Introduction

Purpose

This manual provides instructions for installing the Diesel Exhaust Fluid (DEF) Pulley Guard and Wire Guard Kit (M12587K001) for Encore® Units.

This kit is designed to keep wires away from the DEF pulley wheel.

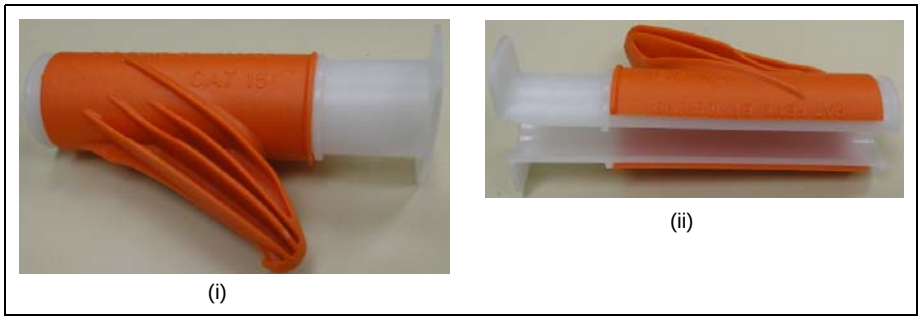
Table of Contents

Required Tools

Following tools are required for installing the DEF Pulley Guard and Wire Guard Kit (M12587K001) for Encore Units:

- Phillips® Head Screw Driver
- Step Ladder
- Wire Cutter
- 13 mm Socket Wrench
- 7 mm Socket Wrench
- Wire Installation Tool [(M12761B103) see Figure 1]
- Cable Tie-wrap
- Electrical Tape

Figure 1: Wire Installation Tool (M12761B103)]



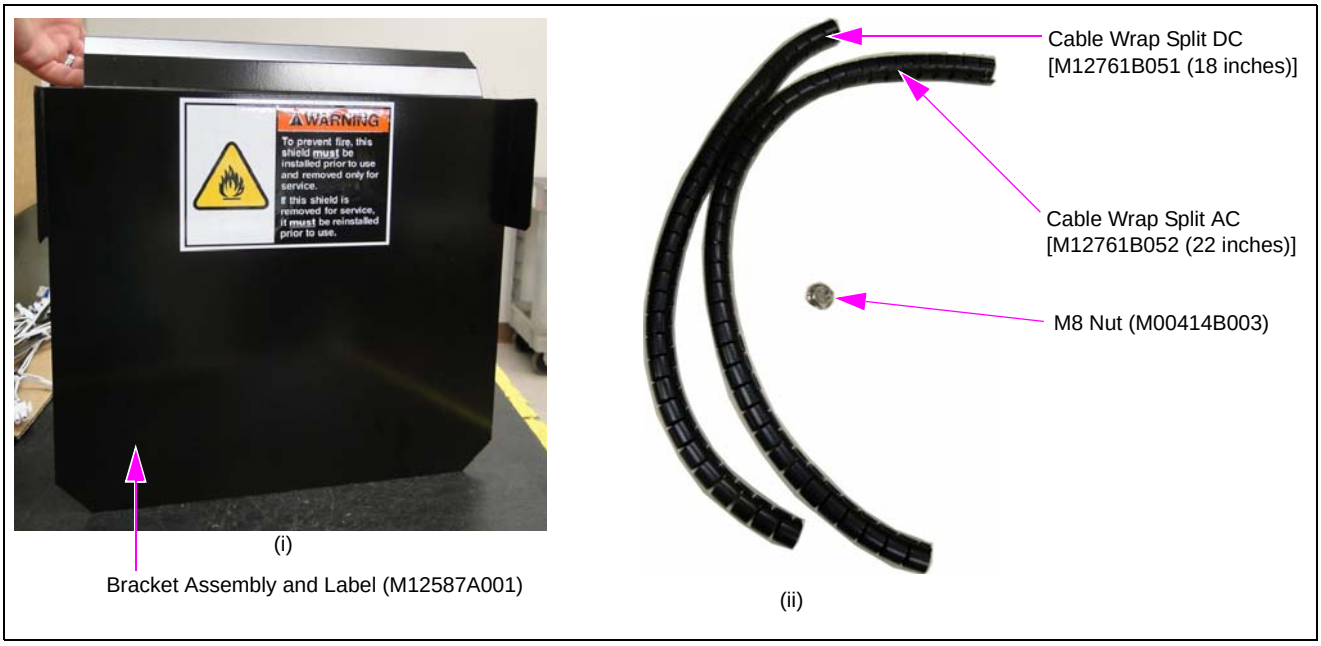
(i) (ii)

Parts List

Following table lists the parts included in the DEF Pulley Guard and Wire Guard Kit (M12587K001).

Item	Description	Part Number	Quantity
1	Bracket Assembly and Label - Pulley Guard	M12587A001	1
2	Cable Wrap Split DC - Wire Guard	M12761B051	1
3	Cable Wrap Split AC - Wire Guard	M12761B052	1
4	M8 Nut	M00414B003	1
5	DEF Pulley Guard and Wire Guard Kit (M12587K001) Installation Instructions for Encore Units	MDE-5031	1
6	DEF Pulley and Wire Guard Kit Completion Notice	MDE-5033	1

Figure 2: Kit Parts



Related Documents

Document Number	Title	GOLD Library
MDE-3804	Encore/Eclipse® Start-Up/Service Manual	• Encore and Eclipse • Service Manual
MDE-3985	Encore Installation Manual	• Encore and Eclipse • Encore and Eclipse Installers
MDE-4949	Encore 500 S Ultra-Hi™ DEF +1 Retrofit Kit (ENC DEF RF) Installation Instructions	• Encore and Eclipse • Encore and Eclipse Installers

Abbreviations and Acronyms

Term	Description
DEF	Diesel Exhaust Fluid

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 fluid lines.

No Open Fire

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

No Sparks - No Smoking

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

Working Alone

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

Working With Electricity Safely

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

Hazardous Materials

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

⚠ WARNING

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

⚠ WARNING

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

In an Emergency

Inform Emergency Personnel

Compile the following information and inform emergency personnel:

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

⚠ WARNING

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

⚠ WARNING

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

⚠ WARNING

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

⚠ WARNING

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

⚠ WARNING

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

⚠ WARNING

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

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

Lockout/Tagout

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

Installing the DEF Pulley Guard and Wire Guard Kit (M12587K001)

Before you begin, read and understand all safety information found in MDE-3804 Encore/Eclipse Start-Up/Service Manual - Safety Instructions.

Inform the Manager that the power must be removed and remove all power supplied to the unit at the breaker located in the building. Block off the unit from customers.

Power must be turned off to the unit to ensure that there are no security errors after the installation.

