

Introduction

Purpose

This manual provides instructions to install the Security Upgrade Kits (M09169K0XX) in Encore® 300/500 units. These kits can be used in all units except for Encore Ultra-Hi™ units of any configuration.

A specific combination of the following kits needs to be installed for each unit depending on the number of grades (inlets) and the type of valve (digital or proportional) in the unit:

Kit Number	Description
M09169K001	Encore 300 Proportional Valve Security Kit, 1 per Grade
M09169K002	Encore 300 Digital Valve Security Kit, 1 per Grade
M09169K003	Encore 500 Proportional Valve Security Kit, 1 per Grade
M09169K004	Encore 500 Digital Valve Security Kit, 1 per Grade
M09169K011	Encore 300/500 Proportional Valve Security Door Kit, 1 per Unit
M09169K012	Encore 300/500 Digital Valve Security Door Kit, 1 per Unit

Following table provides information about the combination of Security Upgrade Kits to be installed for each type of unit:

Notes: 1) Units built before 04/24/2003 have digital valves.

2) Units built after 04/24/2003 have proportional valves.

Type of Unit	Number of Kits to Be Installed in Each Unit			
	M09169K001/K003	M09169K002/K004	M09169K011	M09169K012
1-grade Proportional Valve Unit	1	-	1	-
2-grade Proportional Valve Unit	2	-	1	-
3-grade Proportional Valve Unit	3	-	1	-
1-grade Digital Valve Unit	-	1	-	1
2-grade Digital Valve Unit	-	2	-	1
3-grade Digital Valve Unit	-	3	-	1

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Overview

The Security Upgrade Kits include the following six security upgrades:

- A meter collar to secure the meter
- A pulser guard to secure the pulser assemblies
- A pan in the air gap to protect the pulser shaft
- A base rail guard to secure the base rail
- A lower door guard to secure the lower door
- An upper door guard to secure the upper door

Note: For units with a cash acceptor, depending on the year of manufacture, it may be difficult or even impossible to install the pulser cover under the units.

Required Tools

Following tools are required for installing the kits:

- Metric Socket Wrench Set
- Nut Driver
- Rivet Gun

Related Documents

Document Number	Title	GOLD SM Library
MDE-3804	Encore and Eclipse® Start-up/Service Manual	• Encore and Eclipse • Service Manual
PT-1936	Encore Series Pumps and Dispensers Illustrated Parts Manual	• Encore and Eclipse • Parts Manual • Encore & Eclipse Installers

Abbreviations and Acronyms

Term	Description
CD	Computer Display
CIM™	Customer Interface Module
GOLD	Gilbarco® Online Documentation
OSHA	Occupational Safety and Health Administration
PCA	Printed Circuit Assembly
UL®	Underwriters Laboratories
W&M	Weights and Measures

Parts List

Encore 300

Following table lists the parts included in the Security Upgrade Kits for Encore 300:

Item	Description	Part Number	Quantity			
			M09169K001	M09169K002	M09169K011	M09169K012
1	Bushing, Snap 1/2 ID 5/8 MTG	K85071-07	1	1	-	-
2	Combined Pulser, Encore 300	M05839B002	1	1	-	-
3	Spacer, Security	M13805B001	2	-	-	-
4	Bracket Assembly, Security Base	M08855A001	2	2	-	-
5	Assembly, Security Kit	M09168A001	1	1	-	-
6	Washer, Flat	N16599-130	2	-	-	-
7	Pan Head Machine Screw Metric, Phillips® Recessed M4 X 20	Q11709-61	6	6	-	-
8	Cable Mount, Adhesive Releasable	Q13558-04	2	2	-	-
9	Assembly, Shunt Digital Valve	M01330A001	-	2	-	-
10	Collar, Pulser Security	M08989B001	-	2	-	-
11	Channel, Door Encore	M08478B001	-	-	2	2
12	Bracket, Security Lower Door, Encore	M08479B001	-	-	2	2
13	Bracket, Security Base Rail, Encore	M08548B001	-	-	2	2
14	Rivet Pop	Q10084-31	-	-	8	8
15	Assembly, Bezel Barrier	M02178A003	-	-	-	2
16	Cable, Security Kit Pulser Adapter, Encore 300	M13733A001	-	1	-	-

Encore 500

Following table lists the parts included in the Security Upgrade Kits for Encore 500:

Item	Description	Part Number	Quantity	
			M09169K003	M09169K004
1	Bushing, Snap 1/2 ID 5/8 MTG	K85071-07	1	1
2	Combined Pulser, Encore 500	M05840B002	1	1
3	Spacer, Security	M13805B001	2	-
4	Assembly, Bracket, Security	M08853A001	1	1
5	Assembly, Bracket Security, Pulser Top	M08854A001	1	1
6	Bracket Assembly, Security Base	M08855A001	2	2
7	Washer, Flat	N16599-130	2	-
8	Pan Head Machine Screw Metric, Phillips Recessed M4 X 20	Q11709-61	6	6
9	Cable Mount, Adhesive Releasable	Q13558-04	2	2
10	Assembly, Shunt Digital Valve	M01330A001	-	2
11	Collar, Pulser Security	M08989B001	-	2

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 a Gilbarco Authorized Service Contractor or call the Gilbarco Support Center at 1-800-800-7498. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

Follow the Regulations

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

Replacement Parts

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

Safety Symbols and Warning Words

This section provides important information about warning symbols and boxes.

Alert Symbol



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

Signal Words

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



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



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



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

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

Working With Fuels and Electrical Energy

Prevent Explosions and Fires

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

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

No Open Fire



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

No Sparks - No Smoking



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

Working Alone

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

Working With Electricity Safely

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

Hazardous Materials

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

WARNING

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

WARNING

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

In an Emergency

Inform Emergency Personnel

Compile the following information and inform emergency personnel:

