

## Introduction

### Purpose

This manual provides instructions for installing the Mat Reader Assembly Kit (C00016-XXX) on the Passport® system. The mat reader allows customers to automatically authorize sales using a hand-held transponder tag (also known as a keytag or key fob).

### Table of Contents

Topic	Page
<a href="#">Introduction</a>	1
<a href="#">Important Safety Information</a>	5
<a href="#">Installing Mat Reader Assembly</a>	7
<a href="#">Commissioning and Warranty Information</a>	34

### Important Notice

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the Federal Communications Commission (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.

The long term characteristics or the possible physiological effects of radio frequency electromagnetic fields have not been investigated by Underwriters Laboratories (UL®).

#### Industry Canada (IC) Warning

This device complies with IC licence-exempt Radio Standards Specification (RSS) standard(s). Operation is subject to the following two conditions:

- This device may not cause interference.
- This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- l'appareil ne doit pas produire de brouillage.
- l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Under IC regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by IC. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

*Note: To ensure compliance with Electromagnetic Compatibility (EMC) standards, do not remove the ferrite beads from the cable assemblies provided with them.*

## Required Tools

Following tools are required to install the Mat Reader Kit:

- Drill Motor and Bits
- Needle Nose Pliers
- Phillips® Screwdriver
- Zircon® Stud/Bracket Finder
- Key Fob (Security Hardware Device for Authentication)

## Parts Lists

Following table lists the parts included in the C00016-010 Kit - Low Frequency (Mini Mat):

Item#	Description	Part Number	Quantity
1	Assembly, Interface Box, Mat Reader	M01814A001	1
2	Connector, Cover	M02498B001	1
3	Cable, Mat Reader Drive	M01872A002	1
4	Transient Suppressor, Magnetically Coupled	Q11433-107	2
5	Power Supply, Wall-mount	M01878B001	1
6	Jumper (.100 centers)	Q11011-01	1
7	Cable, Work Area	Q13850-06	1
8	Clamp, Releasable, Flat Cable Mounting	Q13459-01	3
9	Screw, Thread Forming, Hex Washer Head	K85736-06	2
10	Label, Customer Die Cut	N23290-02	1

*Note: For component additions to this kit, refer to ["Additions to Mat Reader Kits"](#) on [page 3](#).*

Following table lists the parts included in the C00016-011 Kit - Low Frequency (PIN Pad):

Item#	Description	Part Number	Quantity
1	Assembly, Interface Box, Mat Reader	M01814A001	1
2	Cable, Mat Reader Drive	M01872A002	1
3	Transient Suppressor, Magnetically coupled	Q11433-107	2
4	Power Supply, Wall-mount	M01878B001	1
5	Jumper (.100 centers)	Q11011-01	1
6	Clamp, Releasable, Flat Cable Mounting	Q13459-01	1
7	Cable, Work Area	Q13850-06	1
8	Label, Customer Die Cut	N23290-02	1
9	Screw, Thread Forming, Hex Washer Head	K85736-06	2
10	Adapter Plate	M03182B001	1
11	Cable-tie	Q10178-01	3
12	Nut, Self Clinching	Q10227-06	3
13	Screw, Machine, Phillips Pan Head	Q11270-21	3
14	Screw, Machine, Phillips Pan Head	Q11270-38	3
15	Bumper, Rubber, Adhesive-backed	Q12226-01	4
16	Assembly, Gender Mender, Modular Jack to D-subminiature	Q13180-20B	1

Notes: 1) The PIN pad and pedestal are not included with this kit.

2) For component additions to this kit, refer to [“Additions to Mat Reader Kits”](#).

## Additions to Mat Reader Kits

Following table lists the parts required in addition to the C00016-XXX Kit:

Description	Part Number (see Note)	Applicable Kit(s)	Quantity
Mat Reader, Mini	MR01003GXXX	C00016-010	1
Mat Reader, PIN Pad	MR02001GXXX	C00016-011	1

Note: XXX is the graphic-specific identifier.

## Related Documents

Document Number	Title	GOLD <sup>SM</sup> Library
MDE-3620	Point of Sale (POS) Systems Site Preparation Manual	Site Prep
MDE-3816	Passport Hardware Start-up and Service Manual	<ul style="list-style-type: none"> <li>Passport</li> <li>Service Manual</li> </ul>
MDE-4157	Passport Combined Cashier/Manager Workstation	Passport
MDE-4158	Passport Cashier Workstation	Passport
MDE-4159	Passport Standalone Manager Workstation	Passport
MDE-5100	PX60 Passport Cashier Workstation Installation Poster	Passport
MDE-5101	PX60 Passport Combined Cashier/Manager Workstation Installation Poster	Passport
MDE-5132	PX60 Passport Standalone Manager Workstation Installation Poster	Passport
MDE-5250	EDH2 Passport Combined Cashier/Manager Workstation for PX52 Installation Poster	Passport
MDE-5251	EDH2 Passport Cashier Workstation Installation Poster	Passport
MDE-5253	Enhanced Dispenser Hub 2 (EDH2) (Passport V10 or Later) Installation Poster	Passport
MDE-5254	EDH2 Passport Combined Cashier/Manager Workstation for PX60 Installation Poster	Passport

Document Number	Title	GOLD <sup>SM</sup> Library
MDE-5255	EDH2 Passport Standalone Manager Workstation for PX60 Installation Poster	Passport
MDE-5351	Passport PIN Pad Stand Installation Instructions	Passport

## Abbreviations and Acronyms

Term	Description
ASC	Authorized Service Contractor
CRT	Cathode Ray Tube
EDH	Enhanced Dispenser Hub
e.i.r.p	Equivalent Isotropically Radiated Power
EMC	Electromagnetic Compatibility
ESD	Electrostatic Discharge
FCC	Federal Communications Commission
GOLD	Gilbarco <sup>®</sup> Online Documentation
IC	Industry Canada
NEC <sup>®</sup>	National Electrical Code
NFPA	National Fire Protection Association
p.i.r.e	Puissance Isotrope Rayonnée Équivalente
PCB	Printed Circuit Board
POS	Point of Sale
RSS	Radio Standards Specification
UL	Underwriters Laboratories
USB	Universal Serial Bus

## Required Reading



Before installation, the installer must read, understand, and follow:

- This manual.
- National Fire Protection Agency (NFPA) 30A, The Automotive and Marine Service Station Code.
- NFPA 70<sup>®</sup>, The National Electrical Code (NEC).
- Applicable federal, state, and local codes and regulations.

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

*Note: To ensure warranty, this kit must be installed by a Gilbarco-Authorized Service Contractor (ASC). For assistance, call Gilbarco Help Desk at 1-800-800-7498.*

## Interconnect/Block Diagrams

Following table lists the Interconnect/Block Diagrams that are applicable for the kits:

Description	Part Number	Applicable Kit(s)
Interconnect/Block Diagram, Mat Reader	M01873 (Sheet 2)	C00016-010
	M01873 (Sheet 3)	C00016-011

*Notes: 1) The interconnect/block diagrams are shown in the appropriate kit installation procedure.*

*2) Full-size drawings may also be available on Gilbarco Online Documentation (GOLD) Library.*

# 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.

# Installing Mat Reader Assembly

## CAUTION

Gilbarco strongly recommends that only Gilbarco ASCs perform this installation.

To begin installing the mat reader assembly, collect and arrange all tools and equipment for safety and convenience.

To install the mat reader assembly, proceed as follows:

## Positioning Mat Reader

Gilbarco recommends the following concerning the placement of a mat reader on the countertop relative to the following devices:

- Any Cathode Ray Tube (CRT), such as the POS Touch Screen
- Any device with Card Reader, such as a PIN pad
- Mat Reader Interface Box
- Countertop Material

### CRT

In general, a mat reader should be positioned as far away as is conveniently possible from any CRT device to avoid interference from the CRT and to ensure optimum performance of the mat reader. The interference from a CRT can vary greatly from unit to unit and model to model. Also, the presence of nearby masses of metal can affect the influence of a CRT.

There is no universal minimum separation that guarantees trouble-free operation. If the distance between the mat reader and CRT cannot be increased, changing the relative orientation of these items may yield better operation of the mat reader. However, increasing the distance will always give the most dramatic improvement in mat reader performance.

### Card Reader

With the exception of the PIN Pad Mat Reader (C00016-011), any device with a card reader should be positioned as far as is conveniently possible from a mat reader. Since the card readers are unshielded, loosely filtered devices, they are susceptible to magnetic interference. The mat reader generates a magnetic field as part of its normal operation that can be a source of magnetic interference to a card reader.

If a known, good card reader begins to display poor read performance after the addition of a mat reader to the POS system, significant improvements to the card reader performance may be realized by simply increasing its separation from the mat reader by as little as a few inches. As a general rule, placing a card reader beside a mat reader has far less effect on the card reader than actually using the card reader while it is physically on or held over the mat reader. A countertop configuration where the card reader could be used in this manner should be avoided.

## Interface Box

For optimum mat reader performance, the interface box should be positioned as close to the mat reader as is conveniently possible. If necessary, the Work Area Cable (Q13850-06) may be replaced for a longer version to properly place the interface box and still reach the POS connection. The dash number, such as -06, indicates 6 feet (1.8 meters) long.

## Countertop Material

If the countertop material is stainless steel, Formica® covered steel, or some other metallic material, less than the desired performance will be experienced. In the preferred setup, the countertop should be Corian®, plastic, wood, or some other non-metallic and/or non-ferrous material.