Figure 3: DEF Encore Unit

To install the DEF Pulley Guard and Wire Guard Kit (M12587K001), proceed as follows:

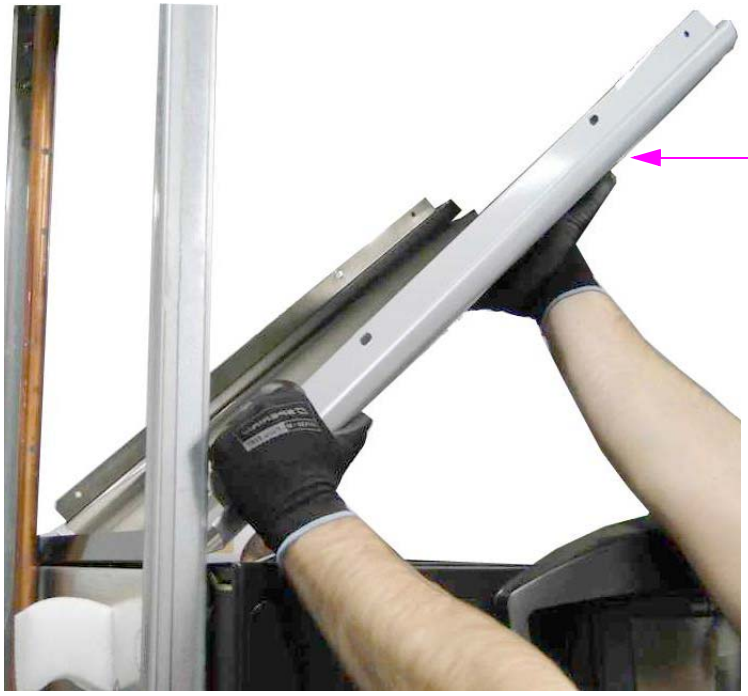
1 Disconnect power to the dispenser. Follow OSHA Lock-out/Tag-out procedures.

⚠ WARNING

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

2 Remove inner sheathings as shown in Figure 4.

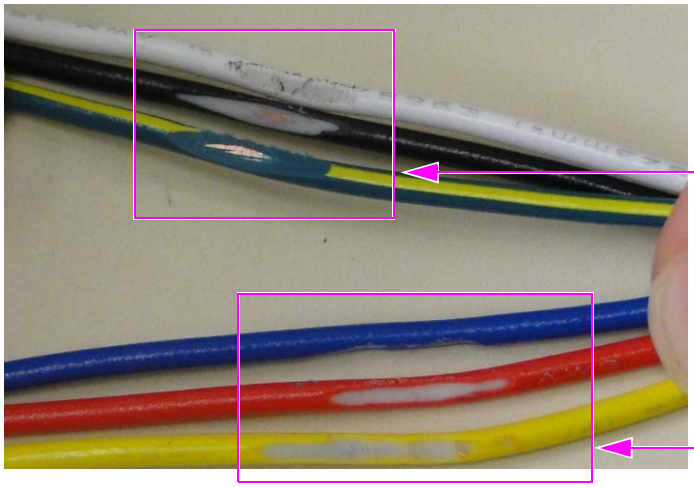
Figure 4: Removing the Inner Sheathings



Note: Do not remove Side Sheathing. Side Sheathing is not shown in this figure for clarity.

3 Inspect the AC wires in proximity to the Hose pulley for any signs of damage to the insulation [for example, any exposed conductor wire (see Figure 5)].

Figure 5: Identifying the Extent of Damage



Note: Severe damage refers to exposed conductor wire.

If any wire in the cable bundle shows exposed conductor wire (damaged), then the entire cable assembly must be replaced. For cable assembly replacement instructions, refer to "Appendix A: Replacing the Cable Assembly" on page 16.

Note: If replacement parts are not available immediately, disconnect P1 from power supply of CD module.

If no damage is visible then proceed with the installation of the Pulley Guard.

Installing the Pulley Guard

4 Disconnect all cable connectors which may interrupt the smooth installation of the pulley guard.

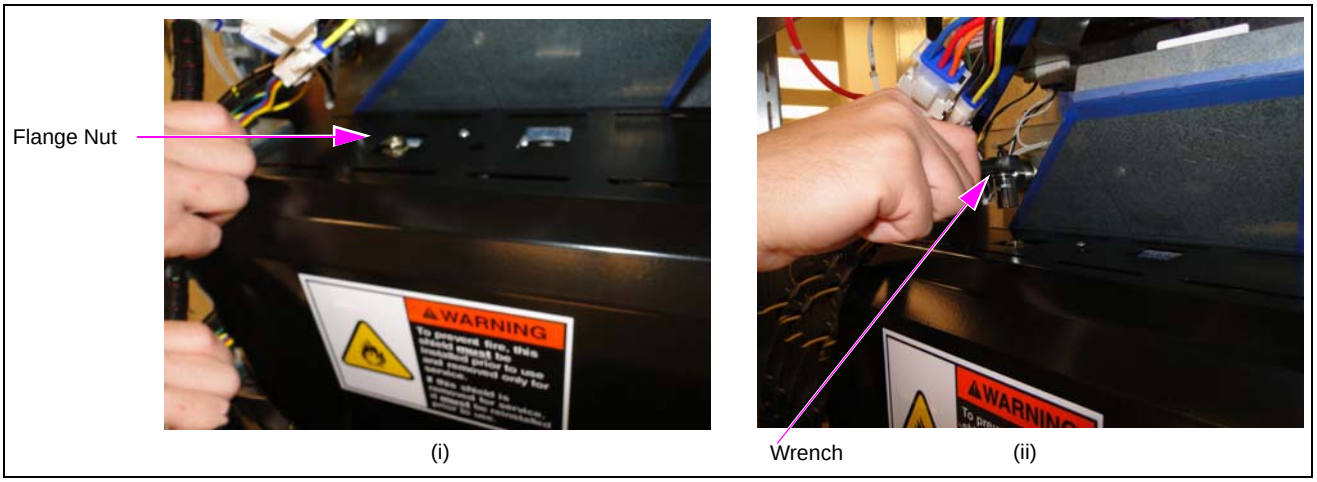
5 Install the pulley guard on top of the pulley as shown in Figure 6. Only 1 tab in the bracket aligns with the stud on the pulley support. The additional stud goes through a clearance hole in the bracket. The bracket can be used for right-hand or left-hand configurations by aligning the opposite tab.

When installing the pulley guard bracket, **ensure that no wires are trapped behind or under the bracket before tightening the M8 Nut (M00414B003).**

Figure 6: Installing the Pulley Guard

6 Secure the pulley guard with a M8 flange nut (M00414B003) using a 13 mm Socket wrench.

Figure 7: Securing the Pulley Guard with the M8 Nut



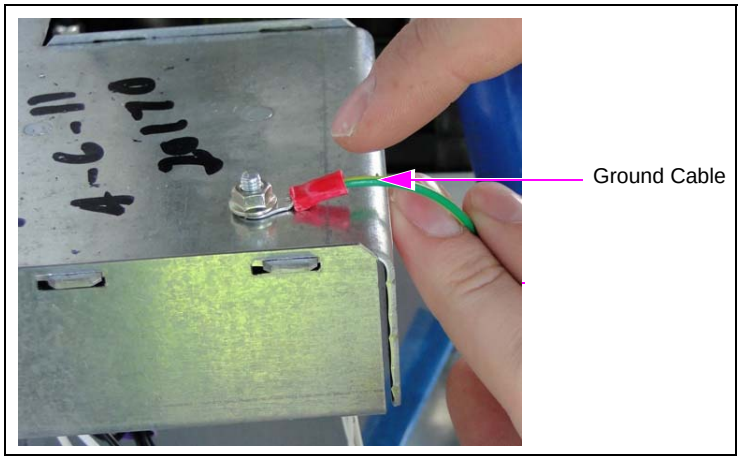
7 Ensure that no cables are pinched or are interfering with the hose pulley or the door weight pulley.

