



Introduction

Purpose

This manual provides instructions to upgrade the existing Encore® 500 E-CIM™/700/900 dispensers to have a door entry detection system. The Security Door Detection Kits (M15611K001, M15929K001, M15930K001, M15931K001, M15956K001, and M15956K002) are used to install the required sensors and supporting components to monitor upper doors, printer doors, lower panels, and side sheathings.

Intended Users

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

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If upgrading an Ultra-Hi™ unit built before October 2008, Ultra-Hi Interface Upgrade Kit [(M09922K001) “Not Included”] must be installed.

Determining Model Number and Manufacturing Date of Unit

IMPORTANT INFORMATION

It is highly recommended to perform a site survey to determine the model and manufacturing date of the units being considered.

The following tables lists the code structure:

Month Codes		
A = January	E = May	J = September
B = February	F = June	K = October
C = March	G = July	L = November
D = April	H = August	M = December

Year Codes		
B = 1993	S = 2007	K = 2021
C = 1994	T = 2008	L = 2022
D = 1995	U = 2009	M = 2023
E = 1996	W = 2010	N = 2024
F = 1997	X = 2011	P = 2025
G = 1998	A = 2012	R = 2026
H = 1999	B = 2013	S = 2027
J = 2000	C = 2014	T = 2028
K = 2001	D = 2015	U = 2029
L = 2002	E = 2016	W = 2030
M = 2003	F = 2017	X = 2031
N = 2004	G = 2018	
P = 2005	H = 2019	
R = 2006	J = 2020	

Example: Encore Serial Plate

AP = Date code; ENXXXXXXXX is the actual serial number	In this example, the unit was built in January 2005 and is not applicable for this security option.
JT = Date code; ENXXXXXXXX is the actual serial number	In this example, the unit was built in September 2008 and is an Ultra-Hi, so it would need the Ultra-Hi Interface Upgrade Kit.

Required Tools

The following tools are required for installing the Security Door Detection Kit:

- Phillips® #2 Screwdriver
- Standard Socket Set
- Metric Socket Set
- ¼-inch Nut Driver
- Hammer
- Punch
- Channel Locks

Kit Descriptions

To identify kits that are compatible with your Encore platform, refer to the following table:

Kit	Description	Windchill® Name	Encore Platform
M15929K001	Security Bezel and Printer Door Detection Kit	Security, Bezel and Printer Door Kit (2 side)	E500 and E700
M15611K001	Security Door Detection Kit	Security Door Detection Kit	E500 and E700
M15930K001	Security Lower Panel and Side Sheathing Detection Kit	Security, Lower Panel and Side Sheathing Kit - 2 side Sheathing	All
M15931K001	Security Lower Panel Detection Kit	Security, Lower Panel Detection Kit	All
M15956K001	Security Door Detection Kit	Security Door Detection Kit, E800	E900
M15956K002	Security Bezel and Printer Door Detection Kit	E900 Security, Bezel, and Printer Door Kit (2 sides)	E900
M09922K001	Additional Ultra-Hi Interface Upgrade Kit is required for units built before October 2008	Kit, Ultra-Hi Interface w/ Ground Wire Upgrade	Required for Ultra-Hi units built before October 2008

Parts List

The following table lists the parts provided in the Security Door Detection Kit (M15611K001 and M15956K001):

Item	Description	Part Number	M15611K001	M15956K001	Quantity
1	Assembly, Intrinsic Safety (I.S.) Barrier Box	M15405A001	X	N/A	1
2	Assembly, Intrinsic Safety (I.S.) Barrier Box	M15956A001	N/A	X	N/A
3	Screw, Hex Head ¼-20 X 1/2	Q11889-02	X	X	1
4	Washer, Flat 0.266 X. 625 X 0.05	K14056	X	X	1
5	Nut, ¼-20 Serrated Flange	Q11890-04	X	X	1
6	Washer, Flat 2.00 X 1.43 X 0.06	N16599-108	X	X	1
7	Nut, Conduit 1.00	N23655-01	X	X	1
8	Cable, Encore Diesel Exhaust Fluid (DEF) Lower Door Alarm	M10059A004	X	X	1
9	Cable, Encore Lower Door Alarm	M10059A005	X	X	1
10	Cable, Encore Dispenser Security Valve Sense Adapter	M05164A002	X	X	1
11	Assembly, Lower Door Detection - Standard	M15330A002	X	X	2
12	Foam, Cable Keeper	M15256B001	X	X	6
13	Clamp, Adhesive Backed, Flat Cable Mount	M01102B002	X	X	10
14	Bracket, Lower Door Detection Assembly Mounting	M15394A001	X	X	2
15	Nut, Hex Flange Serrated 8-32	Q11890-02	X	X	4
16	Bracket, Upper Door Detection	M15416A001	X	N/A	2
17	Switch, Plunger	M15415B001	X	N/A	2
18	Cable, Door Open Sensor Print Support	M07006A008	X	N/A	2
19	Cable, Door Open Sensor Print Support Mini Door Node	M07006A007	X	N/A	1
20	Assembly, Printer Door Alarm Bracket and Switch	M15754A001	X	N/A	2
21	Assembly, Printer Door Alarm Bracket and Switch	M15572A001	N/A	X	N/A
22	Screw, Self-Tapping Hex Head 6-20 X 0.5	Q11677-26	X	X	6
23	Assembly, Side Sheathing Detection	M15510A003	X	X	2
24	Cable, Encore Door Entry Detection	M15561A001	X	X	1
25	Cable, Jumper	M06303A002	X	X	1
26	Screw, Phillips Pan Head Sems Metric	Q12845-58	X	X	1
27	Screw, Thread Forming Phillips Pan Head	M04287B002	X	X	1
28	Lock Spacer	M15725B001	X	X	2
29	Cable Clamp Push Mount	M13365B003	X	X	2
30	Assembly, Printer Door Alarm Bracket and Switch	M16054A001	X	N/A	2
31	Assembly, Security Switch	M18733A001	X	N/A	1
32	Nut, Metric, Flange, M5	M00414B001	X	N/A	1

The following table lists the parts provided in the Security Bezel and Printer Door Detection Kit (M15929K001 and M15956K002):

Item	Description	Part Number	M15929K001	M15956K002	Quantity
1	Cable, Jumper	M06303A002	X	X	1
2	Cable, Door Open Sensor, Print Support Mini Door Node	M07006A007	X	X	1
3	Cable, Door Open Sensor Print Support	M07006A008	X	X	2
4	Printer Door Alarm Bracket and Switch	M15754A001	X	X	2
5	Printer Door Alarm Bracket and Switch	M15572A001		X	
6	Plunger Switch	M15415B001	X	X	2
7	Upper Door Detection Bracket	M15416A001	X		2
8	Screw, Hex Washer Head Thread Forming 6-20 X 0.50	Q11677-26	X	X	6
9	Screw Phillips Pan Head Sems Metric M4 X 10M	Q12845-58	X	X	1
10	Cable Clamp Push Mount	M13365B003	X	X	2
11	Assembly, Printer Door Alarm Bracket, and Switch	M16054A001	X	N/A	2
12	Assembly, Security Switch	M18733A001	X	N/A	1
13	Nut, Metric, Flange, M5	M00414B001	X	N/A	1

The following table lists the parts provided in the Security Lower Panel and Side Sheathing Detection Kit (M15930K001):

Item	Description	Part Number	Quantity
1	Washer, Flat 0.266 X .625 X 0.05	K14056	1
2	Clamp Adhesive Backed Flat Cable Mount	M01102B002	10
3	Screw, Thread Forming Phillips Pan Head, 12-24	M04287B002	1
4	Cable, Encore Dispenser Security Valve Sense Adapter	M05164A002	1
5	Cable, Encore DEF Lower Door Alarm	M10059A004	1
6	Cable, Encore Lower Door Alarm	M10059A005	1
7	Foam Cable Keeper	M15256B001	6
8	Lower Door Detection Assembly- Standard	M15330A002	2
9	Assembly Bracket - Lower Door Detection	M15394A001	2
10	I.S. Barrier Box Assembly	M15405A001	1
11	Side Sheathing Detection Assembly	M15510A003	2
12	Encore Door Entry Detection Cable	M15561A001	1
13	Lock Spacer	M15725B001	2
14	Washer Flat 2.00 X 1.34 X .06 0 Crs Zn Pl	N16599-108	1
15	Conduit Nut 1.00	N23655-01	1
16	Screw, Hex Head ¼-20 X 1/2	Q11889-02	1
17	Nut Hex Flanged Serrated Locking Face 8-32	Q11890-02	4
18	Nut Serrated Flange 1/4-20	Q11890-04	1

The following table lists the parts provided in the Security Lower Panel Detection Kit (M15931K001):

Item	Description	Part Number	Quantity
1	Washer, Flat 0.266 X. 625 X 0.05	K14056	1
2	Clamp Adhesive Backed Flat Cable Mount	M01102B002	8
3	Cable, Encore Dispenser Security Valve Sense Adapter	M05164A002	1
4	Cable, Encore DEF Lower Door Alarm	M10059A004	1
5	Cable, Encore Lower Door Alarm	M10059A005	1
6	Foam Cable Keeper	M15256B001	4
7	Lower Door Detection Assembly- Standard	M15330A002	2
8	Assembly Bracket - Lower Door Detection	M15394A001	2
9	I.S. Barrier Box Assembly	M15405A001	1
10	Lock Spacer	M15725B001	2
11	Washer Flat 2.00 X 1.34 X .06 0 Crs Zn Pl	N16599-108	1
12	Conduit Nut 1.00	N23655-01	1
13	Screw, Hex Head 1/4-20 X 1/2	Q11889-02	1
14	Nut Hex Flanged Serrated Locking Face 8-32	Q11890-02	4
15	Nut Serrated Flange 1/4-20	Q11890-04	1

Related Documents

Document Number	Title	GOLD SM Library
MDE-3804	Encore/Eclipse® Start-up And Service Manual	<ul style="list-style-type: none"> • Encore and Eclipse • Service Manual
MDE-3860	Programming Quick Reference Guide	<ul style="list-style-type: none"> • Encore and Eclipse • Encore and Eclipse Installers
MDE-5356	Encore 900 Start-Up and Service Manual	<ul style="list-style-type: none"> • Encore and Eclipse • Service Manual
PT-1936	Encore Series Pumps and Dispensers Illustrated Parts Manual	<ul style="list-style-type: none"> • Encore and Eclipse • Encore and Eclipse Installers • Parts Manual
PT-1937	Encore 300, Encore 500/500 S, Encore 700 S, Eclipse Recommended Spare Parts Manual	<ul style="list-style-type: none"> • Encore and Eclipse • Encore and Eclipse Installers • Parts Manual
PT-1969	Encore 900 Pump and Dispenser Illustrated Parts Manual	<ul style="list-style-type: none"> • Encore and Eclipse • Encore and Eclipse Installers • Parts Manual
PT-1971	Encore 900 Recommended Spare Parts Manual	<ul style="list-style-type: none"> • Encore and Eclipse • Encore and Eclipse Installers • Parts Manual

Abbreviations and Acronyms

Term	Description
ASC	Authorized Service Contractor
CC	Command Code
CD	Computer Display
CDM	Computer Display Module
CRIND®	Card Reader in Dispenser
DEF	Diesel Exhaust Fluid
EC	Error Code
ESD	Electrostatic Discharge
FC	Function Code
FCC	Federal Communications Commission
GOLD	Gilbarco Online Documentation
I.S.	Intrinsic Safety
NEC®	National Electrical Code
NFPA®	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
PCA	Printed Circuit Assembly
PCN	Pump Control Node
STP	Submersible Turbine Pump
TAC	Technical Assistance Center
UPM	Universal Payment Module

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 Gilbarco Technical Assistance Center (TAC) at 1-800-743-7501. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

Follow the Regulations

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

Replacement Parts

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

Federal Communications Commission (FCC) Warning

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

Safety Symbols and Warning Words

This section provides important information about warning symbols and boxes.

Alert Symbol



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

Signal Words

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



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



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



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

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

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.

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

In the event of inclement weather, including snow, ice, or flooding that makes driving conditions dangerous, please avoid servicing units. Always use available door stops to secure upper doors against unwanted/unexpected movement, especially during high winds. If necessary, reschedule service to avoid damage to the equipment. Weather may change unexpectedly; be aware of local weather conditions. During service, if conditions develop making service unsafe, close the unit(s) and proceed to a safe location.

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.



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.

In an Emergency

Inform Emergency Personnel

Compile the following information and inform emergency personnel:

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

WARNING



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

WARNING

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

WARNING



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

WARNING



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

WARNING



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

WARNING

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

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

Lockout/Tagout

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

Before You Begin

CAUTION



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

To prepare the site and dispenser for an upgrade, 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 Read all the safety information provided in *MDE-3804 Encore and Eclipse Start-up/Service Manual* and *MDE-5356 Encore 900 Start-Up and Service Manual*.
- 5 Isolate a two-wire connection or circuit to the unit.

WARNING

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

Preparing for Installation

To prepare for installation, proceed as follows:

- 1 Unlock and remove the lower panels.
- 2 If installing kit M15611K001, M15930K001, M15956K001, or M15956K002, remove the side sheathing screws.
*Notes: 1) Retain the screws for reassembly.
2) For units with DEF, do not remove screws or sheathing on the DEF side of the unit.*
- 3 If installing kit M15611K001, M15930K001, M15956K001, or M15956K002, remove the inner and outer side sheathing from both sides.
Note: For units with DEF, do not remove the screws or sheathing on the DEF side of the unit.
- 4 Unlock and open the bezel doors.

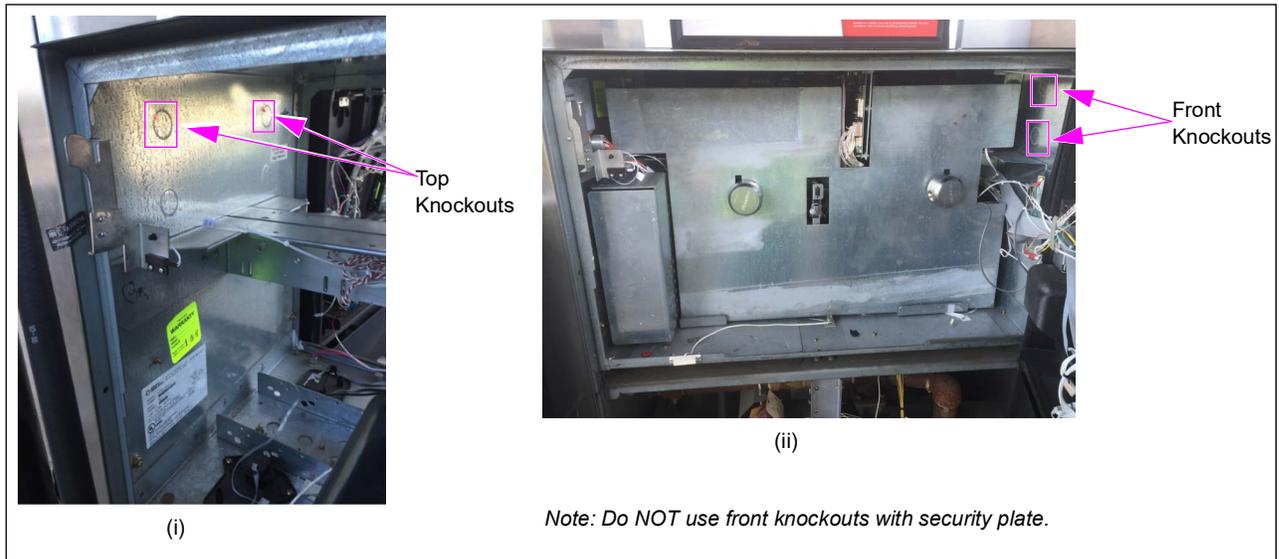
Mounting the I.S. Barrier Box (Kits M15611K001, M15930K001, M15931K001, M15956K001, or M15956K002)

To mount the I.S. barrier box, proceed as follows:

- 1 Identify one of the top knockouts that is unused. The I.S. barrier box will be mounted in place of this knockout.

*Notes: 1) If a security plate is already installed (see [Figure 1](#)), identify one of the rear knockouts to avoid the interference of the I.S. barrier box with the security plate.
2) Ensure that there is enough space around the knockout to mount the I.S. barrier box.
3) On Ultra-Hi units with DEF, do not install the I.S. barrier box on the DEF side of the unit.*

Figure 1: Encore 700



- 2 Remove the identified knockout.

IMPORTANT INFORMATION

Remove the knockout from the INSIDE of the dispenser to prevent damage to electronics.

- 3 Remove the cover of the I.S. barrier box.
Note: Retain the cover and the hardware for assembly.

- 4 To determine the side of the box that will be attached to the support bracket, proceed as follows:
 - a Hold the box up to the knockout with the large conduit hole towards the outside of the dispenser. The support bracket mounts to the top side of the Computer Display Module [(CDM) see [Figure 2](#)].

