

Introduction

Purpose

This manual provides installation instructions for the following Balanced Vapor Retrofit Kits in Encore® units:

- M01472K001 - for installation in Multi-hose Encore units
- M01472K002* - for installation in Single-hose Encore units
- M01472K003 - for installation in Extended-reach Encore units

To install these kits you need access to the top of the upper piping housing and remove the side sheathing.

**For using the Balanced Vapor Retrofit Kit in the units manufactured after July 2014, refer to the note in “Installing Balanced Vapor Recovery System Components” on page 8.*

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Required Tools and Materials

Following tools and materials are required for installing the Balanced Vapor Retrofit Kits (M01472K00X):

- Allen® Wrench
- 10-inch Channel Locks
- Large Crescent Wrench
- Flat-blade and Phillips®-head Screwdrivers
- 1/2 and 1/4-inch Socket Wrenches
- Standard Open-end Wrench Set

Required Reading



Before installing the equipment, the installer must read, understand, and follow:

- This manual
- National Fire Protection Association (NFPA) 30A, The Automotive and Marine Service Station Code
- NFPA 70®, 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®-trained Authorized Service Contractor (ASC) to ensure valid warranty.

Parts List

Following table lists the parts included in the Balanced Vapor Retrofit Kits for Encore unit:

Item	Description	Part Number	M01472K001	M01472K002	M01472K003
			Multi-Hose	Single-Hose	Extended-reach
1	Hose, Outlet, Balanced	M07382B010	8	2	2
2	Screw, Metric, Serrated Flange, Hexagonal-head M8 X 20	M00415B010	8	2	2
3	O-ring, 11/16 X 13/16 X 1/16	N16891-27	16	4	4
4	O-ring, 0.862 X 1.068	Q12974-118	16	8	4
5	Tee C X C X C 1"	M01161B002	1	1	1
6	Tube, Vapor Recovery, Balanced Upper	M01237A001	2	0	0
7	Tube, Vapor Recovery, Balanced Down	M01150A005	1	1	1
8	U-Bolt, Metric, M8	M00703B001	1	1	1
9	Nut, Metric, Hexagonal Serrated Flange, M8	M00414B003	10	2	2
10	Screw, Metric, Socket, Button-head, M8 X 20	M01257B010	8	0	0
11	Plug, Balance, Vapor	M01329B001	4	0	0
12	Flange, Gasket Vapor Recovery	M00620B001	4	0	0
13	Assembly Tube, Vapor Recovery, Balanced, Single Hose	M01446A001	0	2	0
14	Assembly Tube, Vapor Recovery, Balanced, Single Hose	M01446A002	0	0	2
15	Tube, Meter Discharge, 11	M08433A001	0	1	0
16	Tube, Meter Discharge, 12	M08434A001	0	1	0
17	Tube, Meter Discharge, 21	M08435A001	0	1	0
18	Tube, Meter Discharge, 22	M08436A001	0	1	0
19	Manifold Angle Casting	M02771B010	0	2	0
20	Clamp, Parflange Double Tube, 7/8"	M00133B001	0	2	0

Notes: 1) Use Metric Hardware Kit (K96620-01) (includes screws, nuts, bolts) as required in addition to those provided in this kit to replace fasteners.

2) Screws are used to attach the plug plate and gasket to hose outlet casting. For more information on hose outlet castings, refer to "Installing Balanced Vapor Retrofit Kit" on page 7.

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-3893	Encore and Eclipse Owner's Manual	<ul style="list-style-type: none"> Domestic Warranty and Owner's Manual Encore and Eclipse Encore and Eclipse Installers Export Warranty and Owners
MDE-3985	Encore Installation Manual	<ul style="list-style-type: none"> Encore and Eclipse Encore and Eclipse Installers Footprint and Elevations
PT-1936	Encore Series Pumps and Dispensers Illustrated Parts Manual	<ul style="list-style-type: none"> Encore and Eclipse Encore and Eclipse Installers Parts Manual

Abbreviations and Acronyms

Term	Description
ASC	Authorized Service Contractor
ESD	Electrostatic Discharge
GOLD	Gilbarco Online Documentation
NEC	National Electrical Code
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
STP	Submersible Turbine Pump

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 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.

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.