Installation of the Pulley Guard is complete, proceed with the installation of the Wire Guard.

Installing the Wire Guard for the AC Conduit Cables

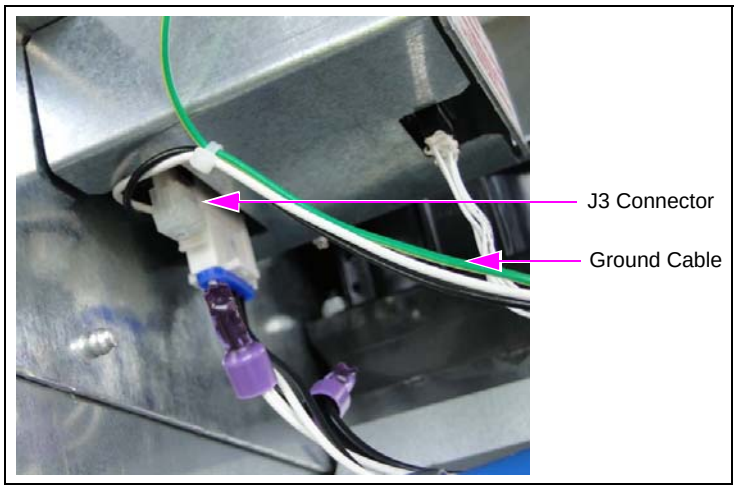
8 Disconnect Ground Cable from the AC Conduit (M10075A003) to the heater electronics frame using a 7mm Socket Wrench.

Figure 8: Ground Cable



9 Disconnect J3 from the AC Conduit (M10075A003) to the connector on the heater electronics frame.

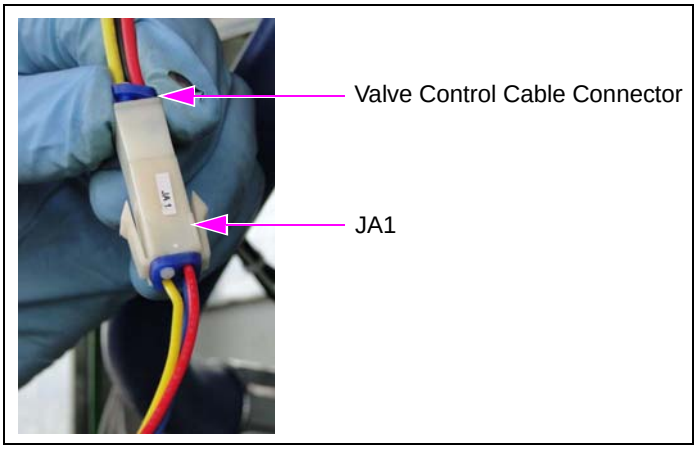
Figure 9: Ground Cable



10 Verify if the spare DEF STP wire is used. If used, disconnect. If not used, unbundle the wire.

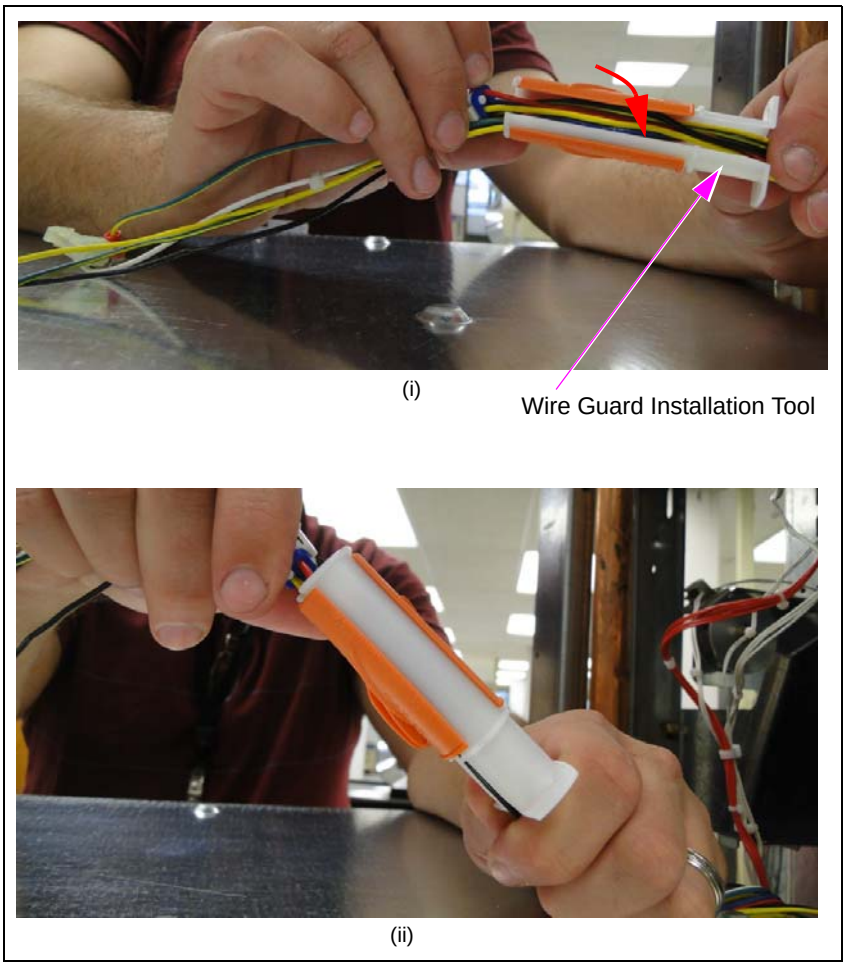
11 Disconnect JA1 from the connector on the Valve Control Cable (see Figure 10).

Figure 10: Disconnecting JA1 from the Valve Control Cable



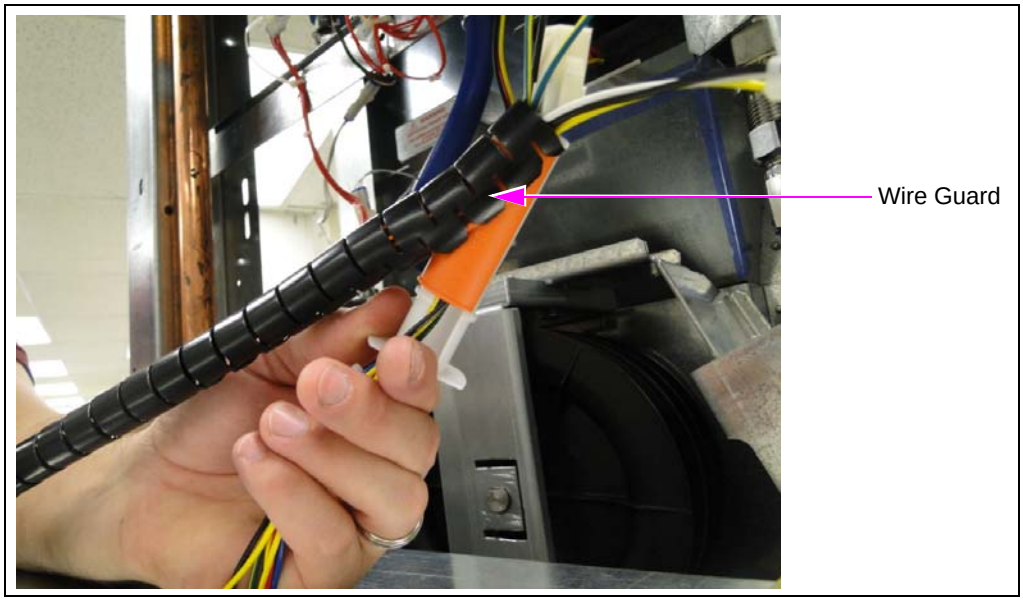
12 Place the wires inside the opening of the wire guard installation tool and rotate the orange cover to enclose the wires in the tool as shown in Figure 11.