## Installing C00016-010 Kit - Low Frequency (Mini Mat)

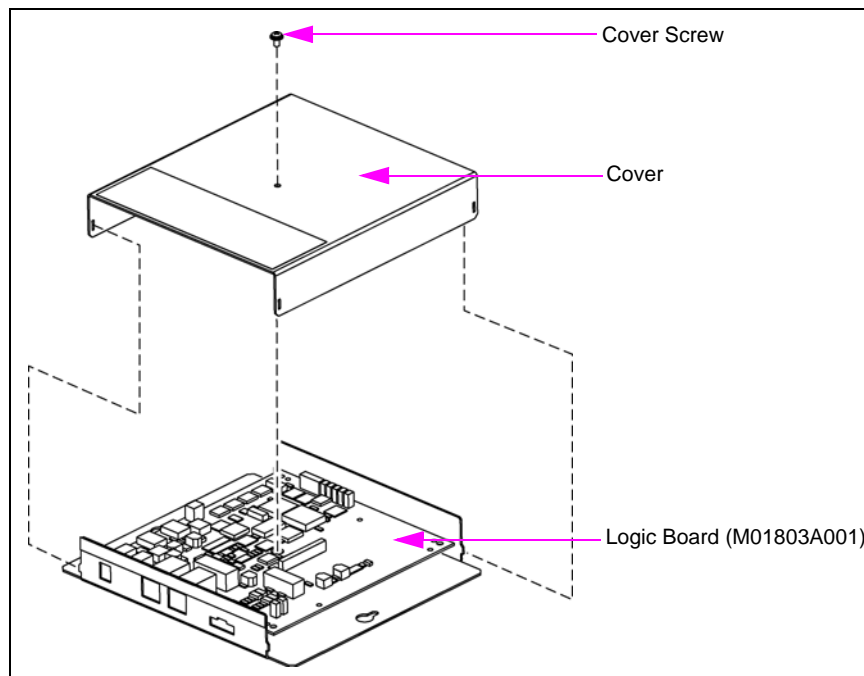
To install the C00016-010 Kit - Low Frequency (Mini Mat), proceed as follows:

### Setting Baud Rate

To set the baud rate, proceed as follows:

- 1 Remove the Mat Reader Interface Box (M01814A001) cover to access the Logic Board (M01803A001), as shown in [Figure 1](#).

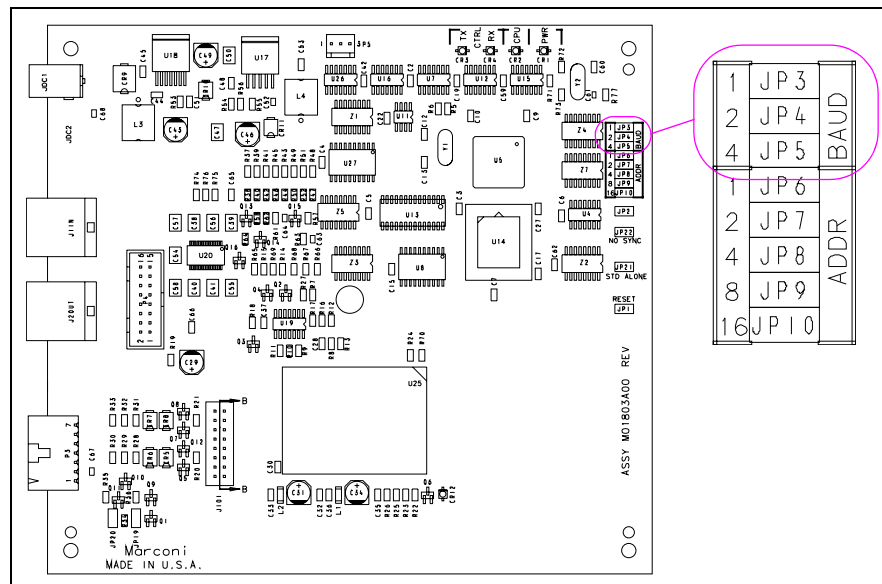
**Figure 1: Mat Reader Interface Box**





- 2 Locate the jump jacks on the logic board for mat reader (see [Figure 2](#)).

**Figure 2: Jump Jacks for Baud Rate Setting on Logic Board**



- 3 Set the jump jacks as follows (see [Figure 2](#)):

## CAUTION

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

Following are the baud rate settings:

Mat Reader Baud Rates			
Baud Rate (see Note)	BAUD 1	BAUD 2	BAUD 4
4800	OUT	OUT	OUT
2400	IN	OUT	OUT
1200	OUT	IN	OUT
300	IN	IN	OUT
38400	OUT	OUT	IN
19200	IN	OUT	IN
9600	OUT	IN	IN
4800	IN	IN	IN

*Note: 4800 is the default Mat Reader value.*

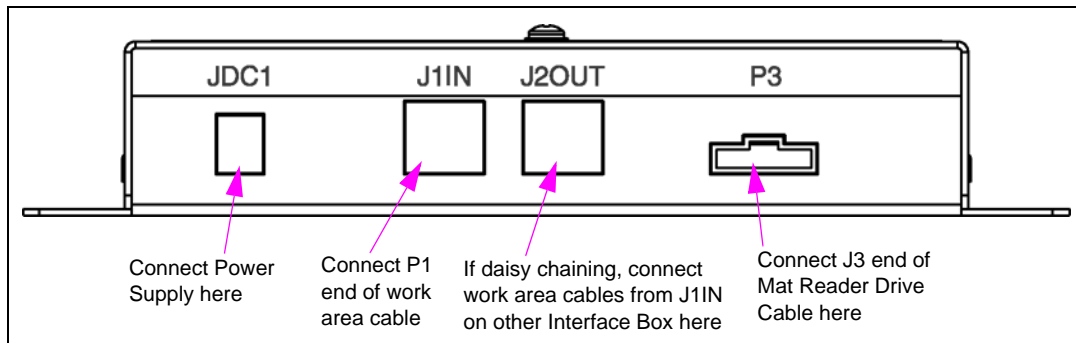
- 4 If you are **NOT** daisy chaining the mat reader interface boxes, reinstall the cover removed in step 1 on [page 8](#).  
*Note: Daisy chaining is connecting the output from one interface box to the input of the another interface box, the address of the second mat reader must match the address on the first mat reader.*
- 5 If you **ARE** daisy chaining the mat reader interface boxes, go to “[Addressing Logic Board When Daisy Chaining](#)” on [page 31](#) to set addresses on the logic board.

## Mounting and Connecting Mat Reader Interface Box

To mount and connect the mat reader interface box, proceed as follows:

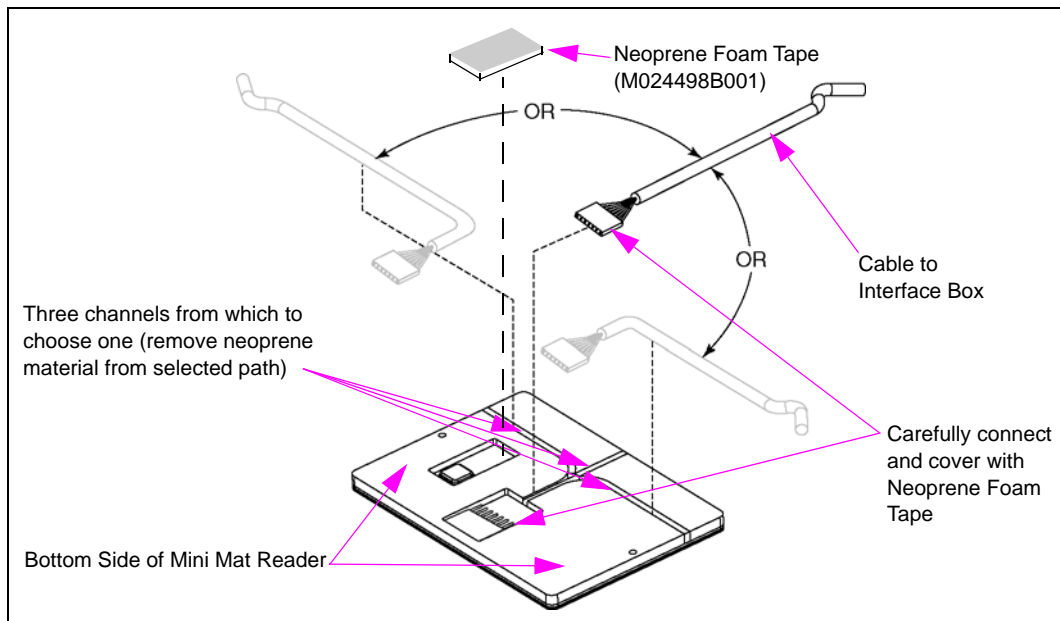
- 1 Mount the mat reader interface box by following the procedures in “[Mounting Mat Reader Interface Box](#)” on [page 33](#).
- 2 Run both power and data cables to the port end of mat reader interface box (see [Figure 3](#)) as follows:
  - a Connect the J3 end of the Ribbon Cable (M01872A001) to the interface P3 port.
  - b Connect the P1 end of the work area cable to the J1IN port. The other end will be connected later.
  - c If daisy chaining the mat reader interface boxes, connect the work area cable from the J2OUT port on this interface box to the J1IN port on the other interface box.

**Figure 3: Connecting to Mat Reader Interface Box**



- 3 Position the mat reader face down (see [Figure 4](#)).

**Figure 4: Bottom Side of Mini Mat Reader - Low Frequency**



- 4 Select side for the Mat Reader Drive Cable (M01872A002) connection based on the countertop configuration requirements.