Figure 2: Orientation of I.S. Barrier Box for Encore 900 Units

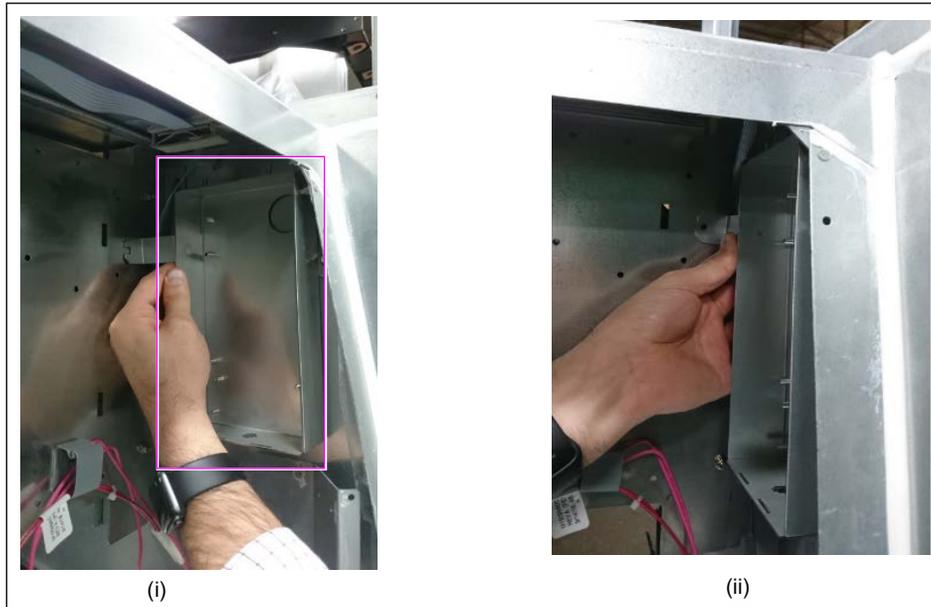
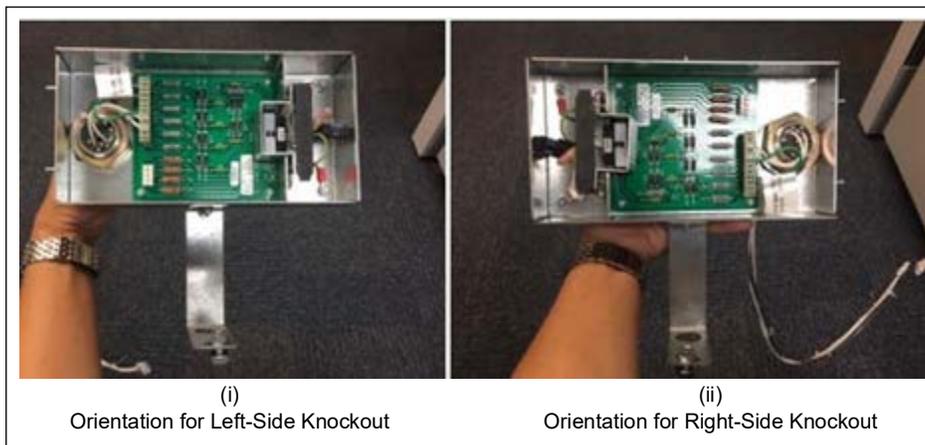
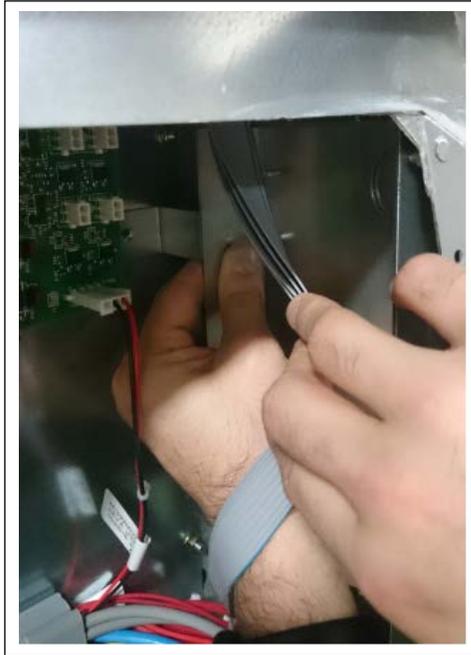


Figure 3: Orientation of I.S. Barrier Box for Encore 700 Units



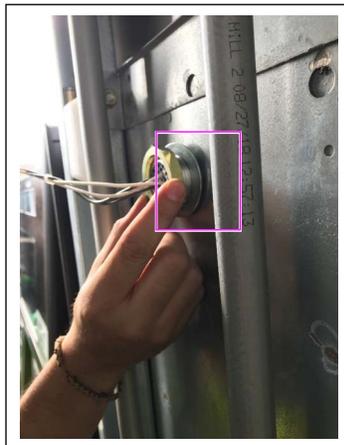
- 5 If there is a board, the covers appear right next to it (see [Figure 4](#)).

Figure 4: I.S. Barrier Box



- 6 Insert the cable/conduit of the I.S. barrier box through the knockout hole removed in step 2 on [page 11](#).
- 7 Insert the cable through a N16599-108 Flat Washer and a N23655-01 Conduit Nut on the outside of the Computer Display (CD) module and tighten the conduit. This secures the I.S. barrier box to the unit.

Figure 5: Securing I.S. Barrier Box



Note: The cable assembly that routes through the potted conduit into the I.S. barrier is marked as SW(A) for the side A lower panel (grey colored wires), and SW(B) for the side B (white colored wire).

- On units without a heater/fan assembly, install the Q11884-02 Bolt (1/4-20), K14056 Washer, and Q11890-04 Serrated Flange Nut (1/4-20) at the bottom part of the bracket on the I.S. barrier and mount it to the dispenser (see [Figure 6](#)).

Figure 6: Mounting I.S. Barrier Box for Encore 900 Units

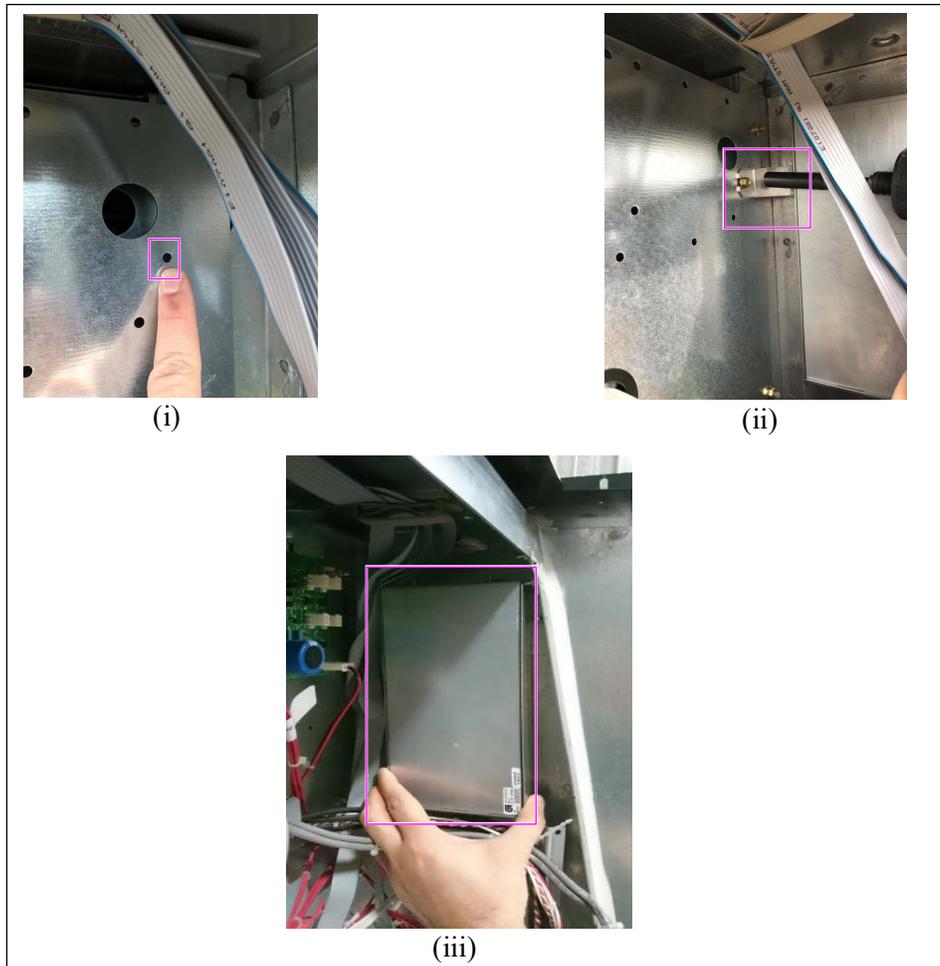


Figure 7: Mounting I.S. Barrier Box for Encore 700 Units



- Reinstall the I.S. box cover using the hardware removed in step 3 on [page 11](#).

Connecting the I.S. Barrier to Pump Control Node [PCN (Kits M15611K001, M15930K001, M15931K001, M15956K001, or M15956K002)]

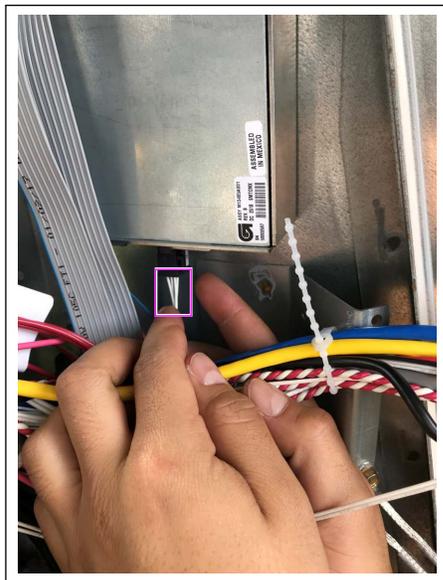
To connect the I.S. barrier to the PCN, proceed as follows:

- 1 Identify the cable to be used.

*Notes: 1) M10059A004 Encore DEF Lower Door Alarm Cable is used for Ultra-Hi units with DEF. M10059A005 Encore Lower Door Alarm Cable is used for other units.
2) Both M10059A004 and M10059A005 Cables are included in the M15611K001, M15930K001, M15931K001, M15956K001, and M15956K002 kits. Refer to the label on the cable to confirm the part number and ensure that the proper cable is selected.*

- 2 Connect the JE end of the M10059A004/A005 Cable to the 4-pin connector on the I.S. barrier box.

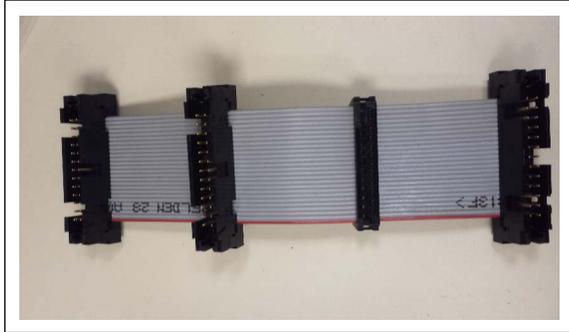
Figure 8: Connecting JE Cable



- 3 For standard units, perform step [a](#); for DEF units, skip to step [b](#).
 - [a](#) Connect the J1110B end of the M10059A005 Cable directly to PCN P1110 header connector. Proceed to [“Mounting the Lower Door and Side Sheathing Detection Assemblies \(Kits M15611K001, M15930K001, M15931K001, M15956K001, or M15956K002\)”](#) on [page 17](#).

- b** On DEF units, disconnect the existing cable at PCN P1110 header connector. Install the M05164A002 Encore Dispenser Security Valve Sense Adapter Cable into P1110.
Note: This will provide an additional input to plug the dispenser security input in.

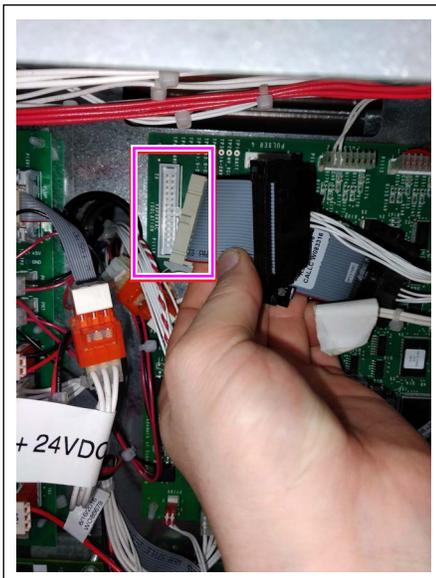
Figure 9: Ribbon Cable



Note: Any of the three connectors on the ribbon cables can be used; however, one will remain unused. The unused connector is retained for future use.

- c** Plug the existing cable disconnected in step 3 b on page 16 back into one of the available connectors in the ribbon cable.
- d** Plug the J1110A end of M10059A004 Cable into any available connector on the M05164A002 Cable.

Figure 10: Ribbon Cable Connectors

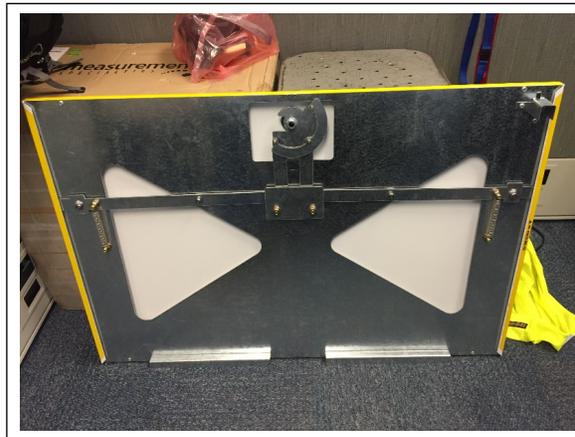


Mounting the Lower Door and Side Sheathing Detection Assemblies (Kits M15611K001, M15930K001, M15931K001, M15956K001, or M15956K002)

To mount the lower door and side sheathing detection assemblies, proceed as follows:

Note: Lower Door Switch Assembly (M15330A002) is oriented for standard lower panels. For a reinforced lower panel (see [Figure 11](#)), proceed to step 1. For a standard lower panel, skip to step 2 on [page 19](#).

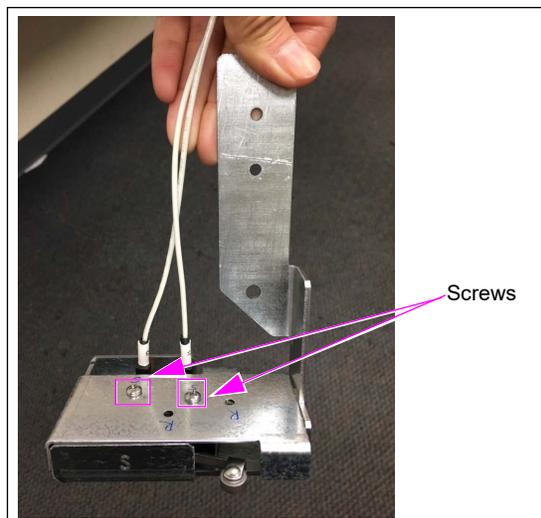
Figure 11: Reinforced Lower Panel



- 1 To prepare the lower door security assembly (reinforced lower panel) for installation, proceed as follows:

- a Remove the two screws as shown in [Figure 12](#).

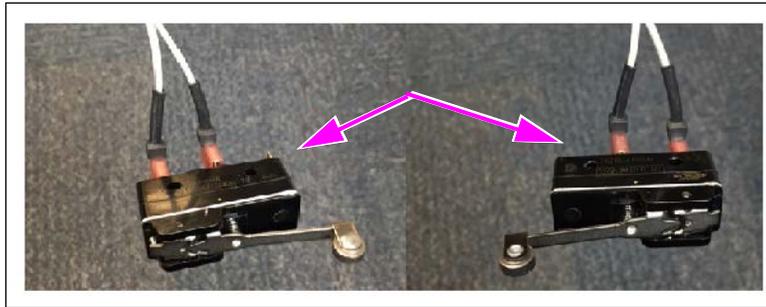
Figure 12: Removing Screws



- b** Remove the cables, turn the switch as shown in [Figure 13](#), and reattach the cables to the NORMALLY OPEN and COMMON connections.

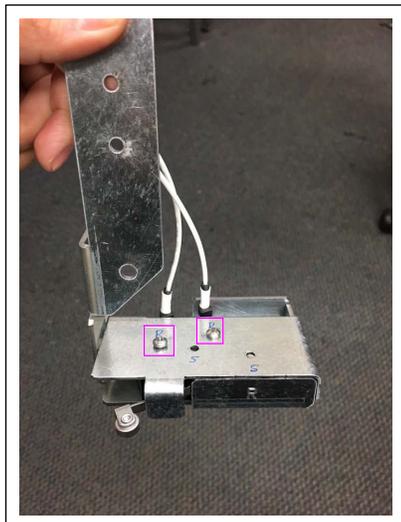
Note: Faston designations (J1 and J2) can be swapped but MUST be on the COMMON and NORMALLY OPEN switch connections.

Figure 13: Swapping Faston Designations J1 and J2



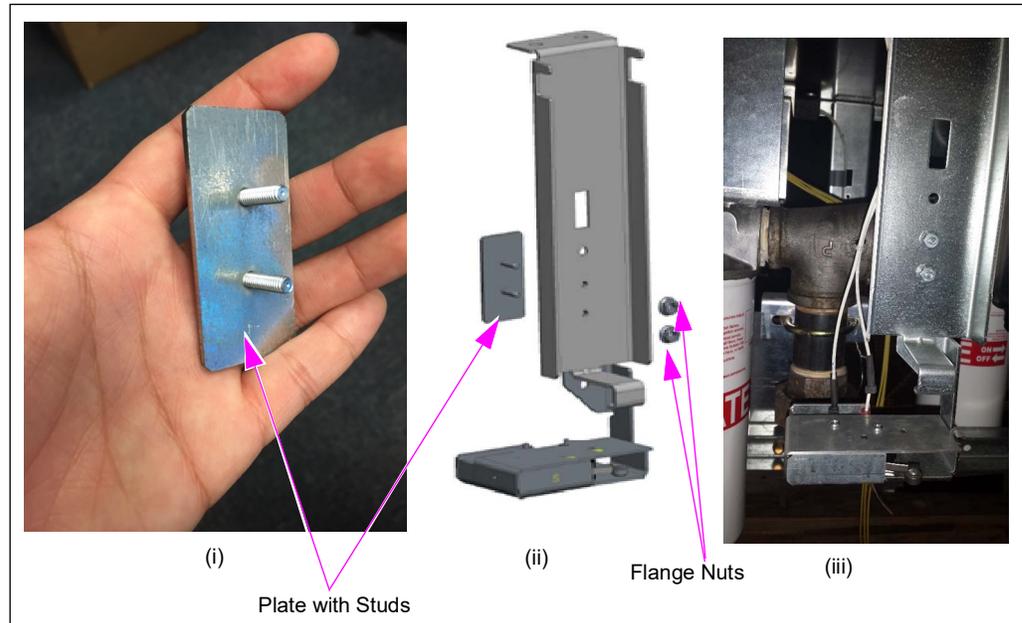
- c** Position the switch over the holes marked with “R” and then insert the screws through the holes - first through the cover and then through the switch.