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

WARNING



Gasoline/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

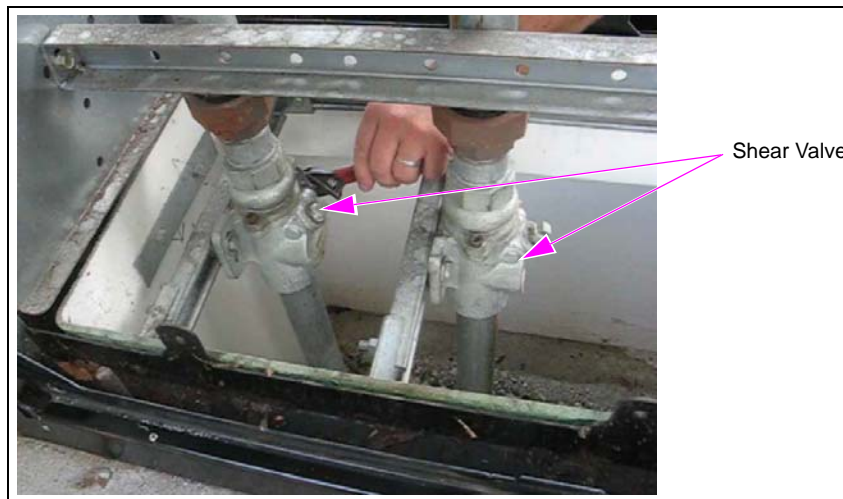
Lockout/Tagout covers servicing and maintenance of machines and equipment in which the unexpected energization or start-up of the machine(s) or equipment or release of stored energy could cause injury to employees or personnel. Lockout/Tagout applies to all mechanical, hydraulic, chemical, or other energy, 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

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

- 1 Before you begin, read and understand all the safety information provided in *MDE-3804 Encore and Eclipse Start-up/Service Manual*.
- 2 Inform the manager.
- 3 Barricade the unit to be worked on.
- 4 Remove power to the unit at the breaker panel. Follow the OSHA lockout/tagout procedures.
- 5 Isolate two-wire to the unit.
- 6 Close the shear valves and drain fuel from the hoses.

Figure 1: Closing Shear Valves and Draining Fuel



WARNING

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

Installing Security Upgrade Kits (M09169K0XX)

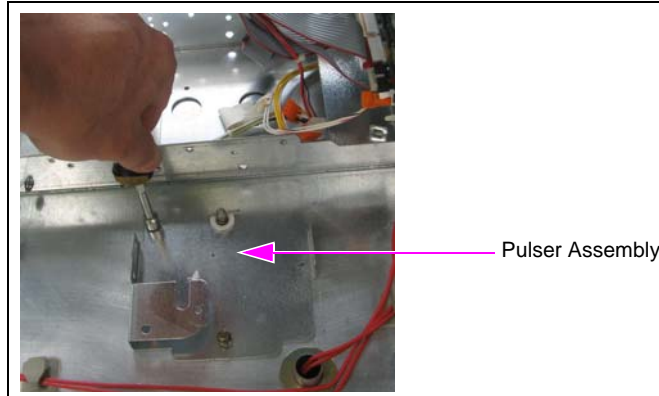
IMPORTANT INFORMATION

- It is recommended that two people install the Security Upgrade Kits in Encore 300/500 unit, as it is difficult for one person to install the meter collar on the meters in the side column.
- It is recommended that the CIM door key be changed so that it is not a standard key.

To install the Security Upgrade Kits in Encore 300/500 unit, proceed as follows:

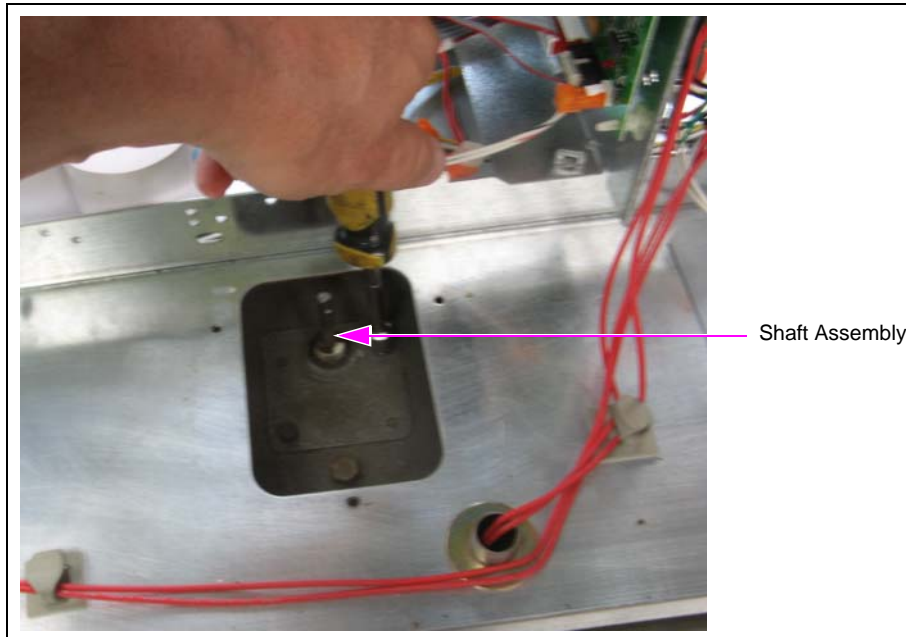
- 1 Remove the pulser assembly from the CD module.

Figure 2: Removing Pulser Assembly



- 2 If present, remove the shaft assembly that runs through the pulser in the air gap area.

Figure 3: Removing Shaft Assembly



- 3 Drop each meter and install the meter collar.
Note: Ensure that the O-ring stays in place when reinstalling the meter.

