

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

Reattachable Breakaway Part Number Series: VSTA-EVR-SBKA



Vapor Systems Technologies, Inc.

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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. 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:

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

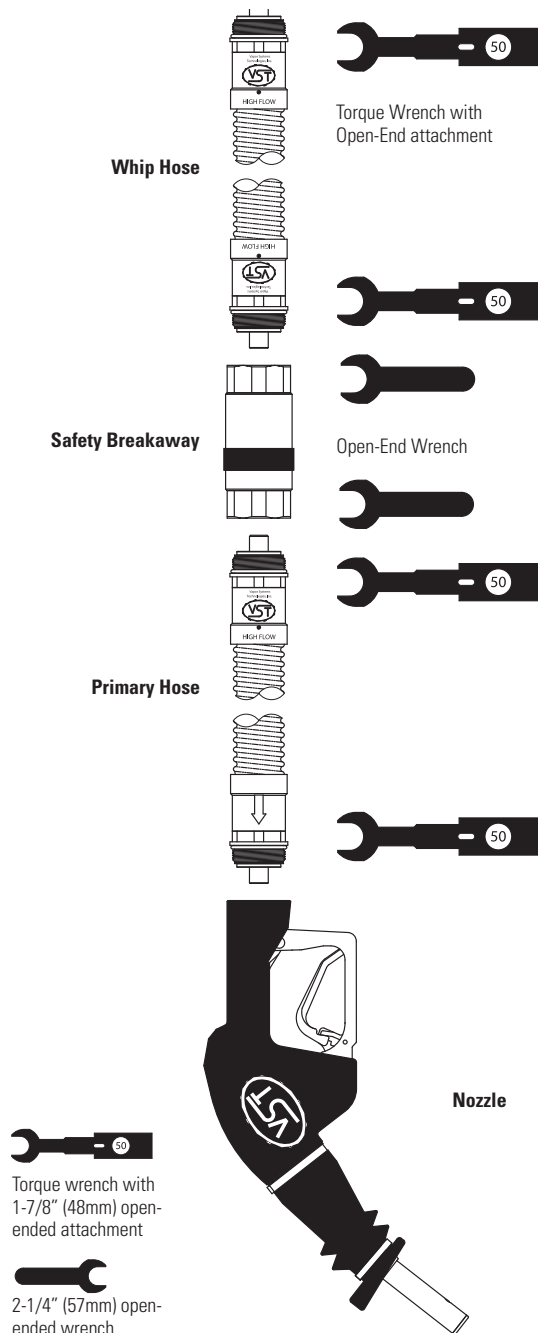
If hanging hardware components are involved in a drive-off or incur other customer abuse, each individual component must be functionally tested prior to customer dispensing activities.

INSTALLATION PREPARATION

These procedures must be followed to ensure leak-proof installation and operation of these safety breakaway products.

- Turn off and tag the power to the dispenser. Dispenser must be de-energized prior to service to avoid personal injury.
- Barricade work area to block vehicle access to the dispenser.
- Close dispenser shear valve prior to performing any service work with the hanging hardware (hoses, safety breakaways, and nozzles).
- Drain liquid product from the hanging hardware set into an approved container prior to replacing any hanging hardware component.

Figure 1.



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- For the installation of a new breakaway, remove hanging hardware from the dispenser prior to making replacement component assembly connections. VST recommends connecting the whip hose to dispenser as the last connection during hanging hardware assembly.