Figure 14: Placing and Inserting Screws



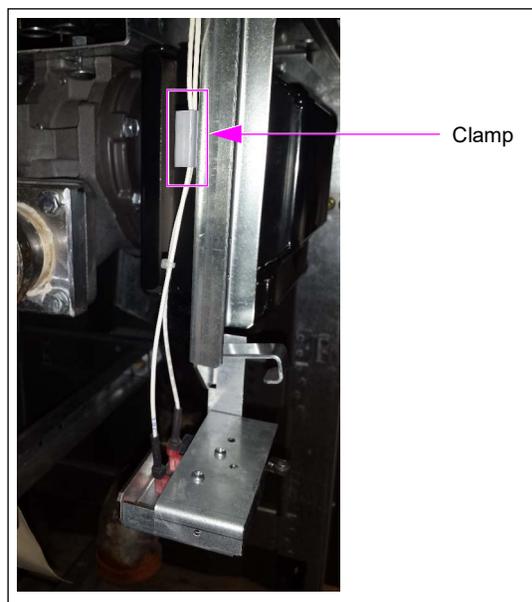
- 2 Attach the lower door security assembly to the existing hanging bracket in lower hydraulics using the M15394A001 Lower Door Detection Assembly Mounting Bracket and two Q11890-02 Hex Flange Serrated Nuts (see [Figure 15](#)). Secure tightly.

Figure 15: Attaching Door Security Assembly



- 3 Secure the cables to the hanging bracket with one of the M01102B002 Clamps provided in the kit (see [Figure 16](#) for the clamp location).

Figure 16: Routing Cables



- 4 Repeat steps 1 on [page 17](#) through 2 for the other side of the unit.

Installing Side Sheathing Assembly (Kits M15611K001, M15930K001, M15956K001, and M15956K002)

- Notes: 1) For units with DEF, only one side sheathing assembly will be installed on the side away from the DEF cabinet. Do not attempt to install the side sheathing assembly on the DEF side.*
- 2) For M15931K001, skip to step 7 on [page 23](#).*

To install the side sheathing assembly, proceed as follows:

- 1 Remove the top bolts on the lower frame (see [Figure 17](#)).

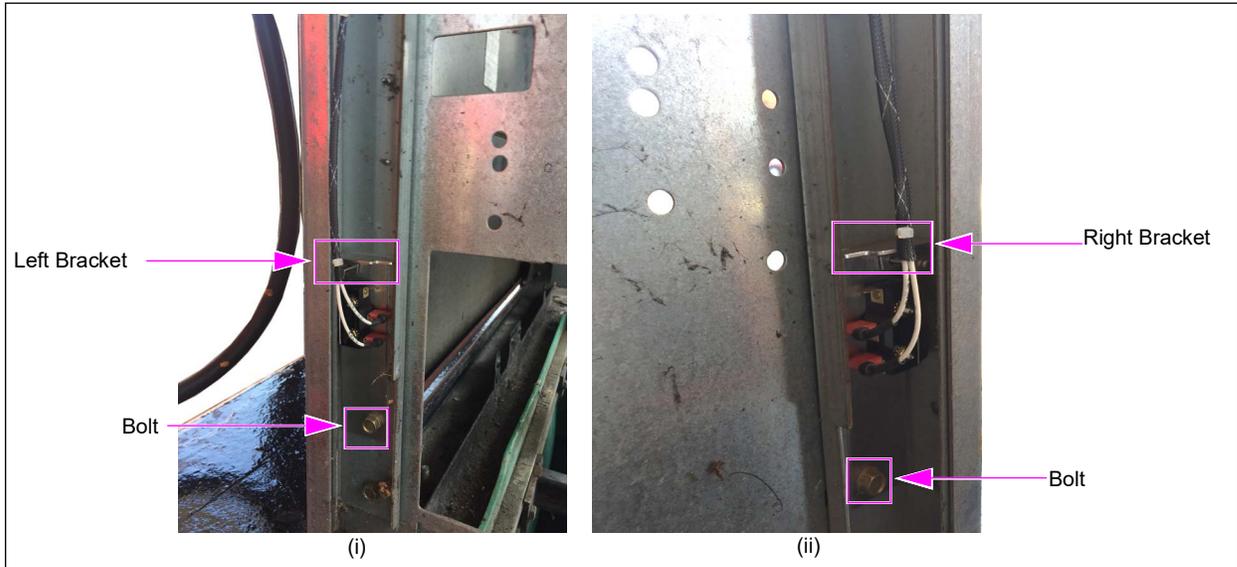
Figure 17: Removing Top Bolts



- 2 When facing the side of the unit, attach the “left” bracket to the left frame post using the bolt removed in step 1. Bracket/switch assembly must fit inside the frame (see [Figure 18](#) on [page 21](#)).

- 3 Attach the “right” bracket to the right frame post using the top bolts removed in step 1 on page 20.

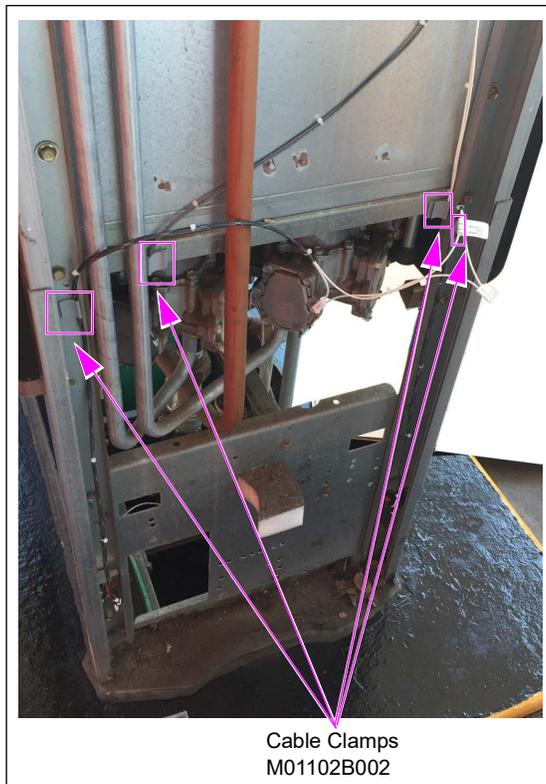
Figure 18: Attaching Left and Right Brackets



- Notes: 1) Ensure proper mounting of the switch assembly in the frame post (see [Figure 18](#)).
2) Switch bracket must not hang on the edge of the frame, but fit inside the frame post.*

- 4 Route the cables up the frame posts (see [Figure 19](#)).

Figure 19: Routing Cables



- 5 Use M01102B002 Flat Cable Mount Releasable Clamps to secure the cable to the frame posts and the side of the CD module.
Note: If installing on a unit with DEF dispenser, proceed to step 7 on [page 23](#).
- 6 For non-DEF units, proceed as follows:
 - a Repeat steps 1 on [page 20](#) through 4 on the other side of the unit.
 - b Install the M15561A001 Encore Door Entry Detection Cable (see [Figure 20](#) on [page 23](#), [Figure 21](#) on [page 24](#)). While looking at the unit from side A (power supply will be to the left), if the I.S. barrier box is located on the left side of the dispenser, M15561A001 Cable will be installed on the side B of the dispenser. If the box is on the right side, then the cable will be installed on side A of the dispenser.

- 7 For M15611K001 and M15930K001 Kits, connect the cables as shown in [Figure 20](#), [Figure 22](#) on [page 25](#), [Figure 25](#) on [page 28](#) and [Figure 26](#) on [page 29](#). For M15931001 Kit, connect the cables as shown in [Figure 27](#) on [page 29](#) and [Figure 28](#) on [page 30](#).

Figure 20: Dispenser with I.S. Barrier Box - Left Side (Reference for Kits M15611K001 and M15930K001)

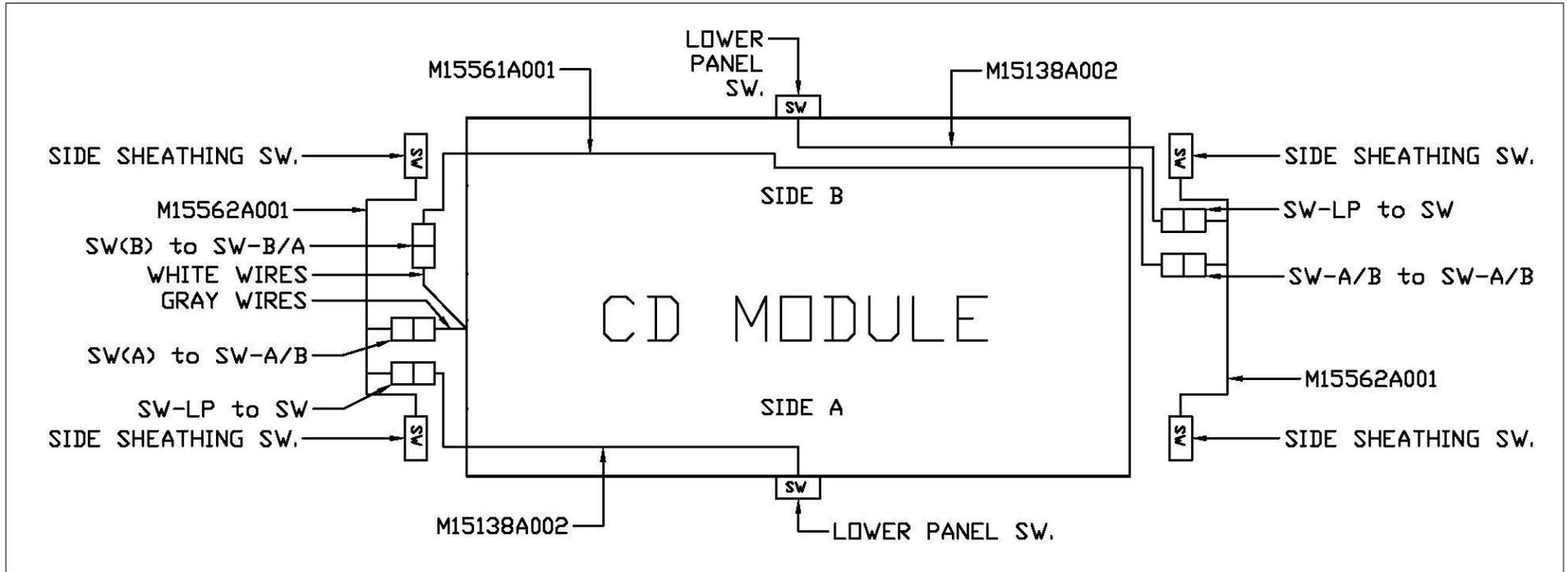


Figure 21: Dispenser with I.S. Barrier Box - Right Side (Reference for Kits M15611K001 and M15930K001)

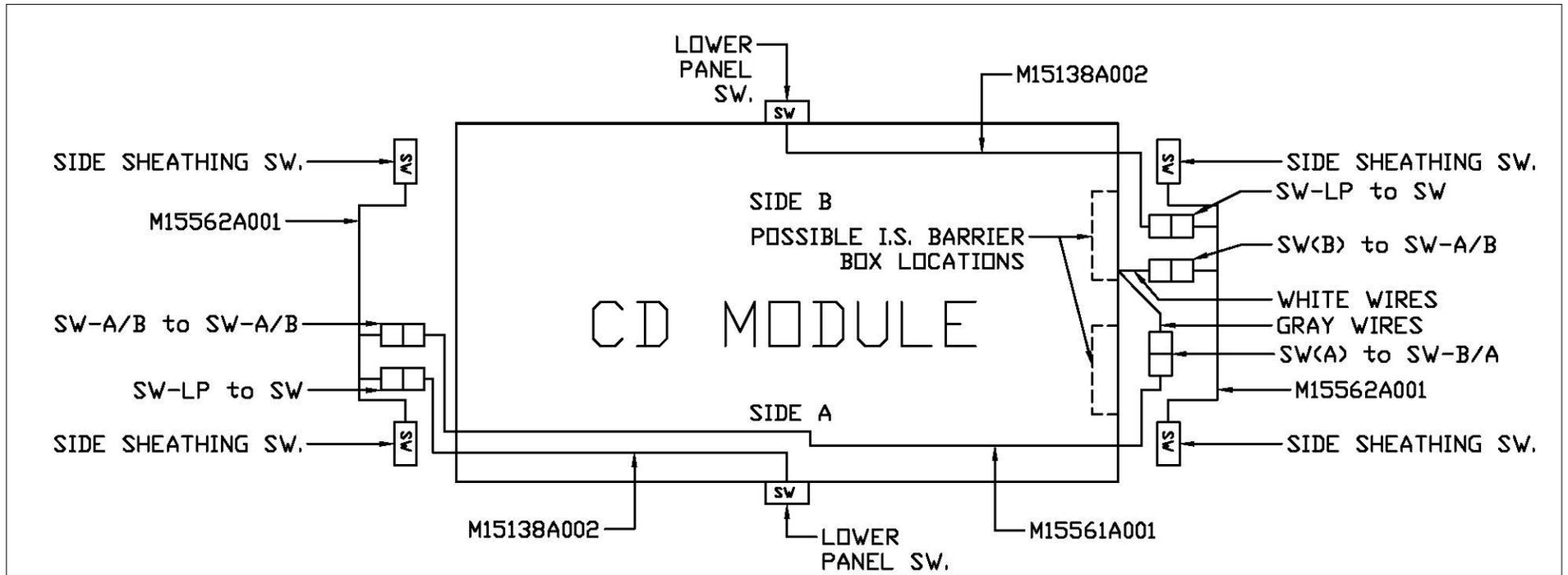


Figure 22: Dispenser with DEF and I.S. Barrier Box - Left Side (Reference for Kits M15611K001 and M15931K001)

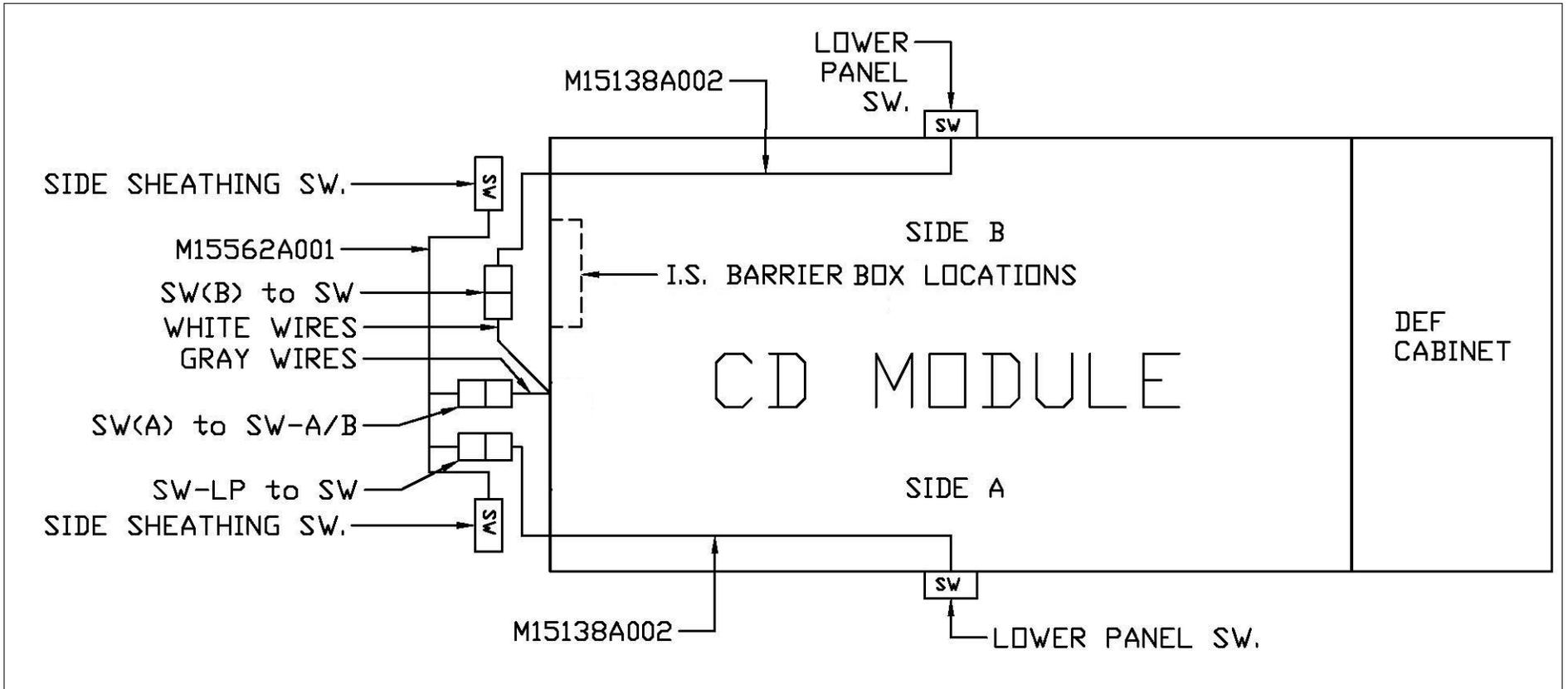


Figure 23: Dispenser with DEF and I.S. Barrier Box - Right Side (Reference for Kits M15611K001 and M15931K001)

