

VST Installation and Testing Procedures for Pressure / Vacuum Vent Valve



Vapor Systems Technologies, Inc.

650 Pleasant Valley Drive
Springboro, Ohio 45066 (USA)

Toll Free: 1-888-878-4673

Phone: 937-704-9333

Fax: 937-704-9443

www.vsthose.com

Model Series:

VST-EVRPV

Part Number Series:

VST-EVRPV-100 (Standard - Top Mount)

VST-EVRPV-200 (Test-In-Place – Top or Mid Mount)

SAFETY

	<p>EXPLOSIVE Gasoline and its vapors are extremely explosive if ignited.</p>
	<p>FLAMMABLE Gasoline and its vapors are extremely flammable.</p>
	<p>NO SMOKING Gasoline and its vapors can be ignited by sparks and embers of burning cigarettes.</p>
	<p>NO OPEN FLAMES Open flames from sources like lighters and matches can ignite gasoline and its vapors.</p>

	<p>NO POWER TOOLS Sparks from electric power tools can ignite gasoline and its vapors.</p>
	<p>NO PEOPLE IN THE AREA Unauthorized people in the work area during installation and service of the device create a potential for personal injury.</p>
	<p>READ ALL RELATED MATERIALS Read, understand, and follow all instructions, warnings, and requirements before you begin work.</p>
	<p>USE SAFETY BARRICADES Unauthorized people in the work area during installation and service of the device create a potential for personal injury. Therefore, always isolate your work area by using safety cones, barricades, etc.</p>

IMPORTANT INFORMATION FOLLOW ALL INSTRUCTIONS

APPLICATION

The VST-EVRPV pressure/vacuum (P/V) vent valve mounts on the vent pipe to protect the structural integrity of the underground storage tank (UST) from extreme positive and negative pressure conditions caused by fuel drops and vehicle dispensing. It is designed to prevent unwanted vapor emissions from escaping into the environment.

PERFORMANCE SPECIFICATIONS

The VST-EVRPV has been manufactured and tested to the following specifications:

- Cracking Pressure: +2.5 to +6 IWC
- Cracking Vacuum: -6 to -10 IWC.
- Pressure leak rate not to exceed 0.05 CFH @ +2 IWC
- Vacuum leak rate not to exceed 0.21 CFH @ -4 IWC

IMPORTANT

- The installation of the VST-EVRPV is to be conducted by qualified personnel ONLY.
- VST products must be used in compliance with applicable federal, state, and local laws and regulations.
- Product selections must be based on physical specifications/limitations and compatibility with the environment and material to be handled.
- Do not alter, cover, or paint over the VST-EVRPV nameplate or decals.

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INSTALLATION PREPARATION

NOTE: Always follow installation/usage instructions and safety warnings. Improper use may result in injury or property damage.

- Survey the site for required components.
- Barricade work area to block vehicle access.
- Visually inspect the VST-EVRPV for damage (threads, exterior, etc.) prior to installation.
- **ONLY** use galvanized pipe and pipe nipples.
- Properly prepare vent pipe prior to installation. Clean and deburr vent pipe.
- **DO NOT USE** Gasoila® or other similar pipe thread dope on the vent pipe NPT threads when attaching P/V valve or any pipe attachments below or above the P/V valve. **USE Teflon™ tape ONLY.**

INSTALLATION OPTIONS

- The VST-EVRPV may be installed in two configurations:
 - 1) Top-Mount or 2) Mid-Mount.
- The Top-Mount is the usual method for the quick and easy replacement of a failed P/V vent valve.
- The Mid-Mount is the method recommended for retrofits and new builds. A Mid-Mount installation allows for safe and easy inspections, testing, and service without the need for ladders or lift equipment.

TOP-MOUNT INSTRUCTIONS

1. Survey the site for required components, including a mushroom-style rain cap and 2" diameter galvanized pipe nipple.
2. Test the VST-EVRPV prior to installation.
 - Recommend CARB Test Procedure TP201.1E: Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves.
 - This test ensures that the valve was not damaged during shipping prior to installation.
 - If the VST-EVRPV fails to pass this test, contact your VST Distributor or VST for a replacement.
3. Remove the old P/V vent valve from the vent pipe.
4. Apply Teflon™ tape to the vent pipe threads.
5. Insert the strainer into the top of the vent pipe, center the wave spring on top of the strainer, and place the P/V valve over the wave spring. **See Figure 1.**
6. Thread the lower 2" FPT flange of the VST-EVRPV onto the 2" NPT vent pipe. **See Figure 2.**
 - For 3" vent piping systems, use a 3" x 2" NPT pipe reducer with a 2" galvanized pipe nipple.
 - For Test-In-Place (TIP) model, be sure to install with enough clearance to access the test port with the TIP Kit components.

