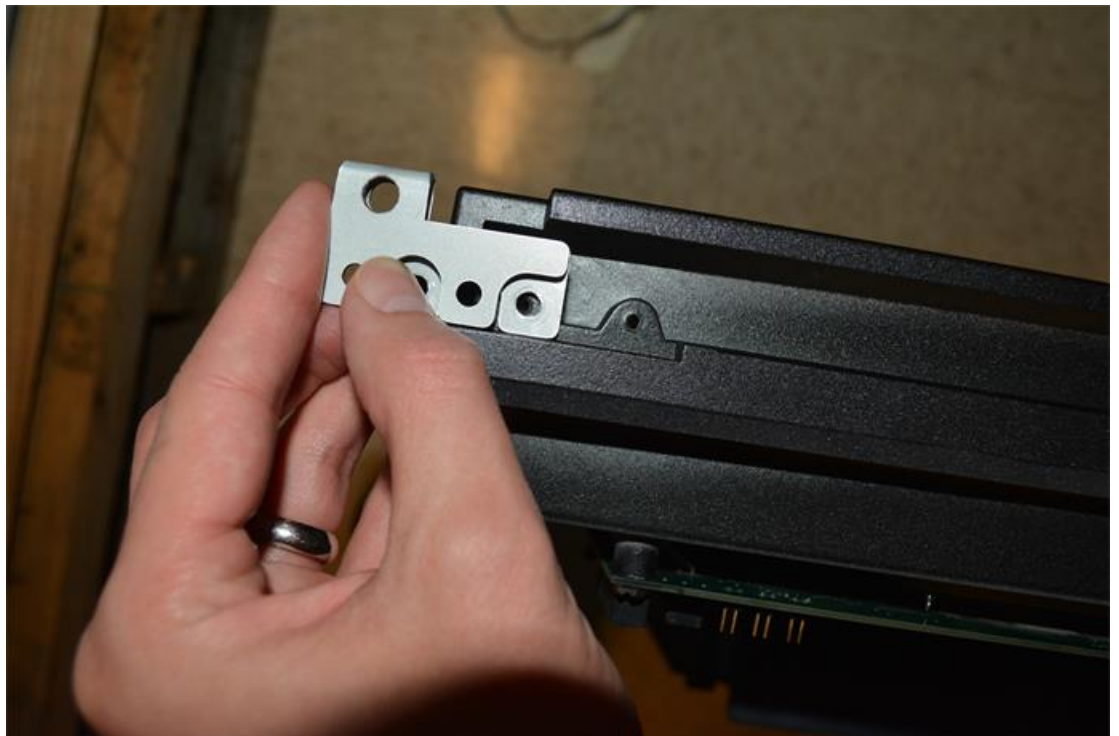


Bottom of Hinge Bracket

- c. Install the Hinge Bracket onto the Hinge Pin and hold.



4. Rotate the OPTIC 5 Door up and into the hinge bracket.



5. Attach the top bracket to the dispenser door using two hex nut screws.



6. Route the OPTIC 5 power cable (preinstalled on the PSU assembly), grounding cable (preinstalled on the PSU assembly), and network cables into the electronics sub compartment directly behind the OPTIC 5 door.

