

## Introduction

### Purpose

This manual provides instructions to install the Price per Unit (PPU) Upgrade Kits (M10742K002/M10742K003/M10742K005/M10742K006/M10742K007) on Encore® 300/500/700/S units. The upgrade kits are used to upgrade a three-button unit to a four-button unit.

*Note: The PPU graphic overlays are not included in the kits. These must be ordered separately to complete the installation.*

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### Required Tools

The following tools are required for installing the PPU Upgrade Kits:

- Phillips® Screwdriver
- Needle Nose Pliers

### Parts List

The following table lists the parts included in the PPU Upgrade Kit (M10742K002) for Encore 500 unit:

Item	Description	Part Number	Quantity
1	Encore 500 PPU and Switch Display Assembly	M04588A001	2
2	Grade Select Button Assembly	M03533A001	2
3	6-20 Thread Forming Screw	Q11677-24	8
4	Jumper	Q11011-01	4
5	PPU Cable	M04547A002	2

The following table lists the parts included in the PPU Upgrade Kit (M10742K003) for Encore 300 unit:

Item	Description	Part Number	Quantity
1	Encore 300 PPU and Switch Assembly	M02652A003	2
2	Grade Select Button Assembly	M03533A001	2
3	6-20 Thread Forming Screw	Q11677-24	8
4	Jumper	Q11011-01	3
5	Printed Circuit Assembly (PCA), Grade Select	M01564A001	1
6	Printed Circuit Board (PCB) Plastic Support	Q10651-02	4
7	Grade Select Cable Distribution	M01695A001	1
8	Grade Select/Controller Cable	M01693A001	1

The following table lists the parts included in the PPU Upgrade Kit (M10742K005) for Encore S unit:

Item	Description	Part Number	Quantity
1	PPU PCB Panel Assembly	M12982A002	2
2	Grade Select Button Assembly	M06139A001	2
3	6-20 Thread Forming Screw	Q11677-24	4
4	Jumper	Q11011-01	4
5	SP-III Door Node 5 (6-digit) PCA	M12803A003	2
6	Card Reader Gasket (Non-adhesive)	M13127B006	1
7	PPU Shield Assembly	M12962A001	1
8	Flat Washer (0.170 X 0.375 X 0.030)	Q10385-09	3

*Note: The PPU graphic overlays are not included in the kits. These must be ordered separately.*

The following table lists the parts included in the PPU Upgrade Kit (M10742K006) for Encore 500 unit built before 2004:

Item	Description	Part Number	Quantity
1	PPU Display Module Assembly	M02652A001	2
2	Grade Select Button Assembly	M03533A001	2
3	6-20 Thread Forming Screw	Q11677-24	8
4	Jumper	Q11011-01	4
5	PPU Cable	M04547A002	2

The following table lists the parts included in the PPU Upgrade Kit (M10742K007) for Encore 500 S and 700 S units built after August 2012:

Item	Description	Part Number	Quantity
1	PPU PCB Panel Assembly	M12982A002	2
2	Grade Select Button Assembly	M06139A001	2
3	6-20 Thread Forming Screw	Q11677-24	4
4	Jumper	Q11011-01	4
5	PCA, SP-III PPU Display Single	M12893A011	2
6	Circuit Board Spacer Support	M16352B001	8

*Note: M10742K007 does not include Card Reader gasket M13127B006, Brand Panel graphics, and additional Octane Stickers.*

## Related Documents

Document Number	Title	GOLD <sup>SM</sup> Library
MDE-3804	Encore and Eclipse® Series Start-up/Service Manual	<ul style="list-style-type: none"><li>• Encore and Eclipse</li><li>• Service Manual</li></ul>

## Abbreviations and Acronyms

Term	Description
E-CIM™	Enhanced Customer Interface Module
ESD	Electrostatic Discharge
GOLD	Gilbarco® Online Documentation
OSHA	Occupational Safety and Health Administration
PCA	Printed Circuit Assembly
PCB	Printed Circuit Board
PPU	Price per Unit

