

## Introduction

### Purpose

This manual provides instructions to install the Lamp Kit (M14027K00X) on Highline™/Legacy® pumps and dispensers. This kit is a field retrofit kit used to add brand panel lighting or replace the existing fluorescent tubes and ballast. Located behind the display bezels, the Lamp Kit is used to light the brand panels.

### Table of Contents

Topic	Page
<a href="#">Introduction</a>	1
<a href="#">Important Safety Information</a>	3
<a href="#">Before You Begin</a>	5
<a href="#">Preparing for Installation</a>	5
<a href="#">Installing Lamp Kit (M14027K00X)</a>	6
<a href="#">Completing Installation</a>	12

### Required Tools and Materials

Following tools and materials are required to install the Lamp Kit:

- T/Allen® Wrench 3/16
- Socket Set
- Pair of Pliers
- Wire Cutter/Stripper

### Required Reading

Before installing the kit, review and follow:

- National Fire Protection Association (NFPA) 30A and the Automotive and Marine Service Station Code.
- NFPA 70® and 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: This kit must be installed by a Gilbarco® Authorized Service Contractor (ASC) to ensure warranty.*

### Related Documents

Document Number	Title	GOLD <sup>SM</sup> Library
FE-335	Legacy Series Dispensers 120/240 VAC	Field Wiring Diagrams

## Parts List

### M14027K001 Lamp Kit for Highline/Legacy Pumps and Dispensers

Following table lists the parts included in the M14027K001 Lamp Kit:

Item	Description	Part Number	Quantity
1	Driver, Light Emitting Diode (LED) Constant Current	M13929B001	1
2	Light Strip, LED	M13924A001	2
3	Wire Nut	K81105-20	6
4	Tie-wrap	Q10178-01	6
5	Bracket, LED Driver Mounting	M13930A001	1
6	Nut, Metric Hexagonal (KEPS), M4 X 0.7	Q12885-05	2
7	Mounting Button, Nylon	Q12614-04	4
8	Clamp, Flat Cable Mount	M01102B002	4
9	Cable, LED Driver Output Extension	M13980A001	1
10	Cable, LED Strip Interconnect	M13981A001	1

### M14027K002 Lamp Kit for Highline/Legacy Pumps and Dispensers

Following table lists the parts included in the M14027K002 Lamp Kit:

Item	Description	Part Number	Quantity
1	Driver, LED Constant Current	M13929B001	1
2	Light Strip, LED	M13924A001	1
3	Clamp, Flat Cable Mount	M01102B002	2
4	Wire Nut	K81105-20	6
5	Tie-wrap	Q10178-01	6
6	Bracket, LED Driver Mounting	M13930A001	1
7	Nut, Metric Hexagonal (KEPS), M4 X 0.7	Q12885-05	2
8	Mounting Button, Nylon	Q12614-04	2
9	Cable, LED Driver Output Extension	M13980A001	1
10	Cable, LED Strip Termination	M13982A001	1

## Abbreviations and Acronyms

Term	Description
ASC	Authorized Service Contractor
ESD	Electrostatic Discharge
GOLD	Gilbarco Online Documentation
J-box	Junction Box
LED	Light Emitting Diode
NEC	National Electrical Code
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration

# 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

### 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.

Installing the Lamp Kit (M14027K00X) involves AC wiring to the pump/dispenser. Before you begin, review all the Gilbarco Legacy installation information and follow all wiring and conduit requirements.

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

- 1 Inform the manager.
- 2 Ensure that the unit is barricaded to prevent customer access as listed in [“Important Safety Information”](#) on [page 3](#).
- 3 Ensure that all power has been removed from the unit as listed in [“Important Safety Information”](#) on [page 3](#).
- 4 Turn off the system battery by pressing **CLEAR** then **ENTER** on the manager’s keypad.
- 5 Match the parts received in the kit with [“Parts List”](#) on [page 2](#).

### WARNING

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

## Preparing for Installation

To prepare for the installation, proceed as follows:

- 1 Unlock the panel on the bezel.
- 2 Remove the five 3/6-inch Allen bolts securing the bezel assembly and remove the bezel assembly.  
*Note: Retain the bolts for reassembly of the unit after the installation is complete.*
- 3 Remove the screws securing the column cover and remove the cover.  
*Note: Retain the screws for reassembly of the unit after the installation is complete*
- 4 Pinch the standoffs to remove display assemblies and operator panel.
- 5 If replacing an existing fluorescent light kit, carefully remove the existing fluorescent tubes, ballast, and lamp holders.

