

Introduction

Purpose

This manual provides instructions for installing the VaporTEK™-3 (M00989K25X) Kit on Encore® units.

Intended Users

This manual is intended for Gilbarco®-trained and certified Authorized Service Contractors (ASCs).

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Required Tools and Material

The following tools and material are required for installing the VaporTEK-3 Kit:

- Adjustable Wrench
- Ladder
- Socket Wrenches
- Two-man Installation
- Standard Tool Set

Parts List

The following is a list of parts in kits M00989K25X for Encore units:

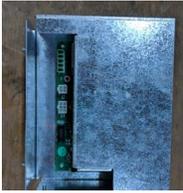
Item #	Part Number	Description	Figure	M00989K25C	M00989K25D
				Quantity	Quantity
1	M00989A25C	Upr Assy, NA1/NC1 2GR MPD Gas Only VaporTEK Sys		1	-
2	M00989A25D	Upr Assy, NA2/NC2 3GR MPD-DSL Lt VaporTEK Sys		-	1

Item #	Part Number	Description	Figure	M00989K25C	M00989K25D
				Kit VaporTEK-3, NA1 2GR MPD-Gas only	Kit VaporTEK-3, NA2 3GR MPD-DSL Left
				Quantity	Quantity
3	M11751A011	Assy, Upper V/R Tube Encore		2	2
4	M11872A007	Assy, Lower V/R Tube Encore		1	1
5	M11872A008	Assy, Lower V/R Tube Encore		1	1
6	M13597B001	Bracket, VaporTEK Encore Dispenser		1	1
7	M16033A002	Assy, Main Conduit and Wire VaporTEK		1	1
8	M16151A001	Pump, VaporTEK Vapor Recovery		1	1

Item #	Part Number	Description	Figure	M00989K25C	M00989K25D
				Kit VaporTEK-3, NA1 2GR MPD-Gas only	Kit VaporTEK-3, NA2 3GR MPD-DSL Left
				Quantity	Quantity
9	140530346	Cable, Pump Control To Interface		1	1
10	M00414B002	Nut, Metric Serrated Flange M6 - C Kit K96620 01		5	5
11	M00414B003	Nut, Metric M8 Serrated Flange - C Kit K96620 01		2	2
12	M00414B005	Nut, Metric, Flange M4		2	2
13	M00415B005	Screw Metric M6 X 12 Serrated Flange Head		4	4
14	M00417B009	Screw, Metric M8 X 18 Thread Former Comments		4	4
15	M00672A004	Ground Wire, 170m		1	1

Item #	Part Number	Description	Figure	M00989K25C	M00989K25D
				Kit VaporTEK-3, NA1 2GR MPD-Gas only	Kit VaporTEK-3, NA2 3GR MPD-DSL Left
				Quantity	Quantity
16	M04406A006	Cable, AC Power Distribution Encore		1	1
17	M10953B014	Conn, Str, 3/8-inch X 1/2-inch OD Tube Seal-Lok Parflange		2	2
18	M10953B022	Union Elbow, 1/2-inch OD Tube Seal-Lok Parflange		1	1
19	M10953B027	Elbow Connector 3/8-inch X 1/4-inch CR-S		1	1
20	M10953B028	Straight 3/8-inch Seal-lok O-ring Face Seal		2	2
21	M13080B001	Bracket, Side Column V/R Encore		2	2
22	M13082A001	Assy, Clamp V/R Encore		1	1

Item #	Part Number	Description	Figure	M00989K25C	M00989K25D
				Kit VaporTEK-3, NA1 2GR MPD-Gas only	Kit VaporTEK-3, NA2 3GR MPD-DSL Left
				Quantity	Quantity
23	M13833A002	Controller Cable, AC Power To Screw Terminals		1	1
24	M16029A001	Assembly, Conduit and Cable, VaporTEK		1	1
25	M16153B001	VaporTEK, 1/2-inch Conduit #1		1	1
26	M16154B001	VaporTEK, 1/2-inch Conduit #2		1	1
27	M16166A001	Conduit Clamp VaporTEK		1	1
28	M16253A001	VaporTEK Junction Box (J-Box) Mount		1	1
29	M16254A001	VaporTEK J-Box Mounting Bracket		1	1
30	M16256A001	Assy, Clamp, V/R Encore		1	1

Item #	Part Number	Description	Figure	M00989K25C	M00989K25D
				Kit VaporTEK-3, NA1 2GR MPD-Gas only	Kit VaporTEK-3, NA2 3GR MPD-DSL Left
Quantity	Quantity				
31	M16269A001	Assy, VaporTEK Board Mounting		1	1
32	M16322A001	VaporTEK Junction Box Assembly		1	1
33	MDE-5394	VaporTEK/VaporTEK-3 Controller Board 110 V UL® Vapor Recovery		1	1
34	MDE-5459	VaporTEK-3 Kit Installation Instructions		1	1
35	N16599-108	Washer Flat 2.00X1.34X.06 0 Crs Zn Pl		2	2
36	N23655-01	Nut Conduit 1.00		2	2
37	Q10016-04	Union, 1/2-inch Conduit 141035566		2	2
38	Q10016-05	Union Cndt M&F 3/4		1	1

Item #	Part Number	Description	Figure	M00989K25C	M00989K25D
				Kit VaporTEK-3, NA1 2GR MPD-Gas only	Kit VaporTEK-3, NA2 3GR MPD-DSL Left
				Quantity	Quantity
39	Q10017-01	Union, Conduit 141035486		2	2
40	Q10158-01	Joint Wire Rc4 2-16,18Aw G-Ppdusage Ppd		10	10
41	Q11889-14	Screw Hx Hd F-Sr Lf 5/16- 18X3/4 Stl Zn Pl		1	1
42	Q12885-03	Nut Metric Hex (SEMS) M3 X 0.5		1	1

Related Documents

Document Number	Title	GOLD SM Library
MDE-3804	Encore and Eclipse® Start-up/Service Manual	<ul style="list-style-type: none">• Encore and Eclipse• Service Manual
MDE-5394	VaporTEK/VaporTEK-3 Controller Board 110 V UL Vapor Recovery Collection for Encore 500 S Start-Up and Service Manual	<ul style="list-style-type: none">• Encore and Eclipse• Service Manual

Abbreviations and Acronyms

Term	Description
ASC	Authorized Service Contractor
DEF	Diesel Exhaust Fluid
ESD	Electrostatic Discharge
FCC	Federal Communications Commission
GOLD	Gilbarco Online Documentation
J-Box	Junction Box
NEC®	National Electrical Code
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
STP	Submersible Turbine Pump
TAC	Technical Assistance Center

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.