Figure 1.

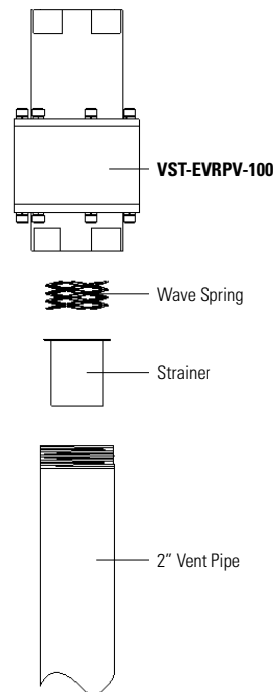
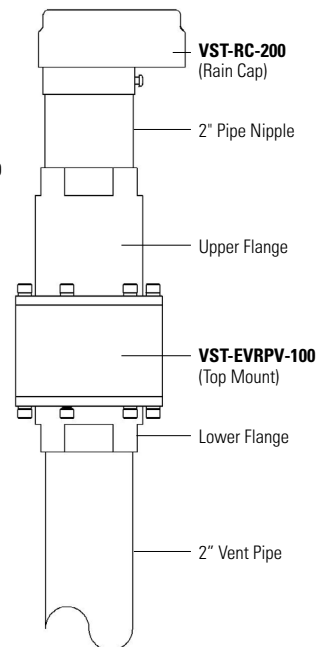


Figure 2.



NOTE: **ONLY** use appropriate fuel resistant Teflon™ tape approved for gasoline and gasoline-ethanol blends for all threaded pipe fittings. Tighten all fittings to 1.5 to 2.0 TFFT (Turns From Finger Tight), do not exceed 75 ft-lbs. Use the flats on the flange when tightening the VST-EVRPV. Ensure the system is vapor tight.

7. Make sure the VST-EVRPV unit is plumb within 3° out of vertical max. and is not set at an angle. Failure to set the unit in the vertical position may cause improper operation.
8. Install an appropriately sized NPT galvanized pipe nipple and a VST-RC-200 venting rain cap to the top 2" FPT flange on the VST-EVRPV to minimize water intrusion and foreign debris contamination. (VST-RC-200 included in VST-EVRPV packaging.)
9. Install VST-EVRPV per NFPA 30 requirements. Pressure Vent valves should be located so that vapors will not be trapped by eaves or other obstructions.
10. After installation, apply paint to any exposed NPT threads on the vent stack.

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MID-MOUNT INSTRUCTIONS

1. Survey the site for required components.
2. Test the VST-EVRPV prior to installation.
 - Recommend CARB Test Procedure TP201.1E: Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves
 - This test ensures that the valve was not damaged during shipping prior to installation.
 - If the VST-EVRPV fails to pass this test, contact your VST Distributor or VST for a replacement

3. Determine the VST-EVRPV mounting location on the vent riser. 3' to 4' from grade is recommended for easy testing and service.

NOTE: All vapor manifolding must be below the VST-EVRPV mounting location. Ensure that any manifolding and vapor processor piping is below the VST-EVRPV mounting location (where applicable). **See Figure 4.**

4. Cut and thread the galvanized vent pipes. Reconfigure the existing vapor manifold below the VST-EVRPV mounting location with galvanized pipe.

NOTE: ONLY use appropriate fuel resistant Teflon™ tape approved for gasoline and gasoline-ethanol blends for all threaded pipe fittings. Tighten all fittings to 1.5 to 2.0 TFFT (Turns From Finger Tight), do not exceed 75 ft-lbs. Use the flats on the flange when tightening the VST-EVRPV. Ensure the system is vapor tight.

5. Apply Teflon™ tape to the vent pipe threads.
6. Insert the strainer into the top of the vent pipe, center the wave spring on top of the strainer, and place the P/V valve over the wave spring. **See Figure 3.**
7. Thread the lower 2" FPT flange of the VST-EVRPV onto the mid-mounting location of the reconfigured lower vent pipe.
 - For 3" vent piping systems, use a 3" x 2" NPT pipe reducer with a 2" galvanized pipe nipple.
 - Be sure to install Test-In-Place (TIP) flange with enough clearance to access the test port with the TIP Kit components.
8. Make sure the VST-EVRPV unit is plumb within 3° out of vertical max. and is not set at an angle. Failure to set the unit in the vertical position may cause improper operation.

Figure 3.