Figure 11: Placing the Cables in the Wire Guard Installation Tool



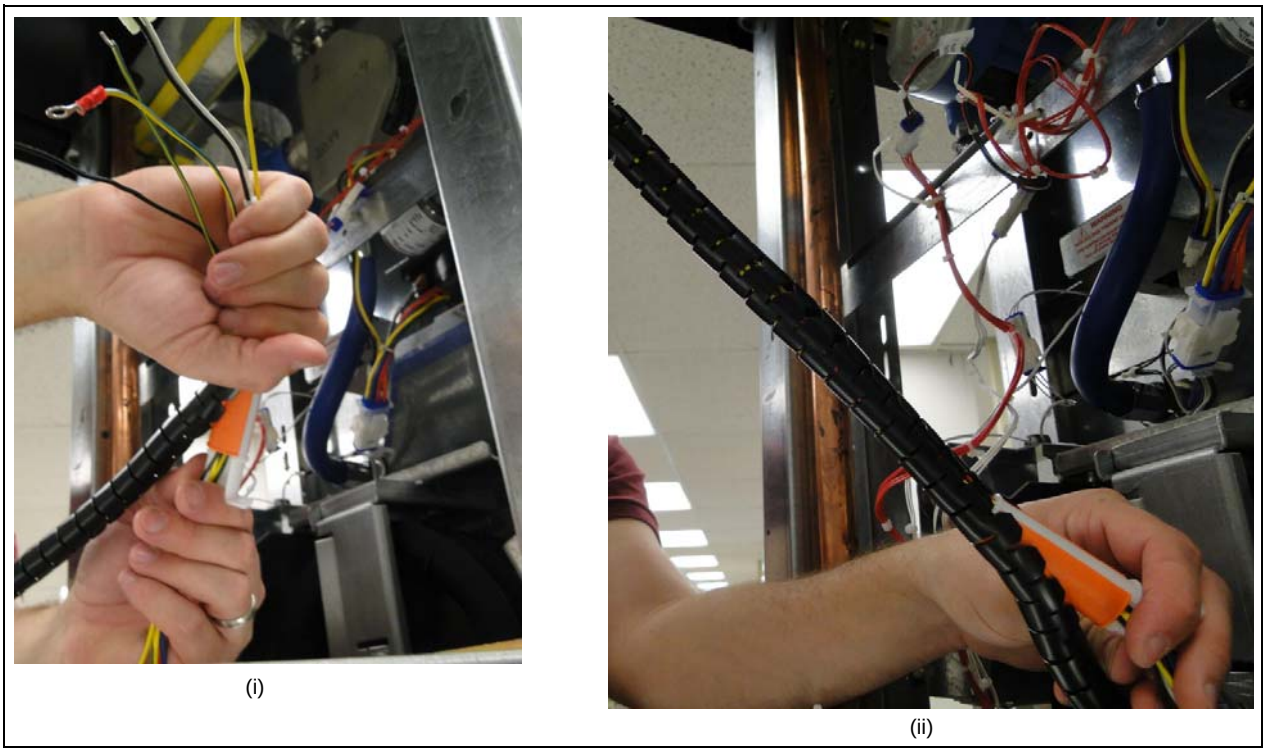
13 Insert one end of the 22-inch wire guard to the Wire Guard Installation Tool (M12761B103) as shown in Figure 12.

Figure 12: Inserting the Wire Guard to the Wire Guard Installation Tool



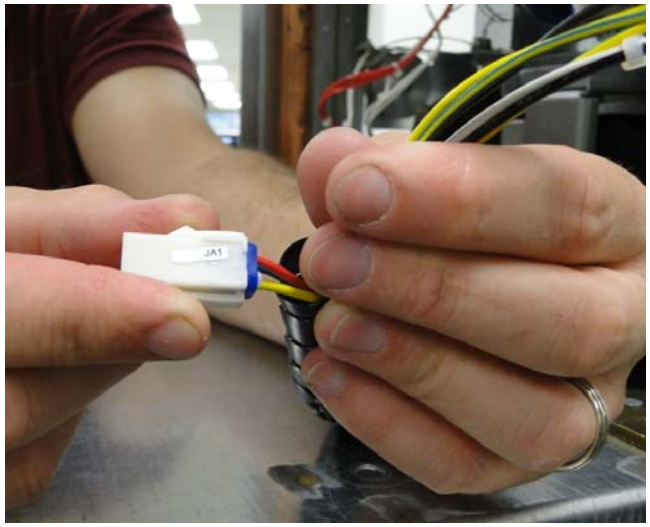
14 Hold the cables firmly and pull down the wire guard installation tool (see Figure 13) to the bottom of the cable assembly. Ensure that all cables are secured inside the guard.

Figure 13: Placing the Cables in the Wire Guard



15 Identify the JA1 connector cable and pull it out from the wire guard (3 inches approximately), and reconnect to the valve.

Figure 14: Pulling JA1 Connector Cables from the Wire Guard



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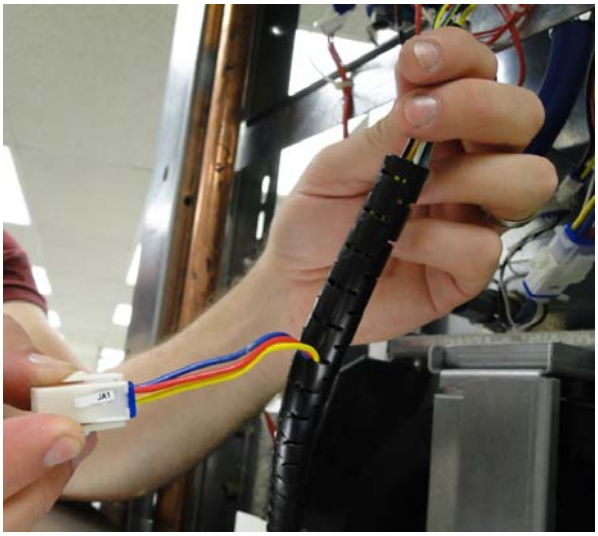


(ii)

16 Reconnect spare DEF STP cable, if used. If not used, secure the cable to the wire guards using the electrical tape, covering any exposed conductor wire. Reconnect the ground cable.

