

Introduction

Purpose

This manual provides instructions to repair broken, stripped, or cracked card reader mounting bosses using the Card Reader Door Boss Repair Kit (M07450K999) in Gilbarco® Encore® 300/500/S E-CIM™ dispensers.

Table of Contents

Topic	Page
Introduction	1
Important Safety Information	3
Before You Begin	5
Removing Existing Card Reader	6
Installing Card Reader Boss Repair Kit (M07450K999)	7

Required Tools and Materials

Following tools and materials are required to install the Card Reader Door Boss Repair Kit:

- 1/4-inch and 7 mm (9/32) Nut Drivers or Ratchet/Socket Set
Note: Use magnetic nut drivers for convenience.
- Static Guard Wrist Strap
- Hand Operated Drill
- Putty Knife
- Isopropyl Alcohol
- Pin Punch (same size as PEM® stud head)
- Hammer

Parts List

Following table lists the parts included in the Card Reader Door Boss Repair Kit:

Item	Description	Part Number	Quantity
1	Drill Fixture (Guide)	M14177B001	1
2	PEM Stud, Metric M4 X 25	Q12887-228	40
3	Nut, Metric	M00414B005	40
4	Gasket, Universal	M13127B006	10
5	Sealant, Room Temperature Vulcanization (RTV)	M14152B001	1
6	Plate, Retainer	M14212B001	1
7	Graphic, Encore	M14182B001	1
8	Graphic, E-CIM	M14195B001	1
9	Drill Bit, 3.9 mm Diameter	M14151B001	1
10	Foam Block	M01581B001	10
11	PEM Stud, Metric M4 X 30	Q12887-231	30

Notes: 1) This kit is for 10 sides. Order one kit for 10 sides.

2) When the Hybrid Card Reader 2 (HCR 2) is used in conjunction with the Global Contactless Module (GCM), a Shield Kit is required for HCR 2. For installation instructions, refer to MDE-5081 Hybrid Card Reader 2 (HCR 2) Shield Kit (M13193K002) Installation Instructions.

Related Documents

Document Number	Title	GOLD SM Library
MDE-3804	Encore and Eclipse® Start-up/Service Manual	<ul style="list-style-type: none"> Encore and Eclipse Service Manual
MDE-5030	Hybrid Card Reader 2 (HCR 2) Kit (M12492K001) Installation Instructions	<ul style="list-style-type: none"> Advantage® and Legacy® Models Encore and Eclipse FlexPay™ EMV®
MDE-5081	Hybrid Card Reader 2 (HCR 2) Shield Kit (M13193K002) Installation Instructions	Encore and Eclipse

Abbreviations and Acronyms

Term	Description
E-CIM	Enhanced Customer Interface Module
EMV	EuroPay®, MasterCard®, and Visa®
ESD	Electrostatic Discharge
GCM	Global Contactless Module
GOLD	Gilbarco Online Documentation
HCR	Hybrid Card Reader
OSHA	Occupational Safety and Health Administration
RTV	Room Temperature Vulcanization
TCR™	Tribrid Card Reader

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.

Important Safety Information

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

Read and understand all the safety information found in *MDE-3804 Encore and Eclipse Start-up/Service Manual*.

CAUTION



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

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

- 1 Inform the manager.
- 12 Barricade the unit to be worked on.
- 13 Remove power to the unit at the breaker panel. Follow OSHA lockout/tagout procedures.
- 14 Isolate two-wire 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 kit installation.