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

In the event of inclement weather, including snow, ice, or flooding that makes driving conditions dangerous, please avoid servicing units. Always use available door stops to secure upper doors against unwanted/unexpected movement, especially during high winds. If necessary, reschedule service to avoid damage to the equipment. Weather may change unexpectedly; be aware of local weather conditions. During service, if conditions develop making service unsafe, close the unit(s) and proceed to a safe location.

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.

WARNING

Gilbarco recommends against any tampering that compromises the frame integrity during the installation process, and doing so may void the warranty.

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

- 1 Inform the manager.
- 2 Barricade the area around the unit that is to be worked on.
- 3 Remove power to the unit at the breaker panel. Follow OSHA lockout/tagout procedures.
- 4 Read all the safety information provided in *MDE-3804 Encore and Eclipse Start-up/Service Manual*.
- 5 Isolate the two-wire communication to the unit.

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.

Before installing the VaporTEK-3 (M00989K25X) kits on Encore units, remove the graphic canopy and external lifting brackets.

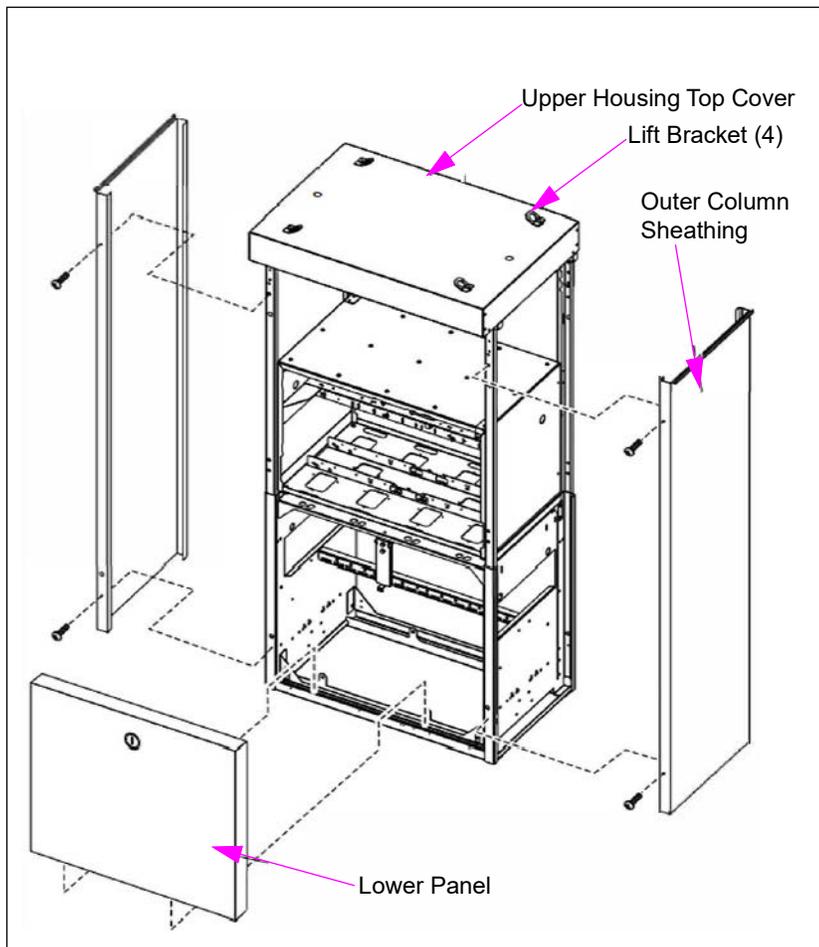
Note: Retain screws for re-installation later.

Removing Original Upper Housing Assembly

To remove the original upper housing assembly from the Encore unit, proceed as follows:

- 1 Relieve the pressure in the hanging hardware assembly by holding the nozzle into an approved fuel container and squeezing the handle.
- 2 Using the appropriate wrenches, remove the nozzle from the end of the hose and drain the fuel from the hose into the approved fuel container.
- 3 Using the appropriate wrenches, remove the hose from the hose outlet casting on the dispenser.
- 4 Repeat steps 1 through 3 for all the hoses on the Encore unit.
- 5 Remove the lower panel assemblies (Figure 1).
- 6 Remove the outer and inner column sheathing. Save mounting hardware for re-installation.
- 7 Remove the upper housing top cover (Figure 1). Save mounting hardware for re-installation.
Note: Keep the upper housing bottom cover attached. It is more efficient to remove it later.

Figure 1: Removal of External/Cosmetic Sheet Metal from the Encore Unit



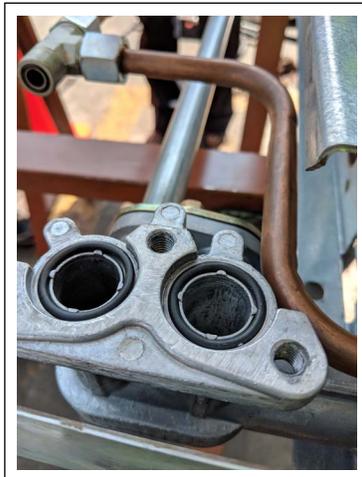
- 8 Place all the external/cosmetic sheet metal that has been removed in a safe place to prevent damage during the installation of the VaporVac retrofit kit.
- 9 Using the appropriate wrench, remove the clinch studs and nuts that attach the upper housing rail to the column channels. There are three clinch studs and nuts at the top of each channel. There are new clinch studs and nuts included in the loose parts of the retrofit kit.
- 10 Disconnect the meter discharge lines from the angle manifold casting by removing the screws and double tube clamp brackets. Save the screws and brackets for re-installation.
- 11 Lift the upper housing assembly off the column channels.
- 12 Remove the upper housing bottom plate cosmetic piece held on by 6 screws and assemble this plate to the new upper housing using the same screws.