## Installing Lamp Kit (M14027K00X)

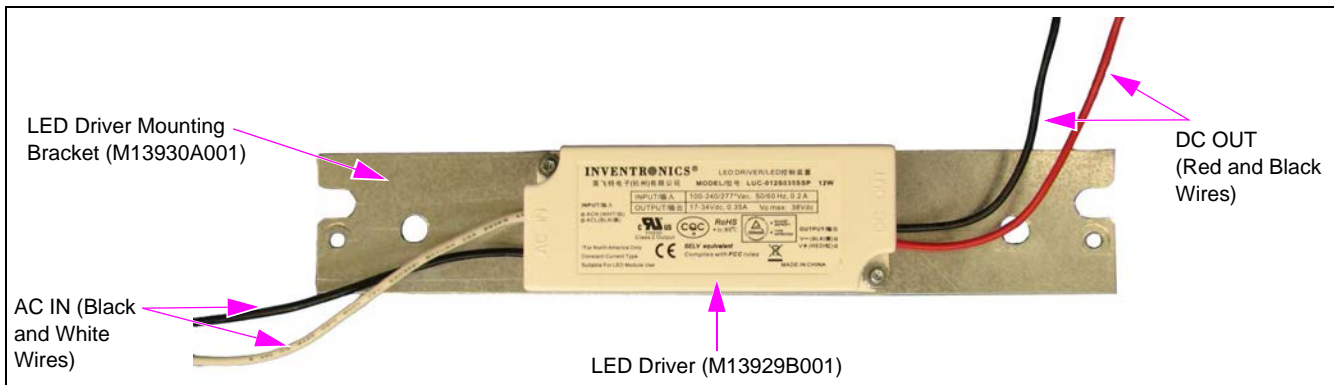
To install the Lamp Kit, proceed as follows:

### Installing LED Driver and LED Light Strips

To install the LED Driver (M13929B001) and LED Light Strips (M13924A001), proceed as follows:

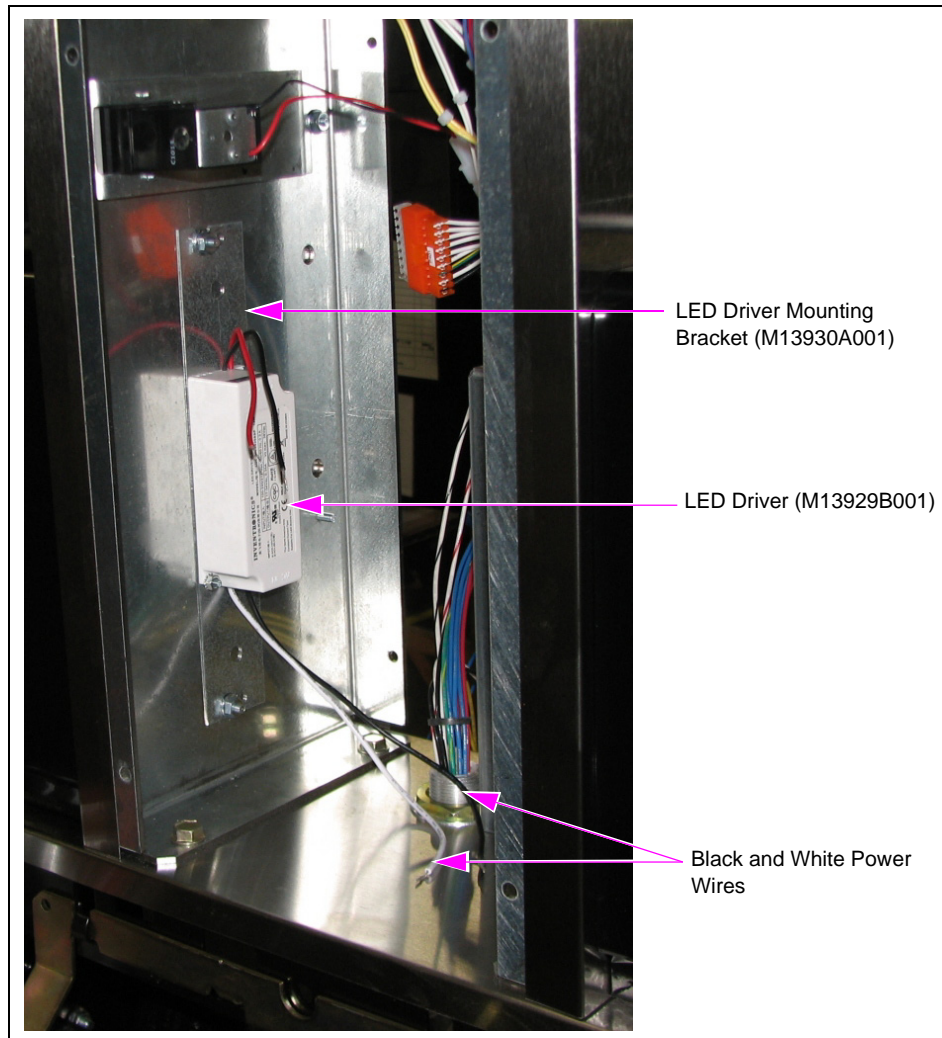
- 1 Locate the LED driver, LED Driver Mounting Bracket (M13930A001), and the two Metric Hexagonal (KEPS) M4 X 0.7 Nuts (Q12885-05) supplied in the kit.
- 2 Attach the LED driver to the mounting bracket using the two metric hexagonal (KEPS) M4 X 0.7 nuts as shown in [Figure 1](#).