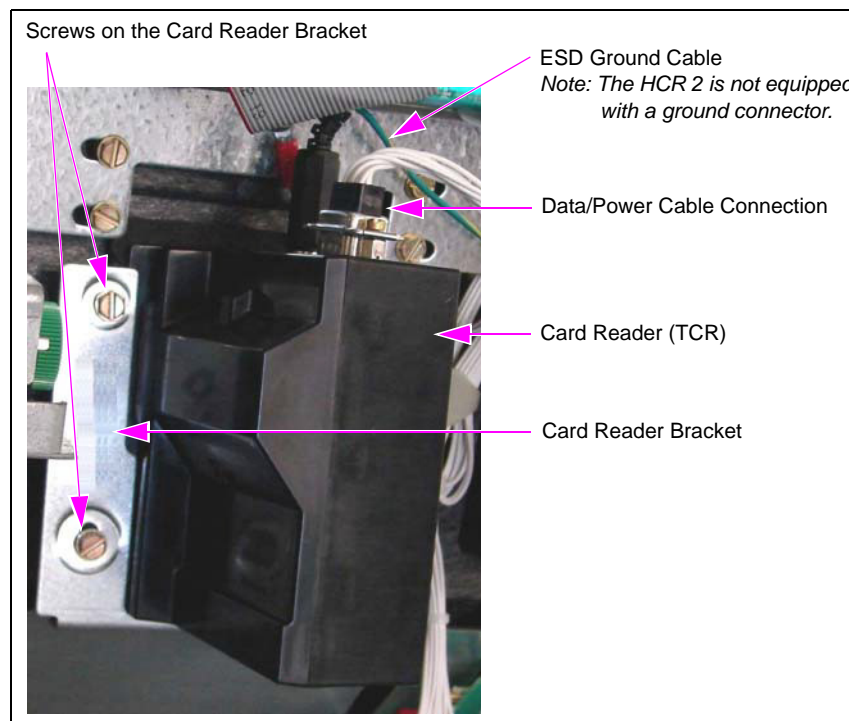
Removing Existing Card Reader

To remove the existing card reader, proceed as follows:

Note: Read all instructions before beginning and observe all safety precautions provided in “Important Safety Information” on page 3.

- 1 Locate the main door, insert the main door key, and open the door.
- 2 Repeat step 1 for side B of the unit.
- 3 Disconnect the cable harness from the existing card reader. If remounting an HCR 2 card reader, protect the connecting pins with the foam block provided in the kit.
Note: Unused cables left connected can cause noise issues in a unit.
- 4 Remove the card reader ground cable, if applicable, and discard.
*Notes: 1) If HCR 2 is of V14.4 and uses a bezel ground wire, ensure to reinstall the ground cable if not replacing the card reader. If upgrading the HCR 2 to V17, then discard the bezel ground wire.
2) The HCR 2 is not equipped with a card reader ground connector; do not install a ground wire/cable.*
- 3 Remove the screw on the activation switch if a TCR is being removed.
- 4 Remove the four hexagonal-head screws that secure the card reader bracket and card reader to the option door using a 1/4-inch nut driver or ratchet and socket. Remove the card reader and card reader bracket and place in a safe location for later use.

Figure 1: Top View of TCR



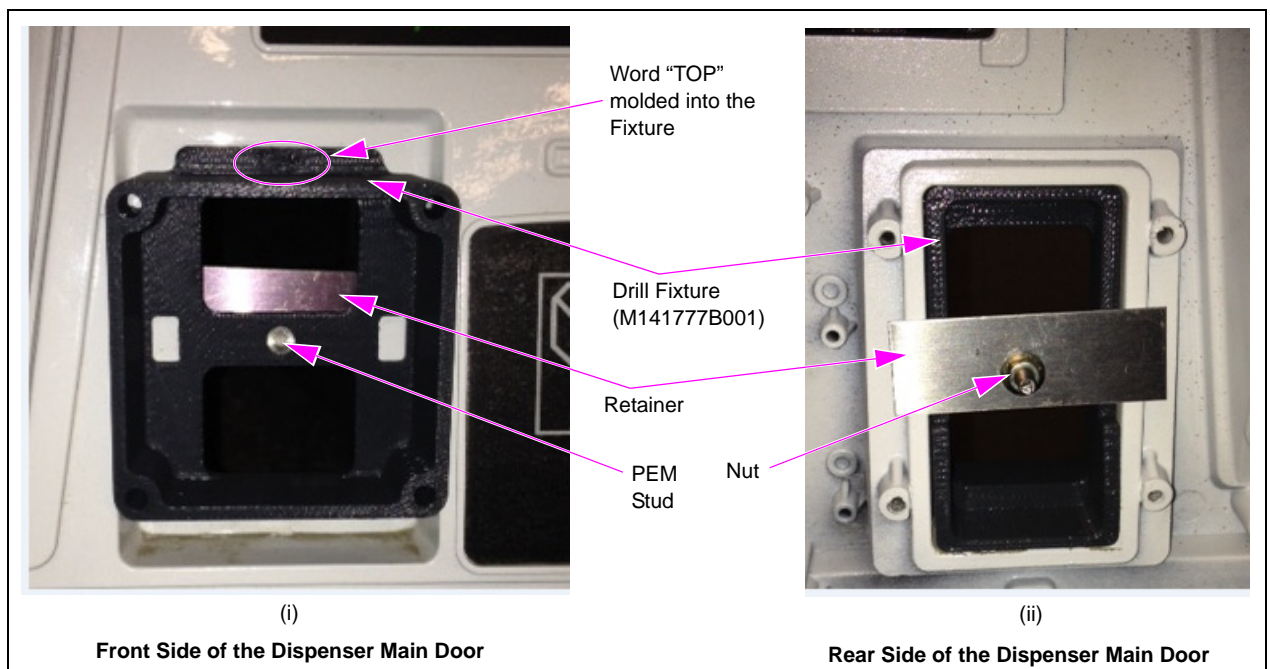
- 5 Carefully remove the existing card reader gasket from the option door. Use a putty knife and isopropyl alcohol, if required.
Note: Ensure to remove the glue left over from the adhesive, as this could cause the new non-adhesive gasket to roll.