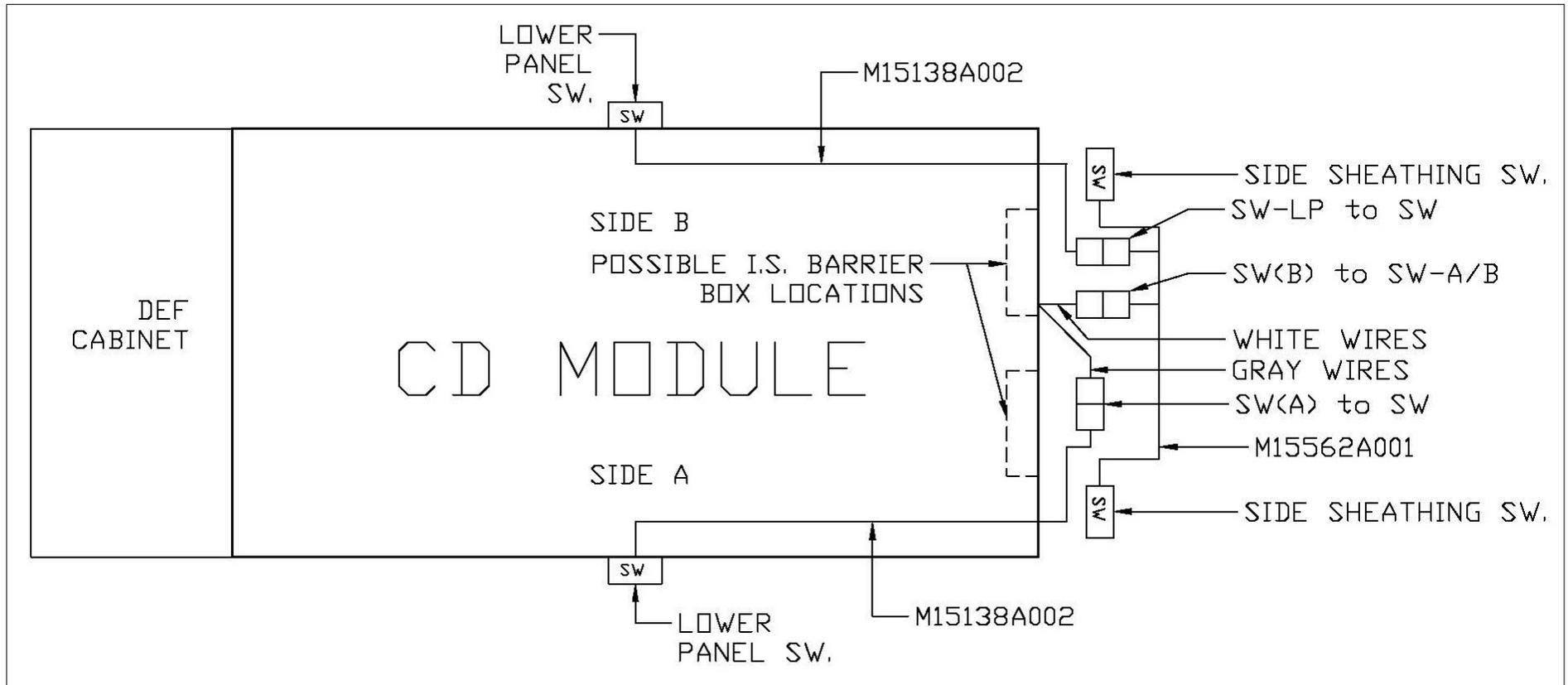
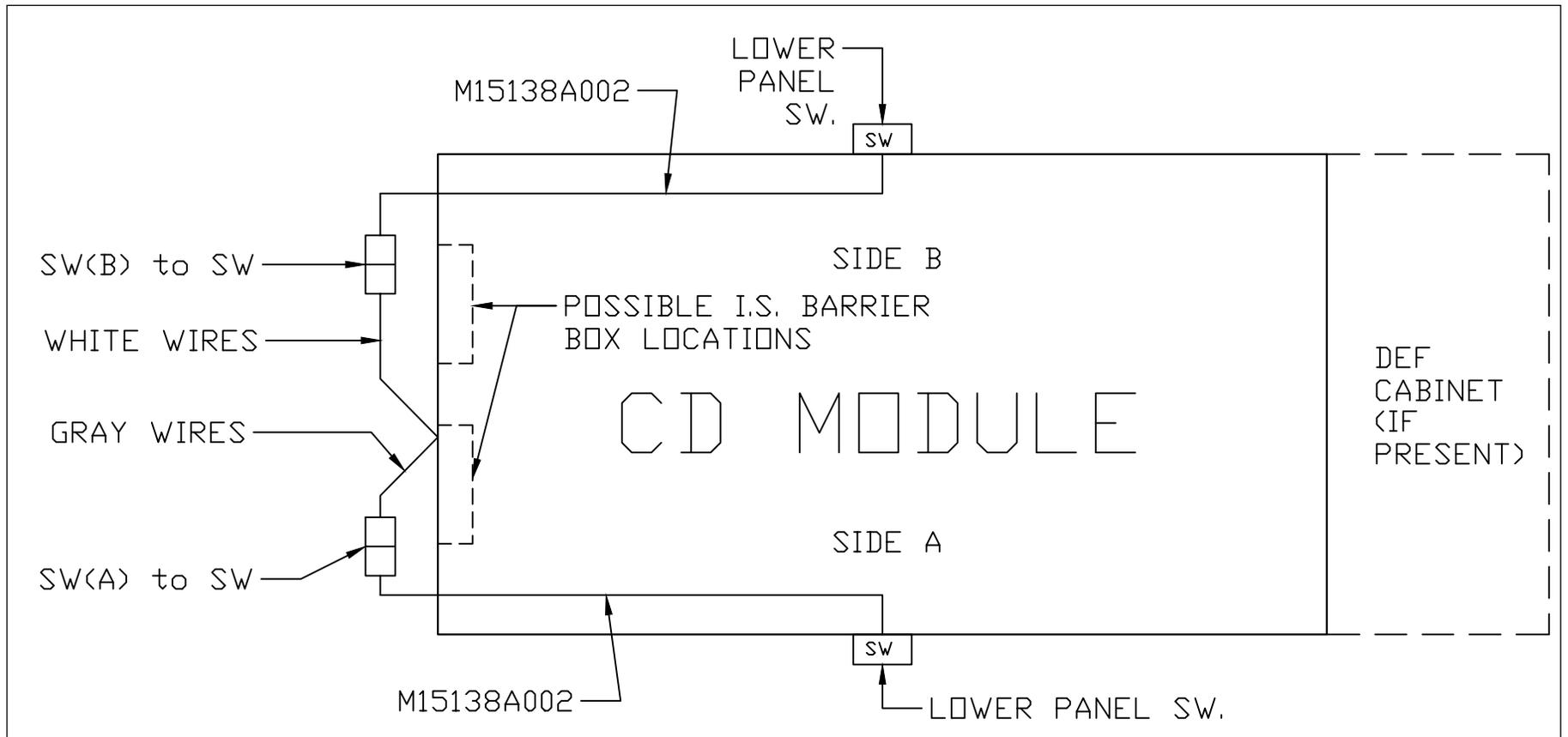
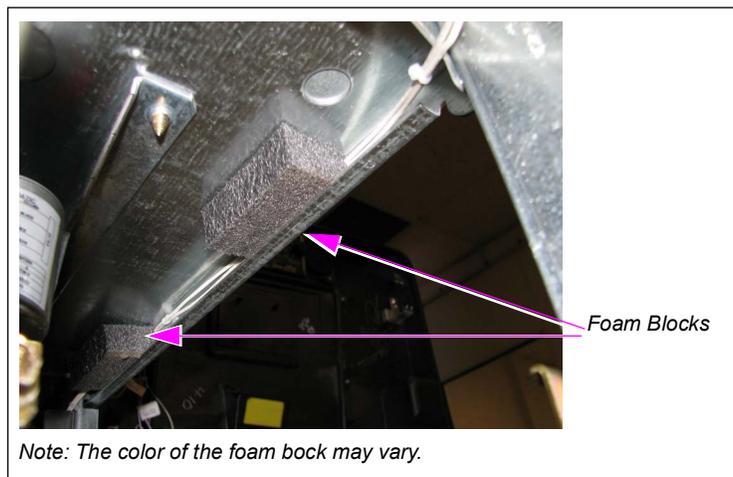


Figure 24: Dispenser with I.S. Barrier Box - Left Side (Reference for Kit M15931K001)



- 8 Route cables in channel under the lower air gap plate (see [Figure 25](#)) and away from the unit hydraulics.
- 9 Secure all wires into the channel under the air gap plate with the foam blocks provided with the kit (see [Figure 25](#)).

Figure 25: Securing Wires with Foam Blocks



Installing the Lower Panel Lock Spacer (M15611K001, M15930K001, or M15931K001 Kits)

Note: The lower panel lock spacer is used for lower panels with standard Gilbarco locks. This spacer (M15725B001) must be installed to prevent panel vibration that may result in false security alerts.

To install the lower panel lock spacer, proceed as follows:

- 1 Remove the bolt at the back of the lock.

Figure 26: Removing Bolt



- 2 Remove the spring and replace with a spacer.
- 3 Reattach the bolt to the back of the lock. Repeat steps 1 through 3 for the second lower panel lock.

Figure 27: Reattaching Bolt



Installing the Main Upper Door Bracket and Switch (Kits M15611K001, M15929K001, M15956K001, or M15956K002)

To install the main upper door bracket and switch, proceed as follows:

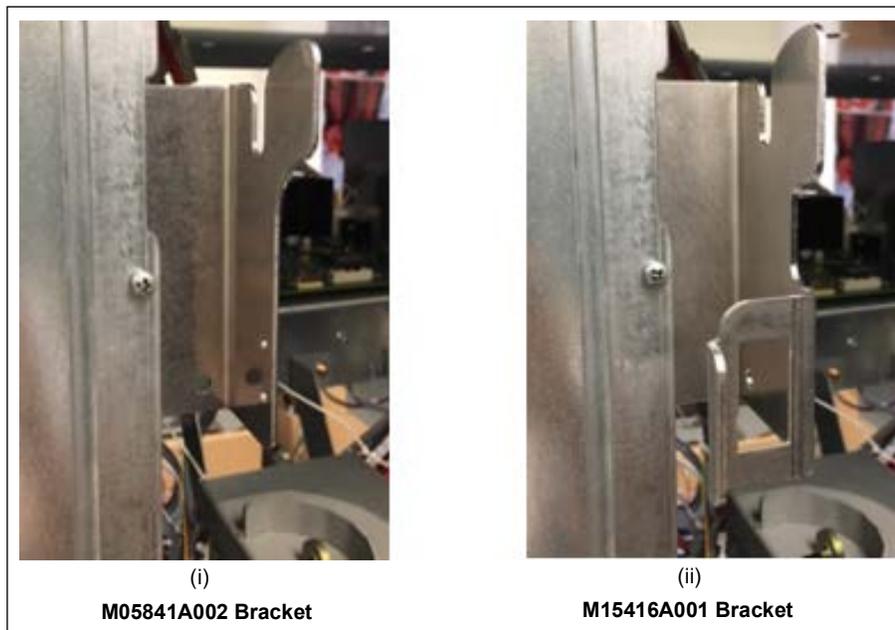
Notes: 1) If the unit to be serviced has the M05841A002 Bracket as shown in [Figure 28 \(i\)](#), proceed with step 1.

2) If the unit has the M15416A001 Bracket as shown in [Figure 28 \(ii\)](#), proceed to step 2 on [page 31](#).

3) If the Encore 900 unit has the M16523A001 Bracket, proceed to step 2 on [page 31](#).

- 1 Remove the existing door lock bracket and replace with M15416A001 Upper Door Detection Bracket.

Figure 28: Removing and Replacing Door Lock Bracket



- 2 Insert the Plunger Switch (M15415B001) into rectangular hole on the bracket (see [Figure 29](#)).
Note: Verify the orientation of the Plunger Switch (see [Figure 30](#)).

Figure 29: Inserting Plunger Switch

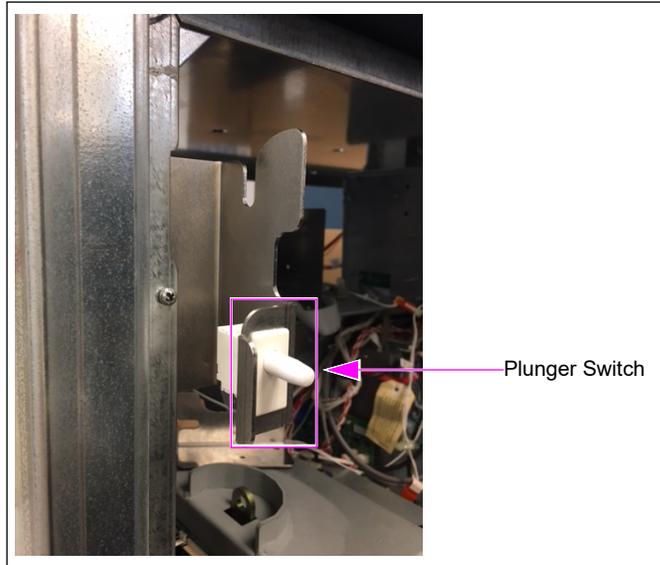
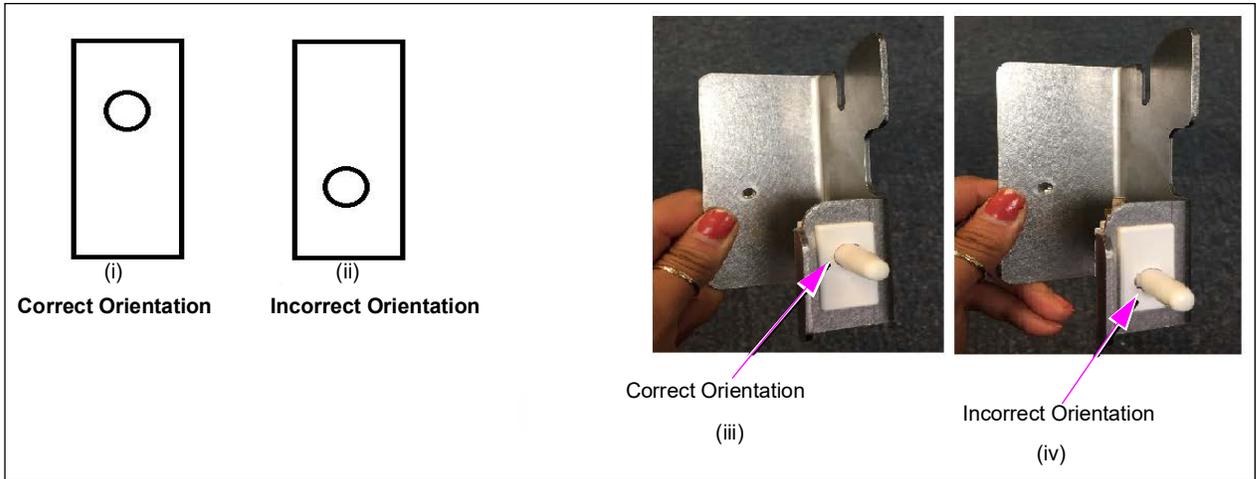


Figure 30: Plunger Switch Orientation



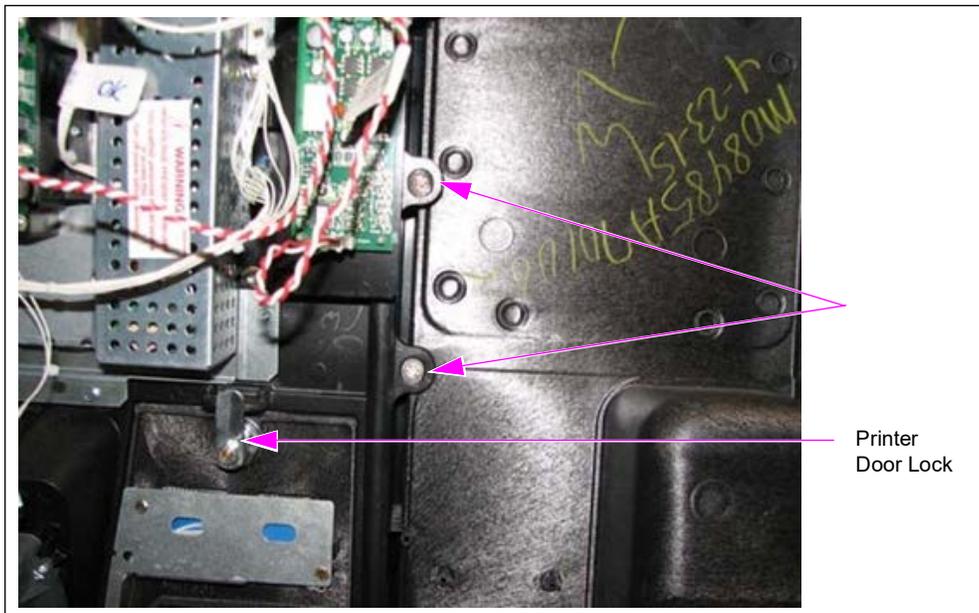
- 3 Repeat steps 1 on [page 30](#) (if necessary) and 2 on the other side of the unit.

Installing Printer Door Bracket and Switch (Kits M15611K001, M15929K001, M15956K001, or M15956K002) on Dispensers with Membrane Keypad and Numeric Universal Payment Module (UPM)

To install the Printer Door Bracket and Switch, proceed as follows:

- 1 Remove the screws from the bezel door (see [Figure 31](#)).

Figure 31: Removing Screws



- 2 Mount the Printer Door Alarm Bracket and Switch Assembly (M15754A001) using Q11677-26 Screw supplied with the kit.