Figure 4: Installing Meter Collar in Units with Proportional Valve

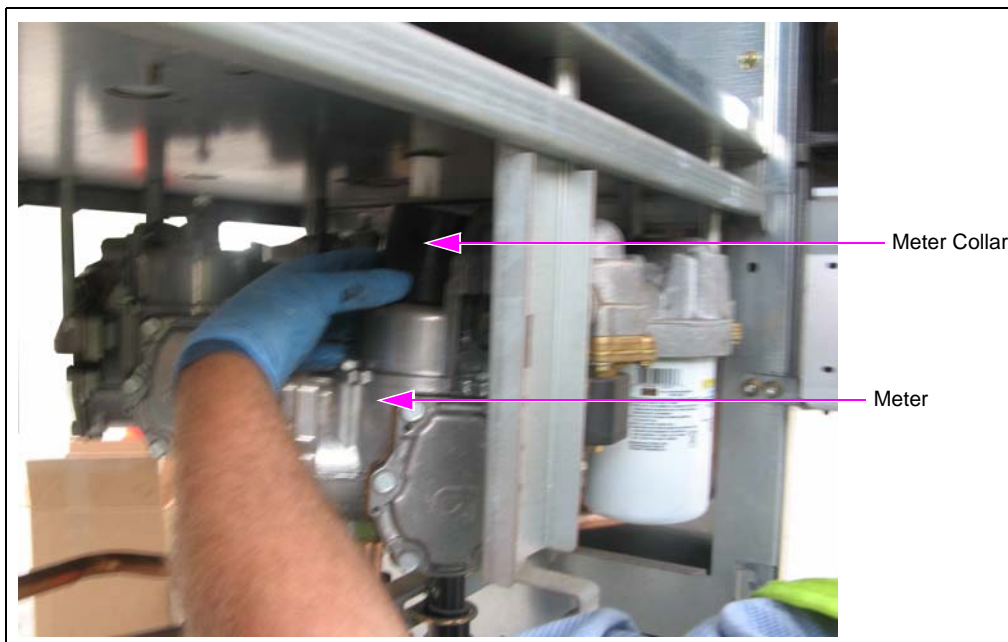
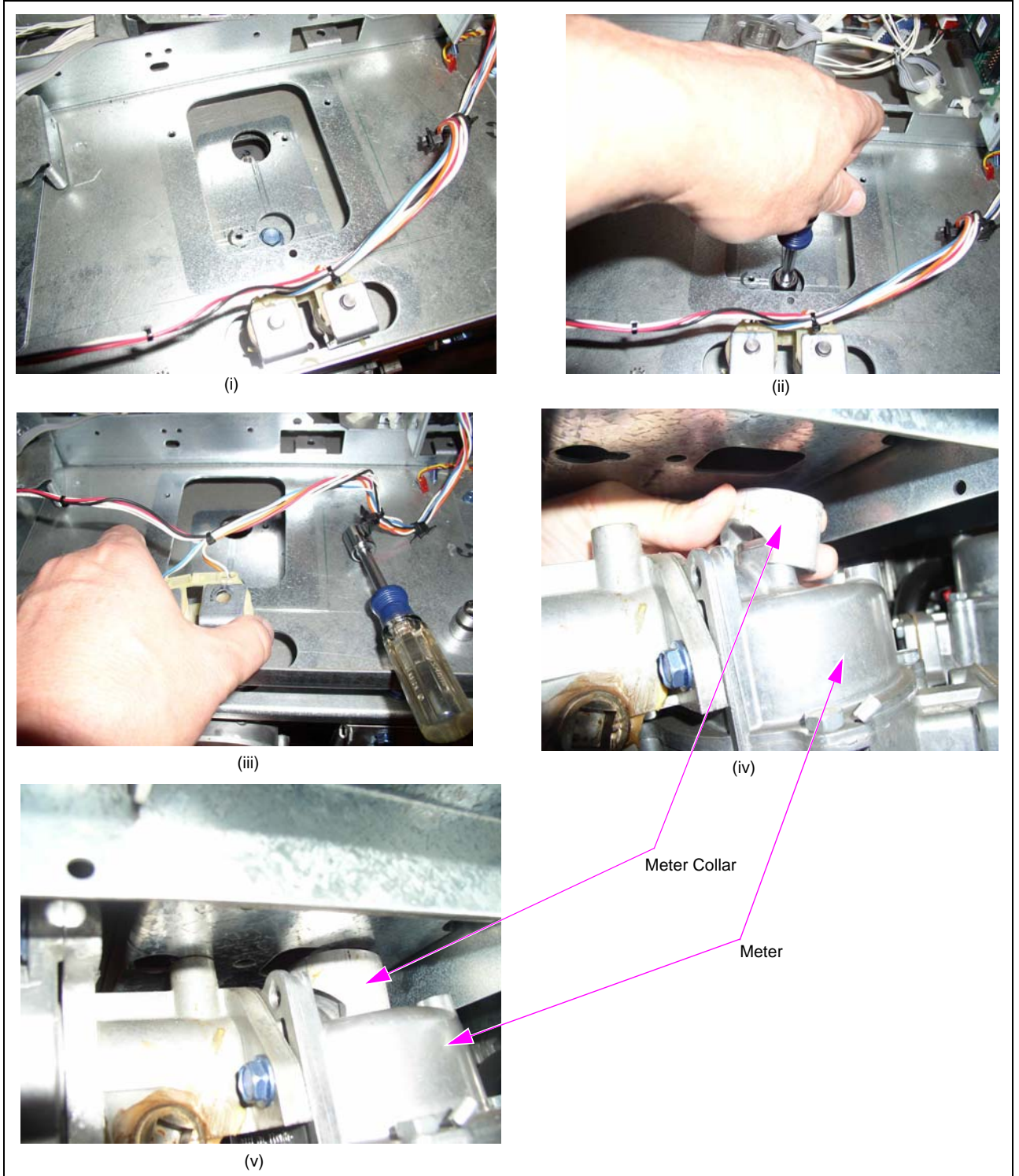


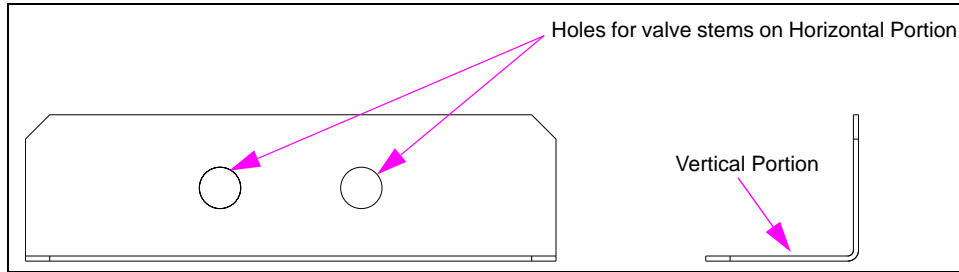
Figure 5: Installing Meter Collar in Units with Digital Valve



- 4 Install Magnetic Shunts (M01330A001) under the digital valve coils to prevent any stray magnetic field from fooling the switch.

To install the magnetic shunts, proceed as follows:

Figure 6: Installing Magnetic Shunt for Digital Valves



- a Remove the coils.
- b Replace the existing valve hole cover with the new shunt provided with each put-down, while ensuring that the vertical portion is positioned toward the door side.
Note: It has been reported that some installations allowed the switch wires to be damaged by the cover during opening and closing of the door. Ensure that wires will not be pinched or chaffed. For all Encore units upgraded or built with the new valve hole cover/shunt before 10/16/00 (serial # EN002249 and older), inspect to ensure that the switch wires will not be chaffed or cut by the cover when opening and closing the door.

- 5 Remove one bolt at a time in the air gap area that mounts the meter manifold.