Before You Begin

Read and understand all the safety information found in *MDE-3804 Encore and Eclipse Start-up/Service Manual*.

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. Block off the unit from customers. Follow OSHA lockout/tagout procedures.
- 4 Match the parts received in the kit with “[Parts List](#)” on [page 2](#).

WARNING

Failure to turn off the unit during 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 Balanced Vapor Retrofit Kit


Removing Parts Prior to Installing Balanced Components

⚠ WARNING

If any gasoline has been inhaled, seek emergency help immediately. Inhaled gasoline may lead to unconsciousness and burns to lips, mouth, and lungs.

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

 Spraying fuel from residual pressure in lines can cause serious eye injuries. Always wear eye protection.

 Collect, transport and dispose of fuel only in approved containers specifically designed for this purpose.

- 1 Relieve the pressure in the hanging hardware assembly by holding the nozzle into an approved fuel container and squeezing the handle.
- 2 Remove the nozzle from the end of the hose and drain the hose into the approved fuel container.
- 3 Remove the hose from the hose outlet casting on the dispenser.
- 4 Repeat steps 1 through 3 for all hoses (except diesel fuel hoses) on the unit.
Note: Ensure that you save all of the mounting hardware (screws, bolts, and nuts) that are removed in the following steps.
- 5 Remove the lower panel assemblies.
- 6 Remove the outer and inner column sheathing.
- 7 Remove the upper housing bottom plate and the upper housing top cover. Remove the upper housing end plates.
- 8 Remove the non-vapor recovery hose outlet castings.
- 9 Place all the sheet metal that has been removed in a place where it will not be damaged during the installation of the balanced system components.

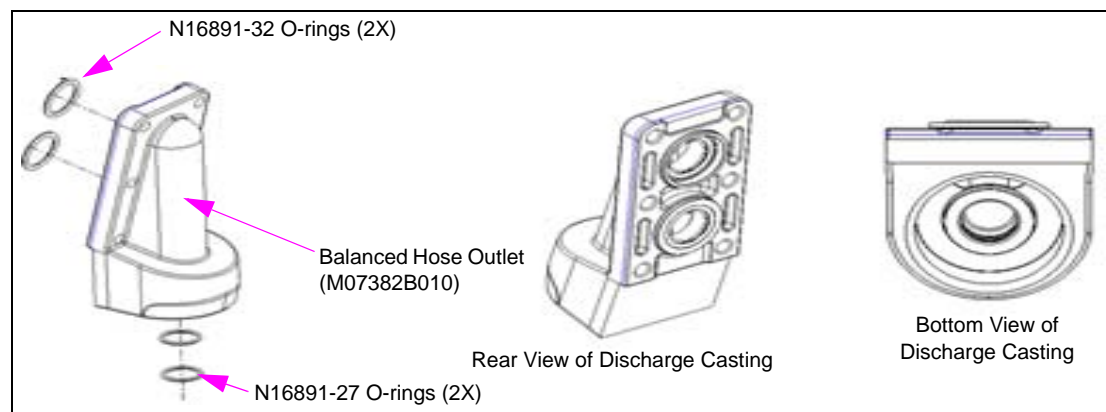
Installing Balanced Vapor Recovery System Components

Note: If the M01472K002 Kit is needed for a single-hose blender unit (X+0 or X+1) manufactured after July 2014, refer to steps 1 through 4. For instructions on installing the M01472K002 Kit in units manufactured until June 2014 and for other kits usage, directly proceed to step 5.

For installing the M01472K002 Kit in a single-hose blender unit (X+0 or X+1), proceed as follows:

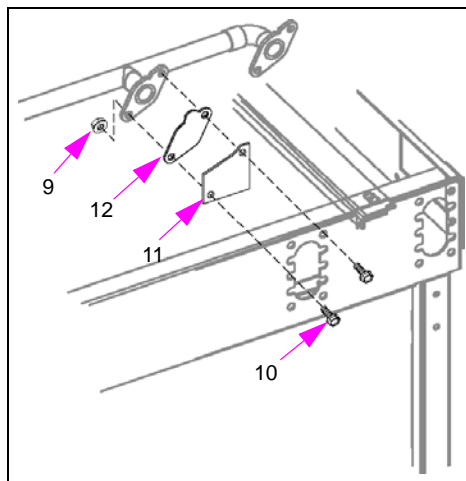
- 1 Remove the existing discharge tubes at the blending side.
 - 2 Install the Manifold Angle Casting (M02771B010) at the blending side (see [Figure 6 \(i\)](#) on [page 13](#)).
 - 3 Install the discharge tubes provided in the kit (see [Figure 6 \(ii\)](#) on [page 13](#)).
 - 4 Refer steps 5 through 13 on [page 10](#) for installation instructions for other parts of the kit.
 - 5 Lightly lubricate the hose outlet casting N16891-27 O-rings with oil or grease before installing them in the hose outlet castings.
 - 6 Locate the Balanced Hose Outlet (M07382B010) and the N16891-27 O-rings and check for the hose connection/attachment at the bottom of the casting. Install two N16891-27 O-rings in the internal grooves of the outlet opening (see [Figure 1](#)).
 - 7 Install two N16891-32 O-rings in the grooves at the back of the casting that connect to the dispenser piping (see [Figure 1](#)).
- Note: A light coating of grease can be used to hold the O-rings in place during assembly.*

Figure 1: Balance Hose Outlet Castings



- 8 Attach the balanced hose outlet castings to the dispenser product/fuel piping and the upper piping housing. The product/fuel piping connects to the top opening at the back of the hose outlet casting.
Note: Ensure that you note the flange positions on the balanced upper tube assemblies so that you properly align the flanges on the product/fuel piping. Also, ensure that the O-rings stay in position during assembly.
- 9 If the unit uses multiple hoses per side, install the Upper Balanced Tube [M01237A001 (see [Figure 5](#) on [page 12](#))]. The tube connects to the bottom opening at the back of the hose outlet castings.
- 10 For any leg on the upper balanced tube without a hose casting, install an Flange Gasket (M00620B001) and an Plug Plate (M01329B001) between the flange and the upper housing frame (see [Figure 2](#)).

Figure 2: Plug Plate and Gasket



- 11 If the unit has one hose per side (see [Figure 3](#) on [page 10](#) and [Figure 4](#) on [page 11](#)), install the Upper Balanced Tube Assemblies [M01446A001 or M01446A002 (the tube connects to the bottom opening at the back of the hose outlet casting)].
- 12 Install the Tee Fitting (M01161B002) between the ends of the balanced upper tubes at the center of the upper housing assembly (see [Figure 3](#) on [page 10](#), [Figure 4](#) on [page 11](#), and [Figure 5](#) on [page 12](#)).

- 13 Connect the Vapor Return Line (M01150A005) to the open leg of the tee fitting at the center of the upper housing and the inlet piping support bracket in the lower hydraulics. Use the U-bolt and nuts to attach the line to the inlet piping support bracket (see [Figure 3](#) on [page 10](#), [Figure 4](#) on [page 11](#), and [Figure 5](#) on [page 12](#)).

