VST Installation Procedure for Phase II Coaxial EVR Balance Safety Breakaway Devices

NON-Reattachable Breakaway Part Number Series: VSTA-EVR

Vapor Systems Technologies, Inc.
650 Pleasant Valley Drive
Springboro, Ohio 45066 (USA)

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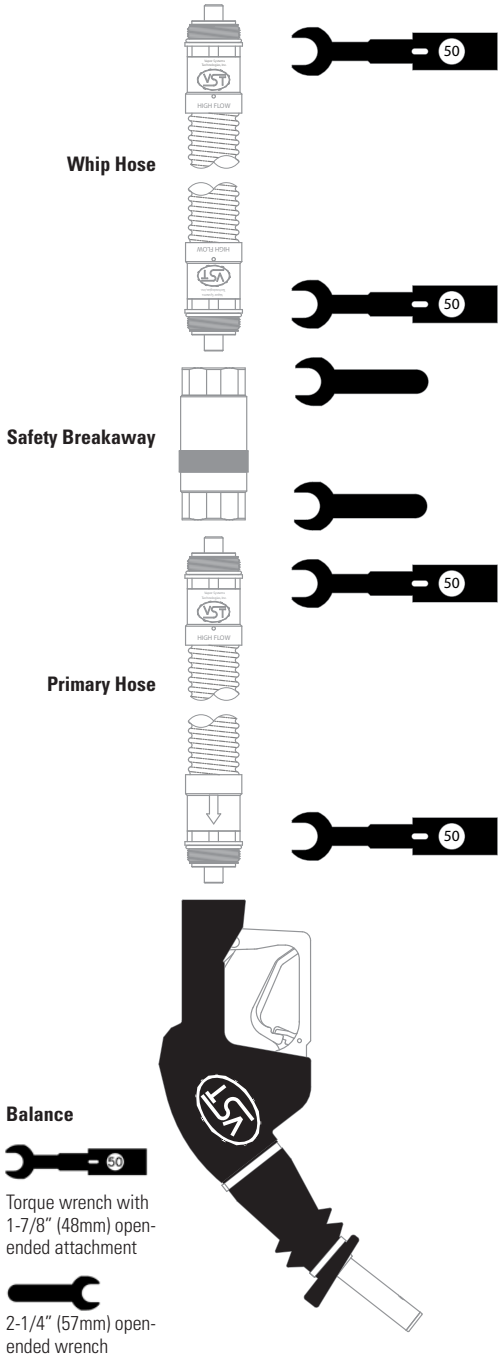
Figure 1.

EVR Balance Hanging Hardware Assembly



APPLICATION

These VST Safety Breakaway devices are intended to prevent damage to the dispenser and hose in the event of a vehicle drive off. These devices separate at pull forces up to 350 lbs. Prior to installation (see Installation Preparation), you will need to determine that 350 lbs. of pull force will not damage the dispenser. After verifying that the dispenser is securely bolted to the island, it can be tested by using a spring scale and a length of rope. The rope must be connected at the dispenser outlet casting, which may require a threaded bushing with a hole for attaching the rope. Attach the scale to the rope and pull to 350 lbs. in several directions. Be sure to avoid damaging the dispenser.

NOTE

a. The whip hose ALWAYS attaches to the dispenser. If a retractor is being used, the retractor clamp MUST be between the breakaway and the dispenser.

b. VST hoses are made to withstand 350 pounds tensile pull without damage. If another brand of hose is present at the dispenser, VST recommends that you contact the hose manufacturer regarding the compatibility with this breakaway device.

GENERAL INFORMATION

If hanging hardware components are involved in a drive-off or incur other customer abuse, each individual component must be functionally tested prior to customer dispensing activities.

INSTALLATION PREPARATION

This procedure must be followed to insure leak-proof installation and operation of these safety breakaway products.