# Important Safety Information

**Notes: 1) Save this Important Safety Information section in a readily accessible location.**

**2) Although DEF is non-flammable, Diesel is flammable. Therefore, for DEF cabinets that are attached to Diesel dispensers, follow all the notes in this section that pertain to flammable fuels.**

This section introduces the hazards and safety precautions associated with installing, inspecting, maintaining, or servicing this product. Before performing any task on this product, read this safety information and the applicable sections in this manual, where additional hazards and safety precautions for your task will be found. Fire, explosion, electrical shock, or pressure release could occur and cause death or serious injury, if these safe service procedures are not followed.

## Preliminary Precautions

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

## Emergency Total Electrical Shut-Off

The first and most important information you must know is how to stop all fuel flow to the pump/dispenser and island. Locate the switch or circuit breakers that shut off all power to all fueling equipment, dispensing devices, and Submerged Turbine Pumps (STPs).

**WARNING**

The EMERGENCY STOP, ALL STOP, and PUMP STOP buttons at the cashier's station WILL NOT shut off electrical power to the pump/dispenser. This means that even if you activate these stops, fuel may continue to flow uncontrolled. You must use the TOTAL ELECTRICAL SHUT-OFF in the case of an emergency and not the console's ALL STOP and PUMP STOP or similar keys.

## Total Electrical Shut-Off Before Access

Any procedure that requires access to electrical components or the electronics of the dispenser requires total electrical shut off of that unit. Understand the function and location of this switch or circuit breaker before inspecting, installing, maintaining, or servicing Gilbarco equipment.

## Evacuating, Barricading, and Shutting Off

Any procedure that requires access to the pump/dispenser or STPs requires the following actions:



- An evacuation of all unauthorized persons and vehicles from the work area
- Use of safety tape, cones, or barricades at the affected unit(s)
- A total electrical shut-off of the affected unit(s)

## Read the Manual

Read, understand, and follow this manual and any other labels or related materials supplied with this equipment. If you do not understand a procedure, call the Gilbarco Technical Assistance Center (TAC) at 1-800-743-7501. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

## Follow the Regulations

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

## Replacement Parts

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

## Federal Communications Commission (FCC) Warning

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

## Safety Symbols and Warning Words

This section provides important information about warning symbols and boxes.

### Alert Symbol



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

### Signal Words

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



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



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



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

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

## Working With Fuels and Electrical Energy Prevent Explosions and Fires

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

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

## No Open Fire



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

## No Sparks - No Smoking



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

## Working Alone

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

## Working With Electricity Safely

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

## Hazardous Materials

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

### WARNING

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

### WARNING

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



Gilbarco Veeder-Root encourages the recycling of our products. Some products contain electronics, batteries, or other materials that may require special management practices depending on your location. Please refer to your local, state, or country regulations for these requirements.

## In an Emergency

### Inform Emergency Personnel

Compile the following information and inform emergency personnel:

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

### WARNING



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

### WARNING

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

### WARNING



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

### WARNING



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

### WARNING



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

### WARNING

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

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

### Lockout/Tagout

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

## Before You Begin

### CAUTION



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

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

- 1 Inform the manager.
- 2 Barricade the unit to be worked on.
- 3 Remove power to the unit at the breaker panel. Follow OSHA lockout/tagout procedures.
- 4 Match the parts received in the kits with [“Parts List”](#) on [page 1](#).



### WARNING

Failure to turn off the unit during the 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.