Figure 32: Mounting Printer Door Alarm Bracket for Encore 900 Units

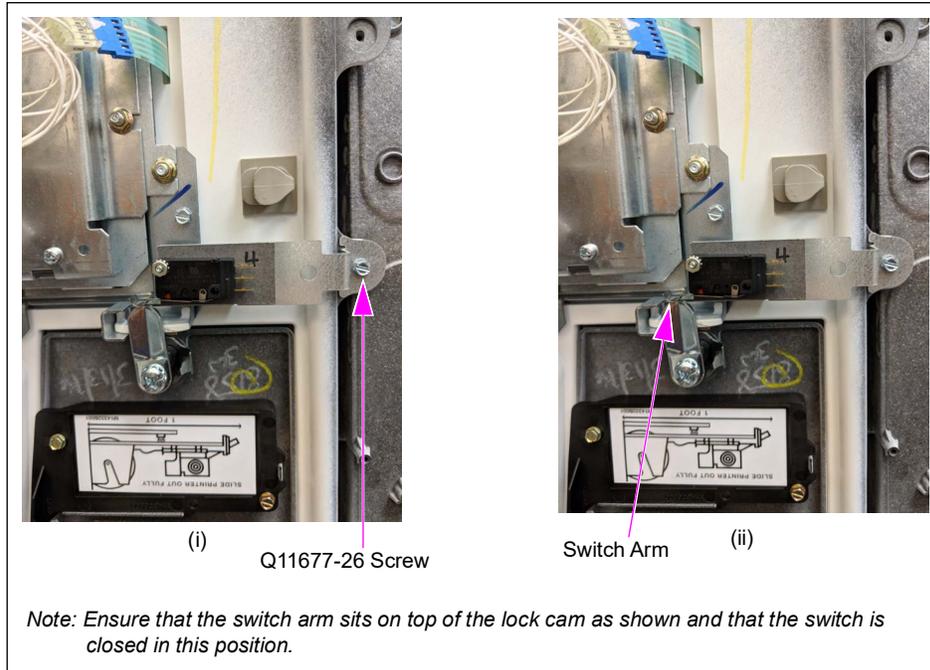
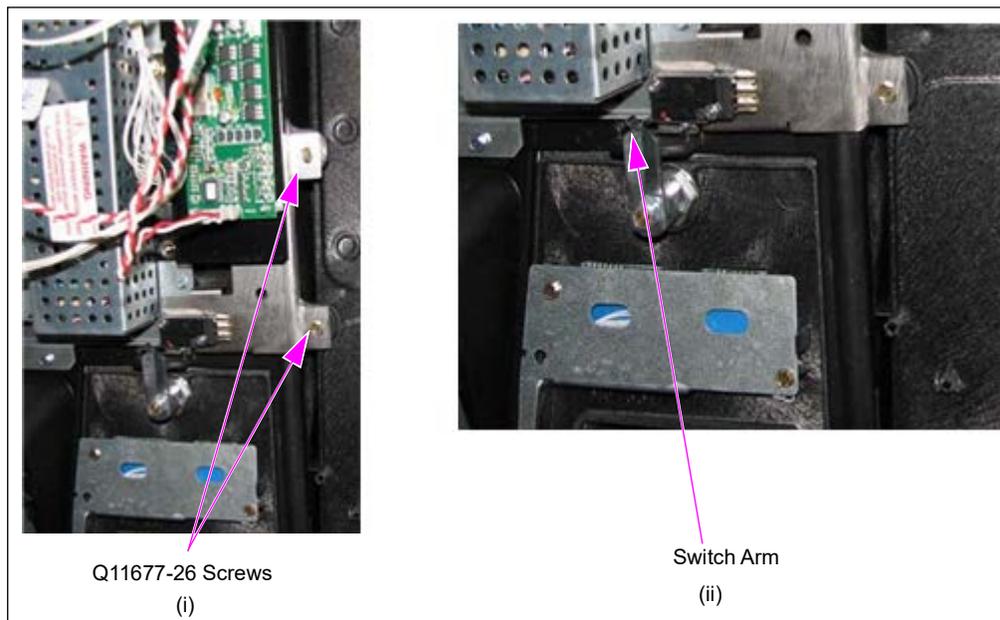


Figure 33: Mounting Printer Door Alarm Bracket

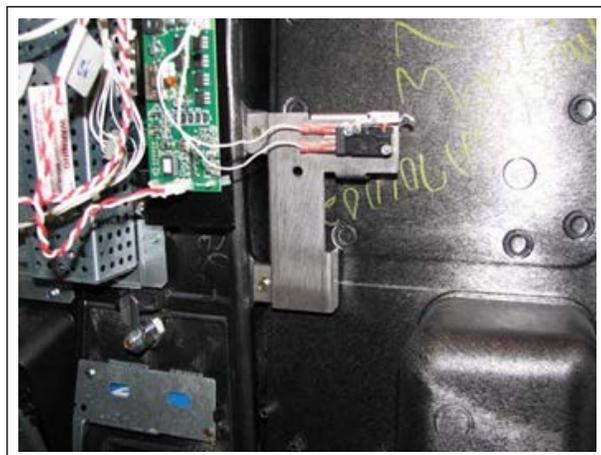


- 3 Repeat steps 1 on page 32 and 2 on page 33 on the other side, if applicable (dual-sided units).
Note: For units where monitoring of the printer door is not required or not possible (printer is not being used, no printer, etc.), the M15754A001 Bracket still needs to be mounted as shown in Figure 34.

Figure 34: Mounting Bracket for Unused Printer Door Security on Encore 700



Figure 35: Mounting Bracket for Encore 700 Units



The wiring of the switch will be changed. For more information, refer to “[Installing Cable for Main Upper Door/Printer Door \[Standard Dual-sided Units \(Kits M15611K001 or M15929K001\)\]](#)” on page 37.

Figure 36: Mounting Bracket for Encore 700 Units with 5.7-Inch Display Ordered After October 2022 (Used on M18986A001)



Figure 37: Mounting Bracket for Encore 700 Units with 10.4-Inch Display Ordered After October 2022 (Used on M18910A001)



Figure 38: Mounting Bracket for Encore 700 Units with 15.6-Inch Display (Used on M18688A001)

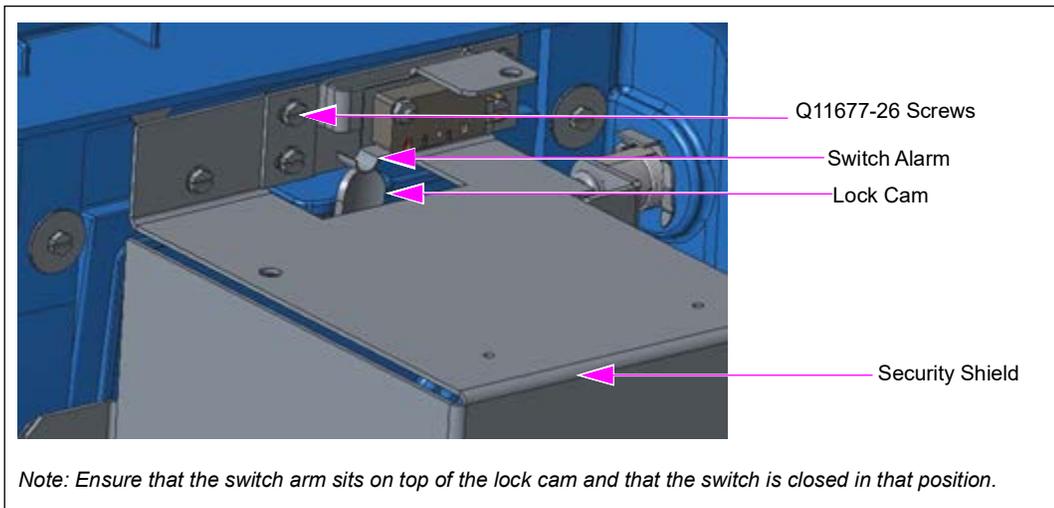


Installing Printer Door Bracket and Switch (Kits M15611K001 and M15929K001) on Dispensers with Alphanumeric UPM

Mount the Printer door Alarm Bracket and Switch Assembly (M16054A001) using Q11677-26 Screws supplied with the kit (see [Figure 39](#)).

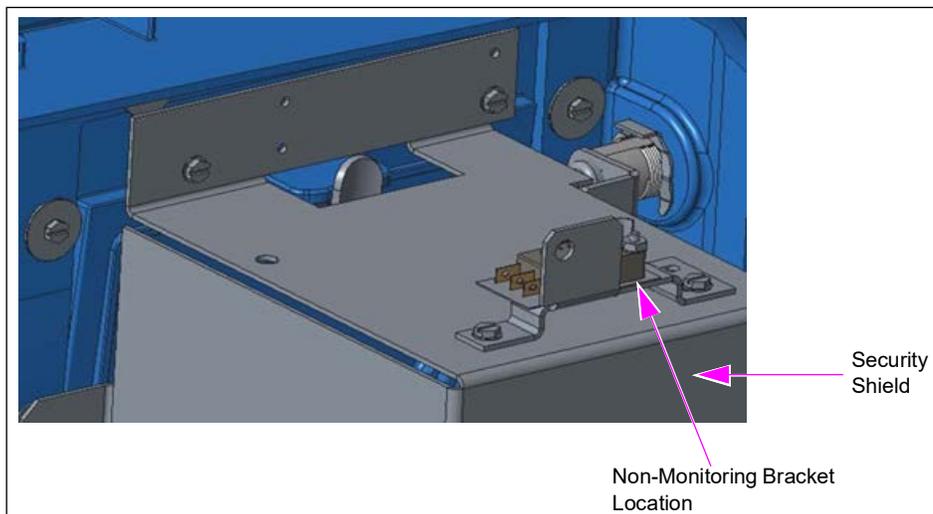
Note: If applicable, repeat the above step on the other side (dual-sided units).

Figure 39: Mounting the Printer Door Alarm Bracket



Note: For units where monitoring of the printer door is not required or not possible (i.e. printer is not being used etc.), the M16054A001 Bracket is to be mounted to the top of the printer shield (see [Figure 40](#)).

Figure 40: Mounting the Bracket on Printer Shield



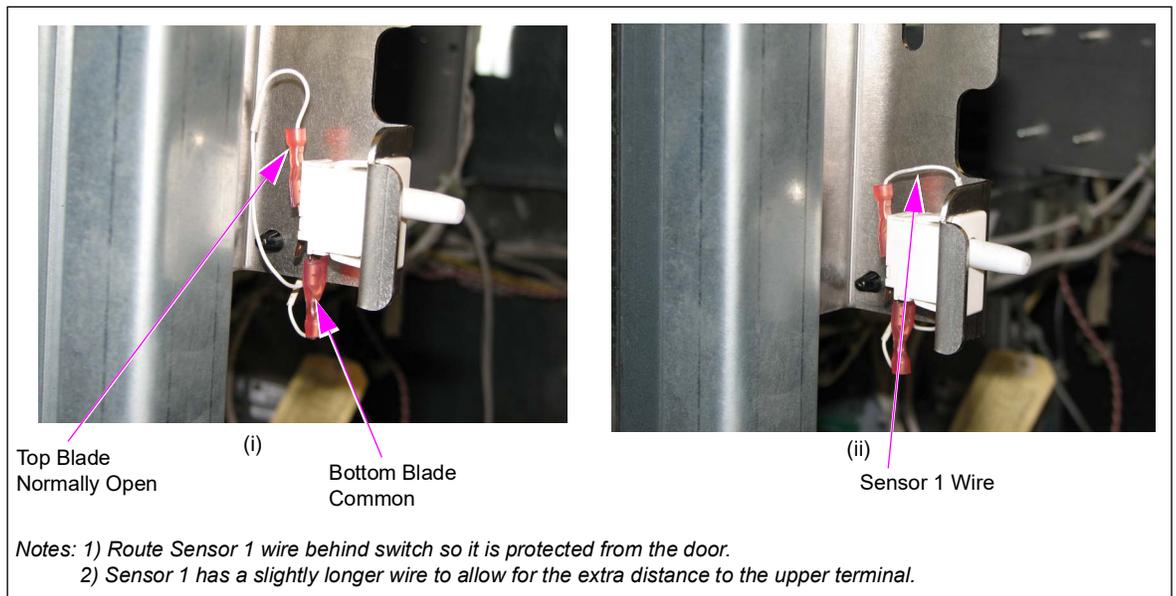
Installing Cable for Main Upper Door/Printer Door [Standard Dual-sided Units (Kits M15611K001 or M15929K001)]

Note: For single-sided units, proceed to “Installing Cable for Main Upper Door/Printer Door [Single-sided Units (Kits M15611K001 or M15929K001)]” on page 41.

To install the cable for main upper door/printer door (standard dual-sided units), proceed as follows:

- 1 Using the M07006A008 Door Open Sensor Print Support Cable, plug the connector marked “Sensor 1” into the top blade (normally open) and “Sensor 2” into the bottom blade (common) at the back of the plunger switch.

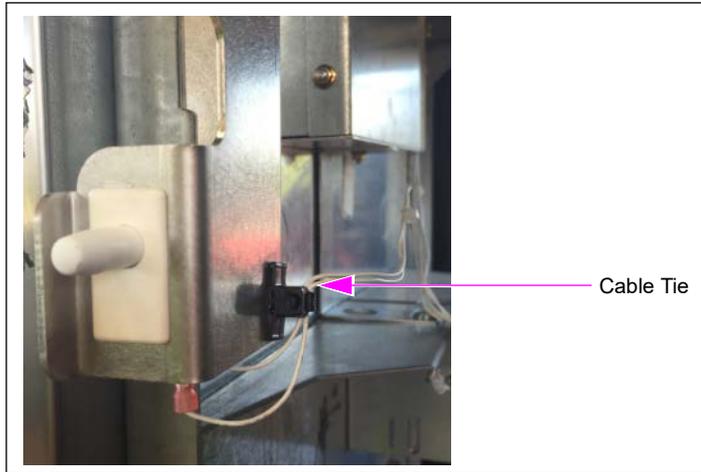
Figure 41: Connecting Cables to Blades



- Anchor the cable with the supplied cable tie to the main upper door bracket to secure and keep the wires away from the door.

Note: Cable tie is a part of the M07006A008 Cable.

Figure 42: Anchoring Cable



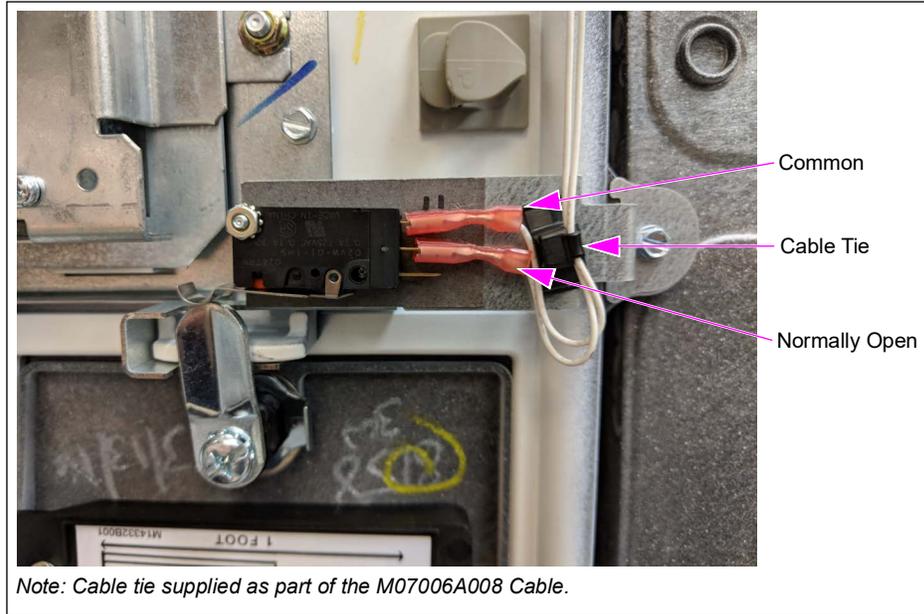
- Route the wires along the T-rail on the inside of the dispenser from the plunger switch to the door node on the bezel using existing cable clamps, and then plug the J2114 connector into the P2114 door sensor input on the door node.

Figure 43: Plugging J2114 into P2114



- 4 Route the cable down to the printer door switch and connect PRT1 and PRT2 to the printer door switch using the top (common) and middle (normally open) terminals.
Note: Figure 44 shows the printer door cable routing for dispensers with CRIND membrane keypads.

Figure 44: Connecting Cable to Printer Door Switch



Note: If the printer door is not being monitored, the M07006A008 Cable should be connected to the common (bottom) and normally closed (top) connections on the switch (see Figure 45).

Figure 45: Connecting Cable (Non-Monitoring)



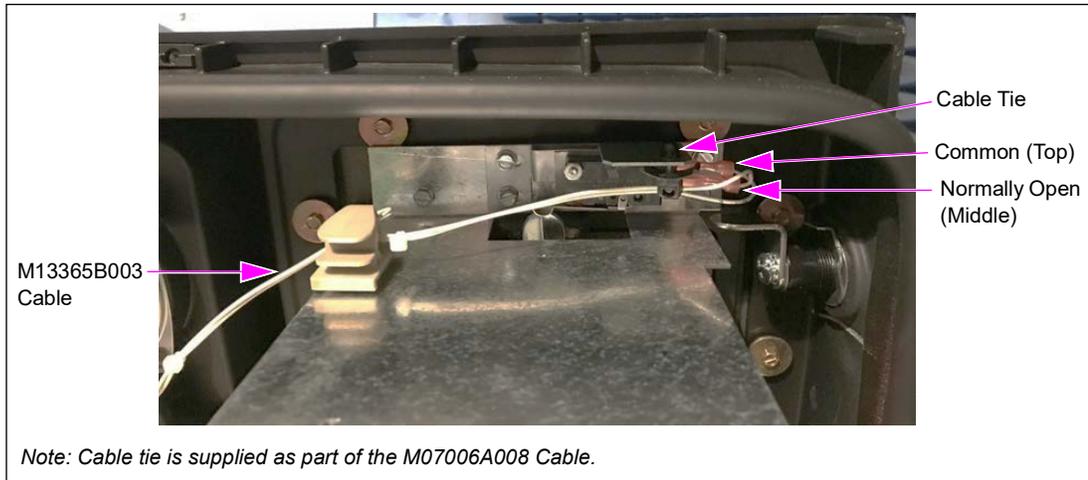
- 5 Anchor the cable with the supplied cable tie (part of the cable) to the printer door bracket (see Figure 44 on page 39) to secure the wires.
- 6 Using the second M07006A008 Cable, repeat steps 1 on page 37 through 5 on the other side of the dispenser.

Routing Printer Door Cables on Dispensers with Alphanumeric UPM for Encore 700 Units

To route Printer Door Cables for Encore 700 units, proceed as follows:

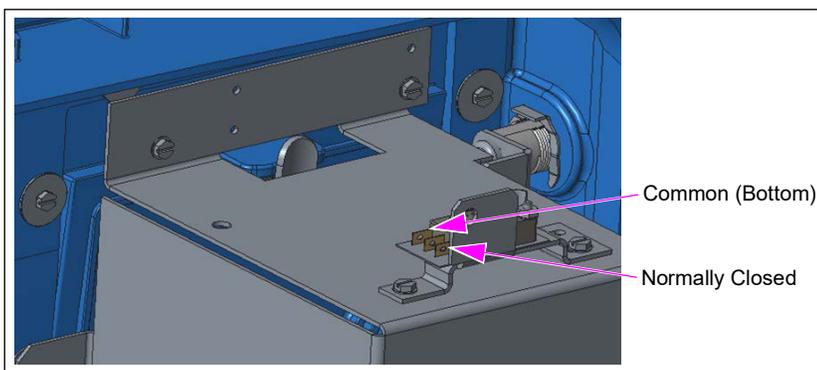
- 1 Route the cable to the printer door switch and connect PRT1 and PRT2 to the printer door switch using the top (common) and middle (normally open) terminals.