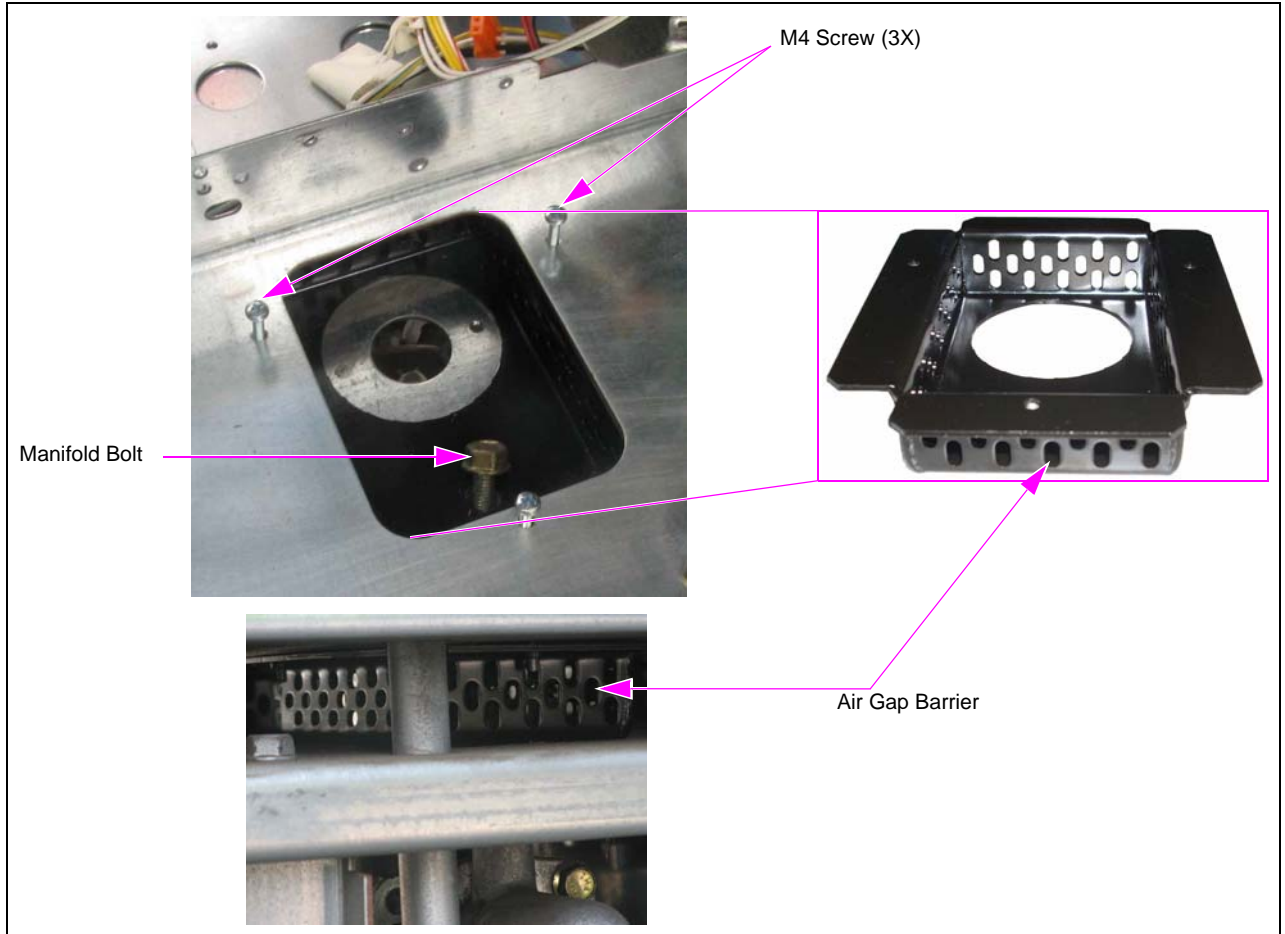
- 6 Install the air gap barrier.

To install the air gap barrier, proceed as follows:

- a Position the air gap barrier in place, using the M4 screws.
- b Tighten the manifold bolt (do not overtighten).

- c Remove the M4 screws once the manifold bolt is tightly secured.
Note: Do not undo both the manifold bolts that hold the manifold at the same time.

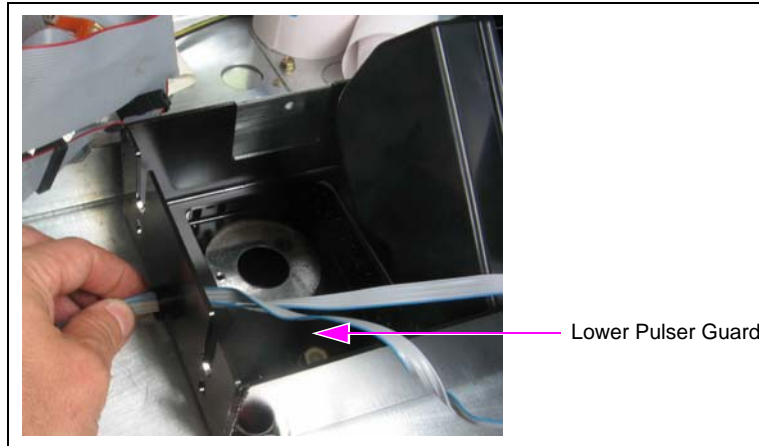
Figure 7: Installing Air Gap Barrier



- 7** Remove any screws or other objects that may be present on the CD module, to accommodate the pulser guards.

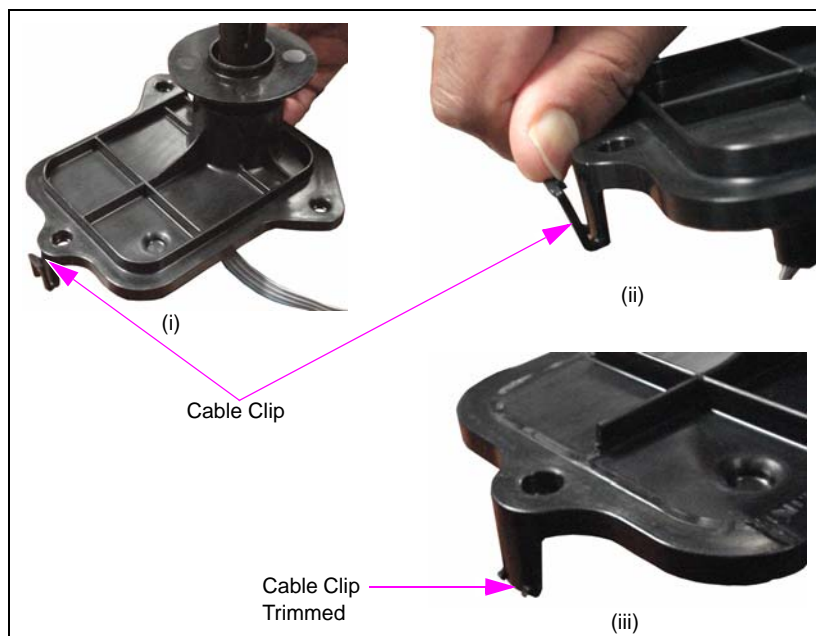
- 8 Install the lower pulser guard and place the Pulser Assembly (M05839B002 or M05840B002) in position.