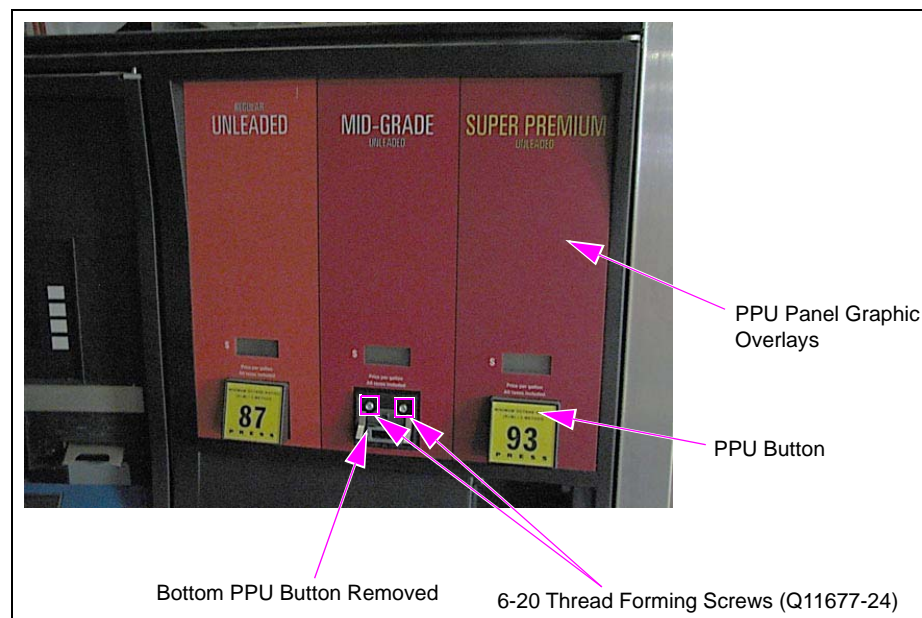
# Installing PPU Upgrade Kit (M10742K002) on Encore 500 Unit

*Note: The PPU graphic overlays are not included in the kit. These must be ordered separately.*

To install the PPU Upgrade Kit on Encore 500 unit, proceed as follows:

- 1 Remove the PPU buttons (top and bottom) and the PPU panel graphic overlays.

**Figure 1: PPU Button and PPU Panel Graphic Overlays**



- 2 Open the door and remove the Encore 500 PPU and switch display assembly.

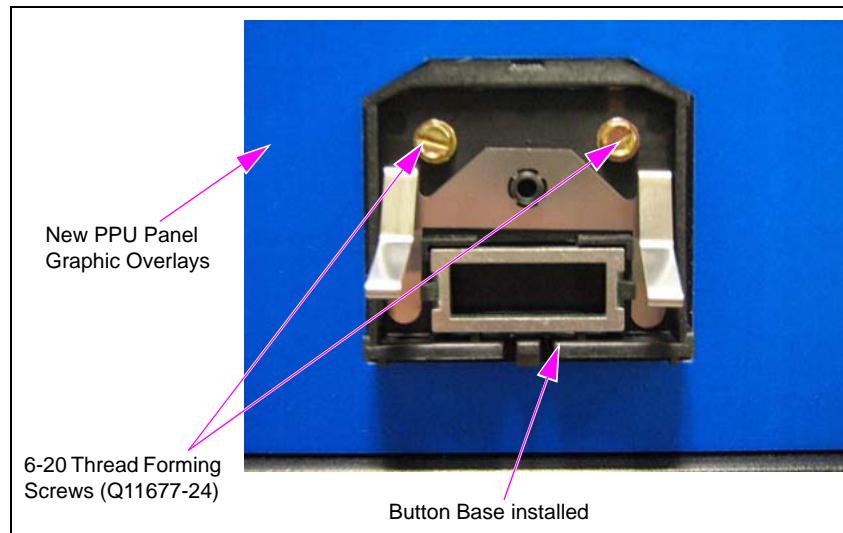
- 3 Install the new PPU graphic overlays.

*Note: When removing the existing graphic overlays, clean the surfaces before installing the new graphic overlays to prevent bubbles or other deformations.*

- 4 Install the new PPU button bases using the Thread Forming Screws (Q11677-24) as shown in [Figure 2](#).

The two thread forming screws hold the soda button base. The button should fit in the open square in graphics, use the pre-tapped holes in the bezel.