Figure 15: Securing the Spare STP Cable

(i)

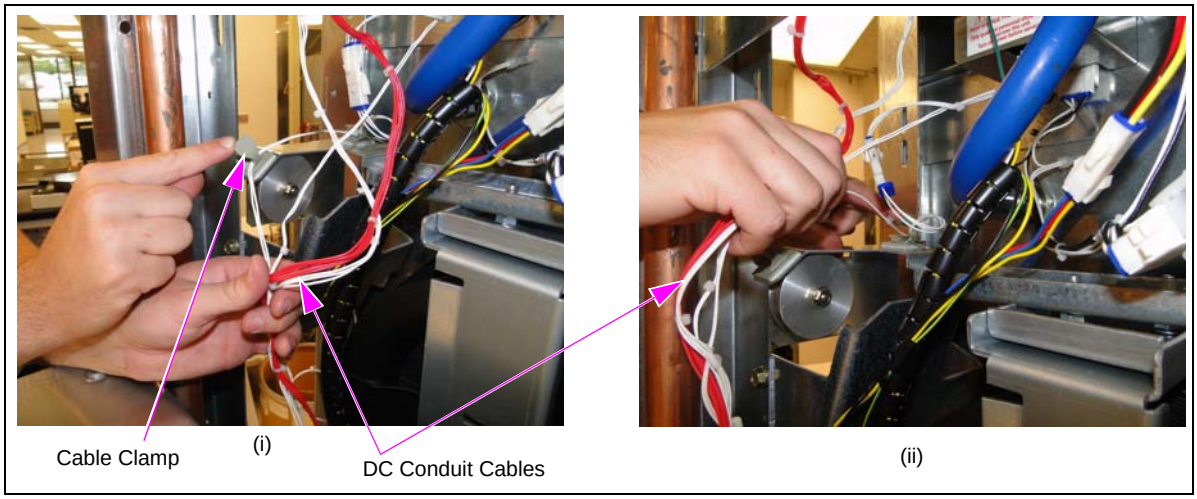
(ii)

Note: Route any extra cables using tie-wrap.

Installing Wire Guard for the DC Conduit Cables

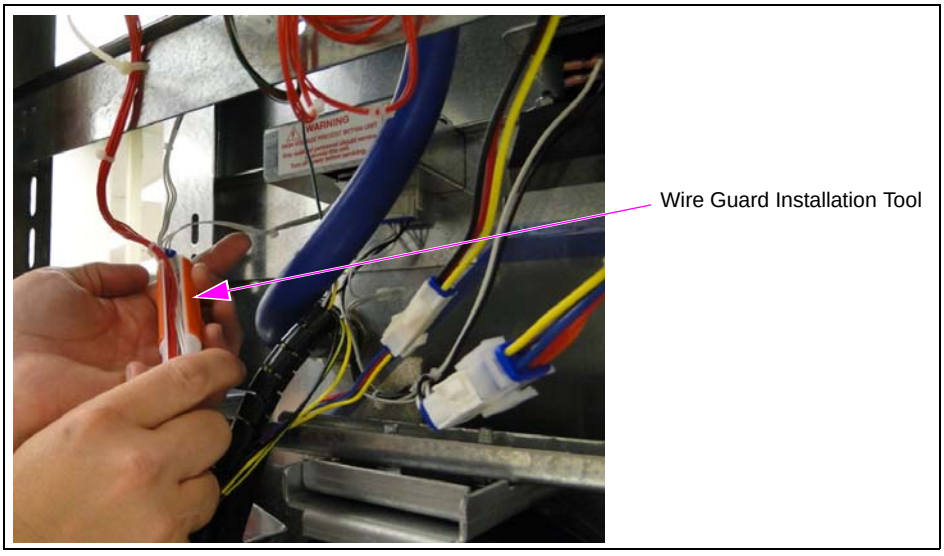
17 Remove the DC Conduit cables from the cable clamps (clamp may not be present on all units) or tie-wraps as required.

Figure 16: Removing the DC Conduit Cables from the Cable Clamp



18 Place the DC conduit cables in the wire guard installation tool [M12761B103 (see Figure 17)] and insert one end of the 18-inch wire guard to the wire guard installation tool (M12761B103).

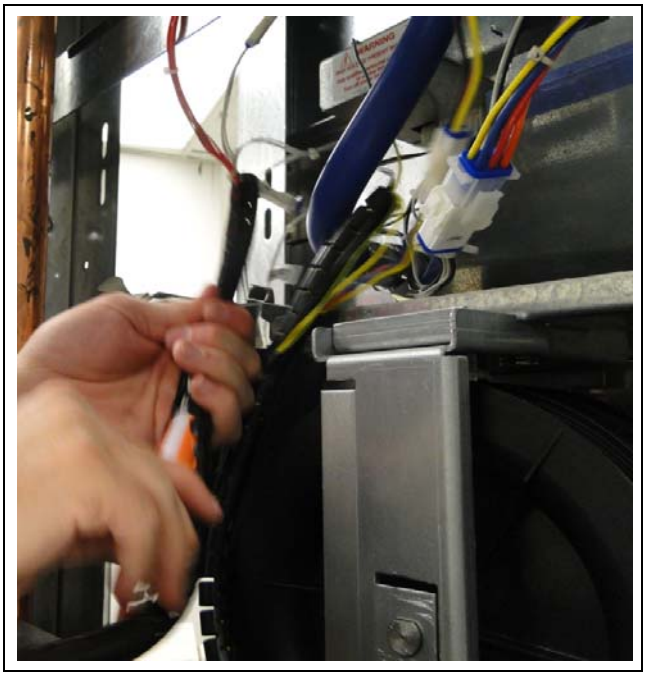
Figure 17: Placing the DC Cables in the Wire Guard Installation Tool



19 Hold the cables firmly and pull down the wire guard installation tool to the bottom of the cable assembly. Ensure that all cables are secured inside the guard.

Note: Both the AC and the DC cable bundles must be in front of the cable bracket and free of interference from either the hose pulley or the door weight pulley.

Figure 18: Placing the Cables in the Wire Guard

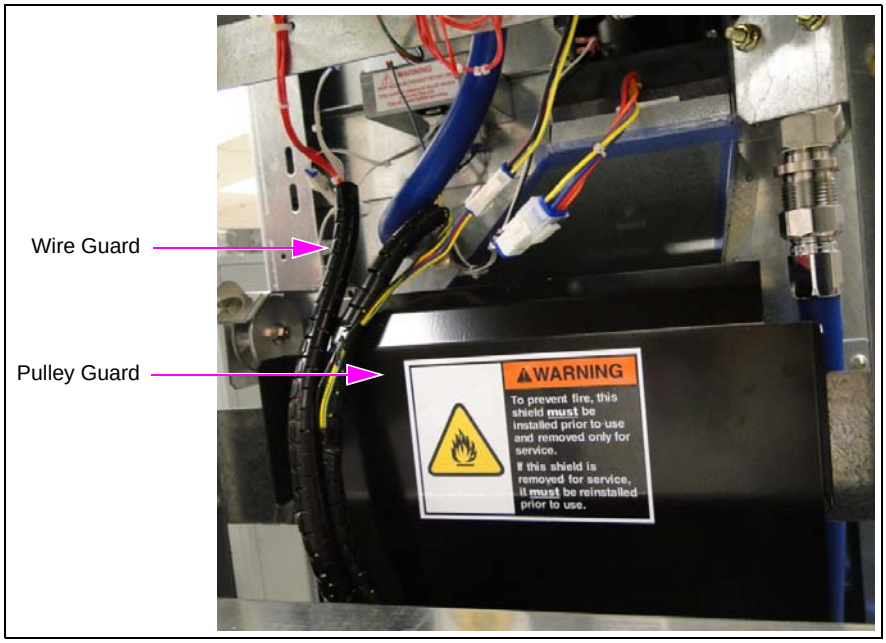


Note: Route any extra cables using tie-wrap.