Installing Card Reader Boss Repair Kit (M07450K999)

To install the Card Reader Boss Repair Kit, proceed as follows:

- 1 Install the Drill Fixture (M14177B001) in the card reader aperture of the dispenser door from the front (outside) of the main door [see [Figure 2 \(i\)](#)].
Notes: 1) Orient the drill fixture correctly, the word "TOP" is molded into the fixture for orientation purposes.
2) Ensure that the drill fixture is fully inserted into the card reader aperture [see [Figure 2 \(ii\)](#)].
- 2 Place a PEM stud through the center hole of the drill fixture. From the rear of the door, place the retainer over the PEM stud and retain with a nut, finger tight, as shown in [Figure 2 \(ii\)](#).

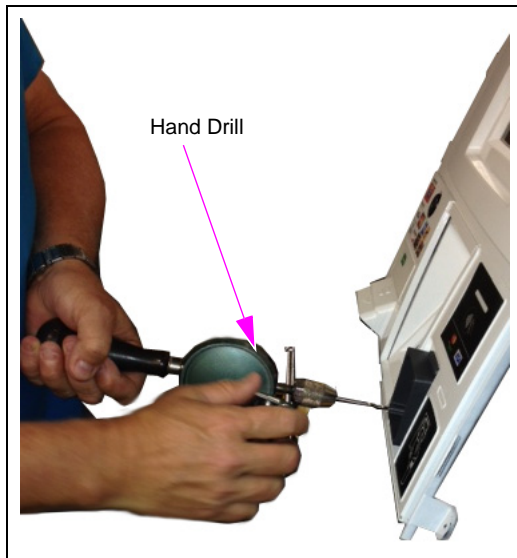
Figure 2: Installing Drill Fixture in Card Reader Aperture



- Notes: 1) Before drilling, ensure there are no cables or components that interfere with the drill bit once it penetrates the door on the inside of the unit. Close the door.*
2) If the keypad is directly below the drilling area, you must cover the area with a clean cloth to prevent shavings from dropping on to the keypad.

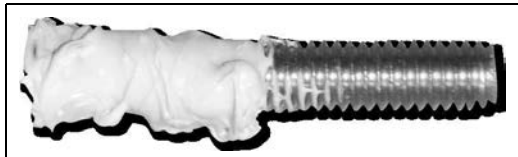
- 3 Drill four holes, using a hand drill and the drill bit provided, through the drill fixture (guide) and door. Carefully follow the axis of the bores in the drill fixture.

Figure 3: Drilling Four Holes Using Hand Drill



- 4 Remove the drill fixture from the door. Retain the drill fixture for reuse.
- 5 Add a ring of RTV, about 6 mm wide, on the thread of the stud below the head. Ensure the RTV forms a complete ring around the stud (see [Figure 4](#)).