INSTALLATION AND FUNCTION TESTS

- Initial inspection:
 - Carefully unpack safety breakaway from shipping carton.
 - Inspect safety breakaway for any damage to threads, O-rings, exterior, etc.
- Lightly lubricate **ALL** O-rings on mating connections with petroleum jelly or other suitable lubricant. **DO NOT USE** pipe dope or thread sealant.
- Attach breakaway on mating connection and tighten by hand. **NOTE FLOW DIRECTION ARROW** (where applicable). Use the hex on the breakaway body closest to the connection to tighten. **DO NOT USE** the breakaway body to tighten the unit.
- Tighten breakaway connection to 50 foot-pounds of torque. **DO NOT OVER TIGHTEN**. Use the hex on the breakaway body closest to the connection 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.
- 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 breakaway joint connection for liquid leaks and meter creep. Make proper adjustments if necessary. Checking for meter creep will verify the integrity of the connections. After dispensing the fuel, release the lever and move components around and/or gently shake the hose and verify if the displaced amount on the dispenser changes. If meter creep is experienced, check all components and replace as necessary.
- Check the nozzle shut-off action by dispensing fuel into an approved container at least three times to assure proper automatic operation of the interlock rod. According to UL requirement 842, the fuel flow-rate must be greater than 3 gpm for the automatic shut-off mechanism to operate.

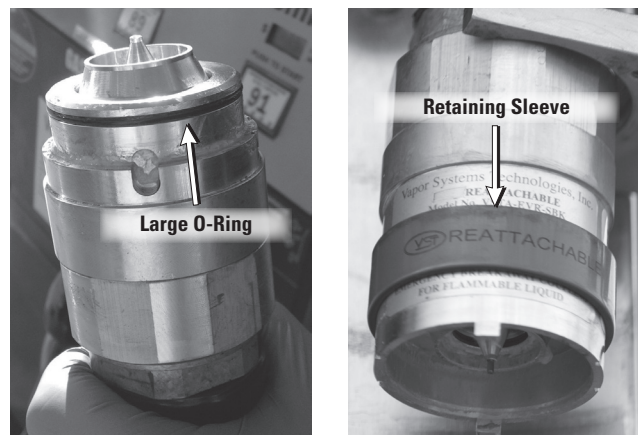


Figure 2: Check each half for damage

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). Slowly remove the nozzle from the container while dispensing fuel. Fuel flow should stop when the nozzle collection sleeve is fully decompressed.

- 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).

BREAKAWAY REATTACHMENT PROCEDURE

The VSTA-EVR-SBKA Safety Breakaway may be reconnected with the use of the VST Breakaway Assembly Tool (VST-BAT-100).

BREAKAWAY REATTACHMENT PROCEDURE

- Follow **INSTALLATION PREPARATION** steps 1-4.
- Inspect both safety breakaway halves for damage that may have occurred during separation. Include looking for external damage to the product and missing alignment pin, etc. See **Figures 2 and 3**. **If damage or missing parts are detected, replace with new product.** Ensure that the retaining sleeve

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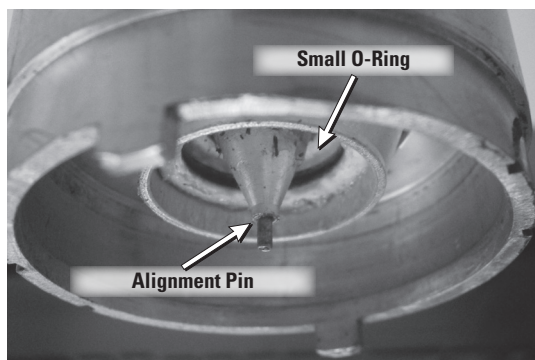


Figure 3: Check for Alignment Pin

is placed on the breakaway half connected to the whip hose before reassembly.