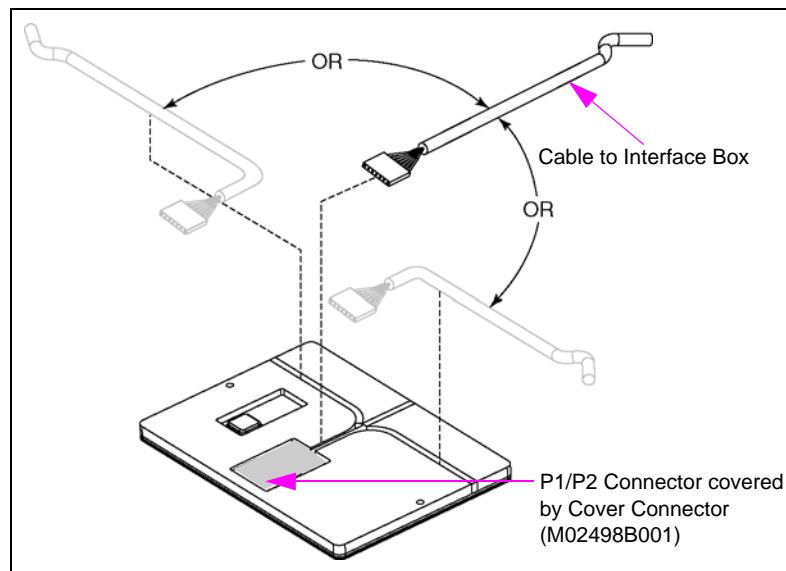
*Note: The mat reader is designed to be placed on a countertop beside or adjacent to a cash register or POS terminal. If properly positioned, the mat reader cable will “disappear” underneath the existing POS equipment. The cable will penetrate the countertop via the same hole used by the POS power and data cables. Double-sided tape (not provided) may be used to secure the mat reader and/or the cable in position on the countertop.*

### CAUTION

Perform the next step by hand. Use of tools (i.e., screwdriver tip or knife blade) will damage the Printed Circuit Board (PCB) beneath the layer of neoprene, which will render the system inoperable and void the warranty.

- 5 Using fingers, spread open the precut backing for the cable routing path selected in step 4 and lift out the neoprene material from that path (see [Figure 4](#) on [page 10](#)). Each cable path has been precut approximately 90 percent through. Lifting out the selected channel will cause slight tearing of the neoprene material, which is to be expected.
- 6 Carefully connect the P1/P2 end of the mat reader drive cable to the back side of the mat reader, and press the cable into the cable path channel created in step 5 (see [Figure 5](#)).
- 7 Peel the backing from the Cover Connector (M02498B001) and place over the P1/P2 cable connection (see [Figure 5](#)). Ensure to press tape firmly so it contacts the PCB around the perimeter of the connector.

**Figure 5: Connecting to Mini Mat Reader - Low Frequency**



- 8 Gently turn the mat reader to the face-up position (see [Figure 6](#)).

**Figure 6: MR01003GXXX Mat Reader - Face Up**

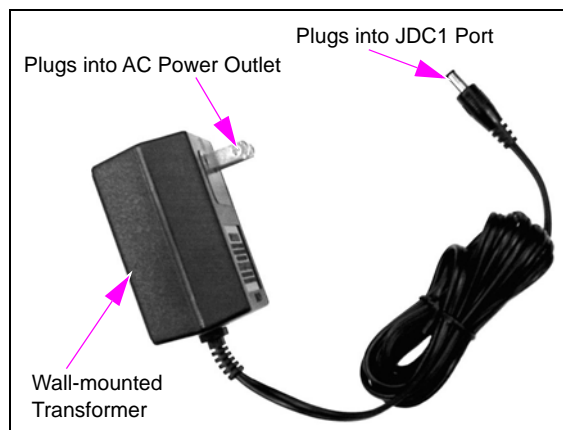


- 9 Connect the loose end of the work area cable to the POS system.
  - For a Passport system, the mat reader connects to the P3 port on the Universal Serial Bus (USB) converter using a Q13180-20B Gender Mender. For more information, refer to *MDE-4157 Passport Combined Cashier/Manager Workstation*, *MDE-4158 Passport Cashier Workstation*, and *MDE-4159 Passport Standalone Manager Workstation*.

### Connecting Wall-mount Power Supply (M01878B001)

To connect the wall-mount power supply provided with the kit as shown in [Figure 7](#), proceed as follows:

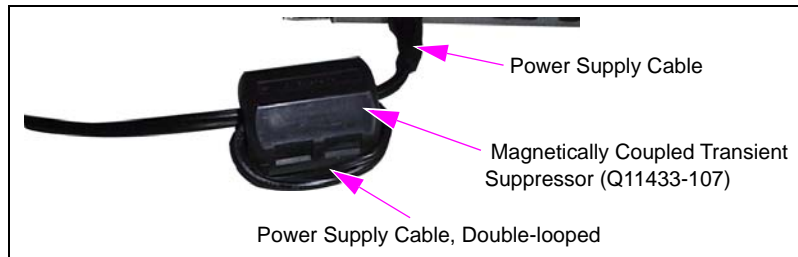
**Figure 7: Wall-mount Power Supply**



- 1 Plug the wall-mounted transformer into the AC power outlet.  
*Note: This AC power outlet must be on the same circuit as the POS system.*
- 2 Connect the plug end of the power supply cable to the JDC1 port on the mat reader interface box (see [Figure 3](#) on [page 10](#)).

- 3 Double-loop the JDC1 end of the power supply cable through the Magnetically Coupled Transient Suppressor (Q11433-107) with the bead in the open position, then snap the bead shut (see [Figure 8](#)).

**Figure 8: Wall-mount Power Supply Cable with Ferrite**

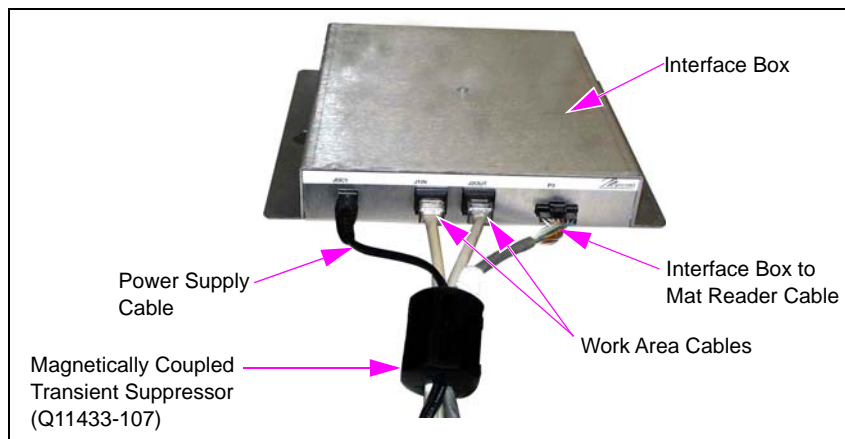


## Completing Installation

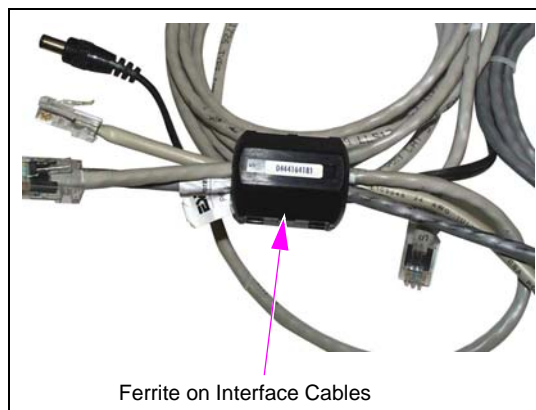
To complete the installation, connect the cables as follows:

- 1 Route all cables near the interface box end through the magnetically coupled transient suppressor and snap the ferrite bead closed (see [Figure 9](#) and [Figure 10](#)).

**Figure 9: Low Frequency Mini Mat Reader Connections**

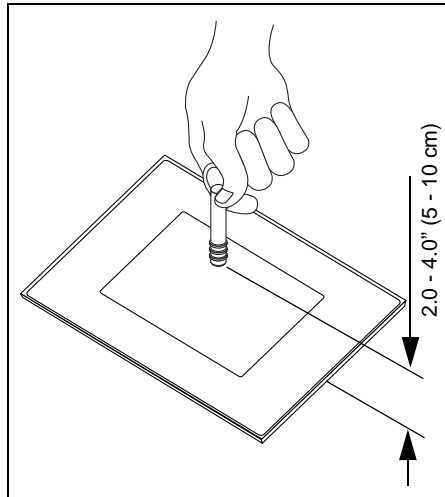


**Figure 10: Ferrite on Interface Cables**



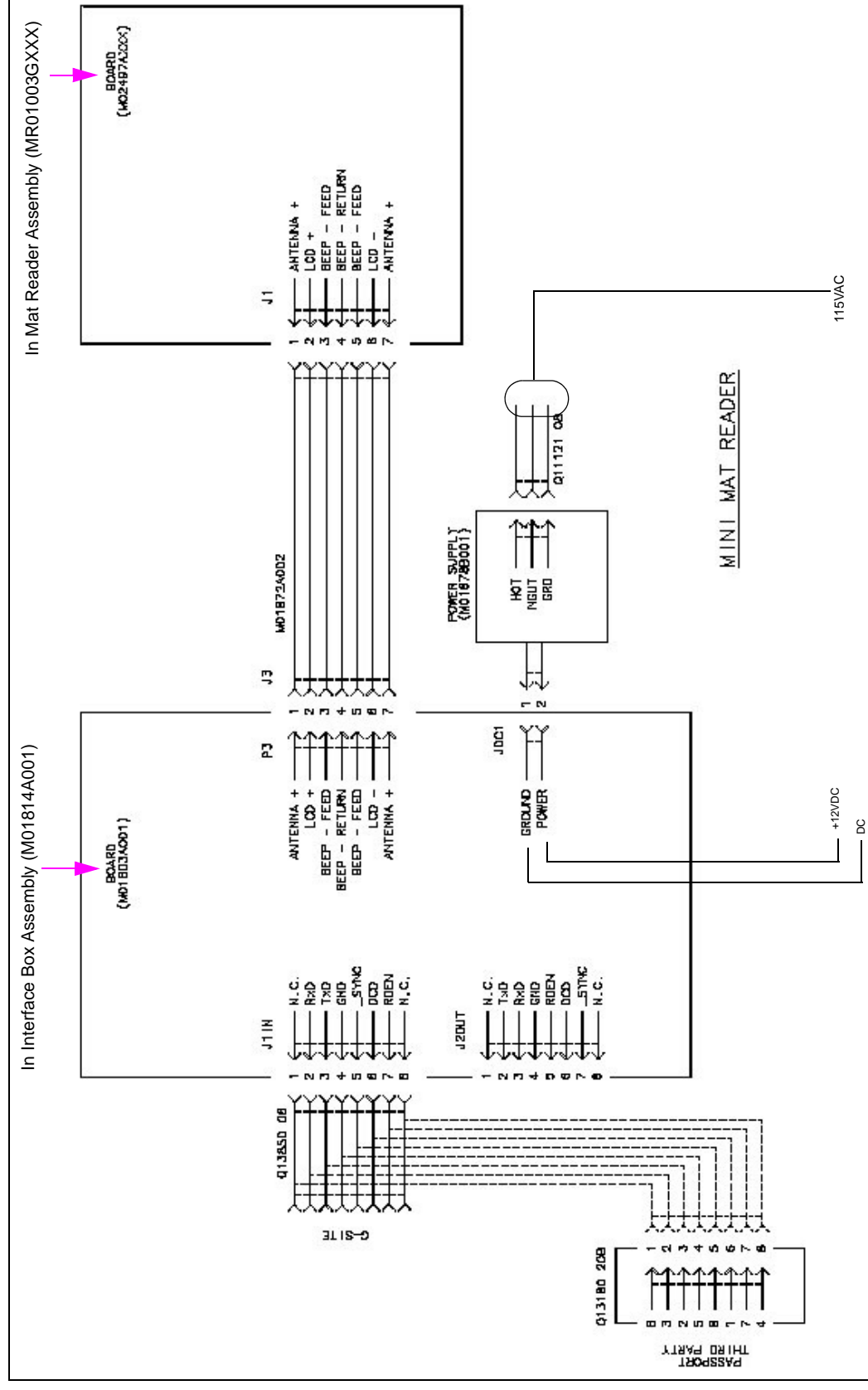
- 2 Dress all cables and secure with Flat Cable Mounting Clamp (Q13459-01).
- 3 Clean up the work area.
- 4 Ensure the keytag is read by the mat reader within the specified range (see [Figure 11](#)).