**Figure 1: Attaching LED Driver to LED Driver Mounting Bracket**



- 3 Mount the LED driver/bracket assembly in the column and position the assembly so the black and white power wires extend from the bottom end after the assembly is mounted.

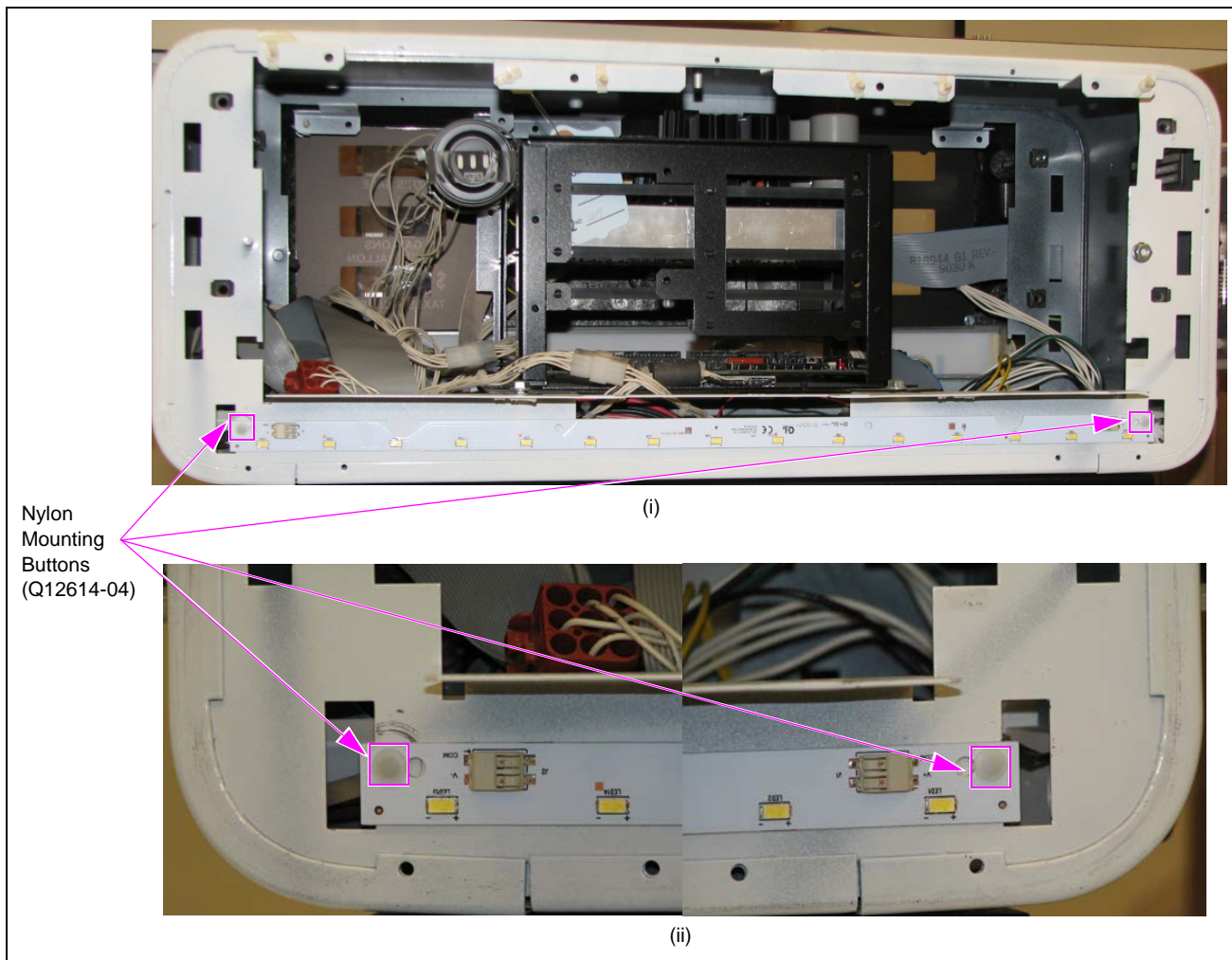
**Figure 2: Mounting LED Driver/Bracket Assembly**