1. Turn off and tag the power to the dispenser. Dispenser must be de-energized prior to service to avoid personal injury.
2. Barricade work area to block vehicle access to the dispenser.
3. Close the dispenser shear valve prior to removing hanging hardware (hoses, safety breakaways, and nozzles).
4. Drain liquid product from the hanging hardware set into an approved container prior to replacing any hanging hardware components.
5. Remove hanging hardware from the dispenser prior to making replacement component assembly connections. VST recommends connecting the whip hose to the dispenser as the last connection during the hanging hardware assembly

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INSTALLATION AND FUNCTION TESTS

1. Initial inspection:
   a. Carefully unpack safety breakaway from shipping carton.
   b. Inspect safety breakaway for any damage to threads, O-Rings, exterior, etc.
2. Lightly lubricate ALL O-Rings on mating connections with petroleum jelly or other suitable lubricant. DO NOT USE pipe dope or thread sealant.
3. Attach breakaway on mating connection and tighten by hand. NOTE THE FLOW DIRECTION ARROW (where applicable). Use the hex on the breakaway body to tighten. DO NOT USE the breakaway body to tighten the unit.
4. Tighten breakaway connection to 50 foot-pounds torque. DO NOT OVER TIGHTEN. Use the hex on the breakaway body to tighten. Use a torque wrench with an open-end attachment to fit the hose couplings and an open-end wrench to properly tighten breakaway connections. DO NOT USE channel-locks or pliers to tighten connections. Proper ft./lb. torque may not be achieved with these tools.
5. Purge air from the system by pumping one-tenth (1/10) to two-tenths (2/10) of a gallon of fuel into an approved container. Inspect each hose joint connection for liquid leaks and make proper adjustments if necessary.
6. Check the nozzle shut-off action by dispensing fuel into an approved container at least three times to assure the proper automatic operation of the interlock rod. According to U/L requirement 842, the fuel flow-rate must be greater than 3 gpm for the automatic shut-off mechanism to operate.

   To test, operate the nozzle and submerge the spout tip in fuel until the fuel level covers the vent hole. The main valve of the nozzle automatically shuts off when liquid covers the vent hole at the end of the spout. The nozzle is not designed to operate on gravity flow. The hold-open latch will disengage automatically when liquid covers the vent hole in the spout. Verify that the fuel flow stops when the nozzle collection sleeve is decompressed (e.g. interlock rod is disengaged). To test that the fuel flow stops, dispense some fuel into an approved container. Slowly remove the nozzle from the container while dispensing fuel. Fuel flow should stop when the nozzle collection sleeve is fully decompressed.
7. Measure the resistance between the dispenser outlet casting and the tip of the nozzle spout. Use an electronic multimeter set on the high range of the ohmmeter function. Resistance should not indicate more than 70,000 ohms per foot of hose. Example: The measured resistance for a 12-foot hose must not exceed 840,000 ohms (840 kilohms).

MAINTENANCE

Inspect safety breakaways daily for damage, loose connections or leaks. Replace as necessary. Subject to customer abuse, safety breakaway should be replaced when damaged.

The safety breakaway is designed and constructed to give lasting service if properly handled and maintained. If for any reason it should need attention, contact your VST distributor for proper disposition.

NOTE

Due to abuse, misuse, changing gasoline formulas, variation in maintenance practices, environmental conditions and/or conditions beyond the manufacturer's control, dispensing equipment may need replacement before five (5) years. Inspections and proper maintenance procedures should be followed by the station manager to determine if replacement is required before five (5) years.

WARNING

Unauthorized rebuilding or modifying of safety breakaways voids **ALL** approvals and warranties.

VST products must be used in compliance with applicable federal, state, and local laws and regulations.

EMCO®
WHEATON RETAIL

A4119EVR
Coaxial Safe Break Valve

Permanent ID Information:

INSTALLATION INSTRUCTIONS

Service Tools Required:

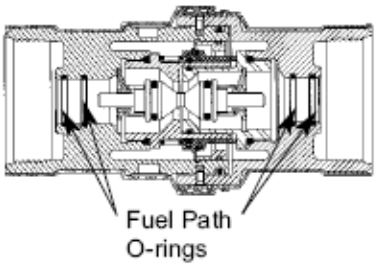
- 1 7/8" Crows Foot
- Gasoline Approved Container
- Petroleum Jelly or Other Suitable Lubricant
- Torque Wrench w/ 50ft-lbs Setting
- Pipe Wrench w/ Flat Jaws

CAUTION:

1. Always barricade work area to keep pedestrians and vehicles from accessing the dispenser.
2. Always use a gasoline approved container or test can when performing any type of preventive maintenance.
3. Before attempting to install, remove or service the A4119EVR safe break valve, turn off and tag out power to the corresponding dispenser.
4. Before attempting to install, remove or service the A4119EVR safe break valve, close the emergency impact valves located inside the base of the dispenser. Relieve the line pressure and standing fuel through the nozzle spout into a gasoline approved container by compressing the bellows and squeezing the lever.
5. If a hose retractor is used, the A4119EVR safe break valve must be attached on the nozzle side of the retractor clamp.