**Figure 11: Verifying Low Frequency Mini Mat Reader**



- 5 Go to [“Commissioning and Warranty Information”](#) on page 34.

**Figure 12: Mat Reader Interconnect/Block Diagram M01873 (Mini Mat)**



## Installing C00016-011 Kit - Low Frequency (PIN Pad)

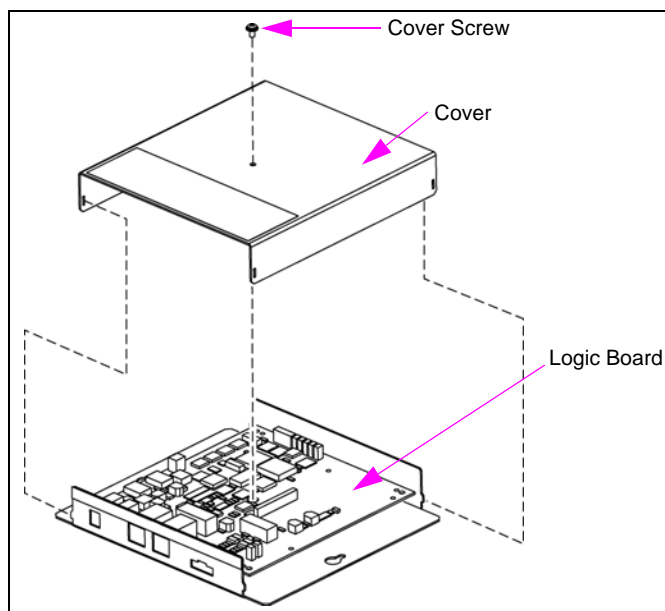
To install the C00016-011 Kit - Low Frequency (PIN Pad), proceed as follows:

### Setting Baud Rate

To set the baud rate, proceed as follows:

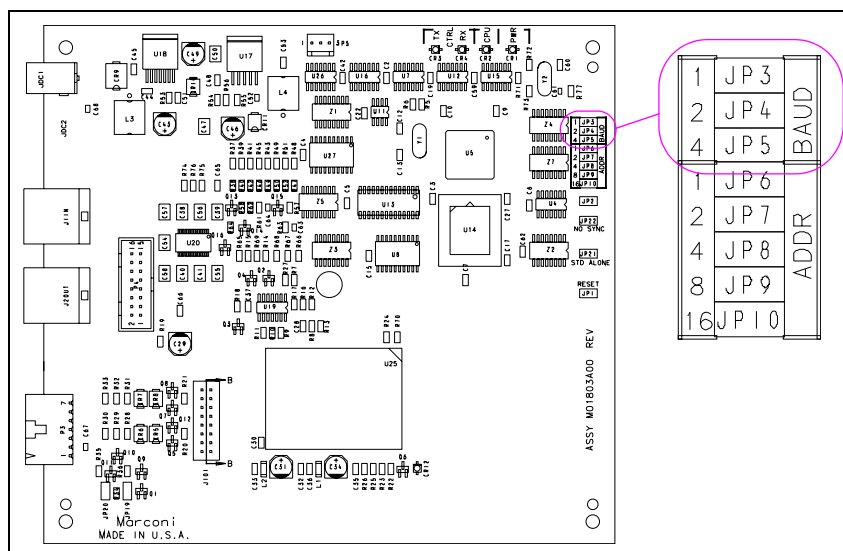
- 1 Remove the mat reader interface box cover to access the Logic Board (M01803A001) as shown in [Figure 13](#).

**Figure 13: Mat Reader Interface Box**




- 2 Locate the jump jacks on the logic board for mat reader (see [Figure 14](#)).


**Figure 14: Jump Jacks for Baud Rate Setting on Logic Board**





- 3 Set the jump jacks as follows (see [Figure 14](#) on [page 16](#)):

 **CAUTION**



A properly grounded 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.

Following are the baud rate settings:

Mat Reader Baud Rates			
Baud Rate (see Note)	BAUD 1	BAUD 2	BAUD 4
4800	OUT	OUT	OUT
2400	IN	OUT	OUT
1200	OUT	IN	OUT
300	IN	IN	OUT
38400	OUT	OUT	IN
19200	IN	OUT	IN
9600	OUT	IN	IN
4800	IN	IN	IN

*Note: 4800 is the default Mat Reader Value.*

- 4 If you are **NOT** daisy chaining the mat reader interface boxes, reinstall the cover removed in [step 1](#) on [page 16](#).  
*Note: Daisy chaining is connecting the output from one interface box to the input of another and the address of the second mat reader must match address on the first mat reader.*
- 5 If you **ARE** daisy chaining the mat reader interface boxes, go to “[Addressing Logic Board When Daisy Chaining](#)” on [page 31](#) to set addresses on the logic board.

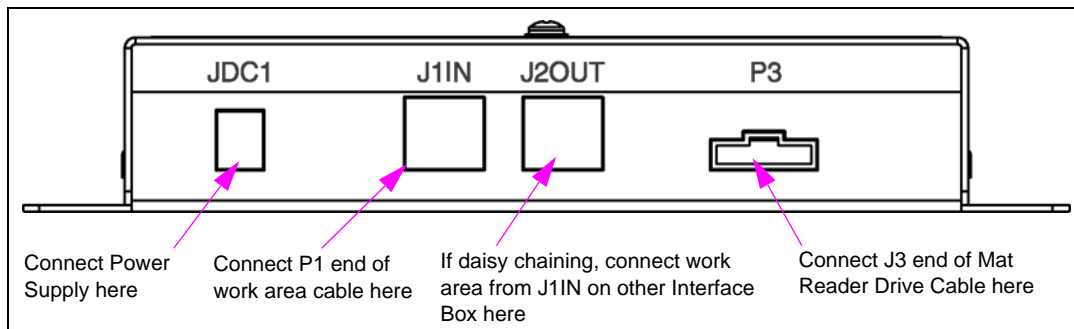
### Mounting and Connecting Mat Reader Interface Box

To mount and connect the mat reader interface box, proceed as follows:

- 1 Mount the mat reader interface box following the procedures in “[Mounting Mat Reader Interface Box](#)” on [page 33](#).
- 2 Run both the power and data cables to the port end of the mat reader interface box (see [Figure 15](#) on [page 18](#)) as follows:
  - a Connect the J3 end of the Ribbon Cable (M01872A001) to the Interface P3 port.
  - b Connect the P1 end of the Work Area Cable (Q13850-06) to the J1IN port. The other end will be connected later.

- c For daisy chaining the mat reader interface boxes, connect a work area cable from the J2OUT port on this interface box to the J1IN port on the other interface box.

**Figure 15: Connecting Mat Reader Interface Box**



## Passport Solution Overview

**Figure 16: Passport Solution Overview**



*Note: For detailed installation instructions of Passport PIN Pad stand, refer to MDE-5351 Passport PIN Pad Stand Installation Instructions.*