*Note: Before mounting the LED light strips, ensure there are no decals or labels in the mounting area. If decals or labels are present, they must be moved inside the head chassis assembly. Any adhesive must also be removed from the mounting area. It is very important that the LED light strip lay flat against the head chassis assembly without any obstructions.*

- 4 Using two Nylon Mounting Buttons (Q12614-04), mount the LED light strip on the front side of the head chassis assembly as shown in [Figure 3](#) (LEDs on lower side) using the mounting holes furthest from the J1/J2 connector. Push the mounting button into place until it clicks and the LED strip is fastened securely.

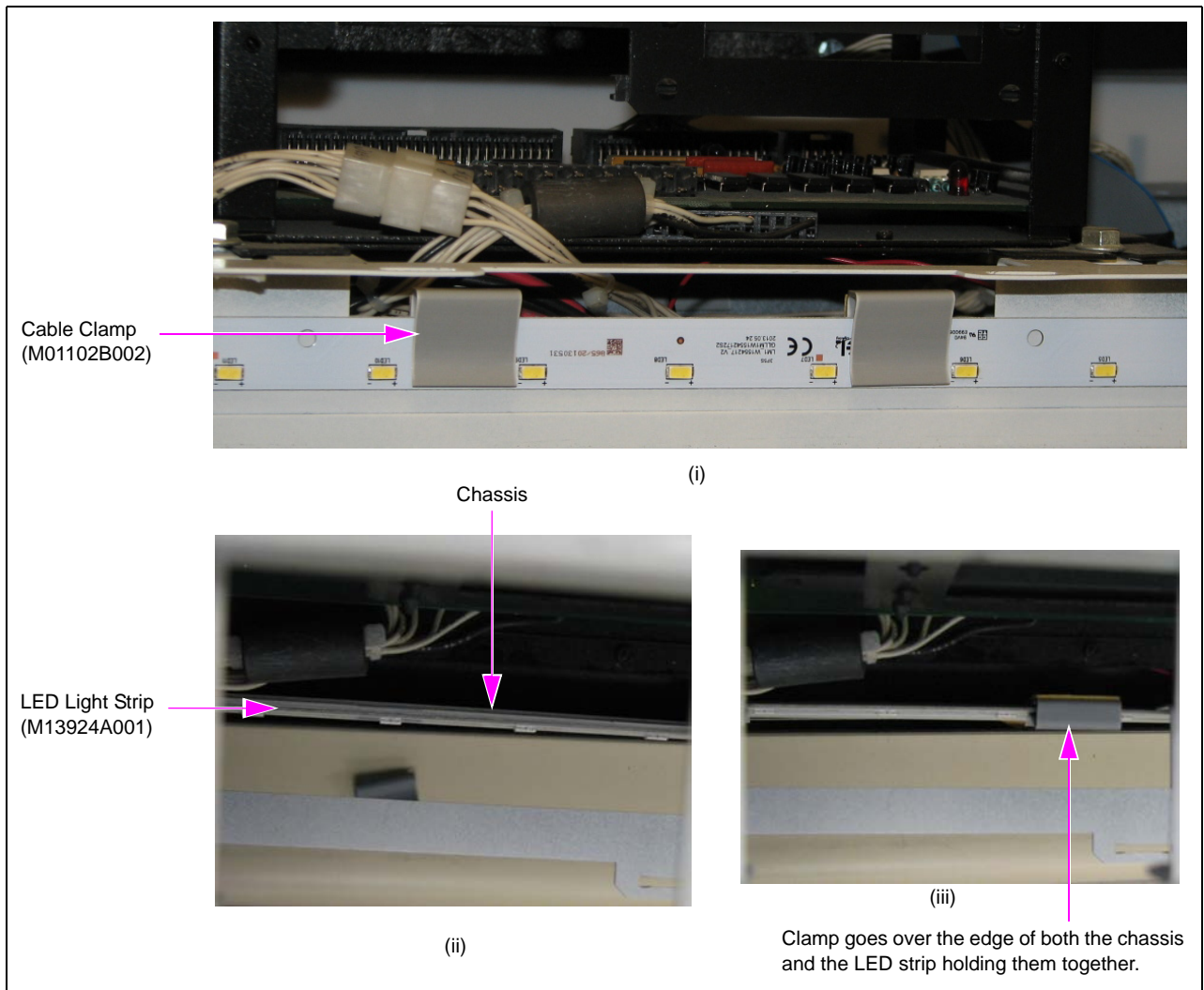