**Figure 2: New PPU Graphic Overlays and PPU Button**



- 5 Install the new PPU button tops.
- 6 Install the new Encore 500 PPU and Switch Display Assembly (M04588A001) to align with the graphic.
- 7 Set the Jumper (Q11011-01) settings correctly on each Encore 500 PPU and switch display assembly. For the jumper settings, refer to [“PPU Jumpers for Encore 500/S”](#) on [page 17](#).
- 8 Connect the new PPU Cable (M04547A002) to the Encore 500 PPU and switch display assembly and to the door node similar to the existing one.
- 9 Close the door, restore power, and test the unit for proper operation of the push buttons.

Installing the PPU Upgrade Kit on Encore 500 unit is now complete.



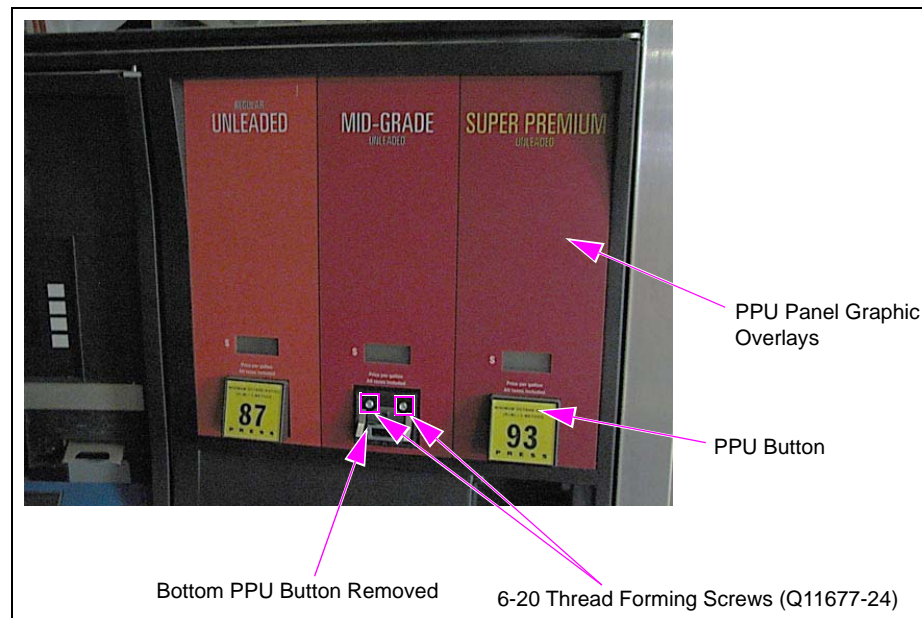
# Installing PPU Upgrade Kit (M10742K003) on Encore 300 Unit

*Note: The PPU graphic overlays are not included in the kit. These must be ordered separately.*

To install the PPU Upgrade Kit on Encore 300 unit, proceed as follows:

- 1 Remove the PPU buttons (top and bottom) and the PPU panel graphic overlays.

**Figure 3: PPU Button and PPU Panel Graphic Overlays**



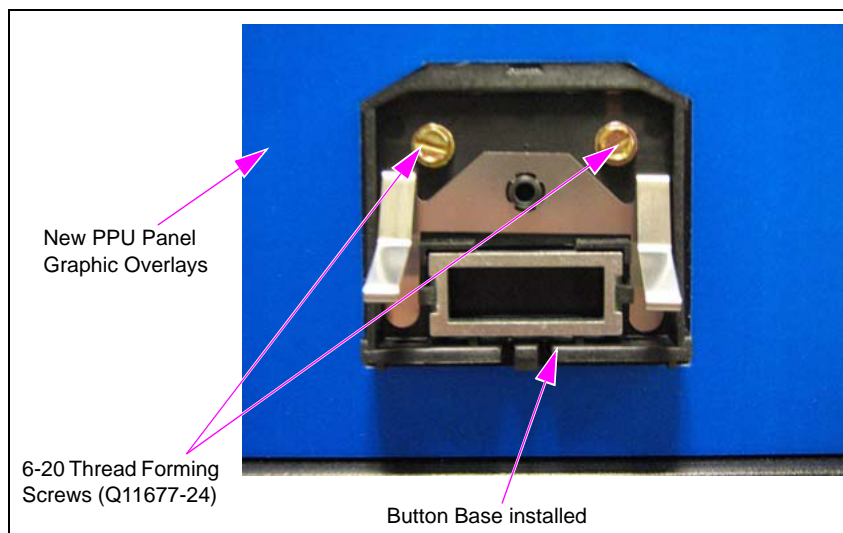
- 2 Open the door and remove the Encore 300 PPU and switch assembly.
- 3 Install the new PPU graphic overlays.