Connecting New Upper Housing Assembly

To connect the new upper housing assembly, proceed as follows:

- 1 Ensure that the O-rings are in place.

Figure 2: O-rings in Place



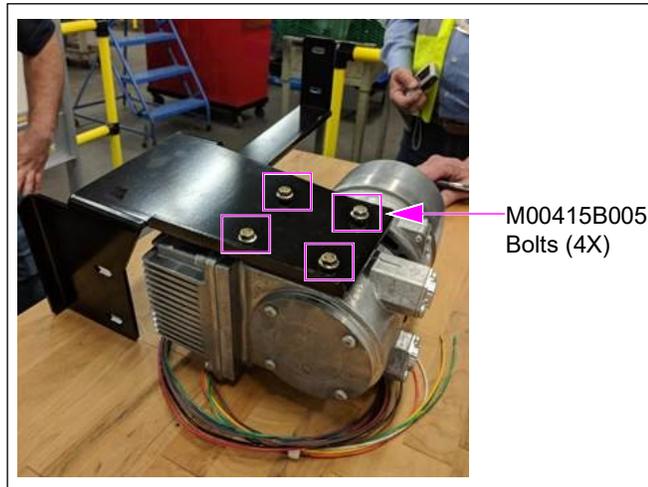
- 2 Lift the new VaporTEK-3 upper housing assembly and place it onto the column channels.
- 3 Connect the meter discharge lines to the angle manifold castings by reinstalling the tube clamp brackets and mounting screws.
- 4 Connect the upper housing assembly to the column channels using the clinch studs and serrated nuts that were removed in a previous step.

Installing the VaporTEK-3 Motor/Pump Assembly

To install the VaporTEK-3 Kit, proceed as follows:

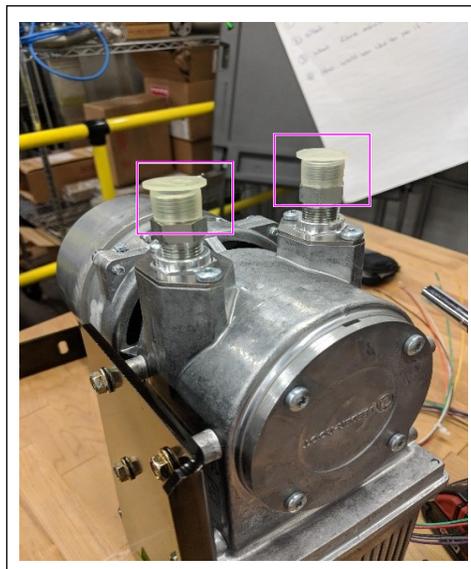
- 1 Mount the bracket to the motor assembly using four M00415B005 Serrated Screw Hex Head.
Note: Ensure that the bracket positioning is consistent with image.

Figure 3: Assembling the Motor/Pump to Bracket



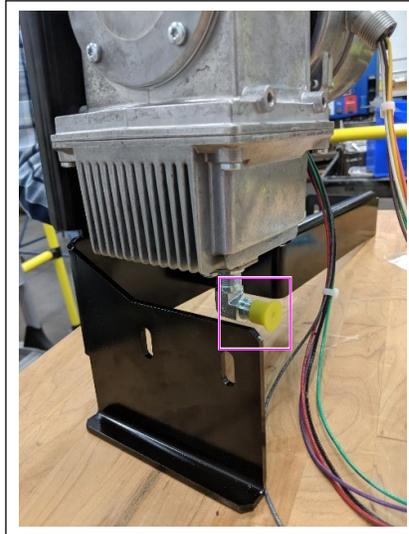
- 2 Assemble the Parker Seal-Lok Fittings (M10953B028) to the motor.

Figure 4: Motor/Pump Inlet Fittings



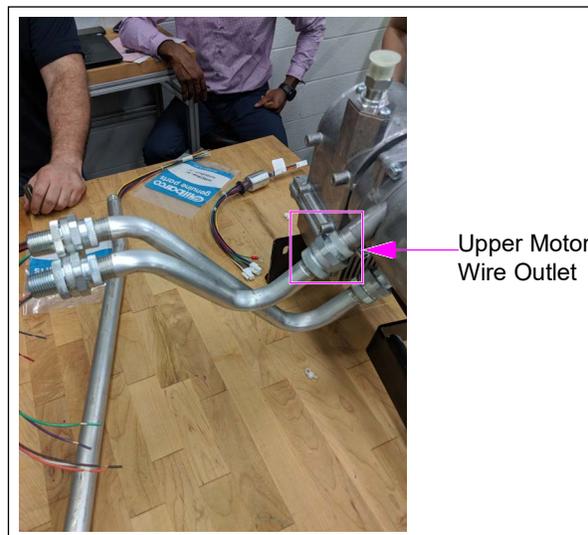
- 3 Assemble the Parker Seal-Lok Fittings (M10953B027) to the motor.
Note: Motor discharge piping should have a slope of 1/8" (3.175 mm) per foot of vapor line or minimum 1-degree slope to prevent gasoline pooling.

Figure 5: Motor Outlet Fitting



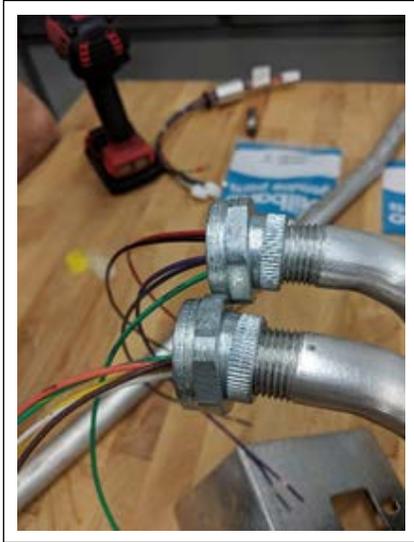
- 4 Assemble both Unions (Q10017-01) to the motor wire outlets.
- 5 Assemble the longer Conduit (M16154B001) to the lower motor wire outlet.
- 6 Assemble the shorter Conduit (M16153B001) to the upper motor wire outlet.

Figure 6: Assembling Unions and Conduit to Motor/Pump



- 7 Assemble the female sides of the Unions (Q10016-04) to the ends of the conduits as shown in [Figure 7](#).