IMPORTANT: Failure to perform cautions 3 and 4 may result in a hazardous gasoline spill, damage to equipment, personal injury and/ or death.

Pre-Inspection:



1. Carefully unpack and remove the A4119EVR safe break valve from the shipping container and evaluate for any kind of damage.

2. Verify the fuel path o-rings located on both ends of the A4119EVR safe break valve. All o-rings must be properly secured inside the factory machined grooves.

Pre-Installation:

3. Lightly lubricate the fuel path o-rings using petroleum jelly or other suitable lubricant.

4. Before attempting to install the A4119EVR safe break valve onto the whip hose, verify the word “NOZZLE”, which is printed on the scuff guard of the safe break valve, is on the opposite end. Verify the vapor path o-ring is properly secured onto the connector, and in good working condition. Lightly lubricate the o-ring using petroleum jelly or other suitable lubricant.

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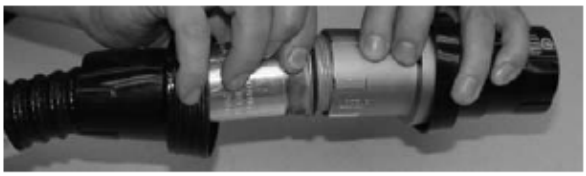
5. Before attempting to install the A4119EVR safe break valve onto the curb hose, verify the vapor path o-ring is properly secured onto the connector, and in good working condition. Lightly lubricate the o-ring using petroleum jelly or other suitable lubricant.

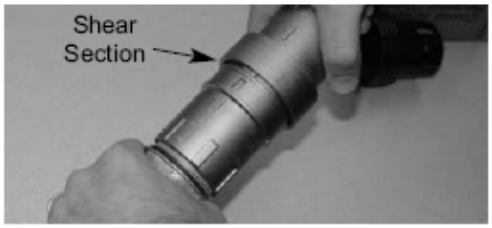
IMPORTANT: Do not use pipe thread sealant compound or Teflon tape when installing the A4119EVR safe break valve. Failure to comply will void warranty.

<u>Installation</u>:

IMPORTANT: If this is a new facility installation, the fueling point must be flushed into a gasoline approved container before installing the A4119EVR safe break valve. Failure to perform this procedure could result in foreign material becoming lodged inside the safe break valve's fuel path causing a reduction in fuel flow.



6. Remove the scuff guard by sliding on to the whip hose. Attach the A4119EVR safe break valve onto the whip hose connector. Tighten by hand to avoid cross threading. Take caution to avoid pinching the vapor path o-ring.



IMPORTANT: Never tighten across the shear section of the A4119EVR safe break valve. Failure to comply will result in damage to the safe break valve and void warranty.

7. Using a 1 7/8" crows foot and torque wrench, tighten the whip hose connector to 50 ft-lbs of torque.

8. Remove the scuff guard by sliding on to the curb hose. Attach the A4119EVR safe break valve onto the curb hose connector. Tighten by hand to avoid cross threading. Take caution to avoid pinching the vapor path o-ring.

9. Using a 1 7/8" crows foot and torque wrench, tighten the curb hose connector to 50 ft-lbs of torque.

Post Functional Tests:

10. Carefully purge the trapped air from the fueling point. Begin dispensing by compressing the bellows and then squeezing the lever. Dispense one gallon of fuel into a gasoline approved container.

11. Functional test the automatic shutoff of the A4005EVR nozzle. Begin dispensing by compressing the bellows and then squeezing the lever. Place the hold open latch in "high" clip position to secure the lever. Dispense one gallon of fuel into a gasoline approved container. At the same time, lower the spout tip into the standing fuel until the vent hole is completely submersed. The main valve of the A4005EVR nozzle will automatically close causing fuel flow to stop.

IMPORTANT: Perform step 11 a minimum of three times to assure the insertion interlock, hold open latch and the automatic shutoff of the A4005EVR nozzle are operating properly.

According to UL requirement 842, the fuel flow rate must be greater than 3 gallons per minute for the automatic shutoff to operate properly. A common problem cause of low flow rates are dirty or clogged dispenser filters.

Post Inspection:

12. Before placing the A4005EVR nozzle onto the dispenser cradle, inspect all hanging hardware connections for potential fuel leaks. Make proper adjustments if necessary.

PREVENTIVE MAINTENANCE

1. Weekly inspect the A4119EVR safe break valve, evaluate for any kind of damage. Damaged components must be replaced with factory authorized service kits.