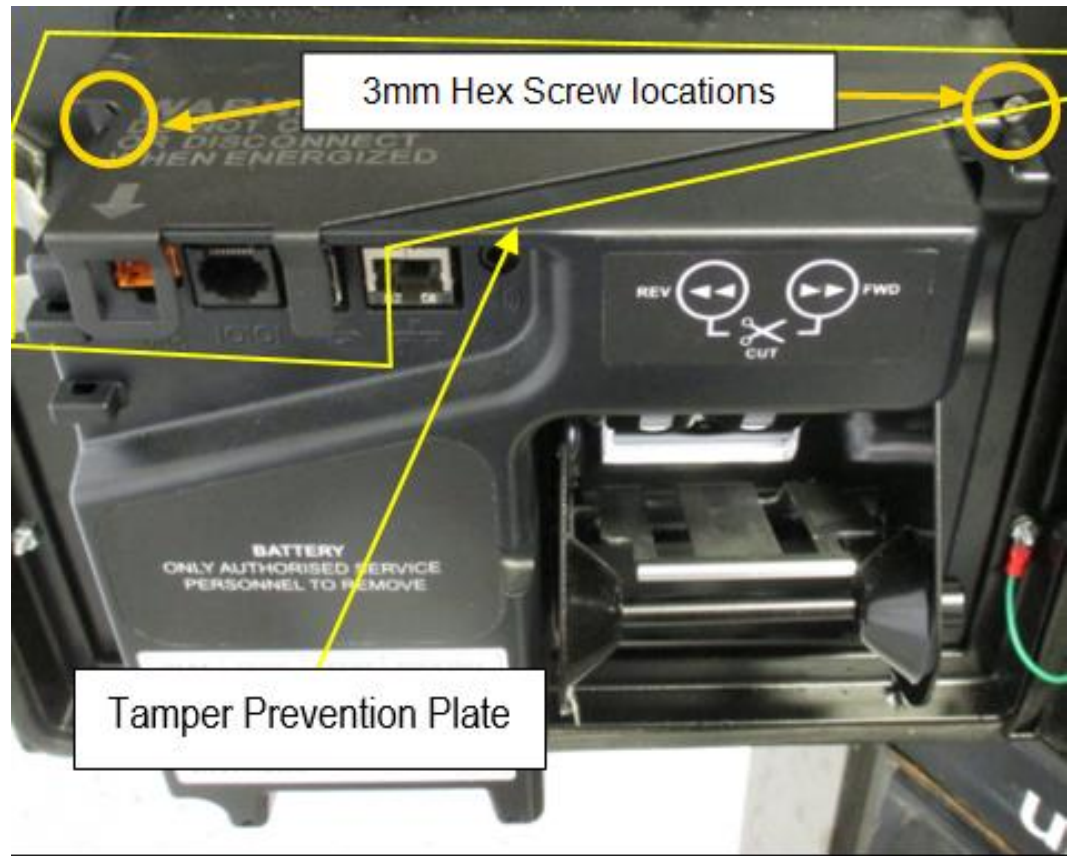
Install the Customer Display and Speaker (if present)

1. Install the Customer Display using four 1/4" Hex Nut Screws (006-8625157). Note the orientation when installing the Customer Display to avoid installing it upside down.
2. Wire the customer display using the previously marked cables.
3. Install the speaker to the OPTIC 5 door over the preinstalled blank panel using the existing hardware.