Figure 7: Assembling Female Unions to Conduits



- 8 Assemble the motor bracket assembly to the frame using four M00417B009 Bolts (two per side).

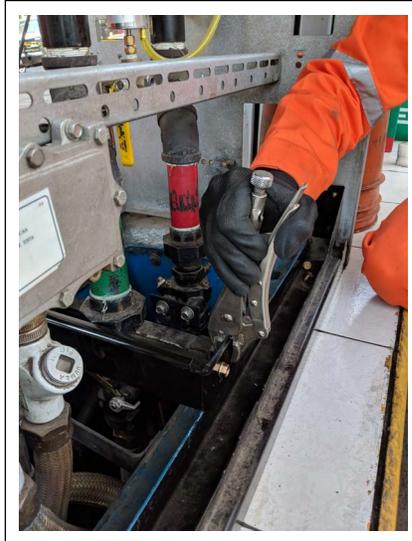
Note: The motor should be placed on Side B of the unit.

Figure 8: Motor Attached to “B” side of Encore Frame



If the bracket is having trouble mating to the unit, use vice grips to aid with installing bolts.

Figure 9: Vice Grips



Preparing the J-Box

To prepare the J-Box, proceed as follows:

- 1 Assemble the male sides of the Unions [(Q10016-04) see [Figure 7](#) on [page 16](#)], to the ports with bushings on the J-Box assembly as shown in [Figure 10](#).

Figure 10: J-Box Assembly with Unions (Q10016-04)



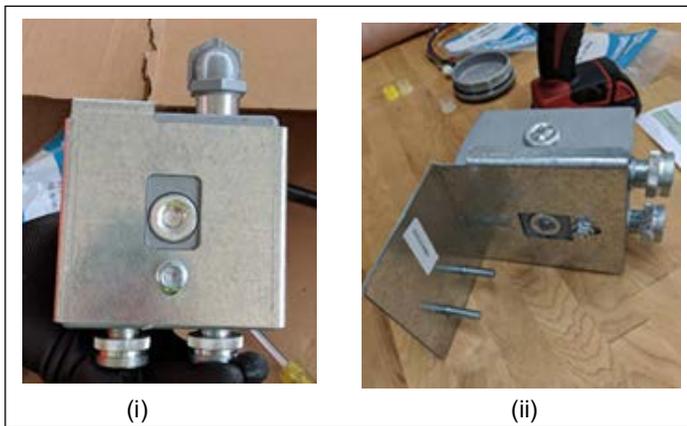
- 2 Assemble the male side of the Union (Q10016-05) to the J-Box assembly on the elbow as shown in [Figure 11](#).

Figure 11: J-Box Assembly with Unions (Q10016-05)



- 3 Mount J-Box to the bracket using the Q11889-14 Bolt.
Note: Keep the bolt loose to allow for adjustment. Continue to step 1 in “[Preparing the Cable Conduit](#)” on page 19.

Figure 12: Mounting J-Box to Bracket



Preparing the Cable Conduit

To prepare the cable conduit, proceed as follows:

- 1 Assemble the female side of the Union [Q10016-05 (male side is shown in [Figure 12](#) on [page 18](#))] to unpotted side of the Conduit (M16033A002).

Figure 13: Union on Conduit



- 2 Mount the J-Box bracket to the frame using two M00414B003 Nut Metric Hex Serrated Flange. Refer to [Figure 15](#) on [page 20](#) to identify the frame in your dispenser.