20 Re-install the inner sheathing.

21 Turn on the power and test the unit for proper functioning.

Figure 19: Pulley Guard and Wire Guard Installed



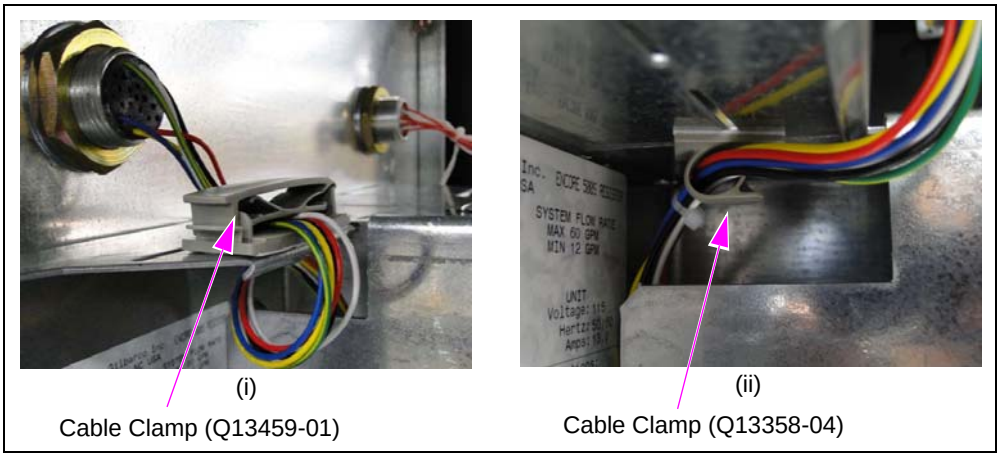
Installation of Pulley Guard and Wire Guard is complete.

22 Record Installation on MDE-5033 DEF Pulley and Wire Guard Kit Completion Notice and fax to Gilbarco as instructed.

Appendix A: Replacing the Cable Assembly

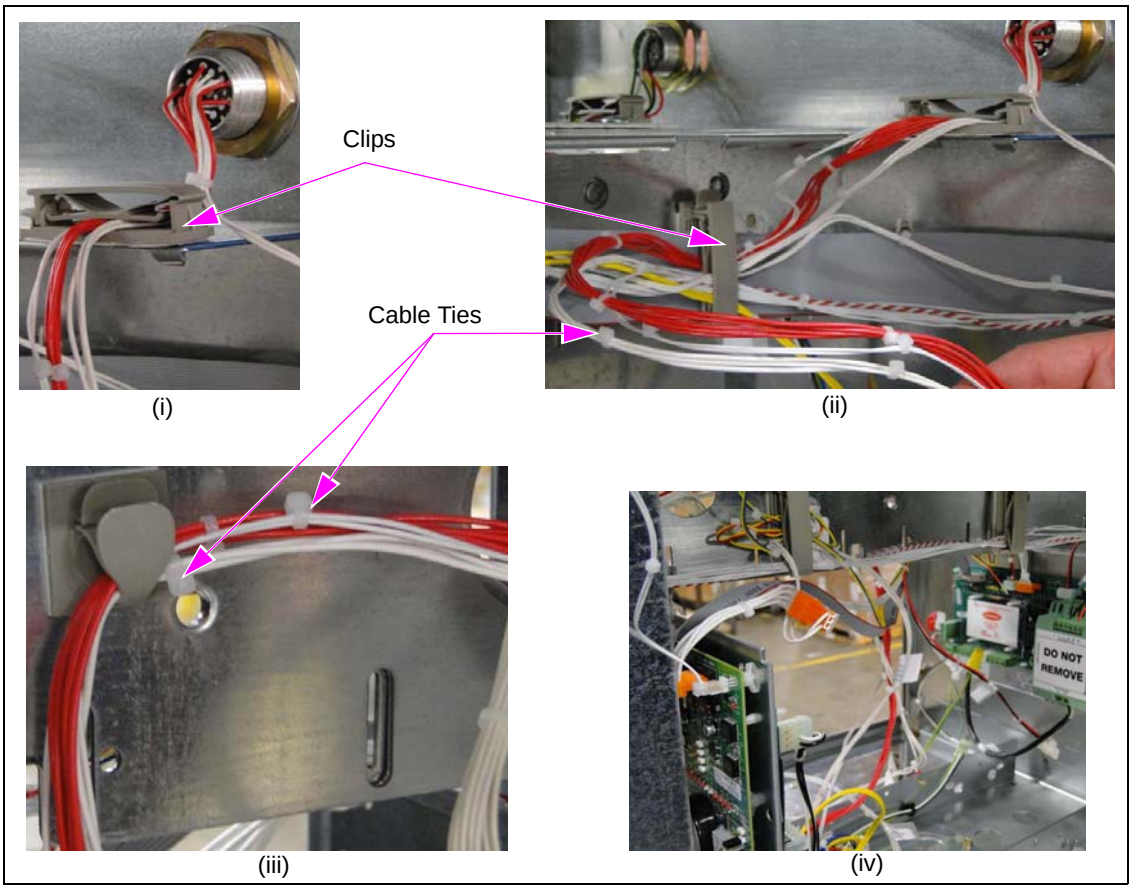
1 For both right-hand and left-hand units, route the AC Conduit Cables using cable clamps to avoid damaging of wires on any sheet metal edges or moving parts (see Figure 20).
For left-hand units, route the wires through the wire trough (a channel in the center of the electronics cabinet).

Figure 20: Routing AC Conduit Cables



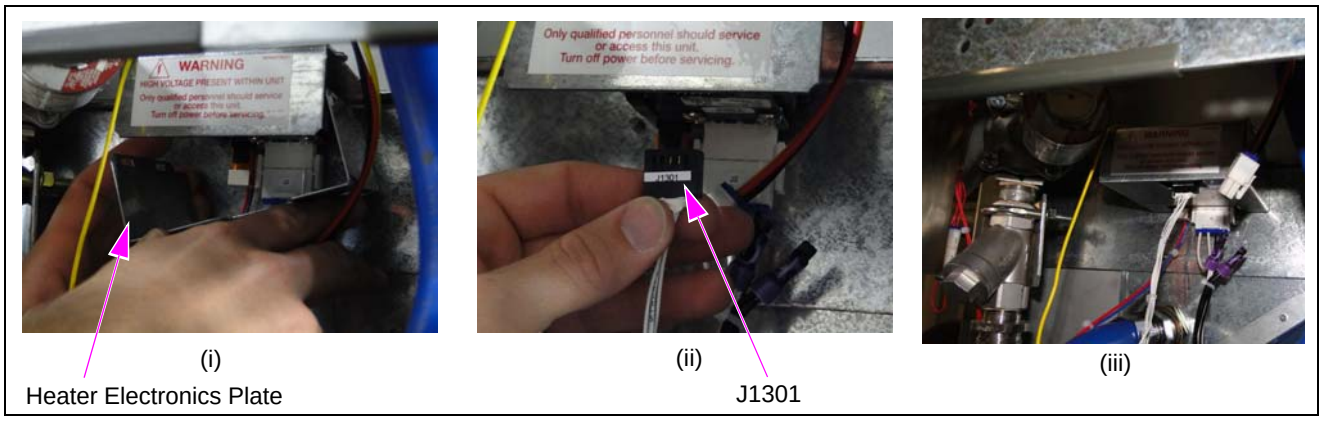
2 Route the DC Conduit cables using cable ties and clips to avoid damaging of wires on any sheet metal edges (see Figure 21).