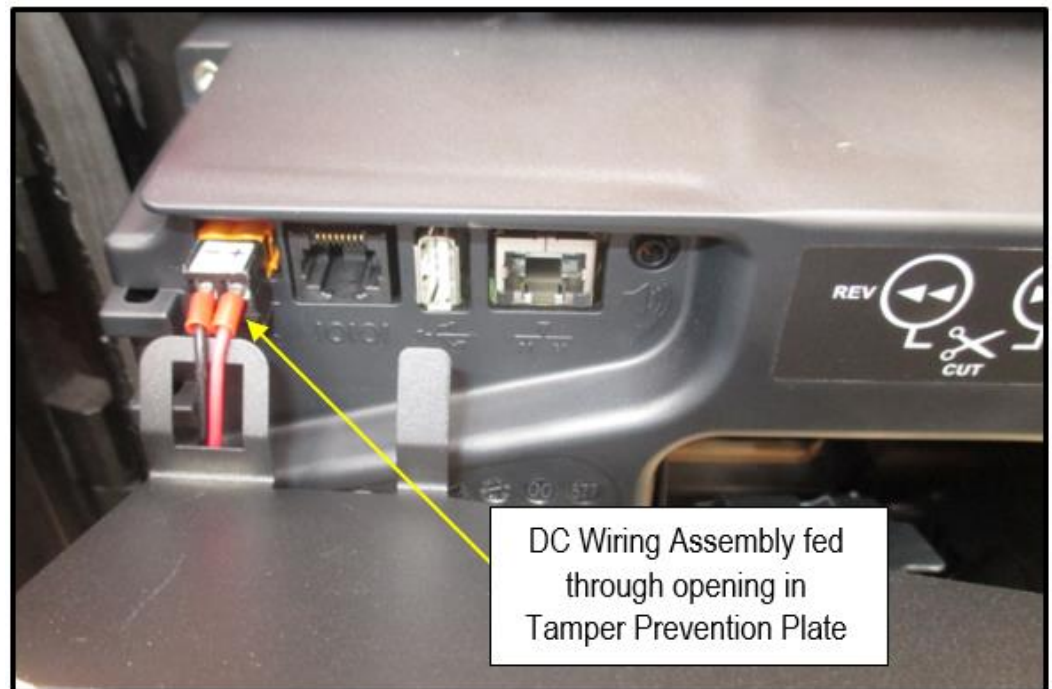
Wire the OPTIC 5

1. Connect all cables to the OPTIC 5 unit.

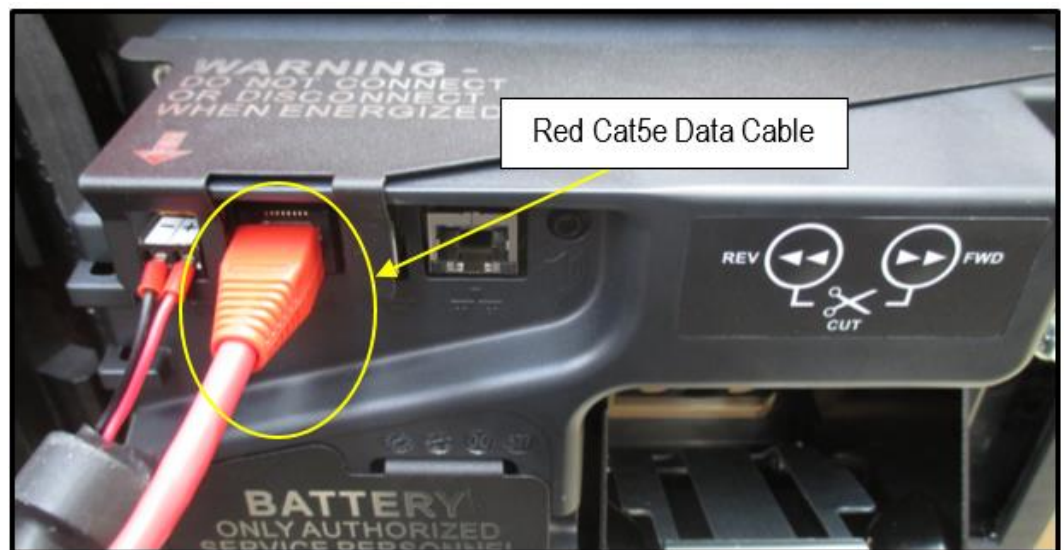
- a. Remove the security cover from the OPTIC 5. Remove the two 3mm Hex Screws and retain. Retain the cover.




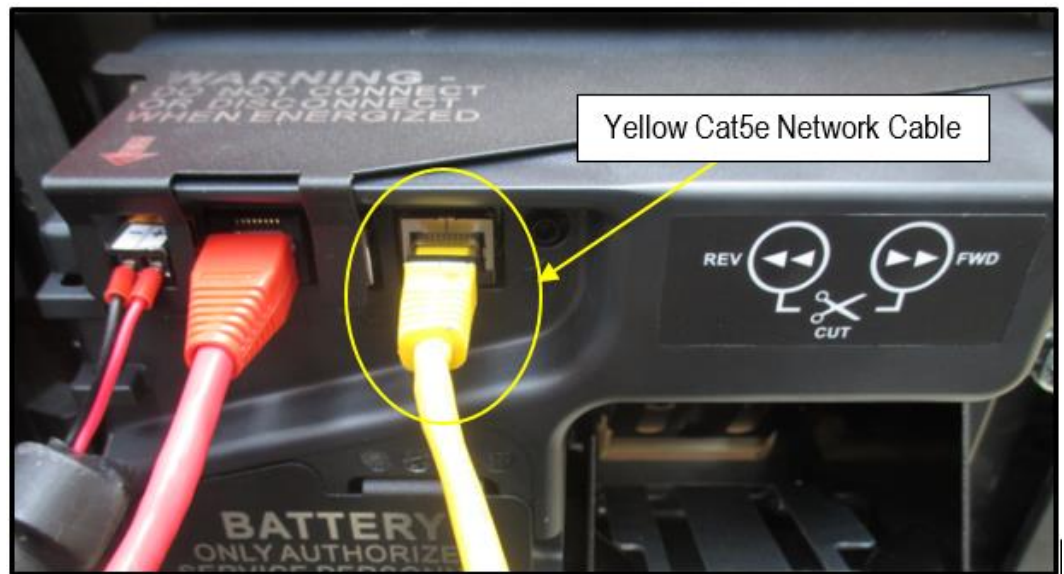
- b. Feed through the pre-installed OPTIC 5 DC Wiring Cable from the PSU assembly into the indicated opening on the Tamper Prevention Plate. Plug in the power cable and reinstall the security cover with the two 3mm Hex Screws previously retained.