Figure 8: Installing Lower Pulser Guard



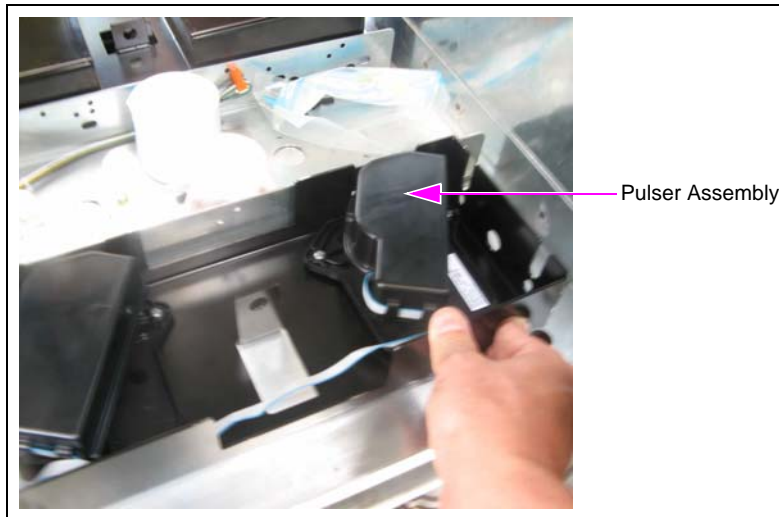
- 9 Mark the outside right on the pulser connector. This aids in the recognition of connectors while separating and feeding them through the bushing and reinstall the cover that connects them.
- 10 Remove the cable-tie with the push mount from the pulser cable.
- 11 Route the pulser cable through the bushing and hole in the lower pulser guard and reinstall the connector cover.
- 12 Trim the cable clip off the pulser before you install the pulser.

Figure 9: Trimming Cable Clip



- 13 Mount the pulser assembly and pulser guard on the CD module and air gap barrier, using M4 screws (Q11709-61). When tightening the screws, apply pressure on the air gap barrier to move it away from the valve coil conduit.

Figure 10: Installing Pulser Assembly



- 14 Fit the cover by angling the studs that are against the side wall into the bottom holes on the lower pulser guard, and then apply pressure on the cover so that the studs on the other side are aligned with the bottom holes. Align the studs into the correct hole and then slide the cover until the lock holes are aligned (see [Figure 11](#) on [page 14](#)).

Notes: 1) The locks have to be purchased separately as they are not provided with the kit.

2) The Security Upgrade Kits for Encore 500 have two locking locations - top and side (see [Figure 13](#) on [page 16](#)). The top location is the preferred location. However, there are some assemblies where the top location cannot be used.

IMPORTANT INFORMATION

Gilbarco recommends that you practice placing the pulser guard box on top of the base before assembling it into the CD module for a better understanding of the assembling procedure.

Figure 11: Lower Pulser Guard with Pulsers Installed (Encore 300)

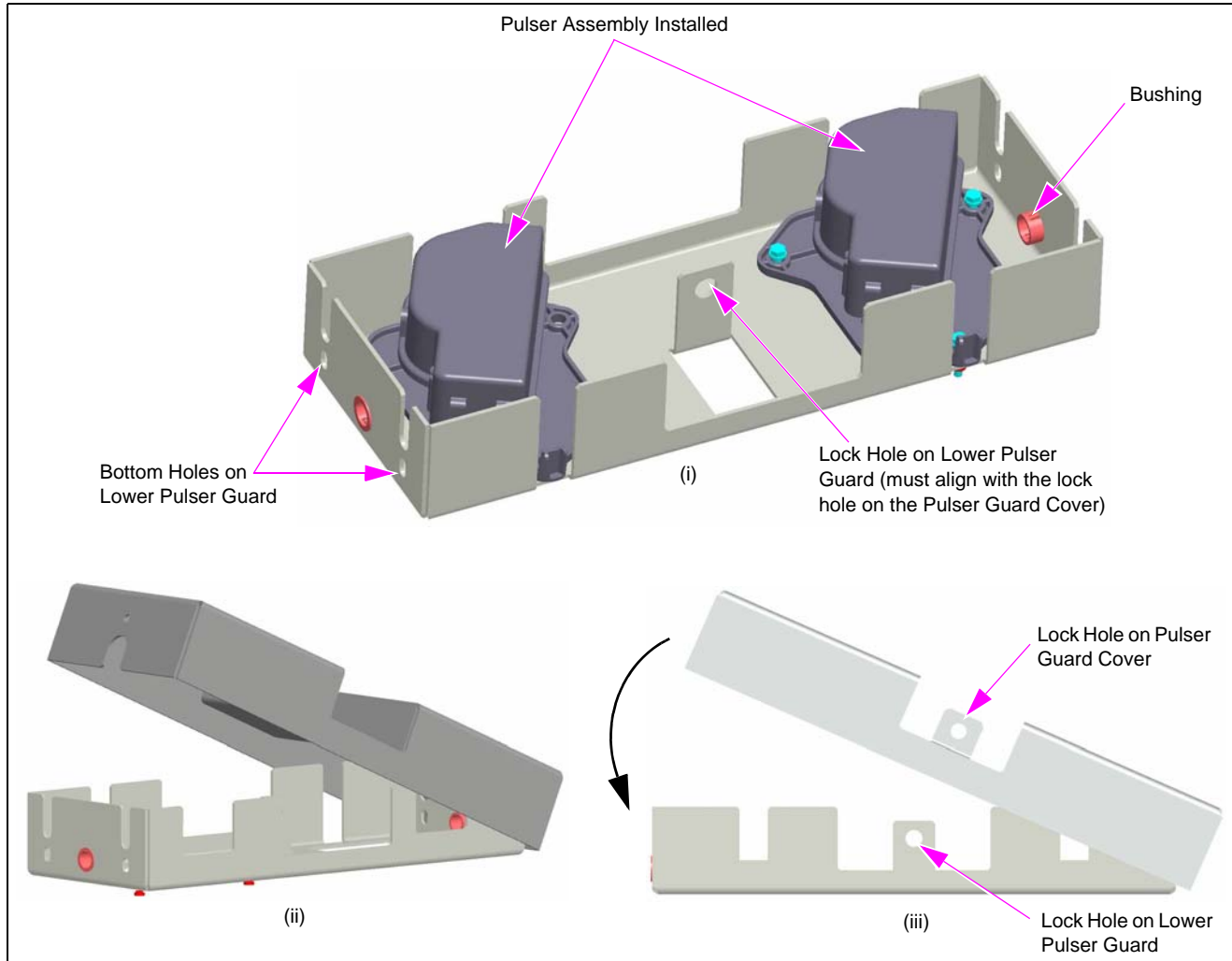


Figure 12: Lower Pulser Guard with Pulsers Installed (Encore 500)