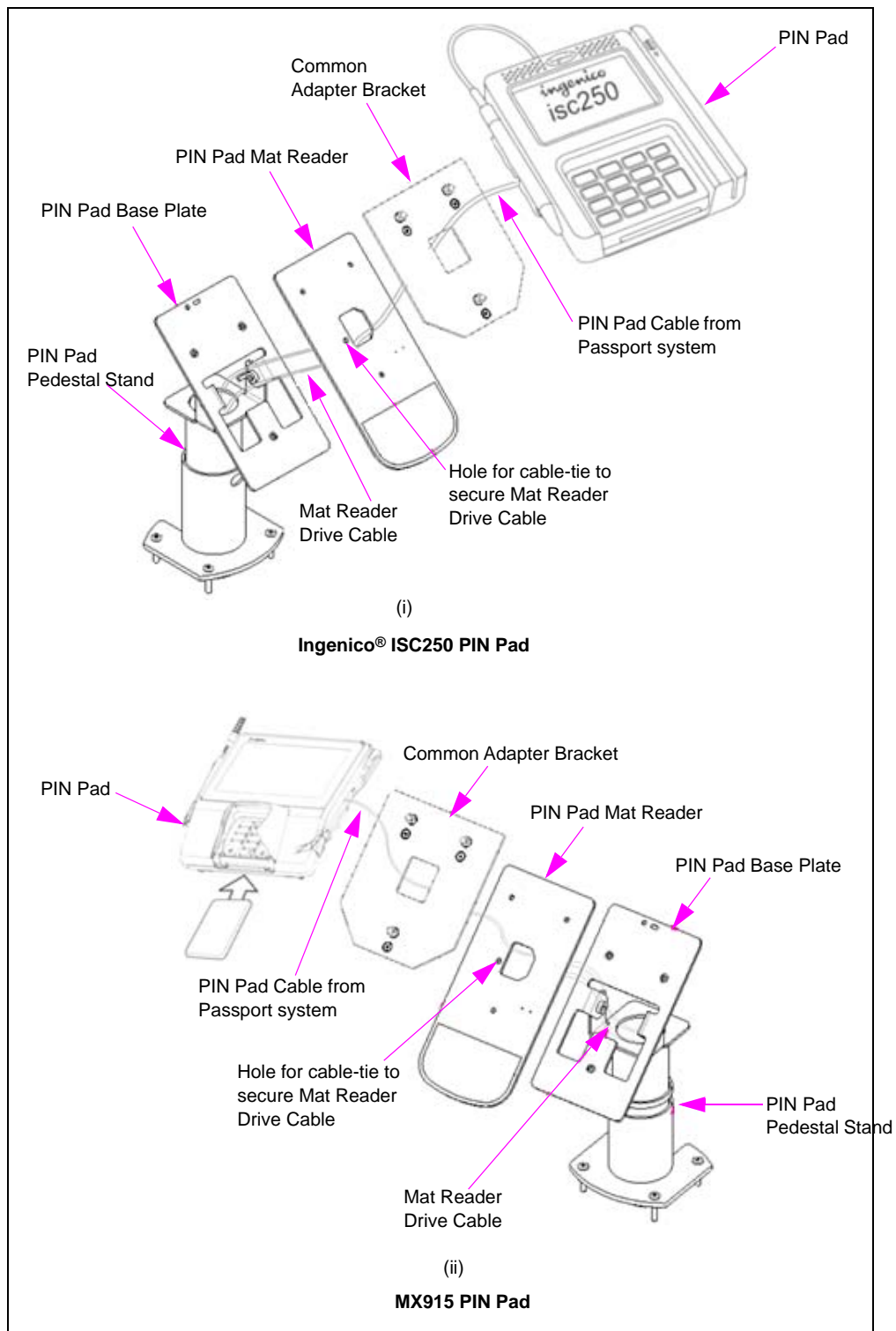
## PIN Pad Mat Reader - with Pedestal and Hole in Countertop

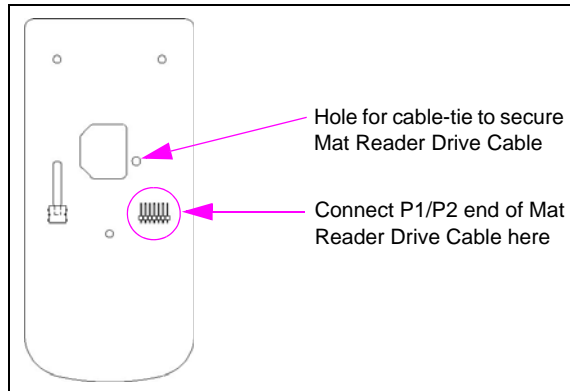
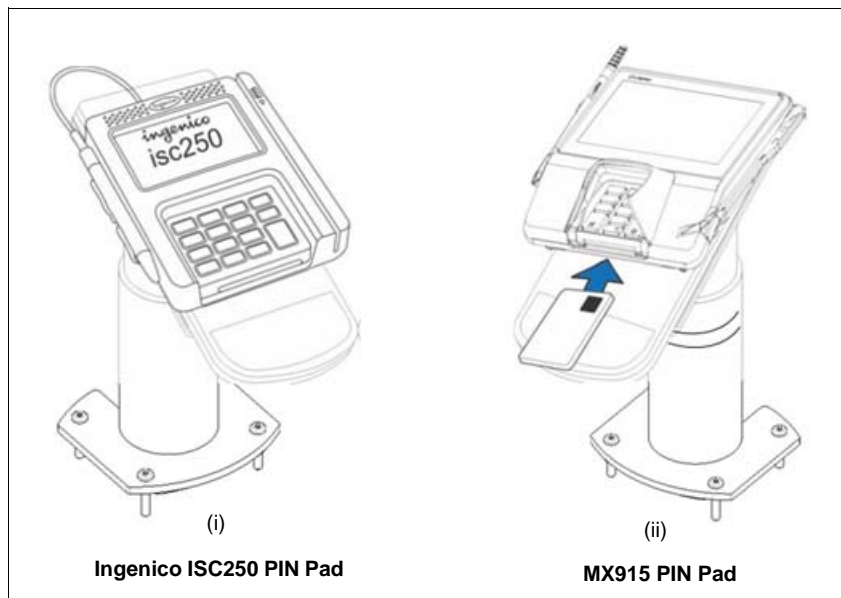
To install the PIN pad mat reader with pedestal and hole in countertop, proceed as follows:

*Note: The pedestal serves as conduit for the PIN pad cable (supplied with PIN pad) and the Mat Reader Drive Cable (M01872A002).*

- 1 If not already installed, use four screws to mount the PIN pad pedestal over a hole in the countertop through which the PIN pad and mat reader drive cables will be routed.
- 2 Route the mat reader drive cable from the interface box through the pedestal and through the hole in the base plate as shown in [Figure 17](#) on [page 20](#).
- 3 Carefully connect the P1/P2 connector of the mat reader drive cable to the connector at the back of the PIN pad mat reader (see [Figure 18](#) on [page 21](#)).
- 4 Route a cable-tie through the designated hole in the PIN pad mat reader (see [Figure 17](#) on [page 20](#) and [Figure 18](#) on [page 21](#)) and around the mat reader drive cable, and pull the cable-tie end through its locking slot. This provides strain relief for the cable.
- 5 Route the PIN pad cable from the Passport system through the pedestal, PIN pad mat reader, and hole in the PIN pad adapter plate (see [Figure 17](#) on [page 20](#)).
- 6 Carefully connect the connector on the PIN pad cable to the connector at the back of the PIN pad.
- 7 Insert the three M01677B010 Screws through the corresponding holes in the common adapter plate, PIN pad mat reader, and screw into the corresponding holes in the base plate (see [Figure 19](#) on [page 21](#)).
- 8 Align the three mounting holes on the bottom of the PIN pad over the three studs on the PIN pad adapter plate.
- 9 Place the PIN pad on the PIN pad adapter plate so that the studs go into the PIN pad's mounting holes.
- 10 Gently slide the PIN pad down the PIN pad adapter plate so that the studs fit firmly into the slot holes.
- 11 Connect the loose end of the work area cable from the interface box to the P3 port on the USB converter (refer to *MDE-4157 Passport Combined Cashier/Manager Workstation*, *MDE-4158 Passport Cashier Workstation*, and *MDE-4159 Passport Standalone Manager Workstation*).

Figure 17: Routing PIN Pad Mat Reader Cable Through Pedestal

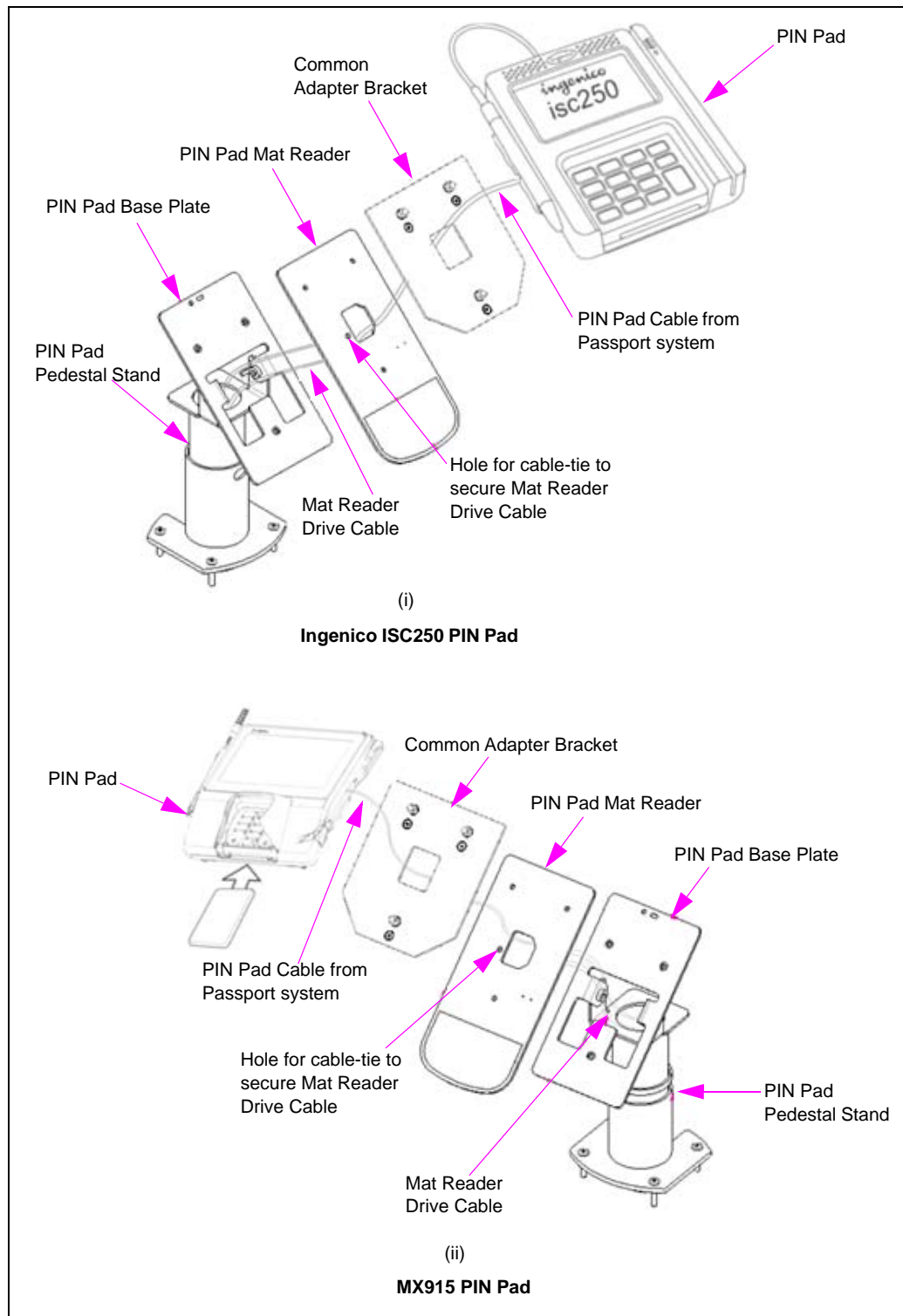


**Figure 18: Back Side of PIN Pad Mat Reader****Figure 19: PIN Pad Mat Reader Assembly on Pedestal**

## PIN Pad Mat Reader - with Pedestal and Without Hole in Countertop

*Note: The pedestal serves as support for the PIN pad and mat reader. The PIN pad cable (supplied with PIN pad) and Mat Reader Drive Cable (M01872A002) will be routed between the mat reader and PIN pad, and secured to the outside of the pedestal.*