Figure 21: Routing DC Conduit Cables



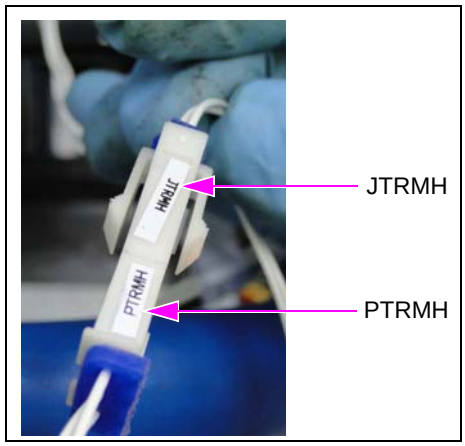
3 Remove the heater electronics cover plate to connect J1301 (see Figure 22).
Note: Replace the heater electronics cover plate after connecting.

Figure 22: Connecting J1301



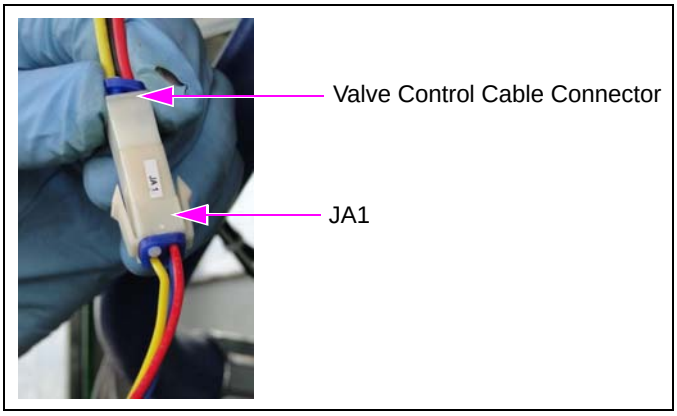
4 Connect JTRMH from the DC Conduit to PTRMH from the heater thermostat (see Figure 23).

Figure 23: Connecting JTRMH to PTRMH



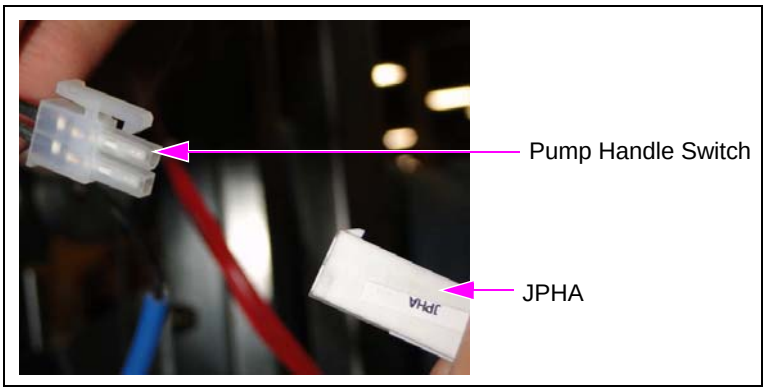
5 Connect JA1 to the connector on the Valve Control Cable (see Figure 24).

Figure 24: Connecting JA1 to the Valve Control Cable



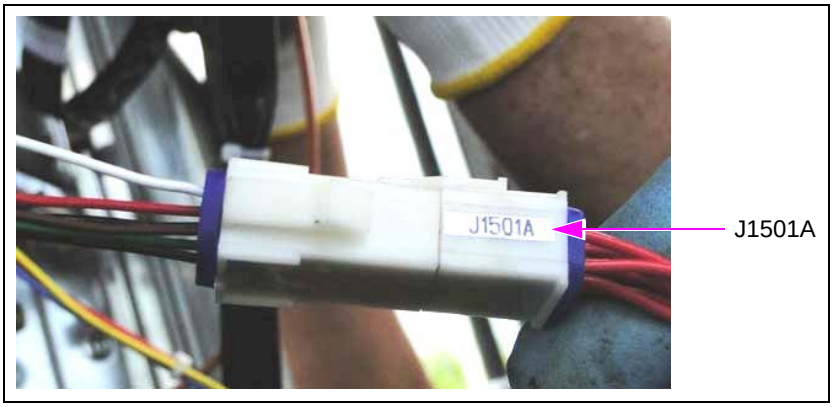
6 Connect the pump handle switch to JPHA of the M04114A006 Conduit (see Figure 25).

Figure 25: Connecting Pump Handle Switch to JPHA



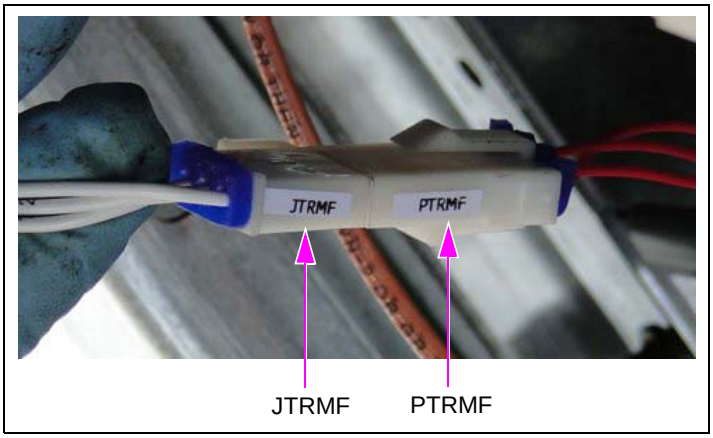
7 Connect J1501A to the Meter (see Figure 26).

Figure 26: Connecting J1501A to the Meter



8 Connect JTRMF to PTRMF [frozen thermostat (see Figure 27)].

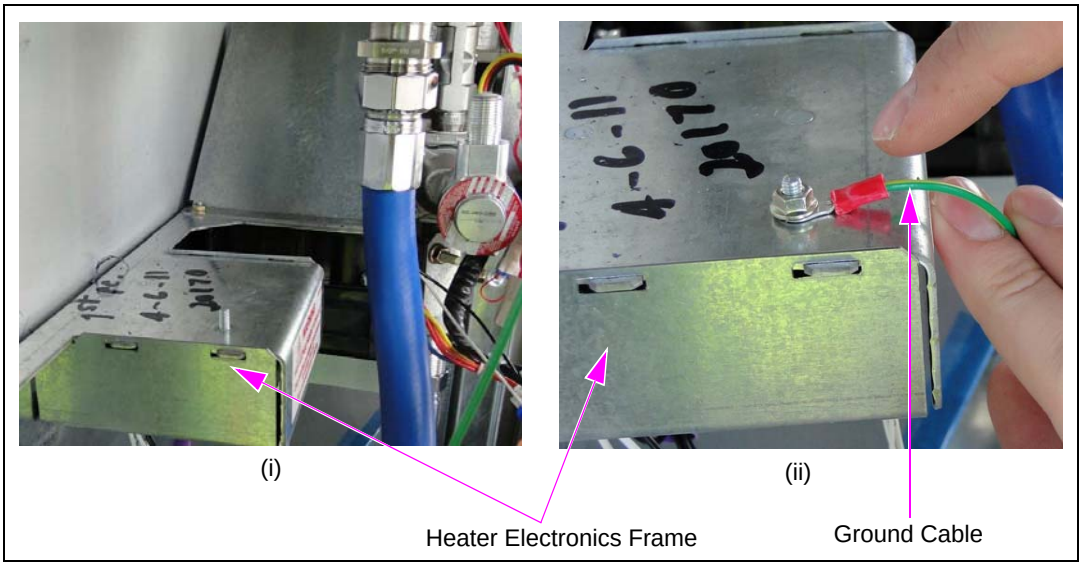
Figure 27: Connecting JTRMF to PTRMF



9 Connect the Ground Cable from the AC Conduit (M10075A003) to the heater electronics frame (see Figure 28).

Note: The green un-terminated wire must have a terminal clip attached and must be connected to the nut as shown in Figure 28 (ii).