*Note: When removing the existing graphic overlays, clean the surfaces before installing the new graphic overlays to prevent bubbles or other deformations.*

- 4 Install the new PPU button bases using the Thread Forming Screws (Q11677-24) as shown in [Figure 4](#).

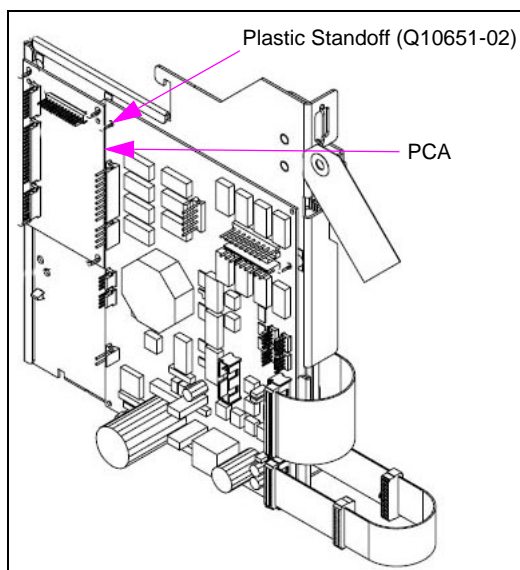
The two thread forming screws hold the soda button base. The button should fit in the open square in graphics, use the pre-tapped holes in the bezel.