3. Prior to reassembling, be sure the mating parts are undamaged and clean.
4. Replace all O-rings with those provided in the repair kit (VST-BRK-100).
 - a. Lightly lubricate the O-rings on mating connections with petroleum jelly or other suitable lubricant. **DO NOT USE** pipe dope or thread sealant.
 - b. Use the large O-ring provided in the repair kit to replace the outer O-ring on the curb hose side of the breakaway. See **Figure 5**.
 - c. Use the small O-ring provided in the repair kit to replace the inner O-ring on the whip side of the breakaway. Use a plastic pick provided in the kit to remove the old O-ring. See **Figure 3**.
5. Apply a liberal amount of lithium grease provided in the repair kit (VST-BRK-100) completely around the mating diameter surface of the curb hose side of the breakaway. The grease will need to cover the entire surface that will slide into the mating end of the breakaway. See **Figure 5**. **DO NOT USE** pipe dope or thread sealant.
6. Utilize the VST Breakaway Assembly Tool (VST-BAT-100) with the appropriate reassembly plates to reassemble the breakaway. The tool is used to provide appropriate leverage for the ease of reassembly of the breakaway and to secure the breakaway during replacement of the shear washers. This can be done without disassembling the hoses from the breakaway halves.

7. Press the button on the Breakaway Assembly Tool to spread the end clamps apart to allow the two separated breakaway halves to fit between the top and bottom clamps. Slide the top clamp of the VST Breakaway Assembly Tool behind the hex on the breakaway half connected to the whip hose. See **Figure 4**.



Figure 4: Attach Reassembly Tool

8. Slide the separated bottom half of the breakaway (with curb hose and nozzle attached) onto the bottom clamp of the VST Breakaway Assembly Tool. Align the shear ring grooves away from the reassembly tool for ease of insertion of the shear washers. See **Figure 4**.
9. Slowly squeeze the VST Breakaway Assembly Tool trigger to bring the breakaway

CAUTION: Reconnection can cause a small amount of gasoline to leak out of the breakaway. A towel wrapped loosely around the breakaway can help to minimize spills.

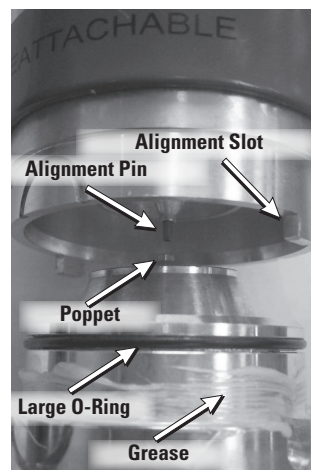


Figure 5: Align Poppet Pin from upper to lower half of breakaway and finish alignment

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Figure 6: Add Shear Washer **Figure 7: Remove Grease**

halves together.

10. Carefully align the two breakaway halves. Place the alignment pin from the breakaway upper half into the hole of the inner poppet on the lower half of the breakaway that is connected to the nozzle end. Continue squeezing the trigger of the VST Breakaway Assembly Tool while guiding the alignment slots together to finish reassembly. See **Figure 5**.

NOTE: Once the two breakaway halves come together close enough for placement of the shear washers, do not squeeze the tool trigger any further. Unnecessary pressure on the tool could damage or break the tool.

11. Once the two aligned halves are together place one shear washer into each of the shear washer grooves (2 total) from the repair kit (VST-BRK-100). See **Figure 6**. Ensure that the shear washer is completely seated into the groove before moving the retaining sleeve into place. See **Figure 7**. Wipe off excess grease after installation of the shear rings.

12. After the two breakaway halves are reattached, remove the Breakaway Assembly Tool (press the button on the tool to allow the plates to release). Reposition the retaining sleeve to the groove between the two halves of the breakaway. See **Figure 8**. Give the reassembled breakaway a strong pull to verify that it is properly connected. See **Figure 9**.

13. If successful, follow the **Installation and Functional Tests** steps 5 – 7 in this document.

14. Reference Section 5 procedures – Drive-off and Other



Figure 8: Reposition Retaining Sleeve



Figure 9: Verify Connection Integrity

Customer Abuse, of the Balance Systems Executive Orders VR-203 and/or VR-204.

MAINTENANCE

Inspect safety breakaways regularly 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.