Figure 46: Connecting Cables to the Printer Door Switch



Note: If the printer door is not being monitored, the M07006A008 Cable should be connected to the common (bottom) and the normally closed (top) connections to the switch (see [Figure 47](#)).

Figure 47: Connecting Cables (Non-Monitoring)



- 2 Anchor the cable with the supplied cable tie (part of the cable) to the printer door bracket to (see [Figure 46](#)) secure the wires.
- 3 Snap the M13365B003 Cable Clamp into the top of the security shield. Route the M07006A008 Cable through the clamp (see [Figure 46](#)).
- 4 Using the second M07006A008 Cable, repeat steps 1 through 3 on the other side of the dispenser.

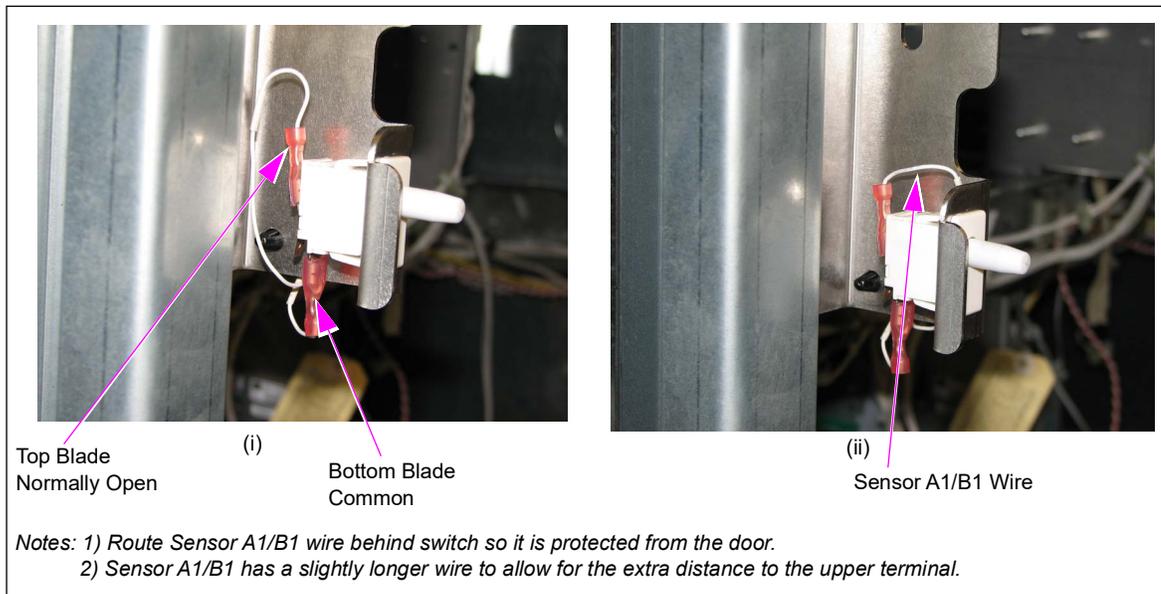
Installing Cable for Main Upper Door/Printer Door [Single-sided Units (Kits M15611K001 or M15929K001)]

To install the cable for main upper door/printer door (single-sided units), proceed as follows:

Note: Determine side A and side B. When you open the door on side A, the power supply will be on the left side of the cabinet.

- 1 Using the M07006A007 Door Open Sensor Print Support Mini Door Node Cable, plug connector marked with “Sensor A1” into the top blade and the connector marked with “Sensor A2” into the bottom blade at the back of the plunger switch.

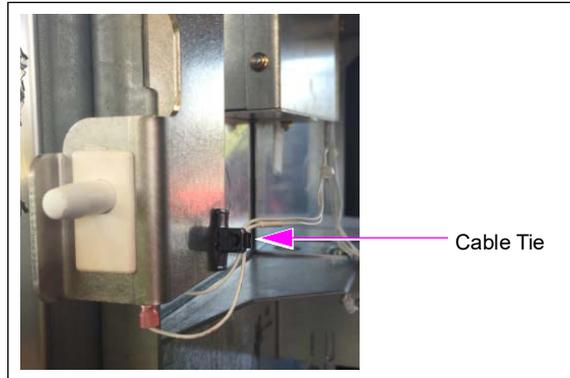
Figure 48: Connecting Cable to Blades



- Anchor the cable with the supplied cable tie to the main upper door bracket to secure and keep wires away from the door.

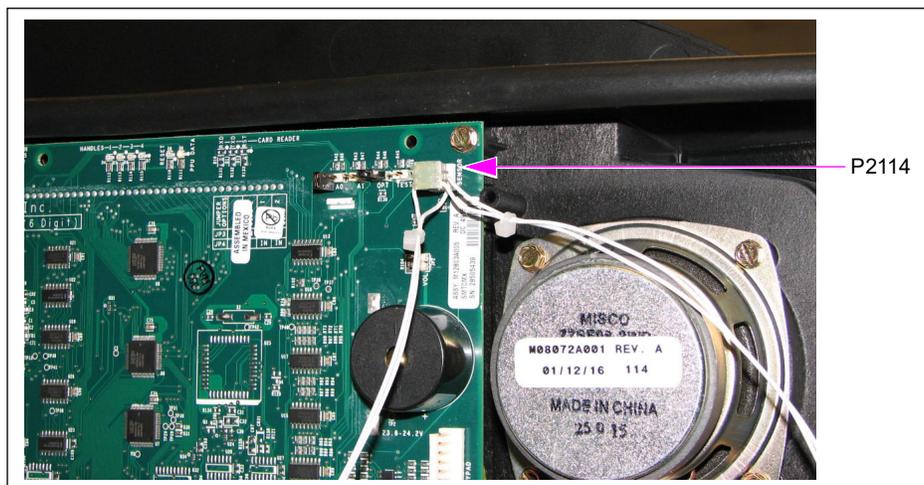
Note: Cable tie is a part of the M07006A007 Cable.

Figure 49: Securing Cables with Cable Tie



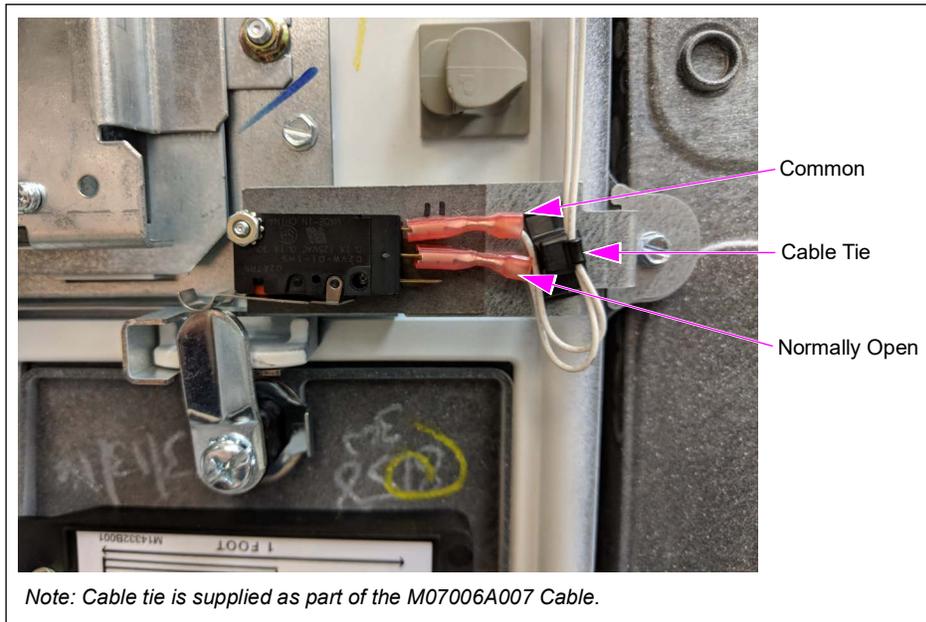
- Route the wires along the T-rail on the inside of the dispenser from the plunger switch on side A to the main upper door bracket on side B using the existing cable clamps.
 - Plug the connector marked “sensor B1” into the top blade and “sensor B2” into the bottom blade at the back of the plunger switch (see [Figure 48](#) on [page 41](#)).
- Note: The sensor B1 has a slightly longer wire to allow for the extra distance to the upper terminal.*
- Anchor the cable with the supplied cable tie (part of the M07006A007 cable) to the main upper door bracket to secure and keep wires away from the door.
 - Route the wires to the side A door node using the existing cable clamps and then plug the J2114 connector into the P2114 door sensor input on the side A door node.

Figure 50: Plugging J2114 into P2114



- 7 Route the cable down to the printer door switch and connect PRT1 and PRT2 to the printer door switch using the top (common) and middle (normally open) terminals.
Note: Figure 51 shows the printer door cable routing for dispensers with CRIND membrane keypads.

Figure 51: Routing Cables to Printer Door Switch



Note: If the printer door is not being monitored, the M07006A007 cable should be connected to the common (bottom) and normally closed (top) connections on the switch.

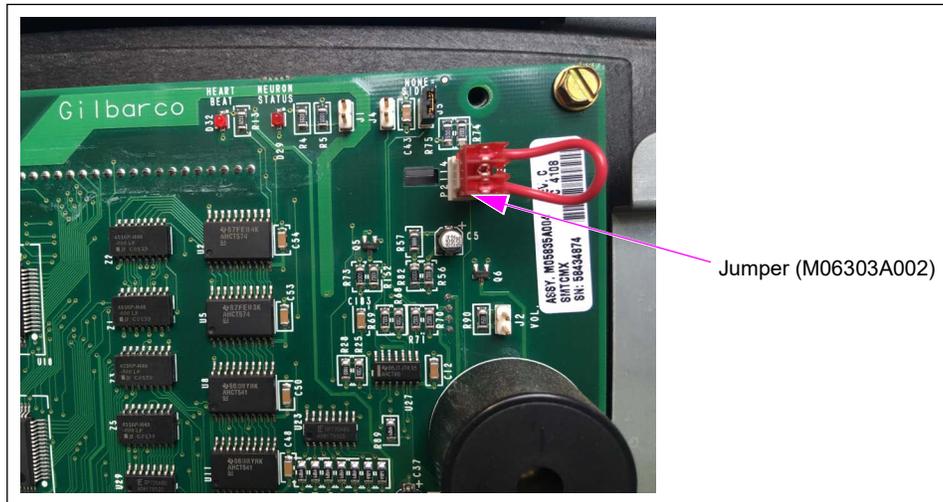
Figure 52: Connecting Cable (Non-Monitoring)



- 8 Anchor the cable with the supplied cable tie (part of the M07006A007 cable) to the printer door bracket to secure wires (see [Figure 51](#)).

- 9 If the unit does not have a Mini Door Node Printed Circuit Assembly [(PCA) M12319A001], connect the M06303A002 Jumper to the side B door node (P2114).

Figure 53: Connecting Jumper to Side B Door Node



- 10 The hardware installation is now complete. Verify connections and installations steps. Remove lock-out/tag-out device and turn the dispenser AC power back ON.

Updating Software (All Kits)

Note: To proceed, power must be restored to the unit. Ensure that all safety precautions are observed before restoring unit power. If the unit is communicating via two-wire communication, set it for standalone until the testing is completed.

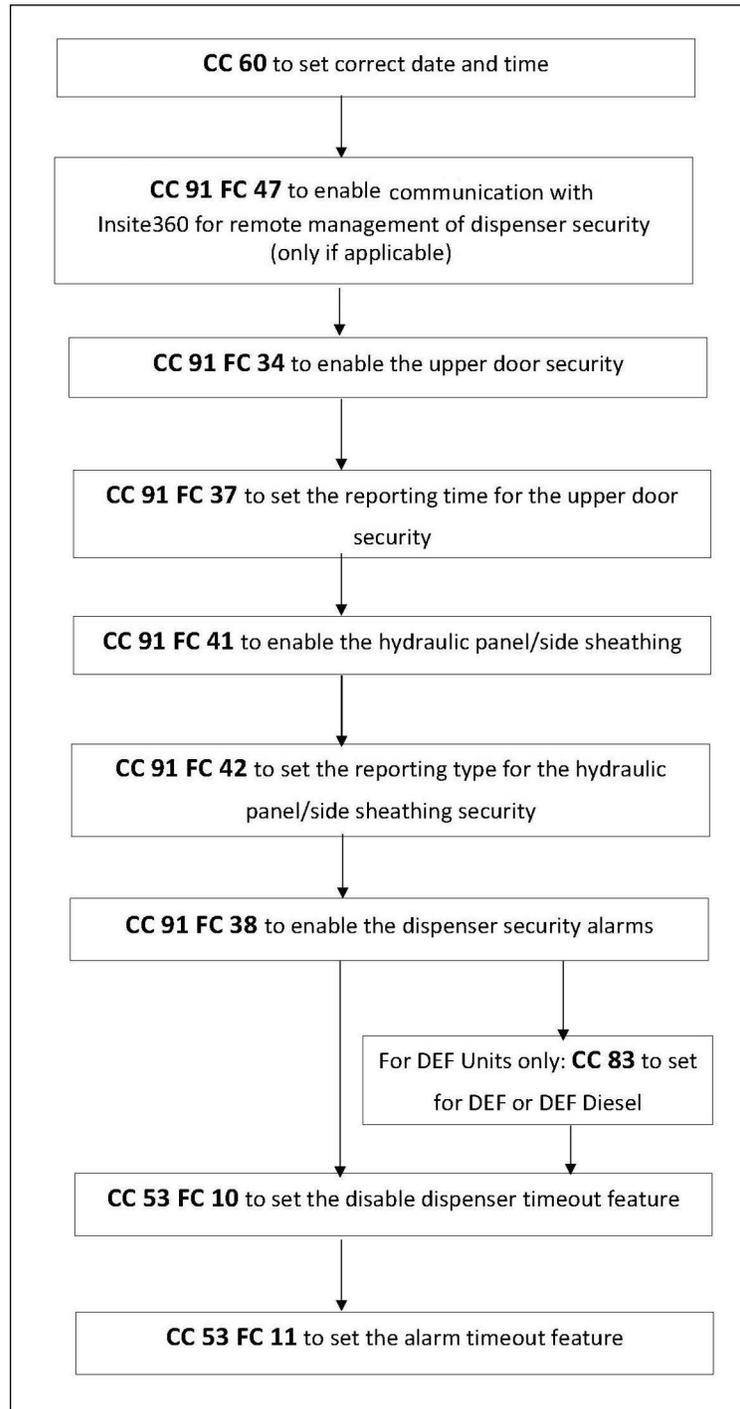
To update the software, proceed as follows:

- 1 Refer to the Service Bulletins related to Omnia software, if applicable.
- 2 Update the pump control software (minimum PCN 4.1.21).
- 3 Determine the door nodes on each fueling point (marked on the board) and update the door node software. For door nodes 1-4 and mini door nodes, use a minimum software version of V01.0.82 (or V01.0.52, as determined by the laptop tool). For door node 5, use a minimum software version of V02.0.57.
- 4 For door sensors managed remotely, verify the Omnia configuration in the Insite360 Configuration page of the Omnia Configurator:
 - a Set the Pump Connection Type to **RTP - Serial**.
 - b Test the ZModem cable connection. The ZModem cable **MUST BE CONNECTED** in order for the Remote Management of door sensors to work.

Configuring Security Door Detection Options (All Kits)

Note: Refer to MDE-3860 Encore Quick Reference Programming Guide to configure the dispenser security via manager keypad.

Figure 54: Flowchart for Configuring the Command Codes



To utilize the security door detection options, configure the following Command Codes (CC):

- 1 Always verify the time and date on the dispenser; if not set correctly, then adjust to the correct date and time CC 60.
- 2 CC 91 Function Code (FC) 47 is used to set the PC serial communication protocol. Real-Time Protocol is required for remote management of door sensors using Insite360. The following is a list of available values:
 - 1: This value indicates serial communication using ZMODEM Protocol. This is the default value.
 - 2: This value indicates serial communication using ZMODEM Protocol and enables the alarm.
 - 3: This value indicates serial communication using Real Time Protocol and is required to communicate with Insite360 for remote management of door sensors.
- 3 CC 91 FC 34 is used to enable the upper door security. The following is a list of available values:
 - 1: This value will disable upper door switch monitoring. It is the default setting.
 - 2: This value will enable upper door switch monitoring.
- 4 CC 91 FC 37 is used to set the reporting type for the upper door security. The following values can only be changed when CC 91 FC 34 is set to enabled. The following is a list of available values:
 - 1: This value causes the unit to create a pump event log entry when an “upper door open” event is detected. It is the default setting.
 - 2: This value causes the unit to display an Error Code (EC) 5721 on the side where an “upper door open” event is detected. It also creates a pump event log entry. Any ongoing transaction on that side of the unit is halted. The EC will be displayed until the door is closed. If a transaction was halted, the EC is displayed until the door is closed and the hose is placed on the hook. If the alarm option is enabled (see step 7 on [page 48](#)), the alarm will sound until the door is closed or until a timeout is reached (see step 10 on [page 48](#)).
 - 3: This value causes the unit to disable the side where an “upper door open” event is detected. It also creates a pump event log entry. An EC 5721 is displayed and any ongoing transaction on that side of the unit is halted. The side remains disabled until the door is closed and the unit is reset; or until the door is closed and a timeout as been reached (see step 9 on [page 48](#)). If a transaction was halted, the hose must be placed on the hook before starting a new transaction. If the alarm option is enabled (see step 7 on [page 48](#)), the alarm will sound as long as the side remains disabled or the timeout is reached (see step 10 on [page 48](#)).
 - 4: This value causes the unit to disable the side where an “upper door open” event is detected. It also creates a pump event log entry. An EC 5721 is displayed and any ongoing transaction on that side of the unit is halted. The side remains disabled until the door is closed and a level 4 PIN code is entered on the manager’s keypad. If a transaction was halted, the hose must be placed on the hook before the level 4 PIN code is entered. If the alarm option is enabled (see step 7 on [page 48](#)), the alarm will sound as long as the side remains disabled or until a timeout is reached (see step 10 on [page 48](#)).
 - 5: This value causes the unit to disable both sides when an “upper door open” event is detected. It also creates a pump event log entry. An EC 5721 is displayed and any ongoing transaction on either side of the unit is halted. The unit remains disabled until the door is closed and the unit is reset, or until the door is closed and a timeout has been reached (see step 9 on [page 48](#)). If a transaction was halted, the hose must be placed on the hook before starting a new transaction. If the alarm option is enabled (see step 7 on [page 48](#)), the alarm will sound as long as the unit remains disabled or until a timeout is reached (see step 10 on [page 48](#)). This option should not be used on a Single-sided dispenser.