**Figure 4: New PPU Graphic Overlays and PPU Button**



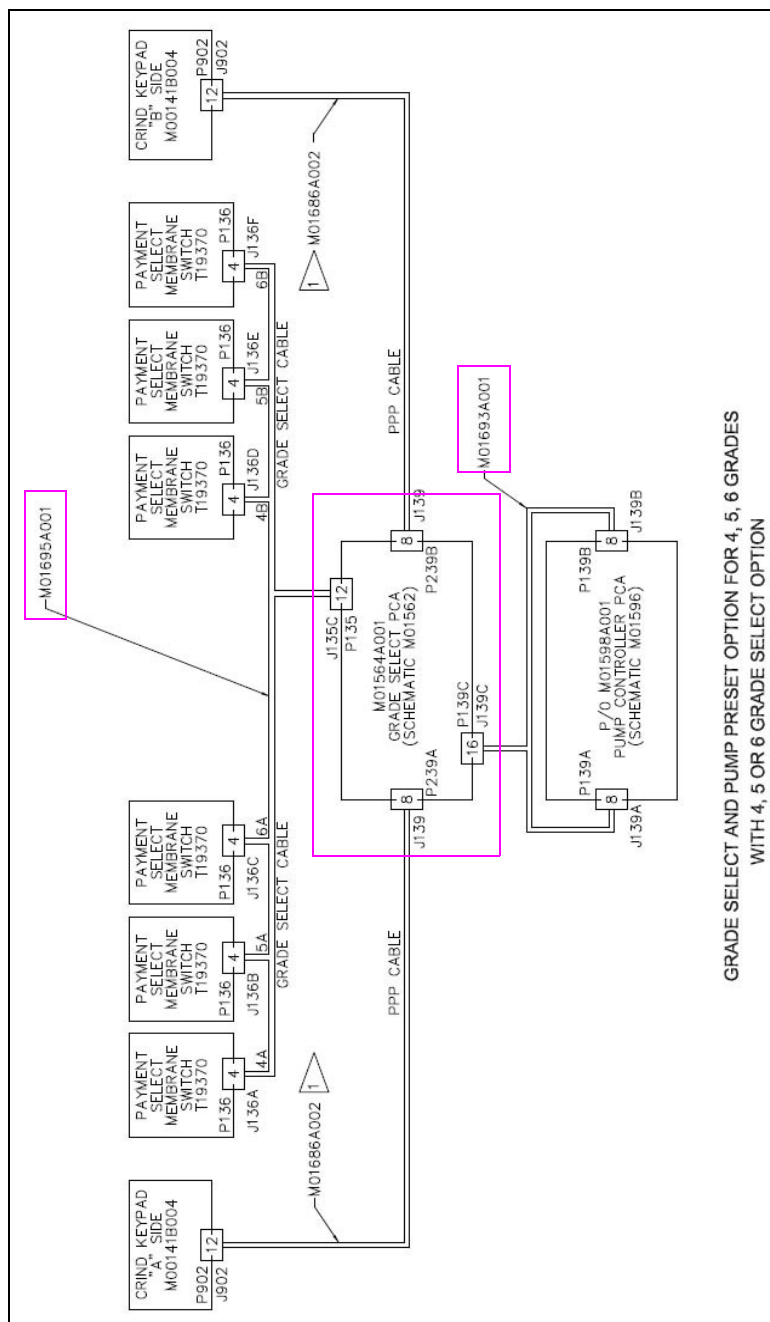
- 5 Install the new PPU button tops.
- 6 Install the new Encore 300 PPU and Switch Assembly (M02652A003) to align with the graphic.
- 7 Set the Jumper (Q11011-01) settings correctly on each Encore 300 PPU and switch assembly. For the jumper settings, refer to [“PPU Jumpers for Encore 300”](#) on [page 17](#).
- 8 Install the Grade Select PCA (M01564A001) to base electronics assembly using the Plastic Standoffs [Q10651-02 (see [Figure 5](#))].

**Figure 5: Base Electronics Assembly**



- 9 Connect the M01695A001 and M01693A001 Cables to the PCAs.

**Figure 6: Connecting Cables to PCAs**



- 10 Close the door, restore power, and test the unit for proper operation of the push buttons.

Installing the PPU Upgrade Kit on Encore 300 unit is now complete.

## Installing PPU Upgrade Kit (M10742K005/M10742K007) on Encore 500 S and 700 S Units

To install the PPU Upgrade Kit on Encore S unit, proceed as follows:

- 1 Remove the PPU buttons (top and bottom) and the PPU panel graphic overlays.  
*Note: When removing the existing graphic overlays, clean the surfaces before installing the new graphic overlays to prevent bubbles or other deformations.*