**Figure 3: Mounting LED Light Strip**





- 5 Using two Cable Clamps (M01102B002) per side, secure the LED strip against the chassis assembly (clamps go over the edge of the chassis assembly and LED strip). Position the clamps as shown in [Figure 4](#).

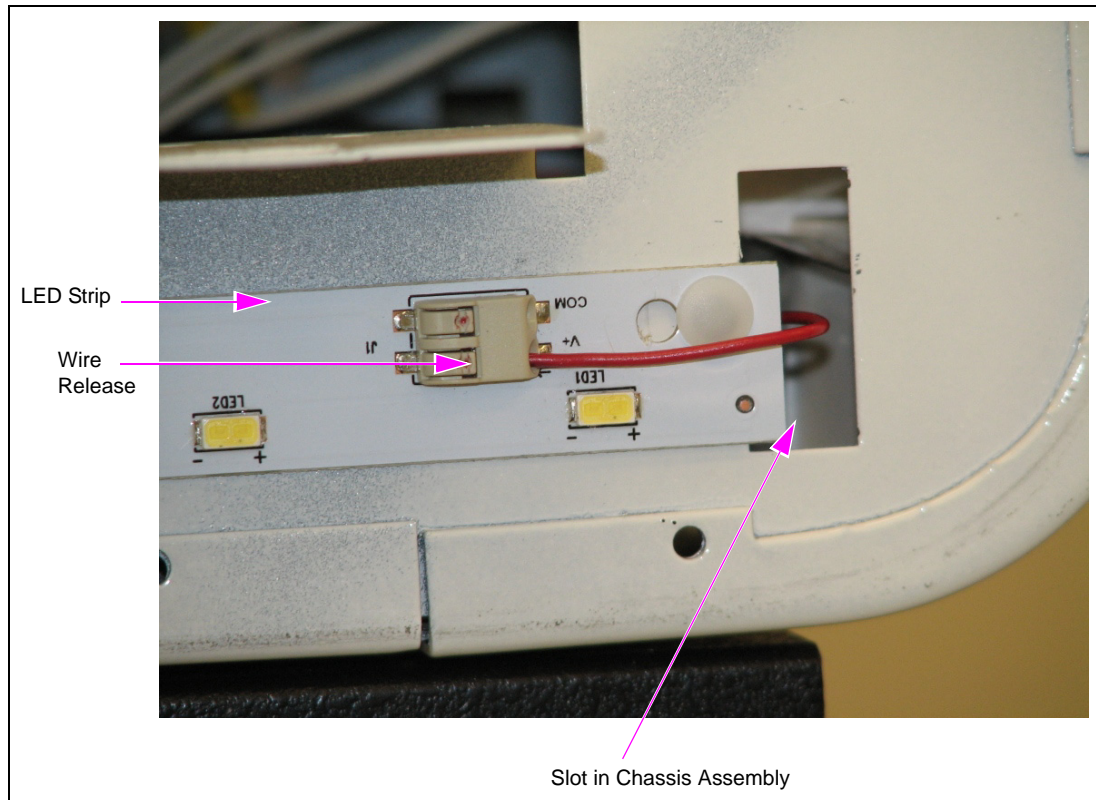
**Figure 4: Securing Strips Chassis Assembly**



- 6 If mounting two LED light strips, repeat steps 4 on [page 8](#) to 5 for the second strip on the opposite side of the unit.
- 7 Connect the LED Driver Output Extension Cable [M13980A001 (red and black wires)] to the red and black wires on the DC OUT end of the LED driver assembly using the two Wire Nuts (K81105-20). Ensure to match the wire colors.