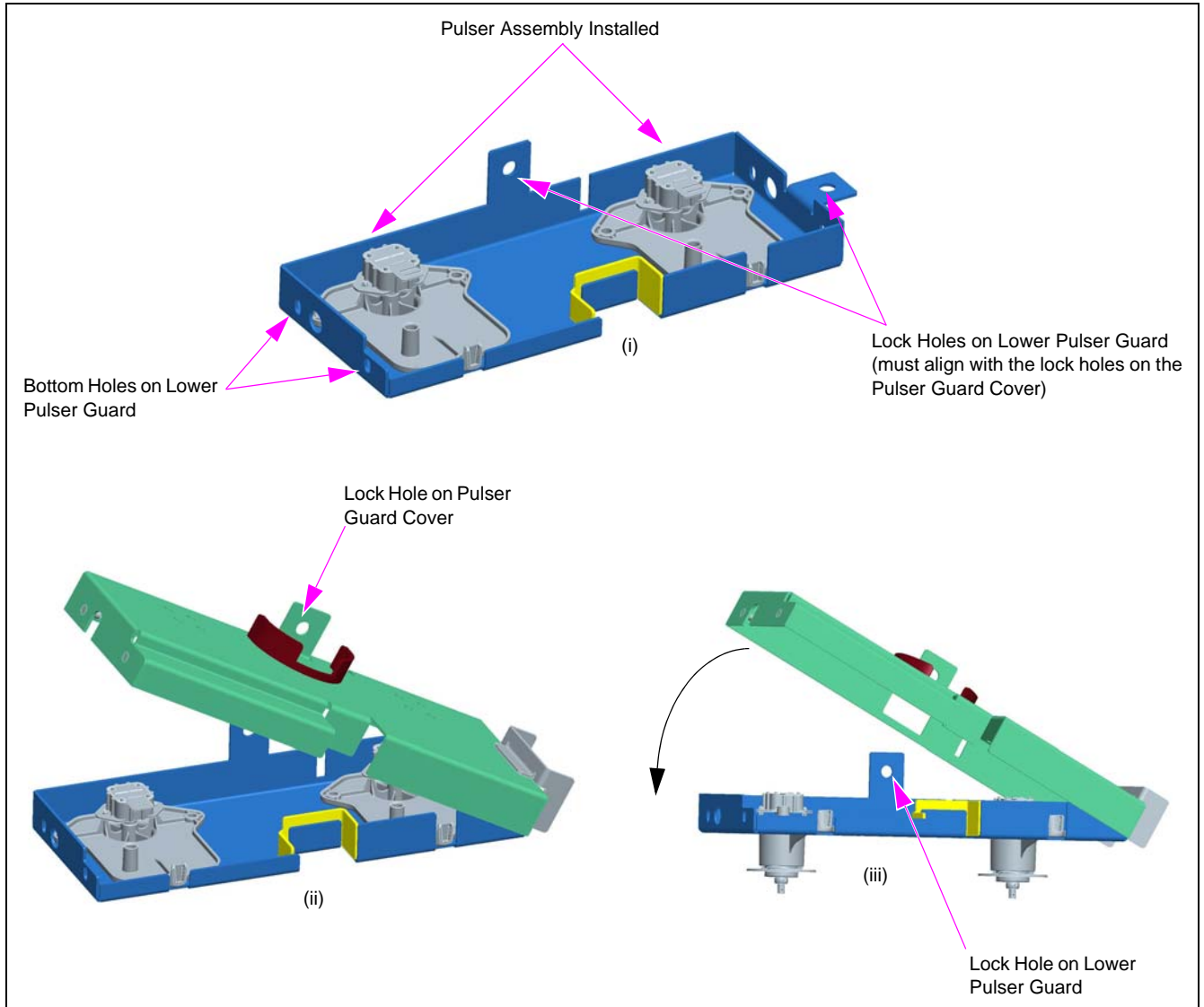


Figure 13: Locking Locations for Encore 500 Security Upgrade Kits

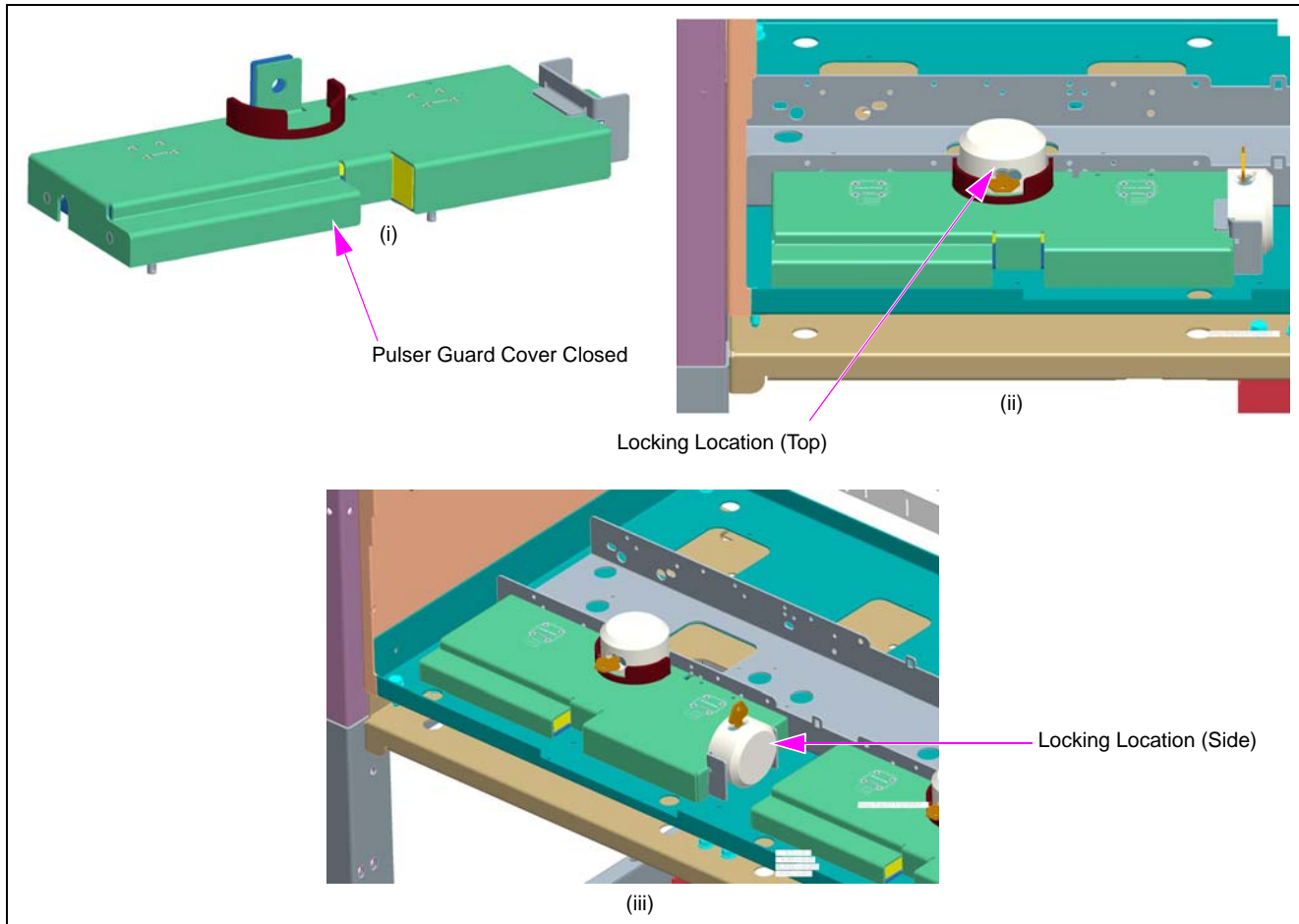
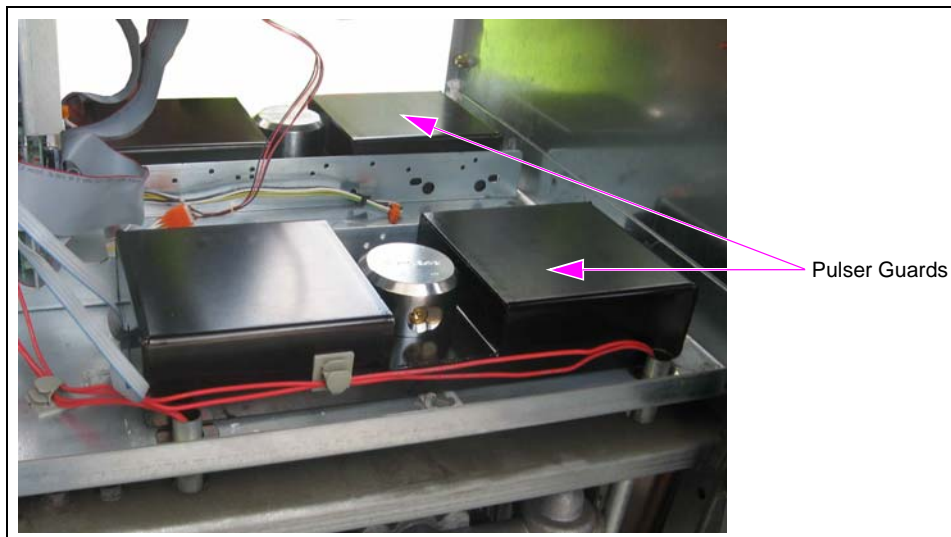


Figure 14: Pulser Guards Installed