**Figure 7: PPU Button and PPU Panel Graphic Overlays**

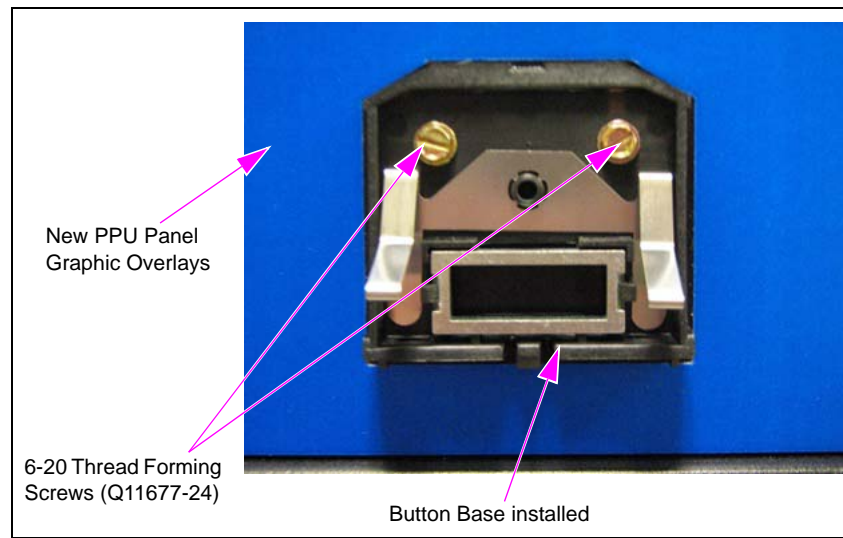


- 2 Install the new PPU graphic overlays, additional PPU button base, and the grade select buttons at the open positions on the PPU panel using the Thread Forming screws (Q11677-24) as shown in [Figure 8](#).

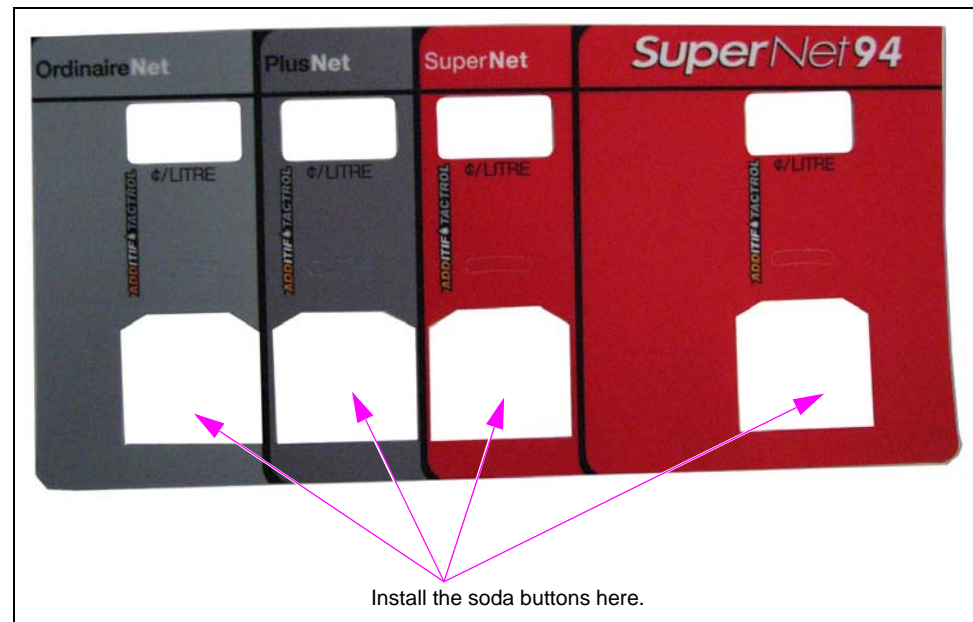
*Note: The PPU graphic overlays are not included in the kit. These must be ordered separately.*

The two thread forming screws hold the soda button base. The button should fit in the open square in graphics (see [Figure 9](#)), use the pre-tapped holes in the bezel.

**Figure 8: New PPU Graphic Overlays and PPU Button**



**Figure 9: New PPU Graphic Overlays - Four Grade Graphics**



- 3 Install the new PPU button tops in their correct positions.



## Installing PPU PCB Panel Assembly (M12982A002) for M10742K007

To install the PPU PCB panel assembly, proceed as follows:

- 1 Remove the card reader to access the PPU PCB panel assembly.
- 2 Remove the three screws that secure the PPU PCB panel assembly.
- 3 Carefully lift the PPU PCB panel assembly.