Figure 14: Bracket for Generation #1 Lower Frame

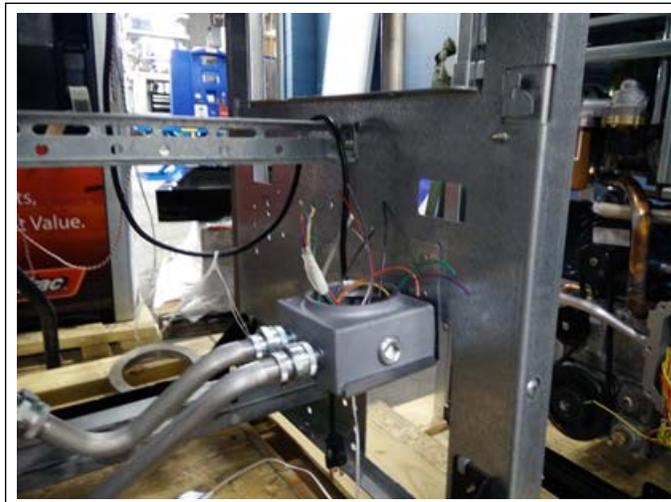


Figure 15: Types of Frame

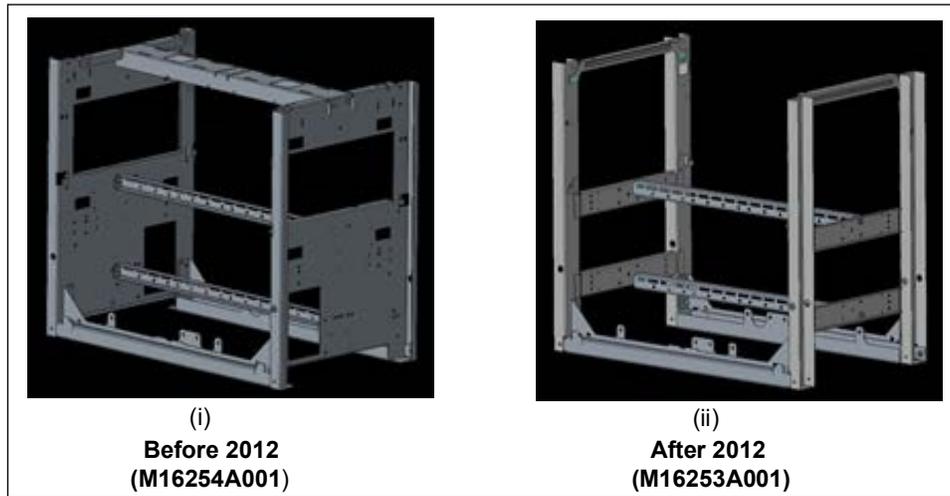
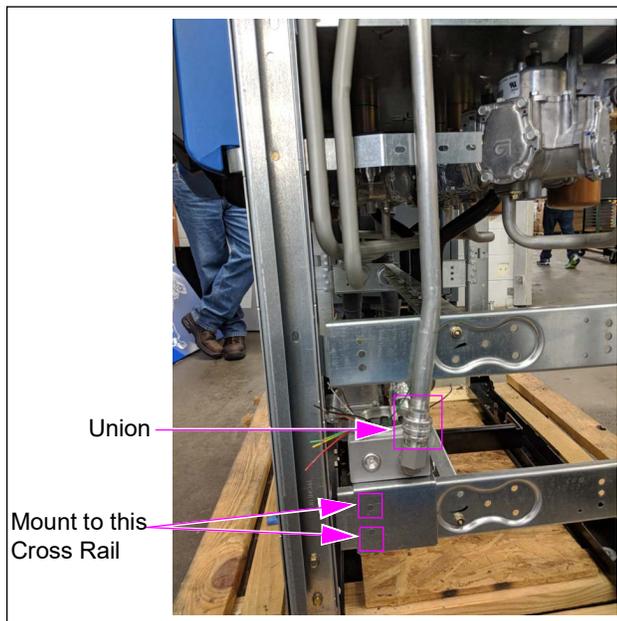
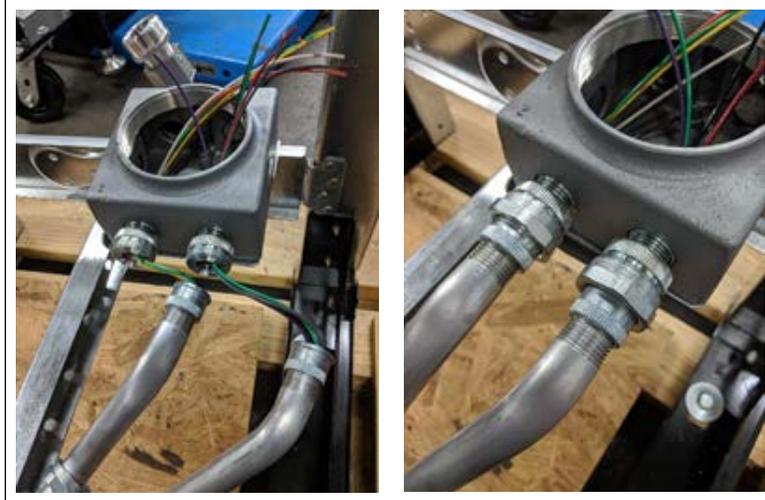


Figure 16: Bracket for Generation #2 and #3 Lower Frames



- 3 Route cables through unions and J-Box. Use the space in the slot to move the J-Box to avoid pinching wires. Move the J-Box back into place and secure the screw. Tighten all unions using a wrench.

Figure 17: Assembling Conduit to J-Box



Installing the Conduit Bracket

To install the conduit bracket to the side of the unit, proceed as follows:

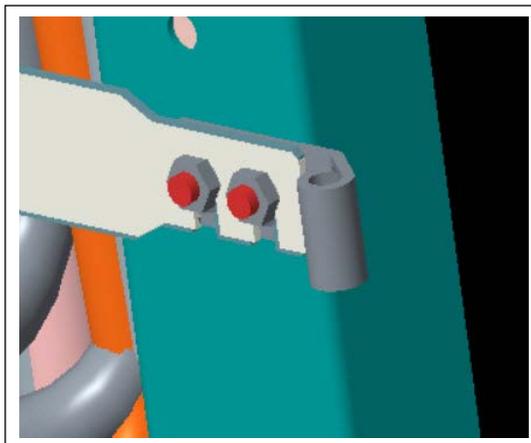
- 1 Loosen the lower hinge nuts that connect the bezel to the frame.

Figure 18: Bezel Hinge



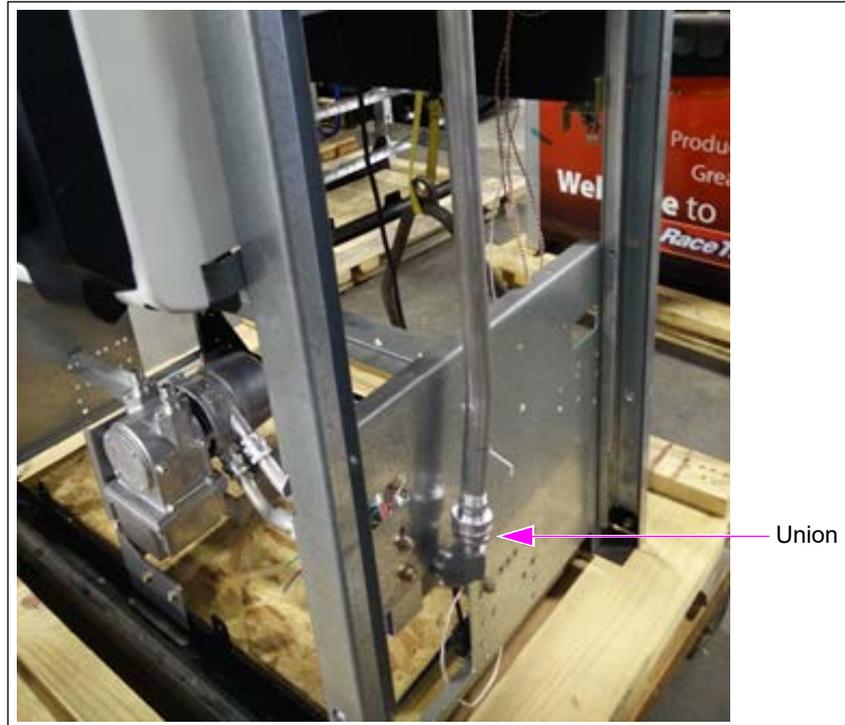
- 2 Slide the Side Column Bracket (M13080B001) behind the hinge and then tighten it. Repeat this step for the other side of the unit.

Figure 19: Conduit Bracket



- 3 Assemble/Connect the Union (Q10016-05) between the Cable Conduit (M16033A002) and J-Box Assembly (M16322A001). Verify the correct orientation.