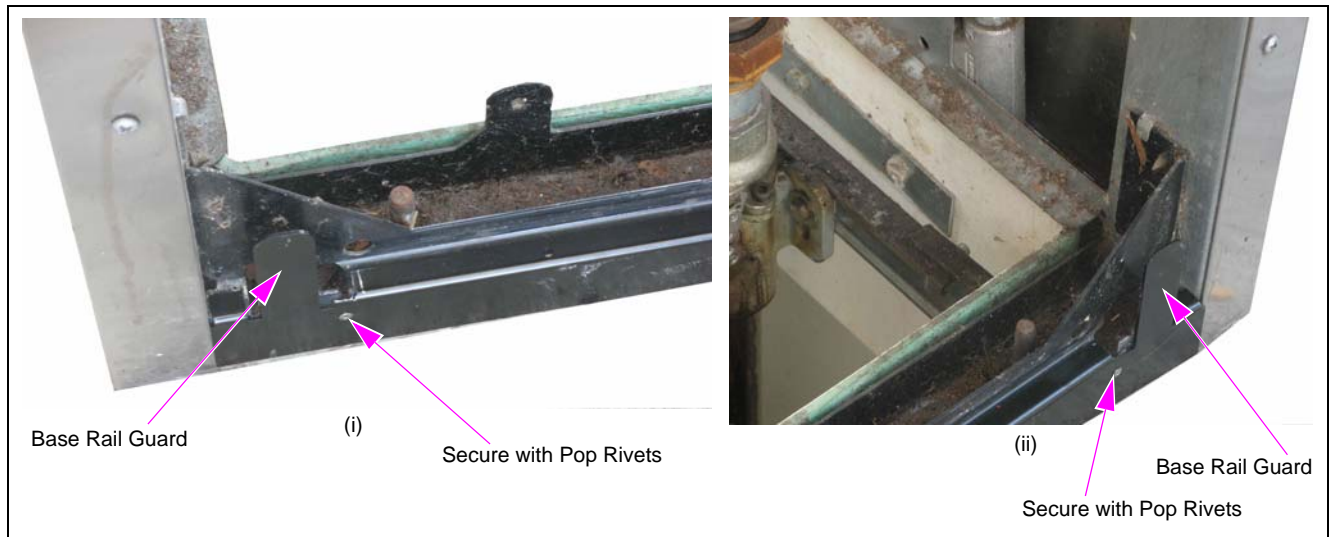
Pulsar Adaptor Cable (M13733A001) must be used if the Encore 300 unit was built with the Hydraulic Interface Printed Circuit Assembly [PCA (M01546A001)].