CUSTOMER COPY

**To be left at gasoline dispensing facility (GDF)
at time of installation**

Manufacturing Date:

(SEE BOX LABEL)

Serial Number: (Fill in at time of installation)

VST Warranty Statement

This limited warranty is given by Vapor Systems Technologies, Inc. (hereinafter VST) to the initial purchaser, and any subsequent purchasers of new equipment, within the warranty period of products manufactured by VST. VST products:

- Are factory tested and meet all applicable performance standards and specifications.
- Should be used in compliance with all applicable federal, state, and local laws and regulations to which they were certified.
- Are warranted to be free from defect in material and workmanship with ongoing compliance to all applicable performance standards and specifications under normal use, service, proper installation, inspections, and maintenance practices per manufacturer specifications.

VST warrants the materials and workmanship to be free from defects in accordance with the following provisions:

1. This warranty does not apply to any products that have:
 - Been subject to misuse, abuse, tampering, negligence, accident, or drive off.
 - Been misapplied, improperly installed, or not installed per VST's instructions and specifications.
 - Been modified, altered, rebuilt or repaired by unauthorized persons or outside the criteria of VST specifications.
 - Been improperly maintained and/or improperly inspected in accordance with the system's or product's periodic maintenance schedule, and any inspection and/or maintenance requirements imposed by the State or any government agency.
 - Been exposed to contact with fuels containing greater than 5% methanol, 10% ethanol, or 15% MTBE by volume or any exposure to M85/E85 fuel, unless the product is rated for that type of fuel.
 - Been subject to damage resulting from acts of God.
2. This warranty does not cover and VST is not responsible or liable for:
 - Incidental, consequential and/or indirect damages or loss including, but not limited to, personal injury, death, property damage, environmental damage, cost of labor, clean-up, downtime, installation and removal, product damage, and loss of product, revenue or profits.
 - Any claims or lawsuits against the purchaser and/or distributor.
 - Labor or materials necessary to disconnect or connect the warranted product for return to VST.

VST products used on systems that have not been listed by a nationally-recognized testing laboratory (NRTL) or use that falls outside intended field of use voids all warranties.

The duration of this warranty is TWELVE (12) MONTHS from the time of installation provided timely valid proof of installation is submitted to VST. Valid proof of installation options include, but are not limited to:

- VST Product Warranty Registration Card is properly completed and returned to VST at time of installation and within (6) SIX MONTHS from the date of manufacture.

OR

- In lieu of a legitimate, completed and returned VST Product Warranty Registration Card within the first (6) SIX MONTHS from the date of manufacture, VST requires the following:
 1. A completed gasoline dispensing facility (GDF) monthly maintenance log from the month in which the VST equipment was installed and documented, **AND**
 2. One of the following documents that may be used as a reference installation date:
 - A valid distributor invoice
 - A valid contractor invoice

The above options must be clearly marked with:

- All VST product serial numbers
- Product sale date and/or installation date
- Purchaser name, address, and phone number

If valid proof of installation is not received by VST, as noted above, the warranty period is TWELVE (12) MONTHS from the VST date of manufacture.

In the event of a warranty claim:

- The purchaser/distributor must obtain a copy of a Return Goods Authorization (RGA) from VST prior to returning product so as to ensure proper processing. All warranty claim returns must be shipped freight prepaid by the purchaser and/or distributor.
- Warranty status will be determined upon inspection at VST's facility within THIRTY (30) DAYS of receipt by VST of the warranted products. All returned merchandise deemed Not Under Warranty; will be held by VST for SEVEN (7) BUSINESS DAYS prior to disposal. Return of this product to the purchaser/distributor will require purchaser/distributor to issue a call tag within SEVEN (7) BUSINESS DAYS of notification.
- Repair or replacement of the warranted product is the **EXCLUSIVE REMEDY** under the terms of this warranty. No other warranty exists.

VST, as to each defect, shall be relieved of all obligations and liabilities under this Limited Warranty if the products have been operated with any accessory, equipment, or a part not specifically approved by VST and the appropriate governing regulatory agencies.