- 6: This value causes the unit to disable both sides when an “upper door open” event is detected. It also creates a pump event log entry. An EC 5721 is displayed and any ongoing transaction on either side of the unit is halted. The unit remains disabled until the door is closed and a level 4 PIN code is entered on the manager’s keypad. If a transaction was halted, the hose must be placed on the hook before the level 4 PIN code can be entered. If the alarm option is enabled (see step 7 on page 48), the alarm will sound as long as the unit remains disabled or until a timeout is reached (see step 10 on page 48). This option should not be used on a Single-Sided dispenser.
- 5 CC 91 FC 41 is used to enable the hydraulic panel/side sheathing security. The following is a list of available values:
 - 1: This value disables hydraulics panel/side sheathing switch monitoring. It is the default setting.
 - 2: This value enables hydraulics panel/side sheathing switch monitoring.
- 6 CC 91 FC 42 is used to set the reporting type for the hydraulic panel/side sheathing security. The following values can only be changed when CC 91 FC 42 is set to enabled. The following is a list of available values:
 - 1: This value causes the unit to create a pump event log entry when a “hydraulics panel open” event is detected. It is the default setting.
 - 2: This value causes the unit to display an EC 5723 on the side where a “hydraulics panel open” event is detected. It also creates a pump event log entry. Any ongoing transaction on that side of the unit is halted. The EC is displayed until the lower panel/side sheathing is closed. If a transaction was halted, the EC is displayed until the lower panel/side sheathing is closed and the hose is placed on the hook. If the alarm option is enabled (see step 7 on page 48), the alarm will sound until the lower panel/side sheathing is closed or until a timeout is reached (see step 10 on page 48).
 - 3: This value causes the unit to disable the side where a “hydraulics panel open” event is detected. It also creates a pump event log entry. An EC 5723 is displayed and any ongoing transaction on that side of the unit is halted. The side remains disabled until the lower panel/side sheathing is closed and the unit is reset; or until the lower panel/side sheathing is closed and a timeout has been reached (see step 9 on page 48). If a transaction was halted, the hose must be placed on the hook before starting a new transaction. If the alarm option is enabled (see step 7 on page 48), the alarm will sound as long as the side remains disabled or the timeout is reached (see step 10 on page 48).
 - 4: This value causes the unit to disable the side where a “hydraulics panel open” event is detected. It also creates a pump event log entry. An EC 5723 is displayed and ongoing transaction on that side of the unit is halted. The side remains disabled until the lower panel/side sheathing is closed and a level 4 PIN code is entered on the manager’s keypad. If a transaction was halted, the hose must be placed on the hook before the level 4 PIN code is entered. If the alarm option is enabled (see step 7), the alarm will sound as long as the side remains disabled or until a timeout is reached (see step 10).
 - 5: This value causes the unit to disable both sides when a “hydraulics panel open” event is detected. It also creates a pump event log entry. An EC 5723 is displayed and any ongoing transaction on either side of the unit is halted. The unit remains disabled until the lower panel/side sheathing is closed and the unit is reset, or until the lower panel/side sheathing is closed and a timeout has been reached (see step 9). If a transaction was halted, the hose must be placed on the hook before starting a new transaction. If the alarm option is enabled (see step 7), the alarm will sound as long as the unit remains disabled or until a timeout is reached (see step 10). This option should not be used on a Single-sided dispenser.

- 6: This value causes the unit to disable both sides when a “hydraulics panel open” event is detected. It also creates a pump event log entry. An EC 5723 is displayed and any ongoing transaction on either side of the unit is halted. The unit remains disabled until the lower panel/side sheathing is closed and a level 4 PIN code has been entered on the manager’s keypad. If a transaction was halted, the hose must be placed on the hook before the level 4 PIN code is entered. If the alarm option is enabled (see step 7), the alarm will sound as long as the unit remains disabled or until a timeout is reached (see step 10). This option should not be used on a Single-sided dispenser.
- 7 CC 91 FC 38 is used to enable dispenser security alarms. The value for this FC can only be changed when CC 91 FC 34 or 41 is set to enable (2) and CC 91 FC 37 or 42 is set to a value higher than 1. The following is a list of available values:
- 1: This valve will disable door and hydraulics panel alarms. It is the default setting.
 - 2: This valve will enable door and hydraulics panel alarms. Once enabled, the alarm will sound whenever an “upper door” or “hydraulics panel open” event is detected. The alarm will continue to sound until the EC being displayed (refer to step 4 on page 46 or step 6 on page 47) is cleared or until a timeout has been reached (see step 10).

The following are the additional options that are based on the site needs/preferences:

- 8 On DEF units, CC 83 FC 1 must be set to 3 (only for DEF) or 4 (DEF and diesel).
- 9 CC 53 FC 10 is used to set the disable dispenser timeout feature. If CC 91 FC 37 or 42 is set to 3 or 5 (refer to step 4 on page 46 or 6 on page 47), this value sets the duration (in minutes) for which the side or unit will be disabled after the upper door or hydraulics panel is closed. For example, if this value is set for 10 minutes and the door or the panel is closed, the disabled dispenser is automatically enabled after 10 minutes. If the alarm option is enabled [CC 91 FC 38 (see step 7)], the alarm will also shut off when the unit has been enabled.
- 10 CC 53 FC 11 is used to set the alarm timeout feature. If CC 91 FC 38 is set to 2 (see step 7), this value sets the duration (in seconds) for which the alarm will sound, provided it is not silenced by clearing the condition that initiated it (refer to step 2 on page 46 through 6 on page 47). For example, if it is set for 10 minutes (600 seconds) and the upper door or the hydraulics panel is left open, the alarm turns off after 10 minutes even though the door or panel remains open. If the condition that started the alarm is cleared (door or panel is closed and the unit is enabled, if needed) before the timeout is reached, alarm will also turn off.

For testing security door detection system, set the CC and the FCs as follows:

- CC 91 FC 47 set to a value of 3 (For remote management of door sensors only)
- CC 91 FC 34 set to a value of 2
- CC 91 FC 37 set to a value of 2
- CC 91 FC 41 set to a value of 2
- CC 91 FC 42 set to a value of 2
- CC 91 FC 38 set to a value of 2
- CC 53 FC 11 set to a value of 0

Once the testing is complete and the system is operational, set these options to the customer-requested values.

Testing Security Door Detection System

To test the security door detection system, proceed as follows:

- 1 Ensure that the configuration is set for testing (refer to [“Configuring Security Door Detection Options \(All Kits\)”](#) on page 45). Reinstall side sheathings and screws that secure them on the unit. Close and lock all doors. Ensure that the door node beepers are not beeping and no ECs are displayed on the PPU displays. For kits M15930K001 and M15931K001, proceed to step 7.
- 2 On dual-sided units, the upper door and printer door switches are wired in series. To test the upper door switch, proceed as follows:
 - a Starting with one side of the unit, open and close the upper door while the printer door remains closed. The event will be entered in the pump event logs. The respective door node will beep and EC 5721 is displayed on the PPU display each time the door is opened. Close and lock the upper door.
Note: If no sound (possible beeper failure) is generated, the door/panel being opened can be verified by viewing the EC 5721 or EC 5723 on the PPU display.
- 3 If the printer door is not being monitored (refer to [Installing Printer Door Bracket and Switch \(Kits M15611K001, M15929K001, M15956K001, or M15956K002\) on Dispensers with Membrane Keypad and Numeric Universal Payment Module \(UPM\)](#) on page 32), skip this step. Otherwise, open the printer door. Verify events by listening for the beeper and viewing the EC on the PPU display.
- 4 Repeat steps 2 and 3 on the other side of the unit.
- 5 On single-sided units, the two upper door (sides A and B) and side A printer door switches are wired in series. To test the upper door switches, proceed as follows:
 - a Starting with one side of the unit, open and close the upper door while the printer door and other upper door remain closed. Verify events by listening for the beeper or viewing the EC on the PPU display. Close and lock the upper door.
 - b Open and close the upper door on the other side of the unit while the printer door and first upper door remain closed. Verify events by listening for the beeper or viewing the EC on the PPU display. Close and lock the upper door.
- 6 If the printer door is not being monitored (refer to [Installing Printer Door Bracket and Switch \(Kits M15611K001, M15929K001, M15956K001, or M15956K002\) on Dispensers with Membrane Keypad and Numeric Universal Payment Module \(UPM\)](#) on page 32), skip this step. Otherwise, open the side A printer door. Verify events by listening for the beeper or viewing the EC on the PPU display. Close and lock the printer door.
Note: For kit M15929K001, proceed to step 11 on page 54.
- 7 To test the lower panel switch, open and close the lower panel. Verify events by listening for the beeper or viewing the EC on the PPU display.

Note: For the lower panel and side sheathing switches, there will be a delay (1-3 seconds) between the opening of the panel/switch and the unit response.

- 8** Repeat step [7](#) on the other side of the unit. For kit M15931K001, proceed to step [11](#) on [page 54](#).
- 9** To test the side sheathing switches, proceed as follows:
Note: On standard units, each side of the unit will have one lower panel and two side sheathing switches wired in series. On DEF units, one side will have the three switch loop and the other side will only have the lower panel switch. While testing the lower panel and side sheathing switches, refer to [Figure 55](#) on [page 51](#), [Figure 56](#) on [page 52](#), and [Figure 57](#) on [page 53](#) that match the unit being upgraded.
 - a** Close and lock the lower panels.
 - b** Remove one of the lower side sheathing screws and listen for the beeper or view the EC on the PPU display. On units with a DEF dispenser, start with the side sheathing opposite the DEF cabinet (refer to [Figure 56](#) on [page 52](#) and [Figure 57](#) on [page 53](#)).
 - c** Re-tighten the screw securely.
 - d** Remove the other lower-side sheathing screw for the switch in the same loop (refer to [Figure 55](#) on [page 51](#) through [Figure 57](#) on [page 53](#)) and listen for the beeper or view the EC on the PPU display.
 - e** Re-tighten the screw securely.
- 10** On non-DEF units, repeat the step [9](#) on the other side of the unit.