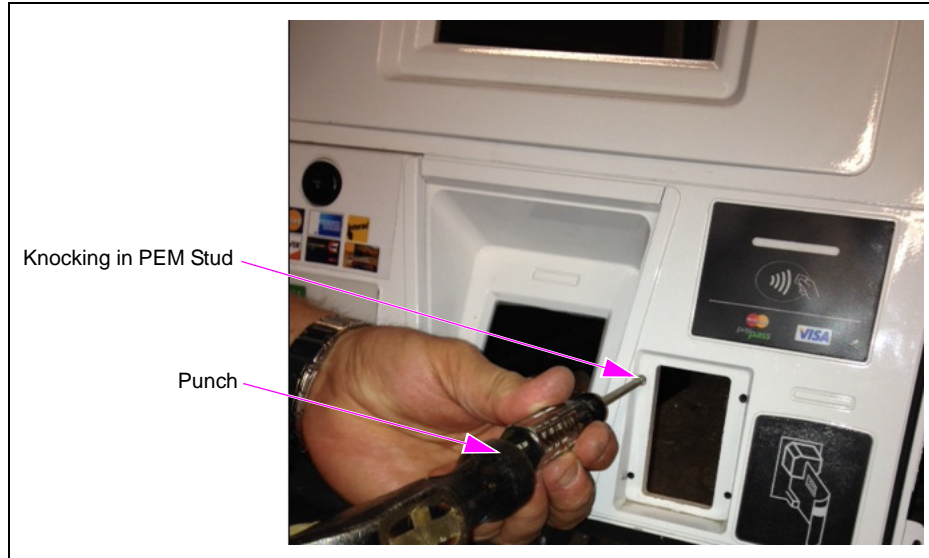
Figure 4: PEM Stud with RTV Applied



- 6 Repeat step 5 for the remaining three PEM studs.
Note: For Encore 300/500 units, use the longer PEM studs for the bottom two holes and shorter PEM studs for the top two holes. The bezel material is thicker on the bottom two mounting holes. For Encore 500 S/E-CIM, all four PEM studs can be shorter.
- 7 Using a punch and hammer, knock in the PEM studs enough to secure them in the door. This allows the PEM studs to stay in place while installing the card reader and bracket.

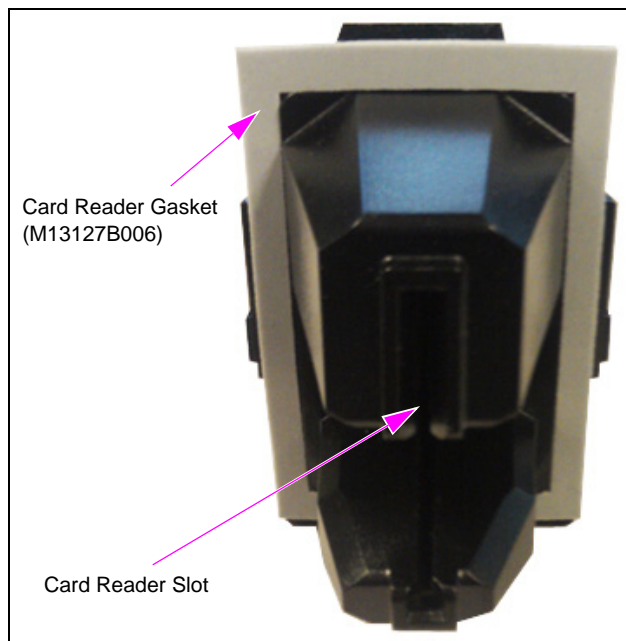
- 8 After the four PEM studs are inserted, allow the RTV sealant to dry for 10 minutes before installing the card reader.

Figure 5: Knocking in PEM Studs



- 9 Place the Non-adhesive Card Reader Gasket (M13127B006) over the card reader bezel and place the card reader in the door aperture. Ensure that the gasket is placed outside of the flange on the card reader and evenly over the dismount switches, if fitted.

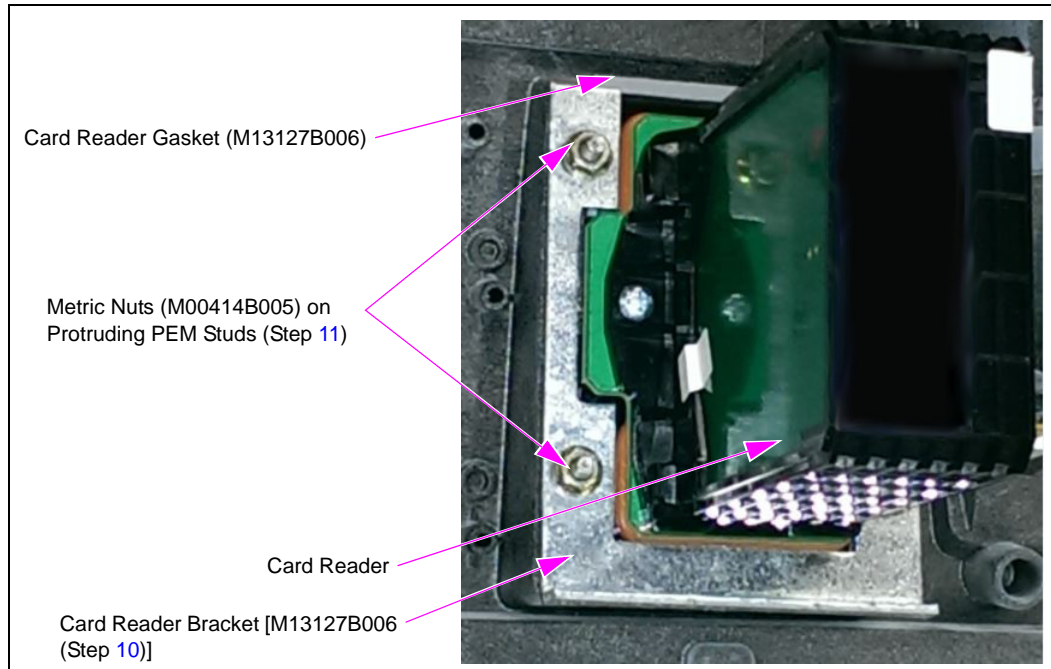
Figure 6: Installing Gasket on Card Reader