THIS LIMITED WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES. VST MAKES NO OTHER WARRANTIES (WHETHER WRITTEN OR ORAL), EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE, AND ANY OTHER SUCH WARRANTIES ARE HEREBY DISCLAIMED.

VST NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON OR ENTITY TO ASSUME FOR IT OR BIND IT TO ANY OTHER LIABILITY OR OBLIGATION RELATED TO OR IN CONNECTION WITH THIS LIMITED WARRANTY.

VST reserves the right to make changes at any time to prices and designs, or make additions or improvements with respect to its products, without incurring any obligation to modify or install same on previously manufactured products.

✂ Cut along dotted lines for both the Return Tag and the Warranty Registration Card

Warranty Registration Card:

- Cut Out
- Fill out completely
- Return to VST for Warranty Registration at time of installation

Product Return Tag:

- Cut Out
- Fill out completely when submitting a Warranty Return Claim
- Include completed form in box with Warranty Return Claim product
- Include RGA paperwork



Breakaway Return Tag

No warranty accepted without tag filled out and attached to product.

ASC Company: _____

Site Name: _____

ASC Tech Name: _____

Site Street Address: _____

ASC #: _____

Site City, State & Zip: _____

Service Date: ____ / ____ / ____

Site Phone #: ____ - ____ - ____

Claim Serial #: _____

(product removed from service)

Breakaway Type (check one):

Replacement Serial #: _____

- Balance Assist Conventional

Check reason for return - at least one box below must be checked to be considered for a warranty claim:

- Connection or thread problem
- Failed regulatory test ----->
- Leaked fuel } ----->
- Leaked vapor }
- Would not re-connect (applies to reattachable only)
- Other claim - explain (use space to the right) ----->

Specify the test that failed: _____

Specify location of the leak: _____

Please explain any "Other claim" below: _____

This side of tag to be filled in by ASC



Vapor Systems Technologies, Inc.

Phone: (937) 704-9333 • Fax: (937) 704-9443
www.vsthose.com

**IMPORTANT
PRODUCT WARRANTY
REGISTRATION CARD**

(FILL OUT WARRANTY REGISTRATION CARD COMPLETELY)

See VST Warranty Statement for complete Warranty details.

A copy of the VST Warranty Statement is included in every product carton.

PRODUCT STYLE:

- HOSE NOZZLE PROCESSOR SAFETY BREAKAWAY OTHER

SERIAL NUMBER:	_____
INSTALLATION DATE:	_____
INSTALLATION SITE NAME:	_____
INSTALLATION CITY/STATE/ZIP:	_____
INSTALLATION SITE PHONE NUMBER:	_____
DISTRIBUTOR NAME:	_____

✂ Cut along dotted lines for both the Return Tag and the Warranty Registration Card

Product Return Tag:

- Cut Out
- Fill out completely when submitting a Warranty Return Claim
- Include completed form in box with Warranty Return Claim product
- Include RGA paperwork

Warranty Registration Card:

- Cut Out
- Fill out completely
- Return to VST for Warranty Registration at time of installation

No warranty accepted without tag filled out and attached to product.



Breakaway Return Tag

Distributor Name: _____

Street Address: _____

City, State & Zip: _____

Distributor Phone #: _____

RG#: _____

Distributor should check off "all" of the below items for accurate warranty claim processing:

- RGA number is obtained and filled in on this side of tag
- "Claim serial number" is validated (refer to other side of tag)
- "Replacement serial number" is filled in (refer to other side of tag)
- Verify the "reason for return" is filled in (refer to other side of tag)

Return product to: Vapor Systems Technologies, Inc. **Phone:** 1-888-VST-HOSE
 650 Pleasant Valley Drive 1-888-878-4673
 Springboro, Ohio 45066 **Website:** www.vsthose.com 9534-001 01/21

This side of tag to be filled in by Distributor

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