- 1 If not already installed, use four screws to mount the PIN pad pedestal to the countertop.
- 2 Route the mat reader drive cable from the interface box beside the pedestal and through the hole at the top of the base plate (see [Figure 20](#) on [page 23](#)).
- 3 Carefully connect the P1/P2 connector of the mat reader drive cable to the connector at the back of the PIN pad mat reader (see [Figure 18](#) on [page 21](#)).
- 4 Route a Cable-tie (Q10178-01) through the designated hole in the PIN pad mat reader (see [Figure 20](#) on [page 23](#)) and around the mat reader drive cable, and pull the cable-tie end through its locking slot. This provides strain relief for the cable.
- 5 Route the PIN pad cable from the Passport system beside the pedestal across the top of the PIN pad mat reader (see [Figure 20](#) on [page 23](#)).
- 6 Carefully connect the connector on the PIN pad cable to the connector at the back of the PIN pad.
- 7 Insert the three M01677B010 Screws through the corresponding holes in the common adapter plate, PIN pad mat reader, and screw into the corresponding holes in the base plate.
- 8 Align the three mounting holes at the bottom of the PIN pad over the three studs on the PIN pad adapter plate.
- 9 Place the PIN pad on the PIN pad adapter plate so that the studs go into the PIN pad's mounting holes.
- 10 Gently slide the PIN pad down the PIN pad adapter plate so that the studs fit firmly into the slot holes.
- 11 Secure the PIN pad cable from the Passport system and the mat reader drive cable to the pedestal with cable-ties (see [Figure 20](#) on [page 23](#)).
- 12 Connect the loose end of the work area cable from the interface box to the P3 port on the USB converter (refer to *MDE-4157 Passport Combined Cashier/Manager Workstation*, *MDE-4158 Passport Cashier Workstation*, and *MDE-4159 Passport Standalone Manager Workstation*).

**Figure 20: Routing PIN Pad Mat Reader Cable - Outside Pedestal**

## **PIN Pad Mat Reader - Without Pedestal and Hole in Countertop**

To install the PIN pad mat reader without pedestal and hole in the countertop, proceed as follows:

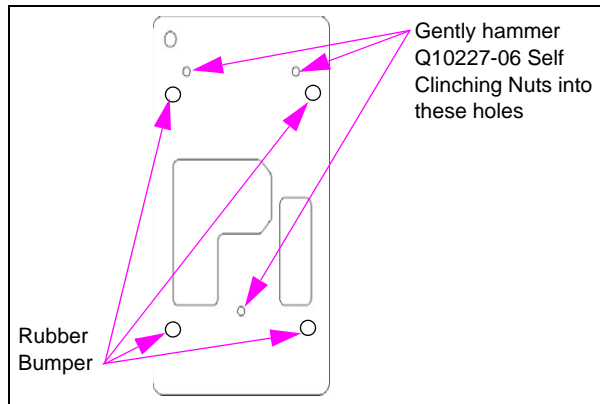
*Note: The PIN pad cable (supplied with the PIN pad) and Mat Reader Drive Cable (M01872A002) are routed between the mat reader and PIN pad. The four Rubber Bumpers (Q12226-01) are attached to the back of the adapter plate to keep it off the countertop.*

- 1** Place the PIN pad adapter plate face down on a clean, shock absorbing material (such as corrugated cardboard or thick shop rag); then firmly hammer the three Q10227-06 Self Clinching Nuts into the three holes in the back side of the PIN pad adapter plate (see [Figure 21](#) on [page 25](#)).
- 2** Attach the four adhesive-backed rubber bumpers to the back side of the PIN pad adapter plate in the four corners (see [Figure 21](#) on [page 25](#)).
- 3** Route the mat reader drive cable from the interface box down through the D-shaped hole in the PIN Pad Mat Reader [M02001GXXX (see [Figure 22](#) on [page 26](#))].
- 4** Carefully connect the P1/P2 connector of the mat reader drive cable to the connector on the back of the PIN pad mat reader (see [Figure 18](#) on [page 21](#)).
- 5** Route a cable-tie through the designated hole in the PIN pad mat reader (see [Figure 22](#) on [page 26](#) and [Figure 18](#) on [page 21](#)) and around the mat reader drive cable, and pull the cable-tie end through its locking slot. The cable-tie provides strain relief for the cable.
- 6** Route the PIN pad cable from the Passport system directly out of the back of the PIN pad (see [Figure 22](#) on [page 26](#)).
- 7** Carefully connect the connector on the PIN pad cable to the connector on the back of the PIN pad.
- 8** Place the three Q11270-21 Screws through the screw holes in the PIN pad mat reader into the front of the PIN pad adapter plate; and screw into the clinch nuts in the PIN pad adapter plate leaving the screw heads 0.160 inches (4 mm) above the top of the PIN pad mat reader.
- 9** Align the three mounting holes on the bottom of the PIN pad over the three screws on the PIN pad adapter plate/PIN pad mat reader combination.
- 10** Place the PIN pad on the PIN pad adapter plate/PIN pad mat reader combination so that the screws go into the PIN pad's mounting holes.
- 11** Gently slide the PIN pad down the PIN pad adapter plate/PIN pad mat reader combination so that the screws fit firmly into the slot holes to form the PIN pad adapter plate/PIN pad mat reader/PIN pad unit (see [Figure 23](#) on [page 27](#)).
- 12** Use the remaining cable-ties to secure the mat reader and PIN pad cables together for neat appearance on the countertop (see [Figure 23](#) on [page 27](#)).