- 10 Replace the card reader bracket over the back of the card reader and the four protruding PEM studs (see [Figure 7](#)).

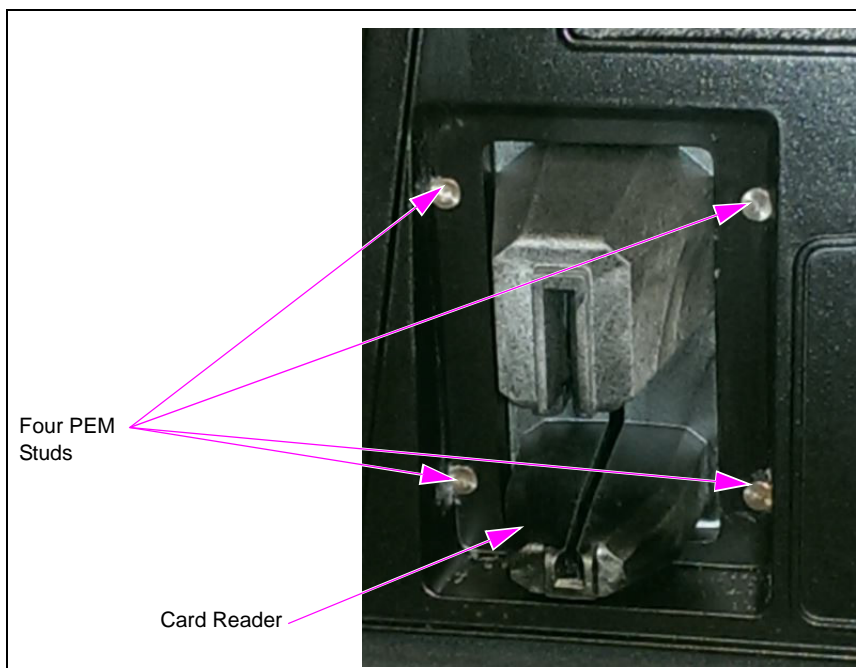
- 11 Place the four Metric Nuts (M00414B005) on the protruding PEM studs and tighten the nuts loosely (see [Figure 7](#)).

Figure 7: Mounting Card Reader



- 12 Continue to tighten the nuts in stages in a diagonal pattern until the heads of all four PEM studs are flush with the front face of the bezel (see [Figure 8](#)).

Figure 8: Card Reader on Front Face of Bezel



- 13 Reconnect the cables disconnected in step 3 on [page 6](#) to the card reader as previously installed.

- 14 Clean the card reader recess in the front bezel with isopropyl alcohol to remove any excess RTV sealant. Inspect the PEM studs and ensure that they are flush against the bezel front.
- 15 Clean off any shavings that may have fallen from drilling the holes.
- 16 Ensure to route the cables properly.

IMPORTANT INFORMATION
Cable routing is critical. It is very important to route and dress the cables properly. Exercise care in routing the cables, keeping in mind that the door(s) opens and closes for service. The cables must be dressed neatly. Ensure that there is no interference after the cables are connected and routed.

- 17 If unit is equipped with a GCM, add a card reader shield. For more information, refer to *MDE-5081 Hybrid Card Reader 2 (HCR 2) Shield Kit (M13193K002) Installation Instructions*.
- 18 Power up the unit.
- 19 Call Gilbarco Support Center at 1-800-800-7498 and activate the card reader.
- 20 Run a credit or debit transaction to verify the card reader is working properly.
- 21 Using isopropyl alcohol, clean the front face of the card reader recess to remove any debris and excess RTV.
- 22 Locate the correct colored E-CIM graphic from the kit and attach it to the front face around the card reader. For Encore 300/500 there is no repair graphic. For black graphic, color the exposed PEM stud head with a black marker pen. If required, the customer can order a correctly configured graphic from Gilbarco customer service.

Installing the Card Reader Door Boss Repair Kit is now complete.

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