- 8 Connect the other end of the red wire to the closest LED strip J1 connector, route the wire through the slot in the chassis assembly and over the edge of the LED strip as shown in [Figure 5](#).
- 9 Insert the red wire into the V+ input and push the wire into the input firmly until it stops.  
*Note: If you need to remove the wire, press down on the wire release and pull the wire out.*

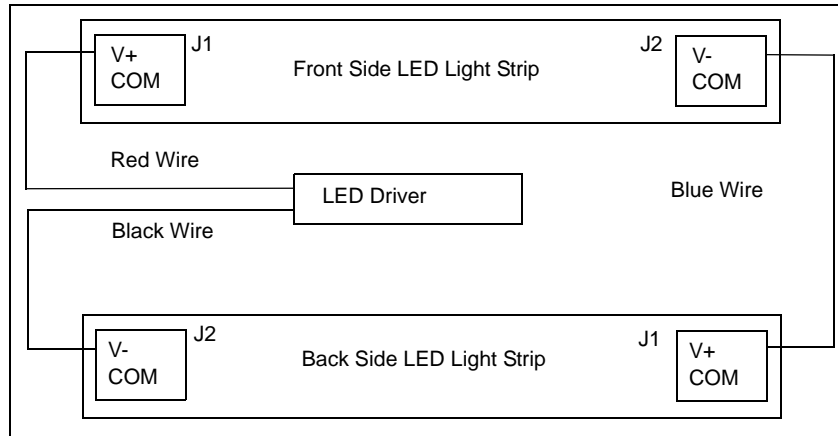
**Figure 5: Connecting Red Wire to LED Strip J1 Connector**



- 10 Connect the other end of the black wire to the back side of the LED strip J2 connector, route the wire through the slot in the chassis assembly and over the edge of the LED strip. Insert the black wire into the V- input.

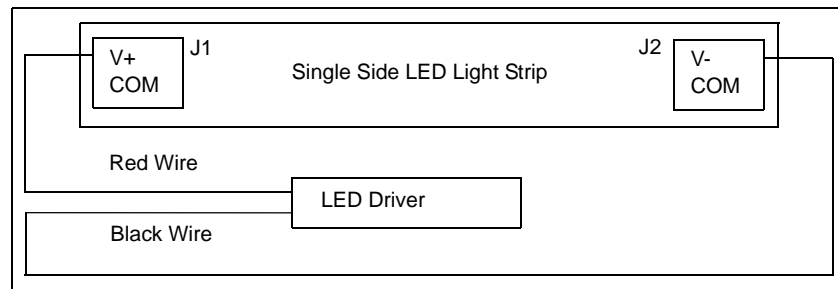
- 11** Connect the front side of the LED strip to the back side of the LED strip using the LED Strip Interconnect Cable [M13981A001/M13982A001 (blue wire)]. Insert one end into the V- input of the J2 connector on the front side of LED strip, route through the slots in the chassis assembly, and over the edge of the LED strips. Insert the other end into the V+ input of the J1 connector on the back side of the LED strip. For LED strip wiring, see [Figure 6](#).

**Figure 6: LED Strip Wiring - Two Strips**



- 12** If only one LED strip is being installed, the black wire from the LED driver will connect to the V- input on the J2 connector of the LED strip. For LED strip wiring, see [Figure 7](#).

**Figure 7: LED Strip Wiring - Single Strip**



- 13** Secure the installed wiring out of the way as much as possible.
- 14** Connect the AC power wires (black and white) from the LED driver to the AC power from the conduit. Secure the wire connections with wire nuts.

## Completing Installation

- 1 Complete the wiring to the LIGHTS FEED (A1) and LIGHTS NEUTRAL (A11) in the AC Junction Box (J-box). For more information, refer to *FE-335 Legacy Series Dispensers 120/240 VAC*.

### 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.

- 2 Attach the bezel. Ensure the bezel is seated properly to ensure a watertight seal.
- 3 Attach the column cover and secure with the screws saved when removed.
- 4 Turn on all the circuit breakers supplying power to the pump.

### WARNING

**Avoid looking directly at the LEDs when lit. Ensure that the bezels are in place with brand panel graphics installed before lighting the LED strips.**

Installing the Lamp Kit on the Highline/Legacy unit is now complete.

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