**Figure 10: Removing Card Reader**



*Note: Before installing the new PPU PCB panel assembly, set the Jumper (Q11011-01) settings. For the jumper settings, refer to “PPU Jumpers for Encore 500/S” on [page 17](#).*

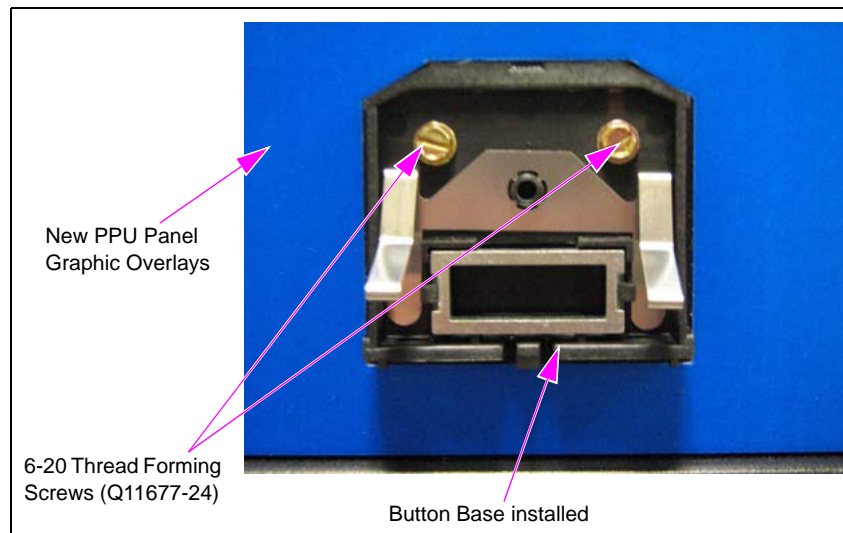
- 4 Using four standoffs (M16325B001), mount the new PPU to the PPU panel. Ensure that PPU is mounted in open location on PPU graphics. Connect the ribbon cable (M10699) to P2201 of new PPU.
- 5 Install the new PPU PCB panel assembly by using the three screws removed in step 2.
- 6 Reinstall the card reader.
- 7 Connect the cable coming from PPU PCB panel assembly to port P2127 on door node assembly
- 8 Close the doors, restore power, and test the unit for proper operation of the push buttons.

Installing the PPU Upgrade Kit on Encore 500 S or 700 S units is now complete.



- 4 Install the new PPU button bases using the Thread Forming Screws (Q11677-24) as shown in [Figure 12](#).

**Figure 12: New PPU Graphic Overlays and PPU Button**



- 5 Install the new PPU button tops.
- 6 Install the PPU Display Module Assembly (M02652A001) to align with the graphic.
- 7 Set the Jumper (Q11011-01) settings correctly on each PPU display module assembly. For the jumper settings, refer to [“PPU Jumpers for Encore 500/S”](#) on [page 17](#).
- 8 Connect the new PPU Cable (M04547A002) to the PPU display module assembly and to the door node similar to the existing one.
- 9 Close the door, restore power, and test the unit for proper operation of the push buttons.

Installing the PPU Upgrade Kit on Encore 500 unit built before 2004 is now complete.



## Appendix: PPU Jumpers for Encore Units

### PPU Jumpers for Encore 500/S

The following table lists the fuel grades and the respective jumper values for Encore 500/S units:

Grades	Jumper Value (0 = No Jumper, 1 = Jumper)		
Grade 1	0	0	0
Grade 2	1	0	0
Grade 3	0	1	0
Grade 4	1	1	0
Grade 5	0	0	1
Diesel	1	0	1

### PPU Jumpers for Encore 300

The following table lists the fuel grades and the respective jumper values for Encore 300 units:

Grades	Jumper Value (0 = No Jumper, 1 = Jumper)			
Grade 1A	1	0	0	0
Grade 2A	0	1	0	0
Grade 3A	1	1	0	0
Grade 4A	0	0	1	0
Grade 5A	1	0	1	0
Grade 6A	0	1	1	0
Grade 1B	1	1	1	0
Grade 2B	0	0	0	1
Grade 3B	1	0	0	1
Grade 4B	0	1	0	1
Grade 5B	1	1	0	1
Grade 6B	0	0	1	1

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