Figure 28: Connecting the Ground Cable to the Heater Electronics Frame

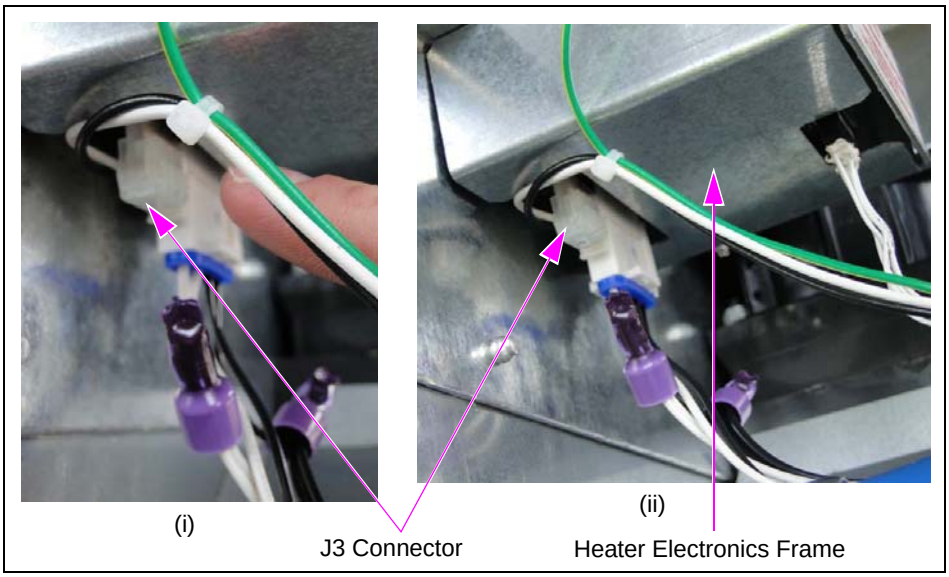


10 Connect J3 from the AC Conduit (M10075A003) to the Connector on the heater electronics frame (see Figure 29).

Notes: 1) Reattach the cover plate after the connections are completed.

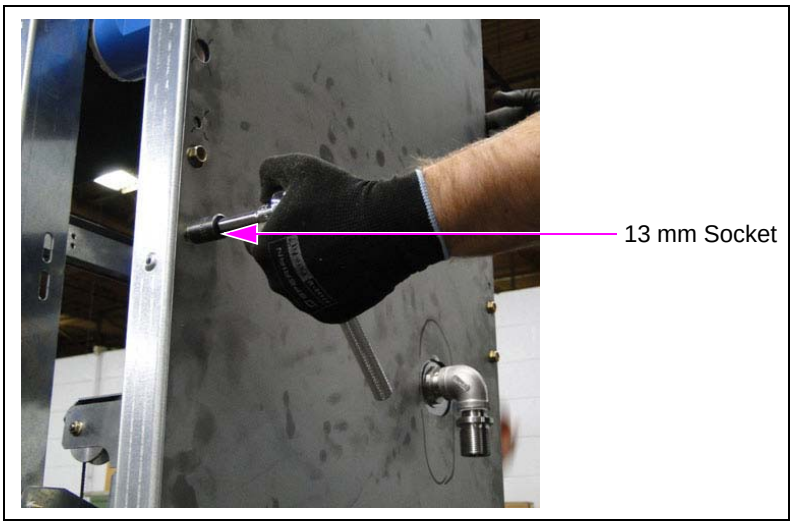
2) The black wire labeled DEF STP must be connected to an external pump relay signal wire for installations that do not have a spare wire from the station to the dispenser. If it is not required, cap this wire with a wire nut.

Figure 29: Connecting J3 to the Connector on the Heater Electronics Frame



11 Re-mount and secure the Rain Shield (M10645B001) outside the DEF unit using two thread forming screws (M00417B009) and a 13 mm socket (see Figure 30).

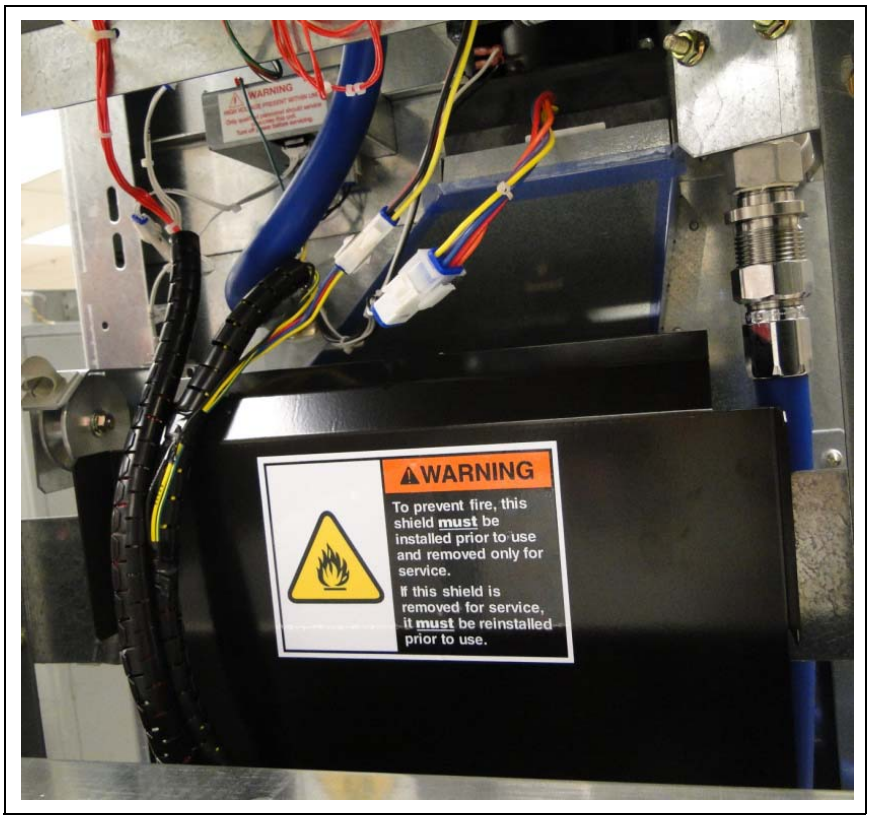
Figure 30: Securing the Rain Shield



12 Route the cables using cable ties and clips to avoid damaging of wires on any sheet metal edges (see Figure 31).

To install Pulley and Wire Guard, refer to the "Installing the Pulley Guard" section on page 8.

Figure 31: Routing the Cables



13 Ensure that all wires are dressed correctly and cable/wire connections are secure after completing the installation.

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