Figure 55: Standard Unit

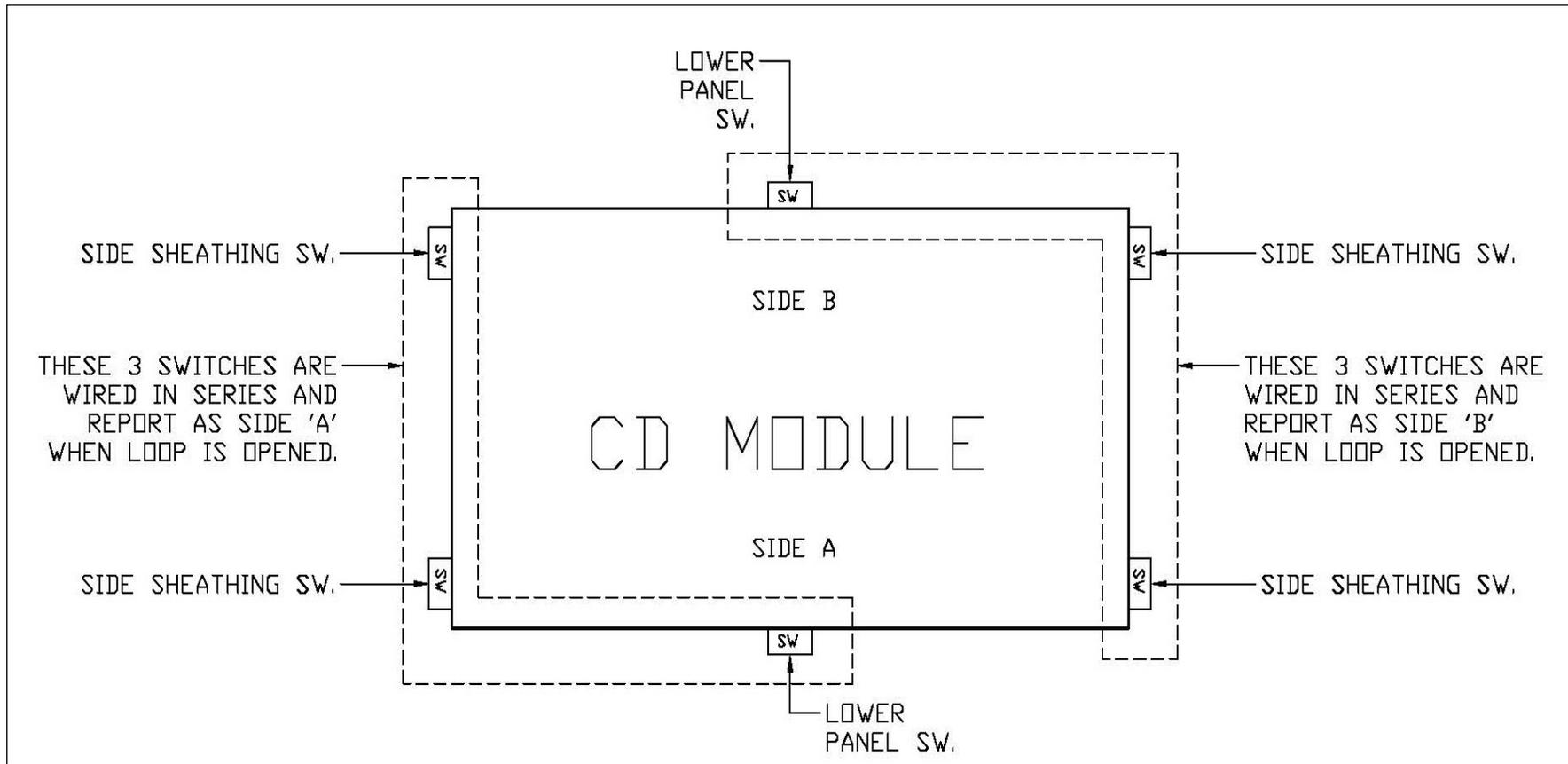


Figure 56: Unit with DEF Dispenser - Left Side

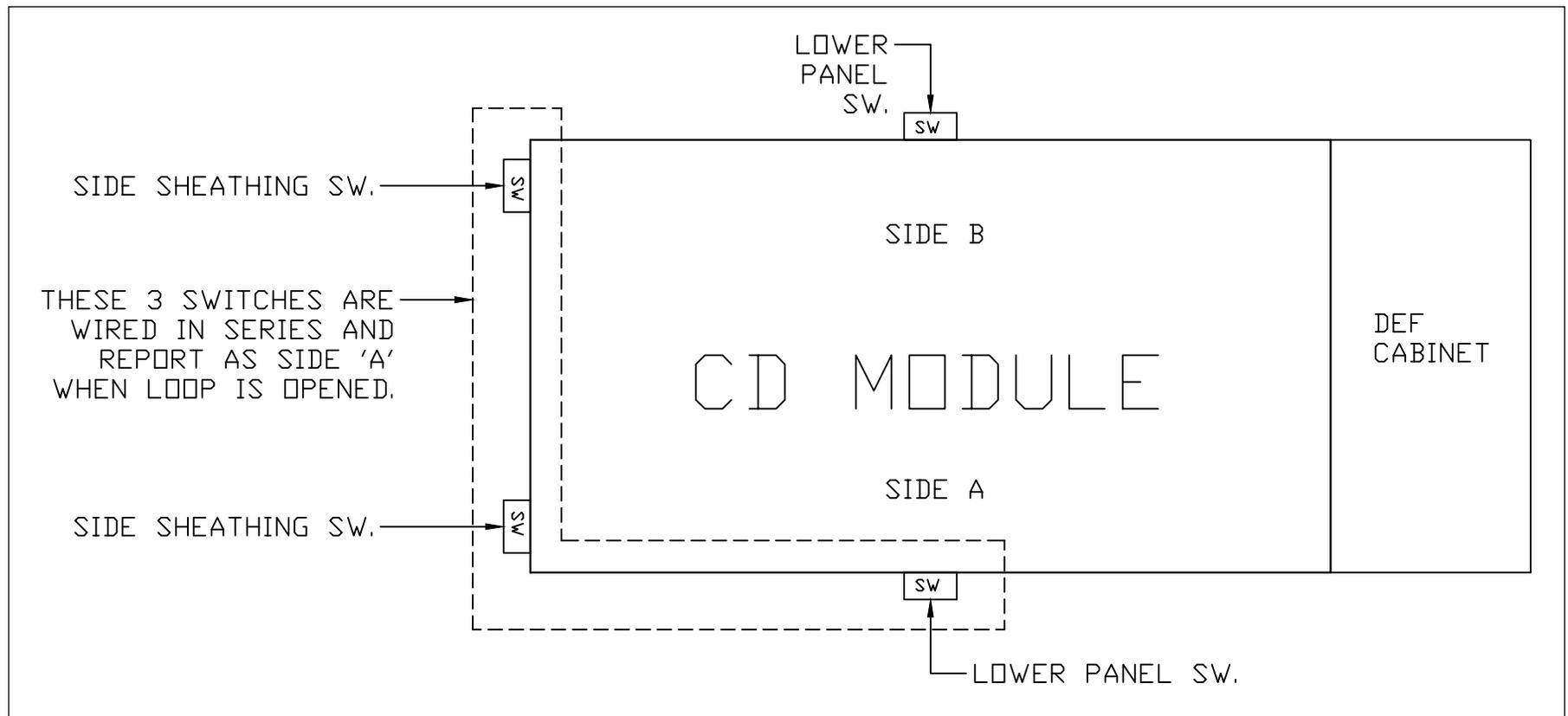
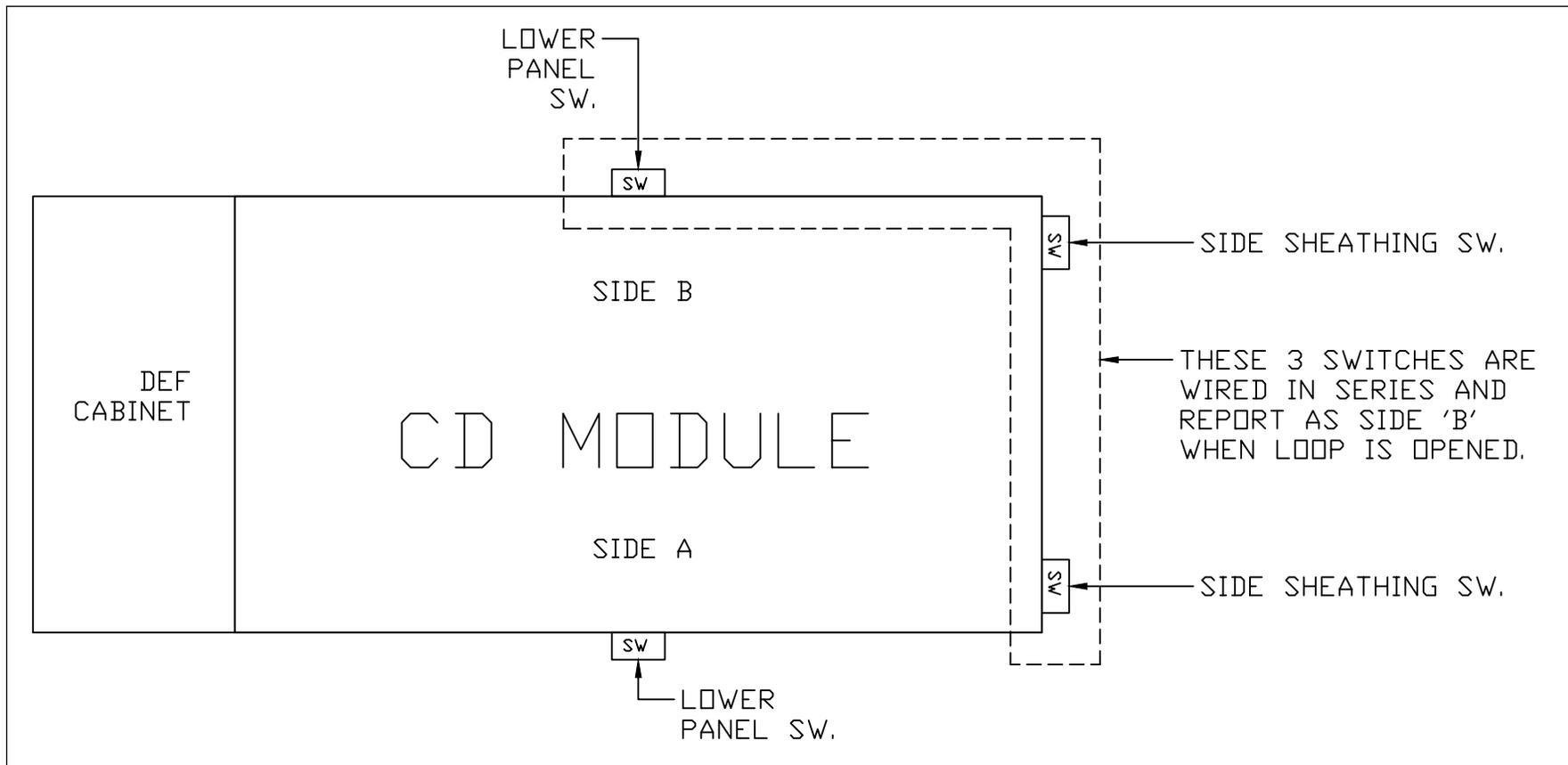


Figure 57: Unit with DEF Dispenser - Right Side



- 11 Pull the event logs from the PCN.
- 12 Verify the open/close events are displayed in the log. Verify the number of opens and closes and the side they were recorded on is correct.
- 13 If no issues are detected, return the unit to two-wire operation and confirm proper operation with the POS and the station manager.

Figure 58 is an example of the logs pulled from a dual-sided unit.

Figure 58: Event Logs from PCN

219	Side A	16:06:01	Tue Aug 16 2016	ePumpOperation	IN5721:INFO :Door Opened
220	Side B	16:06:01	Tue Aug 16 2016	ePumpOperation	IN5721:INFO :Door Opened
221	Side A	16:06:03	Tue Aug 16 2016	ePumpOperation	IN5723:INFO :Hydraulics Panel Opened
222	Side B	16:06:03	Tue Aug 16 2016	ePumpOperation	IN5723:INFO :Hydraulics Panel Opened
219	Side A	16:06:01	Tue Aug 16 2016	ePumpOperation	IN5722:INFO :Door Closed
220	Side B	16:06:01	Tue Aug 16 2016	ePumpOperation	IN5722:INFO :Door Closed
221	Side A	16:06:03	Tue Aug 16 2016	ePumpOperation	IN5724:INFO :Hydraulics Panel Closed
222	Side B	16:06:03	Tue Aug 16 2016	ePumpOperation	IN5724:INFO :Hydraulics Panel Closed

Note: Single-sided units will NOT have upper door events for side B door because the switch on side B is connected to side A door node (P2114).

Once the testing is complete and the system is operational, set configuration options to the customer-requested values (refer to “[Configuring Security Door Detection Options \(All Kits\)](#)” on [page 45](#)). In case of failure in any of the tests, proceed to “[Troubleshooting](#)”.

Troubleshooting

If the testing of any of the doors, panels, or switches fails, check the following:

- a Verify the configuration settings (pump type, security settings). Refer to “[Configuring Security Door Detection Options \(All Kits\)](#)” on [page 45](#).
Note: On units with a DEF dispenser, refer to MDE-3860 Encore Quick Reference Programming Guide to set the CC 83 FC 1 to 3 (only for DEF) or 4 (DEF and Diesel). Connect the I.S. barrier box to the PCN using M10059A004 Cable for units with DEF.
- b Ensure that the valve board has been replaced with the Ultra-Hi Interface Upgrade Kit [M09922K001 (contains M08223A001 Ultra-Hi Interface PCA and cable)] on Ultra-Hi units manufactured before 2008.
- c If the wrong side is faulting for lower doors, verify that the cables are not swapped. Refer to [Figure 20](#) on [page 23](#) through [Figure 24](#) on [page 27](#).
- d Verify that the cables are connected properly.
- e Verify that there are no loose connections.
- f Verify that there are no pinched wires.

- g** For single-sided units, verify that the jumper is connected on the side B door node (P2114).
- h** If there is an open log event but no close log event even though the bezel/panel is closed, check all the cable connections. The switch connections must be on the “Normally Open” and “Common” contacts except the printer door switch that is mounted to not monitor the printer door. It should be connected to the “Normally Closed” and “Common” contacts.
- i** Verify that the doors/panels are locked properly.
- j** Verify that the lower door detection assembly is oriented correctly (standard panel/reinforced panel). Refer to the “[Mounting the Lower Door and Side Sheathing Detection Assemblies \(Kits M15611K001, M15930K001, M15931K001, M15956K001, or M15956K002\)](#)” on [page 17](#).
- k** Side sheathing reporting is not side oriented. Side sheathing tampering can be reported on either side. For example, if the lower side sheathing screw on the right of side A is removed, it will report as an error on side B, as that switch is in the side B lower panel loop. Refer to [Figure 55 on page 51](#) and [Figure 57 on page 53](#).

Encore Door Entry Detection Troubleshooting

There are four kits (format) options available. Seven options are listed in *MDE-5320 Security Door Detection Kit (M15611K001, M15929K001, M15930K001, M15931K001, M15956K001, and M15956K002) Installation Instructions* that pertain to different unit types, but there are four format options.

- Security Bezel and Printer Door Detection Kit (Upper Door Kit) - M15929K001
- Security Lower Panel and Side Sheathing Detection Kit - M15930K001
- Security Lower Panel Detection Kit (No side sheathing switches) - M15931K001
- Security Door Detection Kit (upper door, printer, lower door and side sheathing) - M15611K001

Note: M15930K001 and M15931K001 are for all three Encore Platforms (E500, E700, and E900). To order the correct kit, refer to the “[Kit Descriptions](#)” on [page 3](#).

Questions to ask for a baseline:

- What version of PCN software is installed?
- What version of Door Node software is installed?
- What is the unit type (single-sided or dual-sided)?
- If single-sided, is it an Ultra-Hi?
- Did the dispenser come with factory installed DED system or was a kit installed?

Single-Sided and Dual-Sided Comparison

1 Single-sided

- a Use cable M07006A007 for the upper door system.
 - This cable includes upper door switches and the A-side printer switch in a series on the same wiring harness. Because it is single-sided, all upper door switches display the A-side door alarm EC 5721.
- b Use cable M10059A004 for the lower door system (Ultra-Hi with DEF)
 - This cable is used between the IS Barrier and PCN.
 - This cable puts all lower/hydraulic cabinet switches in series so that if any switch is opened, it displays A-side door alarm EC 5723.

2 Dual-sided

- a Use cable M07006A008 (one per side) for the upper door system
 - Side A cable harness connects to side A door node.
 - Side B cable harness connects to side B door node.
- b Use cable M10059A005 for the lower door system
 - This cable is used between the IS Barrier and PCN.

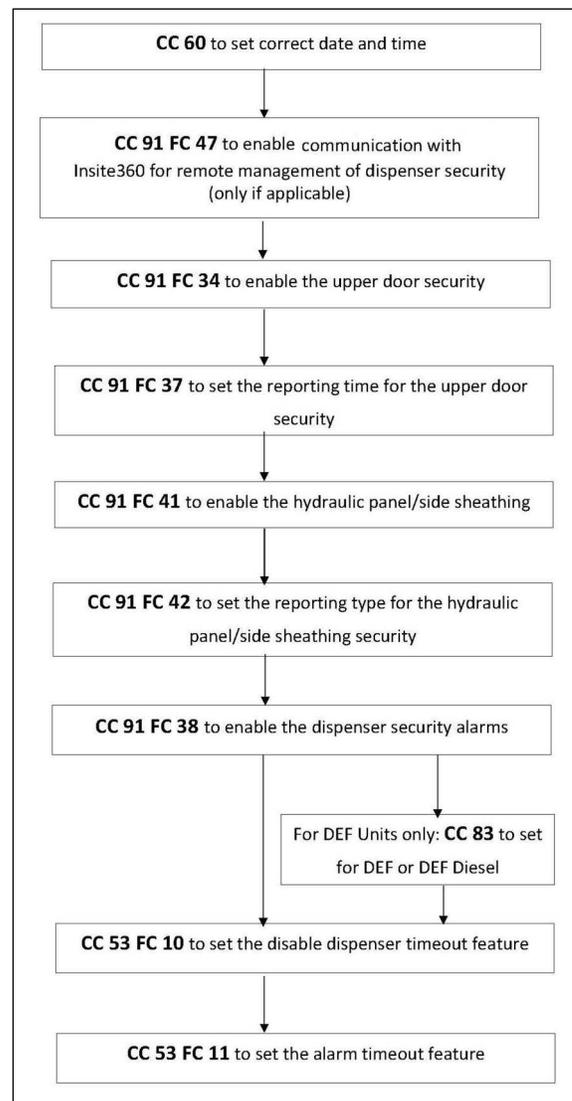
Software

- 1 Minimum version of PCN software is 4.1.30
 - a Door security existed prior to this version; however, there was an issue with single-sided unit's functions with door security that was not resolved until 4.1.30. This version is the minimum requirement for door security.
 - Because the latest production version of PCN software is being installed, you might need to upgrade/install the Omnia or DCM2.2 with SSoM and also upgrade the Door Node software to the latest production version 02.0.59.
 - For sites on Insite360
 - Omnia V05.01 or minimum
 - SSoM V3.5.0 or minimum
 - PCN and Omnia/SSoM **must** be set to RTP

Pull Event Logs, 'Who Are You Report', and Version Report (PCN)

- 1 Check what door security alarms are showing in event logs.
 - A side, B side, or both sides
- 2 Who Are You report allows the verification of required settings.
 - Unit type (CC 90)
 - Alternate and Third-part Fuel Modes (CC 83 FC 1)
 - Set Side Exists (CC 92)

Figure 59: Flowchart for Configuring the Command Codes



For more information on the testing procedures, follow step 1 on [page 46](#) through step 10 on [page 48](#).

Note: If testing of any of the doors, panels, or switches fails, verify all the above information and troubleshooting procedures.

Upper Door Alarms - EC 5721

- 1 Install M06303A002 jumper on door node at P2114.
 - a Does the alarm clear (after programmed clearing method is used)?
 - b If the alarm clears, then troubleshoot each switch and cable.
 - Check if the switches are connected properly (normally open/normally closed).
 - If the printer door switch is not being used, was it repositioned, and whether the wires are moved?
 - Use a continuity tester
 - Upper Door Security: At the plug (disconnected from the Door Node)
 - o If both switches are wired for normally open
 - o Hold both closed and you should get continuity
 - o Open one at a time and verify that you lose continuity
 - o If the unit is single-sided, include the “B” side upper door switch as it is part of the same wiring harness that plugs into the “A” side Door Node.

Lower Door (Hydraulic Panel/Side Sheathing) Alarms - EC 5723

Note: It is not mandatory to have side sheathing sensors/switches.

There are two different kits, with and without side sheathing detection.

- 1 The side sheathing switch has a cable with two connectors, one to plug into the lower door switch cable and the other to plug into the IS Barrier cable.
- 2 For the kit without side sheathing, the lower door switch cable plugs directly into the IS Barrier cable.
 - a Use a continuity tester
 - Units without side sheathing switches
 - Disconnect cable M15138A002 (one per side) where it connects to the IS Barrier cable (inside the side sheathing).
 - Using continuity tester at the connector pins, close and open the switch to verify whether it functions correctly.
 - b Ensure that the lower door switches are mounted correctly on the brackets at the door panel lock.
 - Standard doors must have the switches mounted in the “S” position.
 - Reinforced doors must have the switches mounted in the “R” position.
 - If a switch is mounted in the “R” position for a standard door, the door will not touch against the switch to hold it closed.

For both upper and lower cabinets, switches must be on the “Normally Open” and “Common” positions. The only exception to this is the printer door switch when it is bypassed and not being used.

If the printer door switch is NOT being used (bypassed – set to “Normally Closed” and “Common”) then the switch must also be repositioned, so the switch is NOT being pressed by the printer door lock or any other part of the door. Follow *MDE-5320 Security Door Detection Kit (M15611K001, M15929K001, M15930K001, M15931K001, M15956K001, and M15956K002)* for proper mounting instructions.

Door Sensor 2.0 Access Code Details

Door Sensor 2.0 functionality is available in the following PCN versions:

- (PCN3+) V04.1.39 and later
- (PCN4+) V05.0.19 and later
- (PCN5) V06.0.XX and later

As an added level of security, an 8-digit Access Code was introduced, as part of the Door Sensor 2.0 feature, to protect access to the Door Sensor switch and lower panel switch function code parameters. When making reference the Door Sensor 2.0 feature, these function code parameters are referred to as a “protected setting.” This Access Code is stored in the memory of the PCN but it can not be accessed through the Manager’s keypad. It can only be retrieved or changed remotely by authorized personnel.

The default Access Code is “00000000”.

The function codes for the protected setting are as follow:

- Upper Door
 - CC 91 FC 34
 - CC 91 FC 37
- Lower Panel
 - CC 91 FC 41
 - CC 91 FC 42

Requirements

The procedure for entering in to the programming mode, accessing, and changing command codes, or function codes has not changed. However, if the Access Code is not set to its default setting, a matching 8-digit code entry from the Manager’s keypad is required to change any of the protected setting parameters.

All 8-digits must be entered even if there is a leading zero(s) in the Access Code.

If the Access Code is set to its default setting, no 8-digit entry is required to access the protected setting parameters.

Procedure to Change the Parameter Value

When trying to change a protected setting parameter, if an 8-digit code is required, the user will be prompted to do so immediately after pressing **ENTER** for that parameter. At this point, the MV display will show eight flashing 8s.

To change the parameter values, proceed as follows:

- 1 Enter the 8-digit Access Code.
- 2 Press **Enter**. Command Code **CC 91** will be displayed.
- 3 Press **Enter** and enter the required FC.
- 4 Press **Enter** and enter the required Parameter Value.
- 5 Press **Enter**.

If the 8-digit entry matches the Access Code, the parameter for that function code will be changed after pressing **ENTER**. Once the 8-digit entry is entered correctly, parameters for any “protected setting” can be changed during that programming session. If the Access Code is not set to its default setting, a matching 8-digit entry is required each time a new programming session begins.

If the 8-digit entry does not match the 8-digit Access Code, the MV display will display eight flashing 8s. If this happens, try entering the Access Code again.

If a mistake is made while attempting the 8-digit entry, press **CLEAR** to start over.

To access other command codes, press **F1**.

To exit programming mode, press **F2**.

The following sequence shows an example of changing the parameter value:

- 1 Navigate to the function code that you want to change and press **ENTER**. The parameter value will flash; change the parameter value and press **ENTER**.

Figure 60: Function Code



- 2 The display will immediately begin to flash 8s.

Figure 61: 8s Flash on the Screen



- 3 Enter the 8-digit Access Code and press **ENTER**. The display will flash **CC 91**.

Figure 62: Command Code 91



- 4 Press **ENTER**, and then enter the function code.

Figure 63: Function Code To Be Changed



- 5 Press **ENTER**, and then enter the parameter value that you want.

Figure 64: Parameter Value



6 Press **ENTER**. The parameter value has been changed.

Figure 65: Changed Parameter Value



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