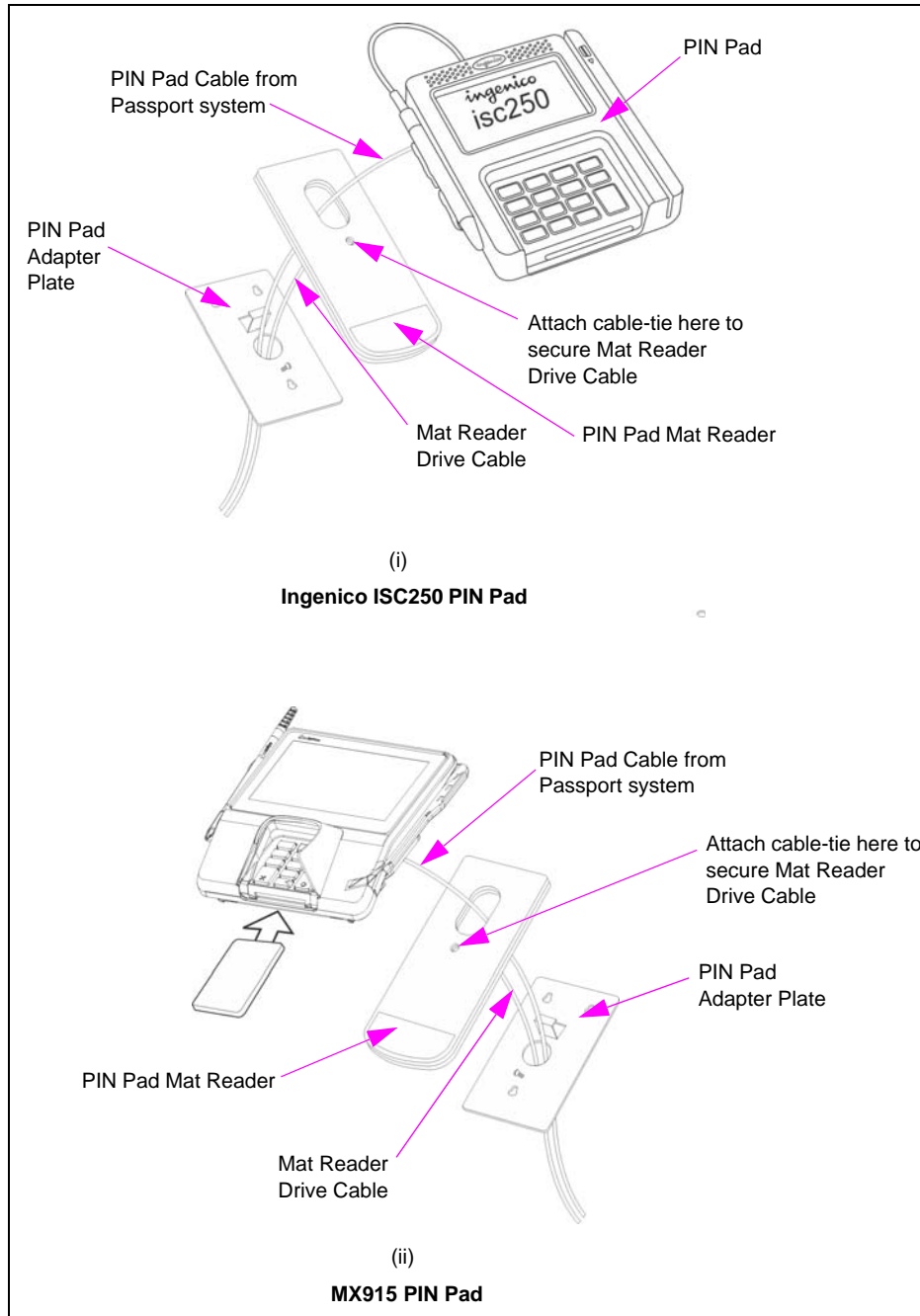


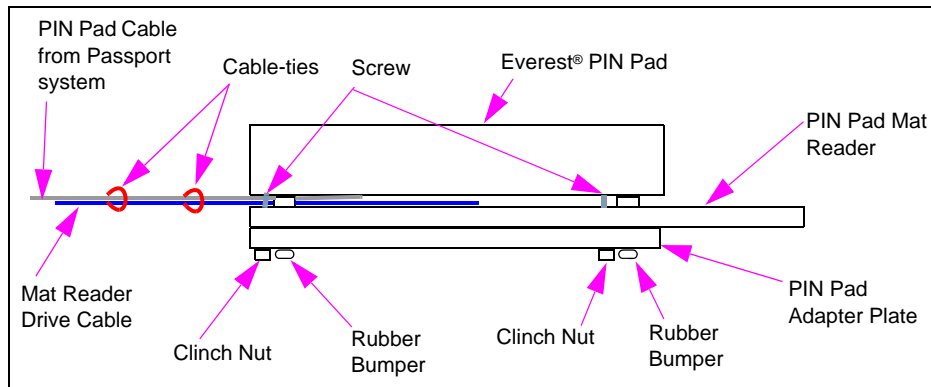
- 13** Connect the loose end of the work area cable from the interface box to the P3 port on the USB converter. Refer to *MDE-4157 Passport Combined Cashier/Manager Workstation*, *MDE-4158 Passport Cashier Workstation*, and *MDE-4159 Passport Standalone Manager Workstation*.

**Figure 21: M01382 Adapter Plate - Back Side with Bumpers and Nut Locations**



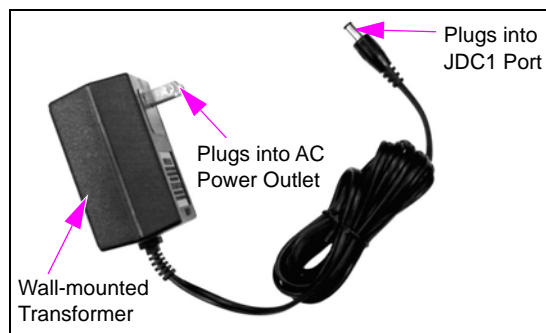
**Figure 22: Routing PIN Pad Mat Reader Cable Without Pedestal**



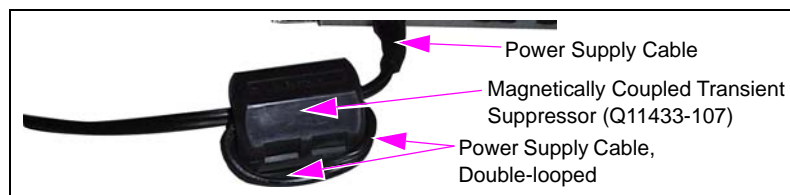
**Figure 23: PIN Pad Adapter Plate/PIN Pad Mat Reader Combination/PIN Pad Unit**

### Connecting Wall-mount Power Supply

To connect the wall-mount power supply provided with kit as shown in [Figure 24](#), proceed as follows:

**Figure 24: Wall-mount Power Supply**

- 1 Plug the wall-mounted transformer into the AC power outlet.  
*Note: This AC power outlet must be on the same circuit as the POS system.*
- 2 Connect the plug end of the power supply cable to the JDC1 port on the mat reader interface box (see [Figure 15](#) on [page 18](#)).
- 3 Double-loop the JDC1 end of the power supply cable through the magnetically coupled transient suppressor with the bead in the open position, then snap the bead shut (see [Figure 25](#)).

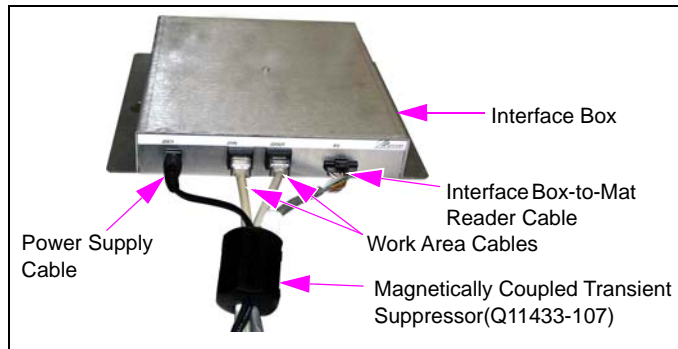
**Figure 25: Wall-mount Power Supply Cable with Ferrite**

## Completing Installation

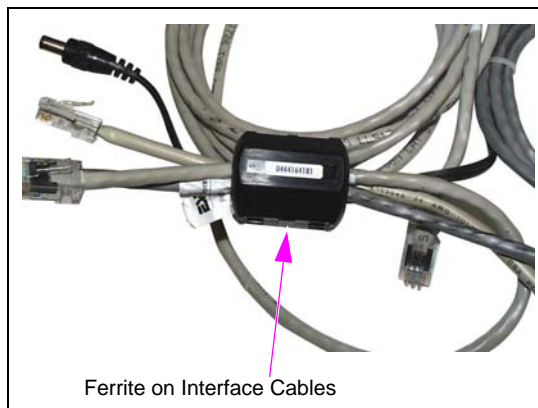
To complete the installation, connect the cables as follows:

- 1 Route all cables near the interface box end through the magnetically coupled transient suppressor and snap the ferrite bead closed (see [Figure 26](#) and [Figure 27](#)).

**Figure 26: Low Frequency Mini Mat Reader Connections**



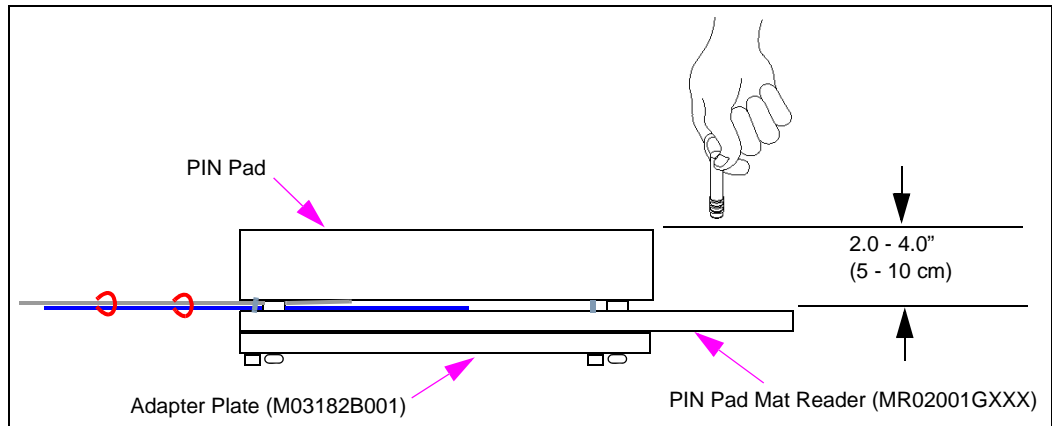
**Figure 27: Ferrite on Interface Cables**



- 2 Dress all cables and secure with flat cable mounting clamp.
- 3 Clean up the work area.

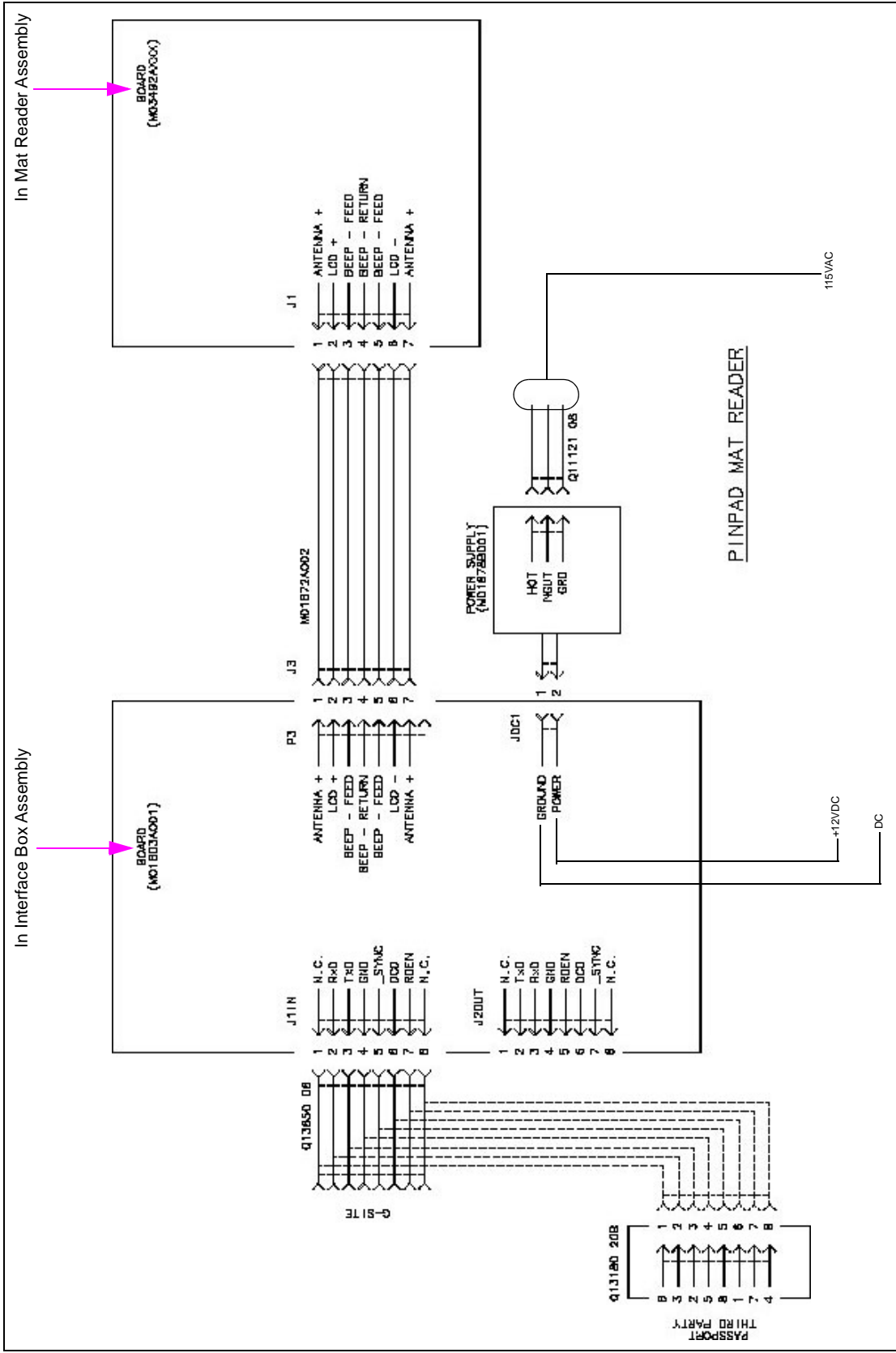
- 4 Verify the keytag can be read by the mat reader within the specified range (see [Figure 28](#)).