Figure 3: Single-Hose (M01472K002) Piping

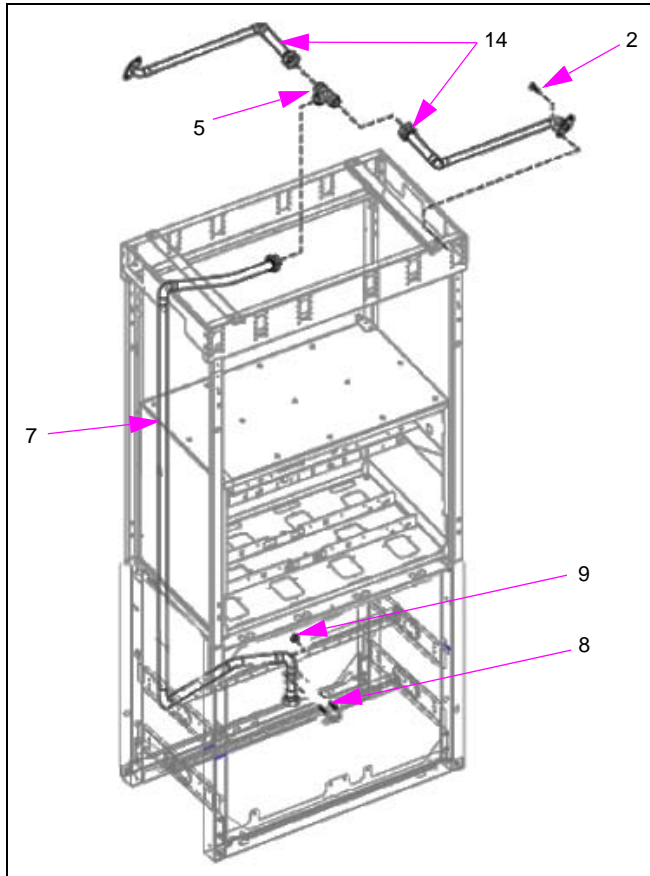


Figure 4: Single-Hose Extended Reach (M01472K003) Piping

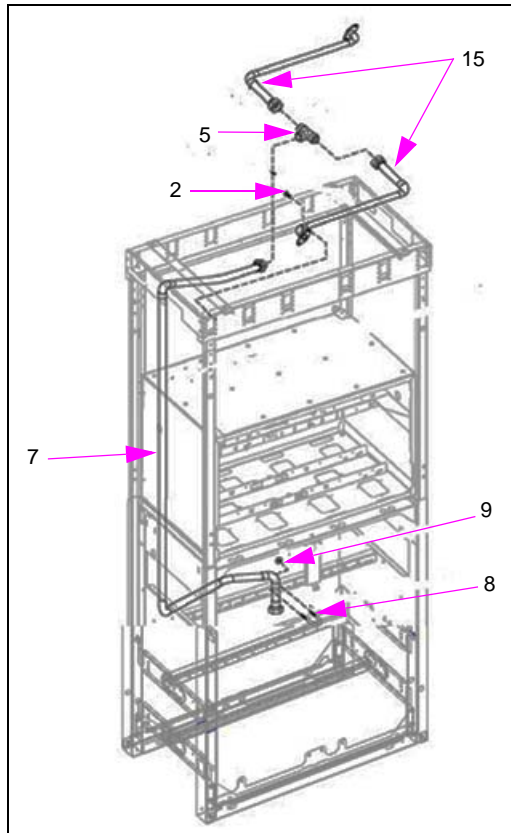
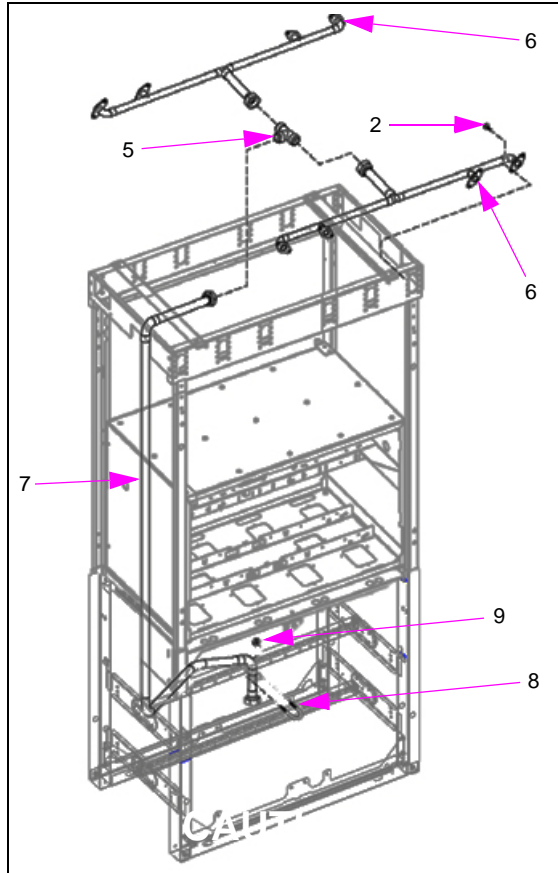
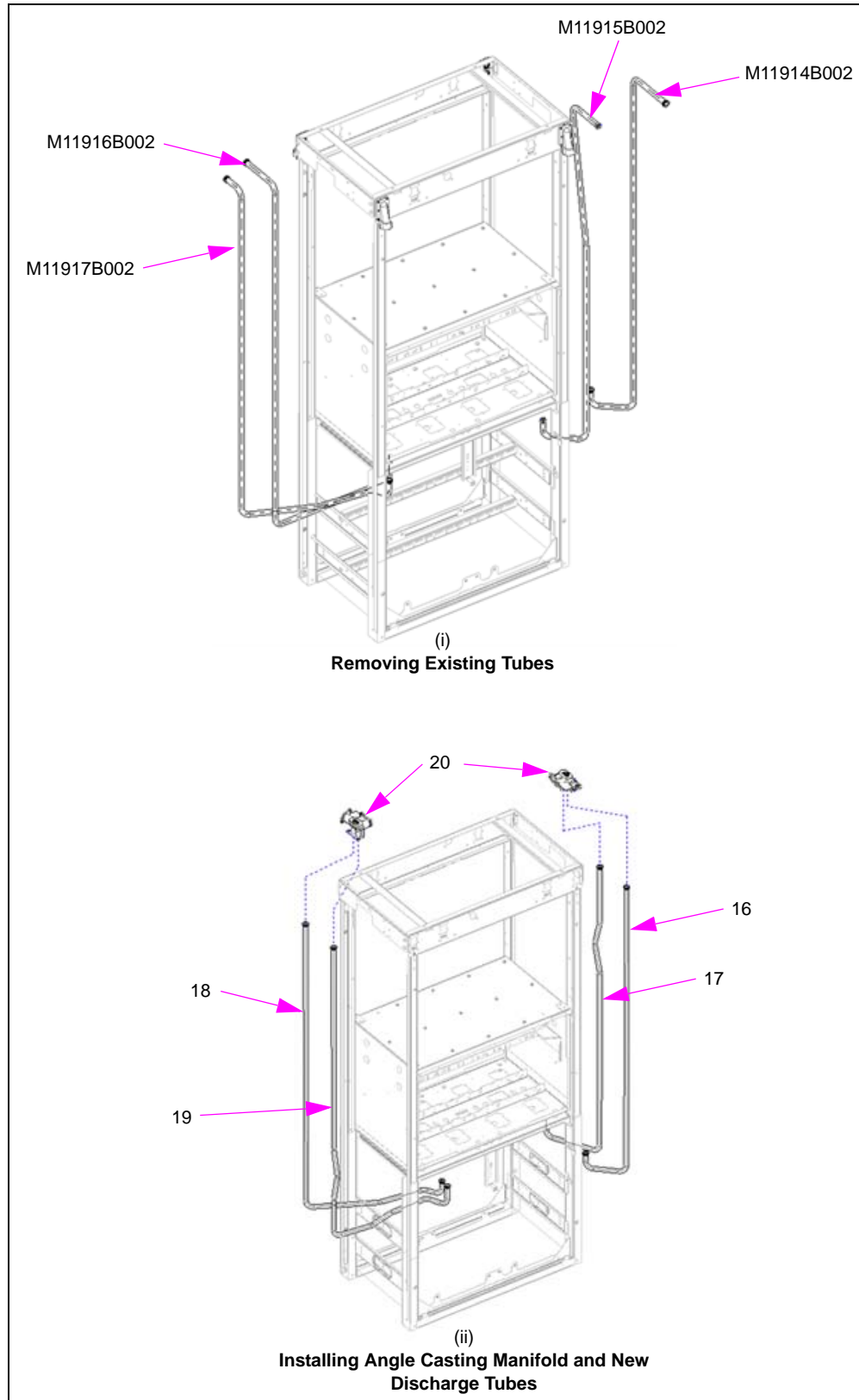


Figure 5: Multi-Hose (M01472K001) Piping



**Figure 6: Installing M01472K002 Kit in Single-hose Blender Unit (X+0, X+1),
Manufactured After July 2014**



Completing Installation

To complete the installation, proceed as follows:

- 1 Check all fasteners and connections to ensure that they are tight.
- 2 Reinstall the upper housing frame end plates.
- 3 Install the balanced hanging hardware (hose, nozzle, breakaway) on each hose outlet casting.

CAUTION

Do not use pipe sealant. Only use grease or oil on the O-rings and threads. Follow the manufacturer's instructions for these components and tighten the connections to the proper torque.

- 4 Turn on the power to the unit.
- 5 Turn on power to the STPs and open the shear valves. Dispense at least 10 gallons of fuel through each hose position. Ensure that there are no fuel leaks.
- 6 If there are no fuel leaks, reinstall all the sheet metal.

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