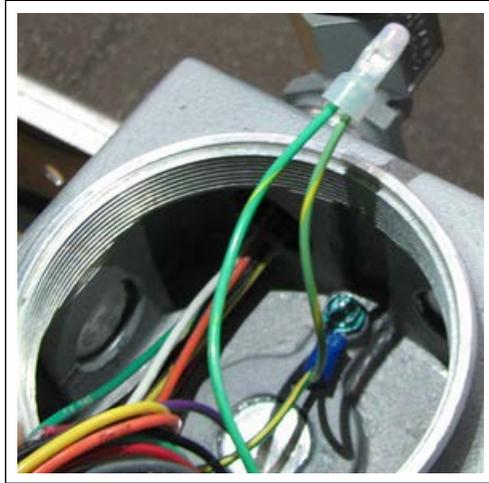
Figure 20: Assembling Union and Cable Conduit



- 4 Connect the following wires:
Note: There are ten wires inside the lower J-Box that must be connected. These wires are color coded to make installation easier.
 - a Take the green wire with yellow stripe (marked “PE”) from the conduit and securely attach this ring terminal to the chassis ground screw in the J-Box.
 - b Take the green wire with yellow stripe from the motor and twist this wire to the loose wire from the ring terminal.

- c Insert the two wires into a Q10158-01 Wire Nut and crimp.

Figure 21: Wire Nut and Ground Wiring

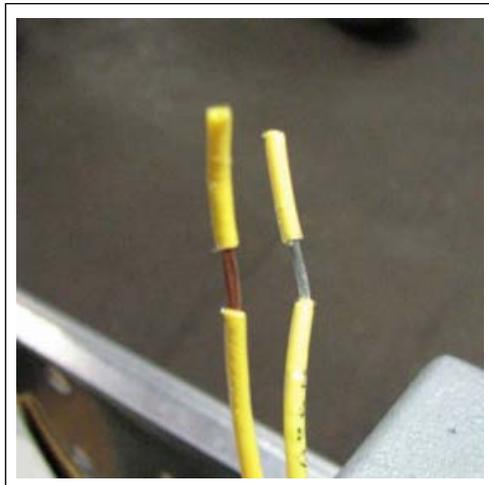


- d The remaining conduit wires will be connected using a Q10158-01 Wire Nut. Take each wire from the motor and find its matching color wire from the conduit and twist the strands together in the following manner:

Note: Ensure that the markings on the wires match.

- i Remove the insulation from each.

Figure 22: Crimping Wires



- ii Twist the strands of the two wires together.

Figure 23: Wire Crimping - 1



- iii Insert the two wires into the Q10158-01 Wire Nut, being careful to verify that all strands are enclosed inside the crimping area.

Figure 24: Wire Crimping - 2



- iv Using the proper crimping tool, crimp the metal end of the wire nut. Verify that neither wire can be pulled out of the crimped area.

Figure 25: Crimping Tool



Note: Use the following wiring chart to verify the wire designations.

Motor Wiring		M16033A002 Conduit	
Wire Color	Cable Marking	Wire Color	Cable Marking
Green with yellow stripe	PE	Green with yellow stripe	PE
White	P1-U	White	P1-U
Yellow	P3-VCC	Yellow	P3-VCC
Brown	P2-V	Brown	P2-V
Orange	P4-W	Orange	P4-W
Green	G4-GND	Green	G4-GND
Black	C3-H3	Black	C3-H3
Red	C2-H2	Red	C2-H2
Violet	C1-H1	Violet	C1-H1
Gray	C5-0/T	Gray	C5-0/T

Note: Take motor wire from the left column and crimp to conduit wire in the right columns.

- 5 Assemble the vapor return tubes to the motor inlets.

Note: From Side B of the unit, assemble Lower V/R Tube Encore Assembly (M11872A007) on the left and Lower V/R Tube Encore Assembly (M11872A008) on the right.

Figure 26: Vapor Return Tubes (B Side View)



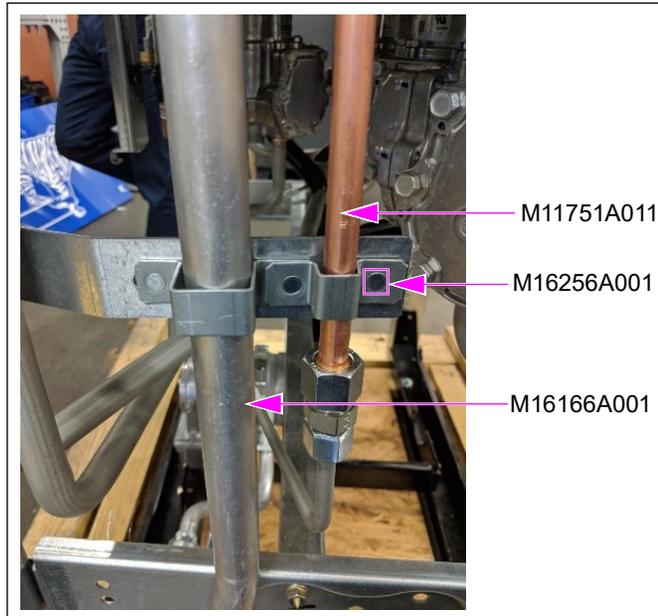
- 6 Assemble the Parker Seal-Lok Fitting (M10953B014) to the end of the Vapor Return Tube (M11872A007) and (M11872A008).

Figure 27: Parker Fitting Assembly



- 7 Assemble the Upper V/R Tube Encore Assembly (M11751A011) to the fitting assembled in step 5 on page 27. Use Conduit Clamp VaporTEK (M16166A001) and M00414B002 X1 Nut to secure the cable conduit assembly. Use V/R Clamp Assembly (M16256A001) and two (M00414B002) Metric Hex Serrated Flange to secure the copper piping.

Figure 28: Side Column Clamping



- 8 On the other side of unit, assemble Upper V/R Tube Encore Assembly (M11751A011) to the other fitting assembled in step 5 on page 27. Use Clamp (M13082A001) and two (M00414B002) Metric Hex Serrated Flange to secure copper piping.
- 9 Use the other nut on the M11751A011 pipe to secure it to the vapor recovery piping in the upper housing.