- 15 Connect the pulsar adaptor cable to the Pulsar Set (M05839B002) and connect JPA and JPB to the correct pulsar connections on the PCA.
- 16 Replace the Underwriters Laboratories (UL) barrier on the back of the door in units that contain a digital valve.

To replace the UL barrier, proceed as follows:

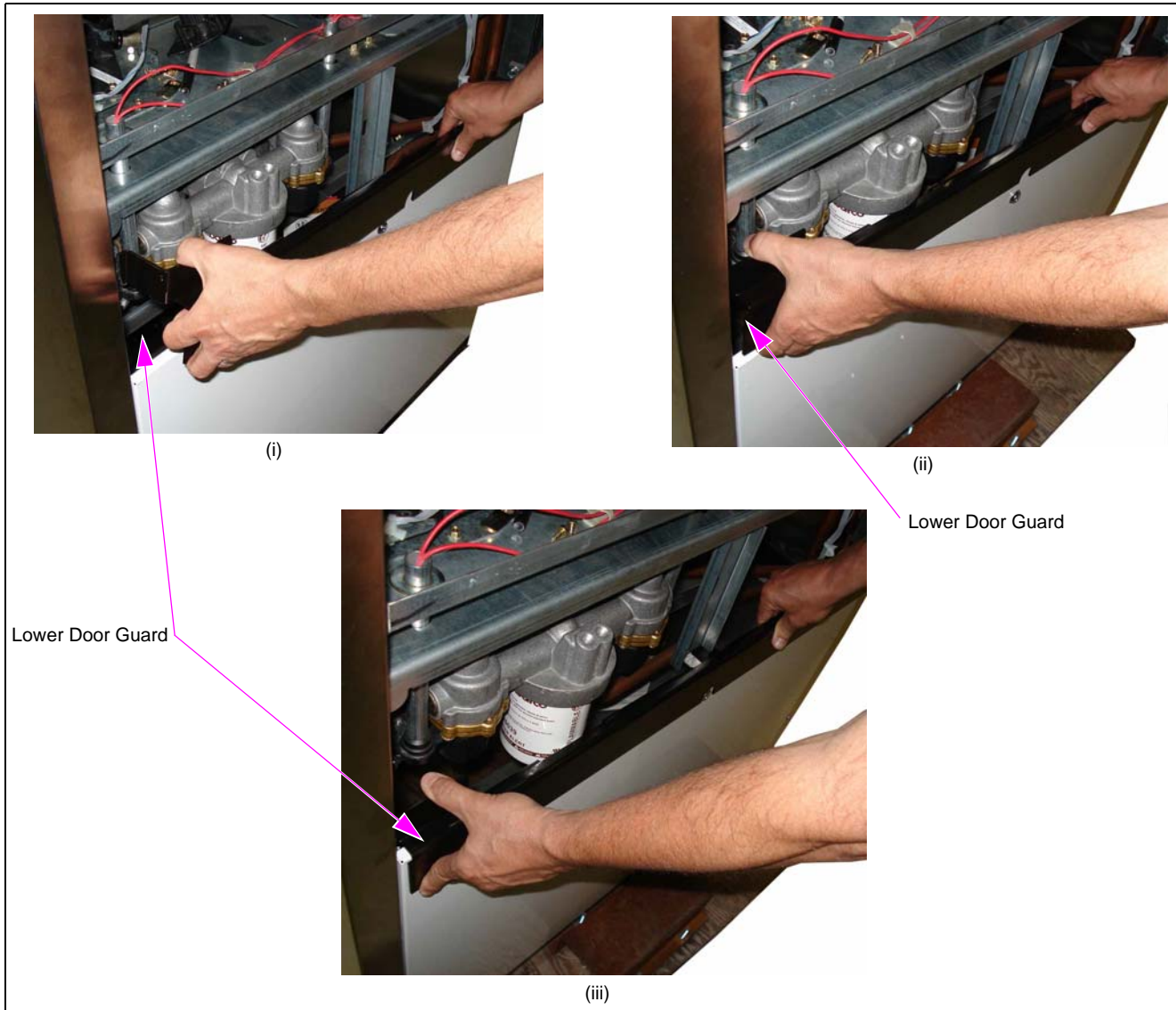
- a Remove any electronics mounted on the door.
 - b Remove the four screws that secure the UL barrier, and set aside for reuse.
 - c Install the new UL barrier using the four screws removed in step b.
 - d Reinstall all electronics removed in step a.
- 17 Clean out the pit box for any spilled gas and run the Encore 300 unit to check for leaks.
 - 18 Install the base rail guard by sliding one end behind the edge of the sheathing with the other end raised at an angle. Then slide the other end of the base rail guard down so that it slides behind the edge of the sheathing. Secure the base rail with the pop rivets provided.

Figure 15: Installing Base Rail Guard



- 19 Install the lower door. Install the lower door guard by placing the right side of the door guard in first. The door guard aligns to, and behind the side column. Raise the left side of the door guard up until the edge is aligned behind the side column. Lower the left side down until the door guard is on top of the lower door.

Figure 16: Installing Lower Door Guard



- 20 Close the upper main door and then install the Upper Door Guard (M08478B001) on the bottom of the CIM door opening and CD module.

Figure 17: Installing Upper Door Guard

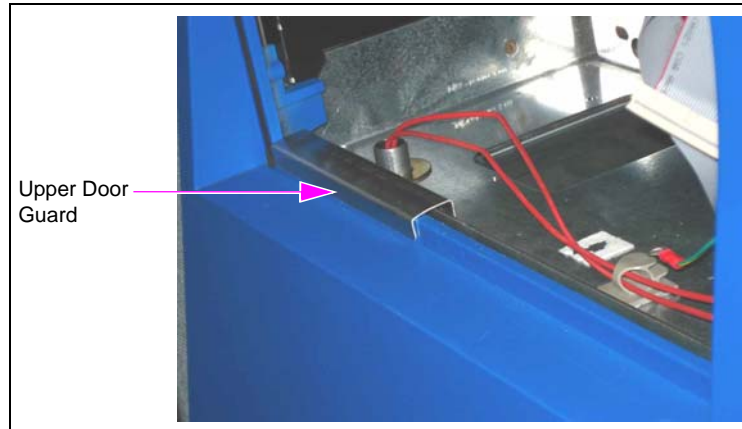


Figure 18: Encore 300 Unit with Base Rail Guard and Lower Door Guard Installed



Note: Ensure that the door keys are available for service and for Weights and Measures (W&M) officials. Store employees will not need keys to the pulser guard locks.

Installing the Security Upgrade Kits in Encore 300/500 unit is now complete.

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