Part Number	Description
494748EVR	Fuel Path O-ring Kit

2. Weekly inspect all hanging hardware connections for potential fuel leaks.

IMPORTANT: Should a drive-off or incidence of customer abuse occur, follow the initial inspection and function instructions found in the installation section.

PERFORMANCE STANDARDS & SPECIFICATIONS

This component was factory tested to, and met the following specifications:

1. Meets ARB Material Compatibility with Fuel Blends as per Section 3.8 of CP-201.
2. TP-201.2J – Complies with the maximum allowable component pressure drop of 0.04 inches of water column @ 60 CFH.

IMPORTANT: Leave these installation instructions with the station owner and/or operator.

WARRANTY POLICY

Emco Wheaton Retail Corporation service station products are warranted to be free from defects in material and workmanship under normal use and service. Vapor recovery nozzles are warranted for a period of twelve (12) months from date of shipment from Emco Wheaton Retail Corporation or from installation date as specified by the returned warranty card, not to exceed fifteen (15) months from the date of shipment from Emco Wheaton Retail Corporation. This warranty excludes the spout and/or front end components of balance vapor recovery nozzles unless damage is obvious when the nozzle is removed from the shipping carton and the defective nozzle is returned to Emco Wheaton Retail Corporation prior to use and within two (2) months from the date of invoice. Other service station products are warranted for a period of twelve (12) months from the date of manufacture.

Emco Wheaton Retail Corporation shall, at its option, repair or replace that part which proves to be defective. Repaired or replacement nozzles are warranted for the balance of the original warranty period. This warranty is void unless the original purchaser returns the claimed defective item to Emco Wheaton Retail Corporation for inspection to determine whether the claimed defect is covered by this warranty.

The exclusive and sole remedy under this warranty is repair or replacement of the defective part. Emco is not responsible for claims for damage caused by improper installation or maintenance; corrosive fluids; misuse of the product or use the product for other than its intended purpose; or accident, acts of God, or natural phenomena. Emco will not pay for labor or related expenses, nor shall Emco be liable for any incidental, consequential or exemplary damages. This warranty is void if the Emco Wheaton Retail Corporation product has been previously repaired with parts not approved by Emco Wheaton Retail Corporation, or if a nozzle bears the mark or imprint of a company other than Emco Wheaton Retail Corporation, indicating the nozzle has been rebuilt or repaired by a company other than Emco Wheaton Retail Corporation.

EMCO WHEATON RETAIL CORPORATION MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, (WHETHER WRITTEN OR ORAL), INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

In the event a nozzle is returned to Emco Wheaton Retail Corporation within the warranty period described above, and when tested is found to be functional and without defect, Emco Wheaton Retail Corporation reserves the right to return the nozzle to the customer or apply a Core Credit (see Nozzle Core Return Program), at Emco Wheaton Retail Corporation's discretion.

In the event of failure within the warranty period, call the Customer Service Department at **(800) 234-4394**. Describe the problem and provide the product date stamp information to the customer service representative. In the case of a nozzle, provide the serial number. The customer service representative will provide a product complaint number, if applicable. Ship the defective equipment **PREPAID**, to Emco Wheaton Retail Corporation for repair or replacement.

Emco Wheaton Retail Corporation products should be used in compliance with applicable federal, state and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and material to be handled. All illustrations and specifications are based on the latest product information available at the time of publication. Emco Wheaton Retail Corporation reserves the right to make changes at any time in prices, materials, specifications and models and to discontinue models without notice or obligation.

Emco Wheaton Retail Corporation warrants the workmanship and materials to be free of defects and will comply with the performance standards of California ARB CP-201 for a period of one (1) year from the date of installation or fourteen months from the date of shipment from Emco Wheaton Retail Corporation.

Emco Wheaton Retail Corp.
2300 Industrial Park Dr. • Wilson, NC 27893
252-243-0150 • 252-243-4759 (fax)
619-421-1743 (Technical Services, California)

p/n 569043
Rev. D, 06/09

EMCO®
WHEATON RETAIL

494748EVR
Fuel Path O-ring Kit

For use with Vapor Systems Technologies VST California Air Resources Board Executive Orders VR-203 and VR-204

Packing List:

(2) Fuel Path O-rings

A4005EVR Balance Vapor Recovery Nozzle

A4119EVR Coaxial Safe Break Valve

INSTALLATION INSTRUCTIONS

Service Tools Required:

- Pipe Wrench w/ Flat Jaws
- Bench Vise w/ 5" Jaw Width
- Petroleum Jelly or Other Suitable Lubricant
- Scribe Tool w/ 90 Degree Tip
- Gasoline Approved Container

CAUTION:

1. Always barricade work area to keep pedestrians and vehicles from accessing the dispenser.
2. Always use a gasoline approved container or test can when performing any type of preventive maintenance.
3. Before attempting to install, remove or service the A4005EVR nozzle and A4119EVR safe break valve, turn off and tag out power to the corresponding dispenser.
4. Before attempting to install, remove or service the A4005EVR nozzle and A4119EVR safe break valve, close the emergency impact valves located inside the base of the dispenser. Relieve the line pressure and standing fuel through the nozzle spout into a gasoline approved container by compressing the bellows and squeezing the lever.

IMPORTANT: Failure to perform cautions 3 and 4 may result in a hazardous gasoline spill, damage to equipment, personal injury and/or death.

Pre-Inspection:

1. Carefully unpack and remove all kitted parts from the shipping container and evaluate for any kind of damage. Verify that no parts are missing from the packing list before proceeding with the installation.

Pre-Installation:

2. Empty all standing fuel within the spout and bellows into a gasoline approved container before attempting to service the fuel path o-rings.

3. It is necessary to remove the A4005EVR nozzle and A4119EVR safe break valve from the curb hose during the removal and installation of the fuel path o-rings. Use the pipe wrench with flat jaws to loosen the curb hose connector. Unfasten the curb hose connector by hand from the A4005EVR nozzle to avoid cross threading.

IMPORTANT: Drain the fuel from the hanging hardware into a gasoline approved container when removing the A4005EVR nozzle from the curb hose.

A4005EVR Nozzle

A4119EVR Safe Break Valve

4. Use the bench vise to properly secure the A4005EVR nozzle or A4119EVR safe break valve during service.

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Installation:

Removing the Existing Fuel Path O-rings

A4005EVR Nozzle

A4119EVR Safe Break Valve

5. Use the scribe tool to remove the existing fuel path o-rings.
6. Clean and remove all existing grease, fuel residue, debris, etc. from within the machined grooves.

IMPORTANT: Properly discard all removed components.

Installing the New Fuel Path O-rings

A4005EVR Nozzle

A4119EVR Safe Break Valve

7. Use the scribe tool to install the new fuel path o-rings. Verify that both o-rings seat properly into the machined grooves.

A4005EVR Nozzle

A4119EVR Safe Break Valve

8. Lightly lubricate the fuel path o-rings using petroleum jelly or other suitable lubricant.

Post-Installation:

9. Before attempting to reinstall the A4005EVR nozzle or A4119EVR safe break valve, please refer to the following installation instructions below.

    - A4005EVR Balance Vapor Recovery Nozzle p/n 570435
    - A4119EVR Coaxial Safe Break Valve p/n 569043

PREVENTIVE MAINTENANCE

1. Weekly inspect the A4005EVR nozzle and A4119EVR safe break valve connections for leaks or fuel residue. Replace with factory authorized service kits.

Part Number	Description
494748EVR	Fuel Path O-ring Kit

PERFORMANCE STANDARDS & SPECIFICATIONS

This component was factory tested to, and met the following specifications:

1. Meets ARB Material Compatibility with Fuel Blends as per Section 3.8 of CP-201.

IMPORTANT: Leave these installation instructions with the station owner and/ or operator.

4

WARRANTY POLICY

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Emco Wheaton Retail Corporation shall, at its option, repair or replace that part which proves to be defective. Repaired or replacement nozzles are warranted for the balance of the original warranty period. This warranty is void unless the original purchaser and any subsequent purchaser returns the claimed defective item to Emco Wheaton Retail Corporation for inspection to determine whether the claimed defect is covered by this warranty.

The exclusive and sole remedy under this warranty is repair or replacement of the defective part. Emco is not responsible for claims for damage caused by improper installation or maintenance; corrosive fluids; misuse of the product or use the product for other than its intended purpose; or accident, acts of God, or natural phenomena. Emco will not pay for labor or related expenses, nor shall Emco be liable for any incidental, consequential or exemplary damages. This warranty is void if the Emco Wheaton Retail Corporation product has been previously repaired with parts not approved by Emco Wheaton Retail Corporation, or if a nozzle bears the mark or imprint of a company other than Emco Wheaton Retail Corporation, indicating the nozzle has been rebuilt or repaired by a company other than Emco Wheaton Retail Corporation.

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Rev. C, 10/10