Removing Knockout

To remove the knockout, proceed as follows:

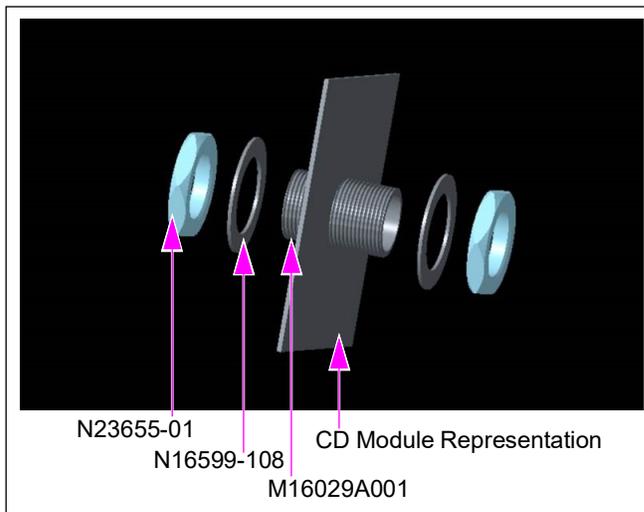
- 1 Knockout the available ports on the CD Module near the installed VaporTEK Main Conduit and Cable Assembly (M16033A002).

Figure 29: CDM Knockout



- 2 Insert the potted nipple on VaporTEK Conduit and Cable Assembly (M16029A001) into the knockout hole and secure using two N16599-108 Washers and two N23655-01 Conduit Nuts.

Figure 30: Conduit, Nut, and Washer Assembly



- 3 Plug J1 from the VaporTEK Conduit and Cable Assembly (M16029A001) to P1 of the VaporTEK Main Conduit and Cable Assembly (M16033A002).

Figure 31: Side Column Connections

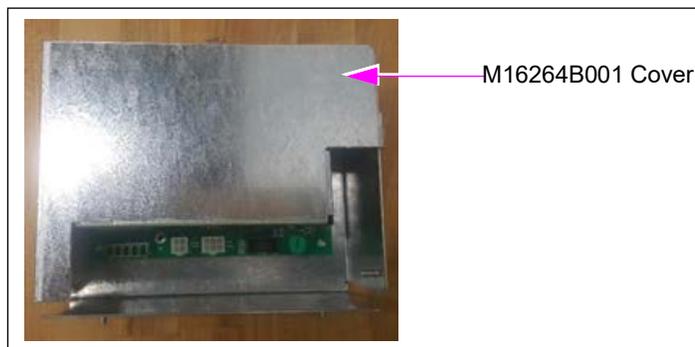


Preparing VaporTEK-3 Board

To prepare the VaporTEK-3 Board, proceed as follows:

- 1 Remove the Cover (M16264B001) from the VaporTEK-3 Controller Board Assembly (M16269A001).

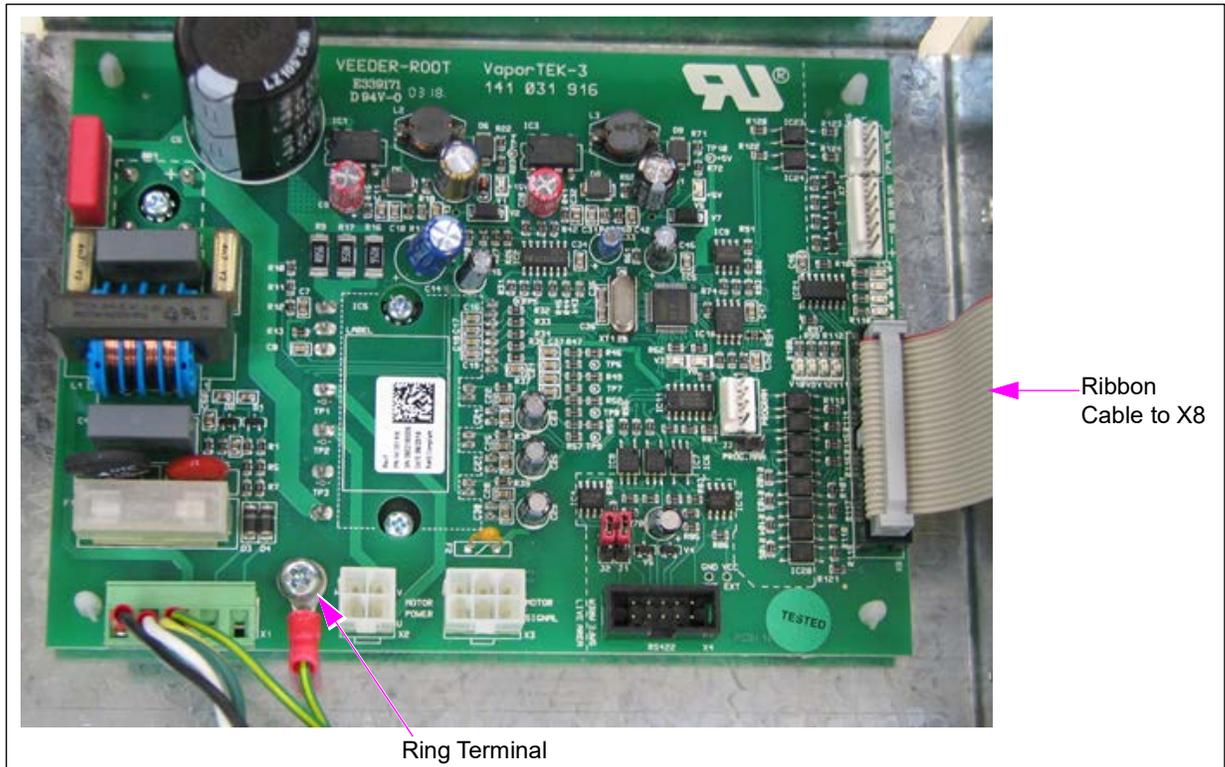
Figure 32: VaporTEK-3 Controller Board Assembly



- 2 Remove the Phoenix Contact Connector (M04379B205) from the X1 connection.
Note: This connector is already installed on M13833A002 assembly.

- 3 Plug the Cable (M13833A002) into X1 of the Controller Board (M16035A001).
- 4 Connect the ring terminal on the end of the green/yellow wire to PE hole on the Controller Board (M16035A001) using Q12845-59 Screw.