**Figure 28: PIN Pad Mat Reader Read Verification**



- 5 Go to [“Commissioning and Warranty Information”](#) on [page 34](#).

Figure 29: Mat Reader Interconnect/Block Diagram M01873 (PIN Pad)



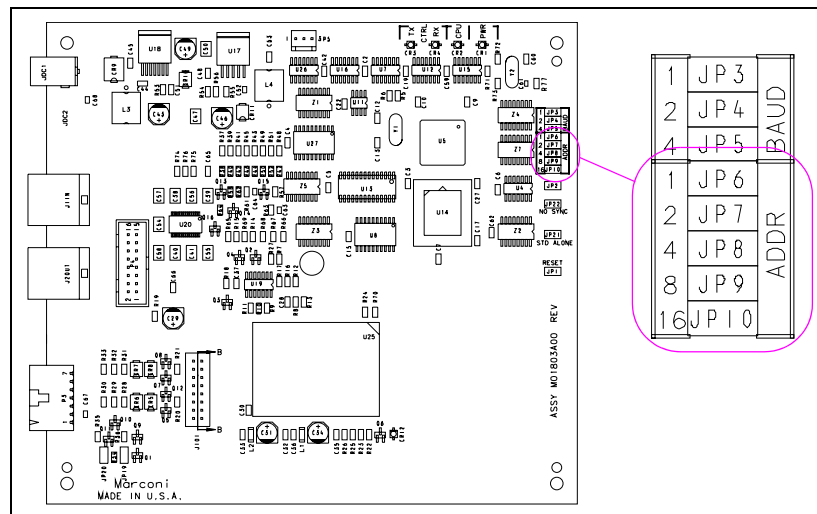
## Addressing Logic Board When Daisy Chaining

Address for the mat reader must match the address on the previously installed mat reader.

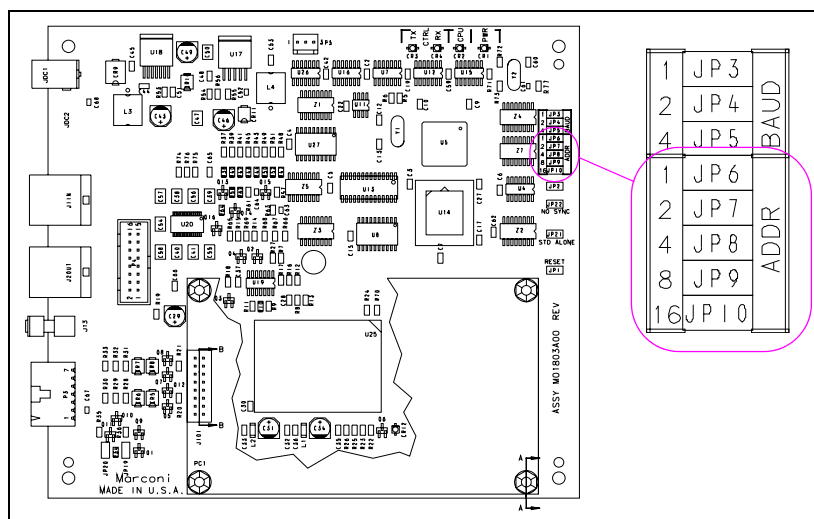
To set the address on the logic board when daisy chaining, proceed as follows:

- 1 Access the logic board for the mat reader being installed.
- 2 Locate the jump jacks on the previously installed Mat Reader Logic Board (M01803A001 or M01803A002) as appropriate (see [Figure 30](#) or [Figure 31](#)).

**Figure 30: Jump Jacks for Address Setting on M01803A001 Logic Board**



**Figure 31: Jump Jacks for Address Setting on M01803A002 Logic Board**



- 3 Note the position of jump jacks on the previously installed mat reader logic board and set the jump jacks on the board for the mat reader being installed to match the address on the logic board (see [Caution](#) on [page 32](#)).

**CAUTION**

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

Mat Reader Addresses					
Address on Logic Board	ADDR 1	ADDR 2	ADDR 4	ADDR 8	ADDR 16
M01803A001/M01803A002					
0	OUT	OUT	OUT	OUT	OUT
1	IN	OUT	OUT	OUT	OUT
2	OUT	IN	OUT	OUT	OUT
3	IN	IN	OUT	OUT	OUT
4	OUT	OUT	IN	OUT	OUT
5	IN	OUT	IN	OUT	OUT
6	OUT	IN	IN	OUT	OUT
7	IN	IN	IN	OUT	OUT
8	OUT	OUT	OUT	IN	OUT
9	IN	OUT	OUT	IN	OUT
10	OUT	IN	OUT	IN	OUT
11	IN	IN	OUT	IN	OUT
12	OUT	OUT	IN	IN	OUT
13	IN	OUT	IN	IN	OUT
14	OUT	IN	IN	IN	OUT
15	IN	IN	IN	IN	OUT
16	OUT	OUT	OUT	OUT	IN
17	IN	OUT	OUT	OUT	IN
18	OUT	IN	OUT	OUT	IN
19	IN	IN	OUT	OUT	IN
20	OUT	OUT	IN	OUT	IN
21	IN	OUT	IN	OUT	IN
22	OUT	IN	IN	OUT	IN
23	IN	IN	IN	OUT	IN
24	OUT	OUT	OUT	IN	IN
25	IN	OUT	OUT	IN	IN
26	OUT	IN	OUT	IN	IN
27	IN	IN	OUT	IN	IN
28	OUT	OUT	IN	IN	IN
29	IN	OUT	IN	IN	IN
30	OUT	IN	IN	IN	IN
31	IN	IN	IN	IN	IN

**4** Reinstall the cover.



## Mounting Mat Reader Interface Box

To mount the mat reader interface box, proceed as follows:

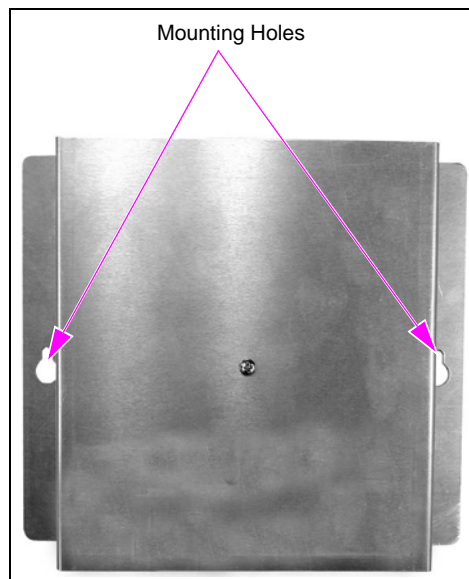
- 1 Determine the location for the installation of indoor equipment. The interface box may be mounted under the countertop (upside down) or vertically on one of the supporting walls of the countertop.  
*Note: For connecting the mat reader interface box to the mat reader, refer to MDE-3620 POS Systems Site Preparation Manual. Also, refer to “Interface Box” on page 8.*
- 2 Use a Zircon stud/bracket finder to ensure no electrical conduits or pipes are located inside the wall where the mat reader interface box is to be mounted. Also, ensure the mat reader interface box is to be located where studs or wall (concrete/brick/drywall) mollys can be used for mounting.
- 3 Mark and drill the holes. Insert the wall mollys, if required.

### CAUTION

Do not use the mat reader interface box as a drill guide. It may be used as a template to mark the holes to be drilled.

- 4 Use the 8-32-inch thread-forming screws provided or other appropriate contractor-supplied mounting hardware to secure the mat reader interface box to the wall or under the countertop.  
*Note: 3/8-inches deep pilot holes (approximately 1/8 inches in diameter) are required if the screws provided are used.*

**Figure 32: Mat Reader Interface Box Mounting Holes**



## Commissioning and Warranty Information

On completion and testing the mat reader System, call the Gilbarco Call Center at 1-888-800-7498 to register the installation and activate the warranty.

*Note: The installed unit's full model (C00016-XXX) and serial number are required to register the installation and activate the warranty.*

- All mat readers have one-year parts warranty.  
*Note: Parts are to be returned through and obtained from the local Gilbarco distributor.*
- Labor warranty, if any, is unit and customer-specific.

Gilbarco strongly recommends using only Gilbarco-trained ASCs to perform service on the units. Use of non-authorized service personnel to repair or service these units may void warranty. Call your local distributor for service.

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