- c. Plug the open end of the Red Cat5e Data Cable (the one that was plugged into terminal RS232-1 for Side A; RS232-2 for Side B) into the OPT Ethernet terminal labeled as "IOIOI."



- d. Plug the open end of the Yellow Cat5e Network Cable (the one that was plugged into terminal LAN1 for Side A; LAN2 for Side B) into the OPT Input/Output terminal labeled as 



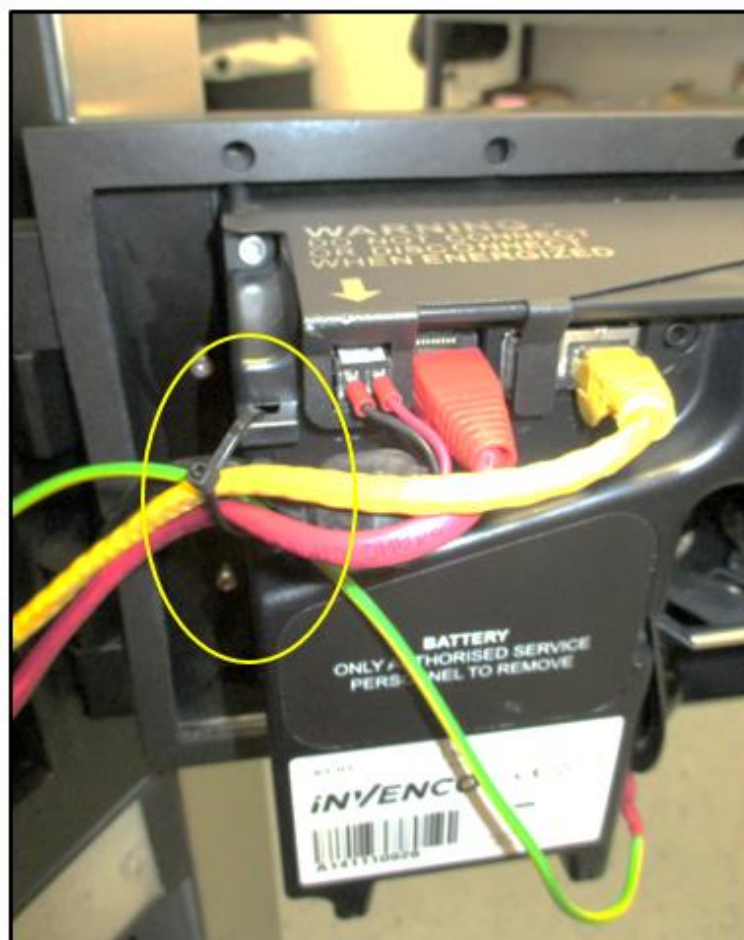
- e. Attach the grounding cable pre-installed on the PSU assembly to the OPTIC 5 near the printer spool.



2. Using a zip-tie, gather all cable assemblies attached to the OPT unit, including the ground cable, and secure them to the Cable Restraint Anchor Point located to the left of the tamper prevention shield.



Location of Cable Restraint Anchor Point



All cable assemblies connected to OPT Unit after being fastened to Anchor Point

3. Route cables away from sharp edges and gaskets. Close the main dispenser door and engage the side paddles.
4. Close the new OPTIC 5 door and lock.
5. Repeat all previous steps for Side B of the dispenser.
6. Return power to the dispenser.



Caution: Follow local regulations for certification and inspection prior to returning power or reopening the dispenser for costumers.