Figure 33: VaporTEK-3 Controller Board



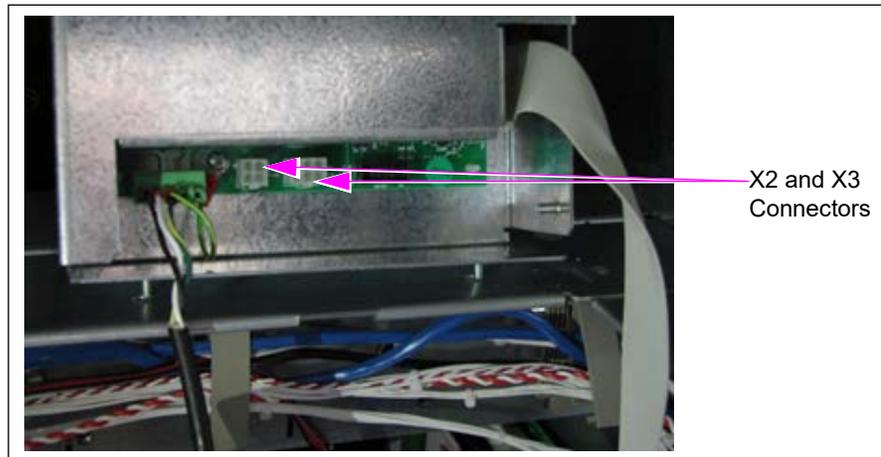
- 5 Plug the Ribbon Cable (140530346) into the X8 Connector on the VaporTEK-3 Controller Board.
Note: Both connectors of ribbon cable are the same.
- 6 Re-install the Cover Assembly (M16264B001 on M16269A001). Secure the cover using one Q12845-59 Screw.

Mounting the Controller Board Assembly

To mount the controller board assembly, proceed as follows:

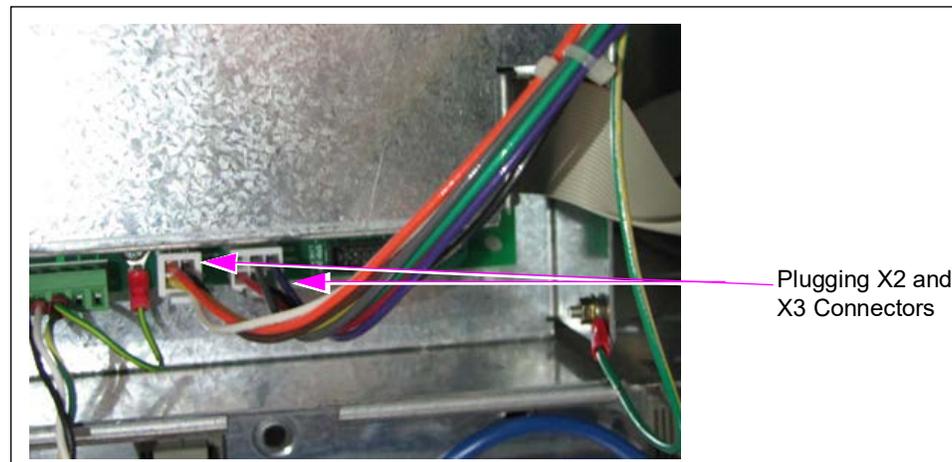
- 1 Determine the location for the Controller Assembly (M16269A001). The controller assembly must be mounted within the reach of the side Conduit Cables (M16029A001). Secure using two M00414B005 Nuts.
- 2 Install the X2 and X3 Connectors on the Cable Assembly (M16029A001) to the designated ports X2 and X3 on the VaporTEK-3 Controller Board (M16035A001).

Figure 34: Mounting the Controller Board Box to the T-Frame



- 3 Use one Q12885-03 Nut to secure the ring terminal to the side of the controller board assembly. Plug the X2 and X3 Connectors to the controller board.

Figure 35: Attaching X2 and X3 Connectors

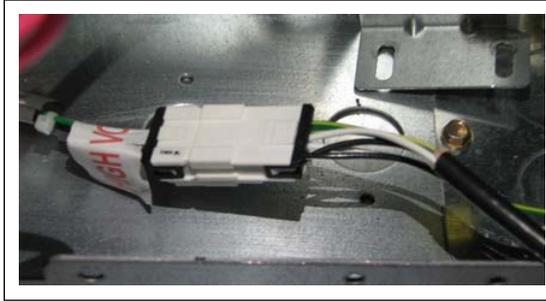


Note: This kit requires the M04406A006 AC distribution cable.

- 4 Replace the AC distribution cable with the new AC Distribution Cable (M04406A006), if necessary.

- 5 Plug the J1 connection from the AC Distribution Cable (M04406A006) into P1 on the Power Supply (M07021A002) port on M07021A002 Power Supply. Plug the opposite end of the AC distribution cable into the Power Cable (M13833A002) from the VaporTEK-3 controller.

Figure 36: M04406A006 Assembly



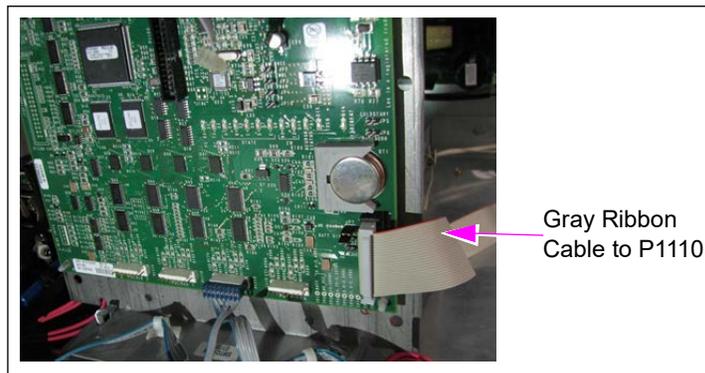
- 6 Attach the ground wire to the frame rail as shown in [Figure 37](#).

Figure 37: Connecting Ground Wire to Frame Rail



- 7 Plug the loose end of the gray ribbon cable into P1110 of the Pump Control Node (M12702A001).

Figure 38: Ribbon Cable on PCN



- 8 Continue to *MDE-5394A VaporTEK/VaporTEK-3 Controller Board 110 V UL Vapor Recovery Collection System for Encore 500 S Start-Up and Service Manual* for calibration setup.

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