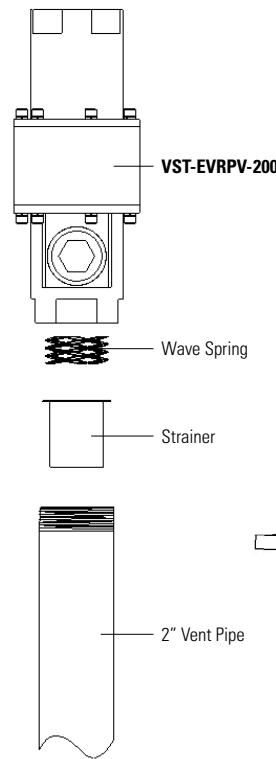
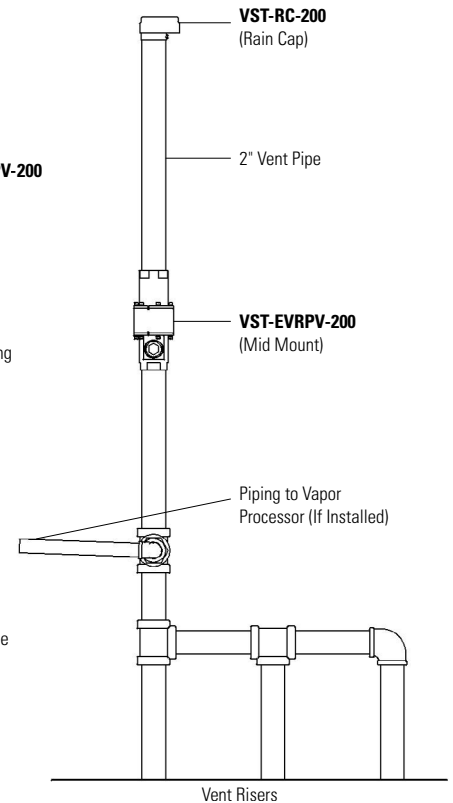


Figure 4.



9. Install and secure to the vent stack support, the upper section of the 2" vent piping to the top 2" FPT flange on the VST-EVRPV.
 - Be sure to use a pipe wrench to counteract the tightening force to the valve.
 - Refer to NFPA 30 for specific fuel-system vent-piping requirements.
10. Attach the VST-RC-200 venting rain cap to the top of the vent pipe to minimize water intrusion and foreign debris contamination. (VST-RC-200 included in VST-EVRPV packaging.).
 - Make sure the rain cap is above the minimum vent pipe height.
11. After installation, apply paint to any exposed NPT threads on the vent stack.

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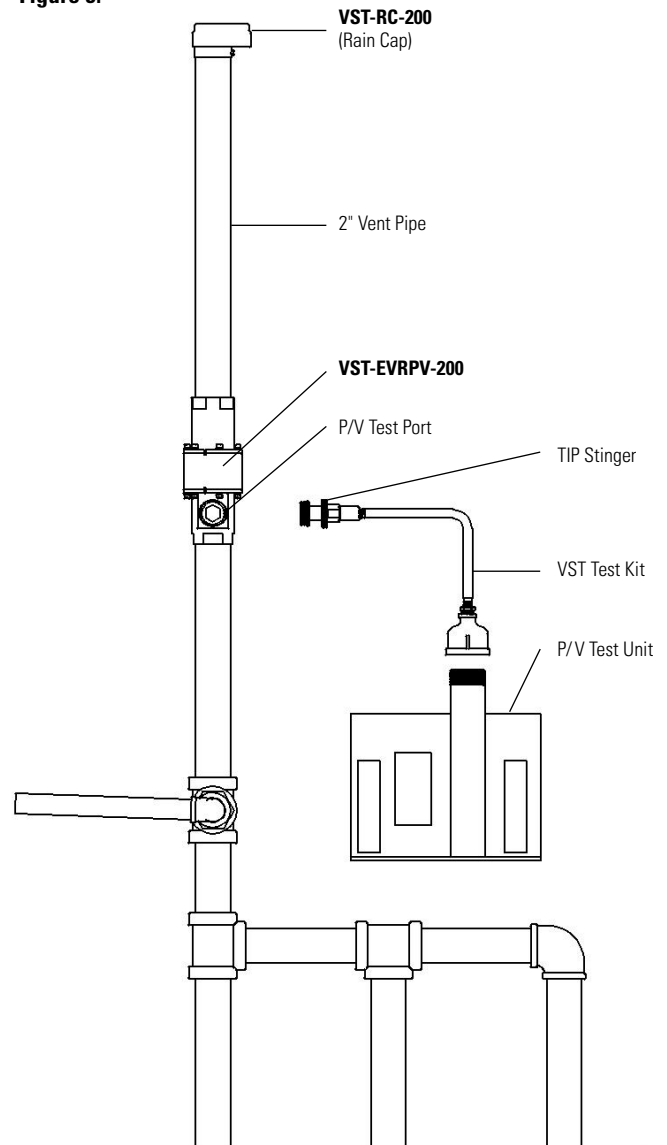
TEST-IN-PLACE (TIP) PROCEDURE

This procedure may be used with the VST-EVRPV-200 P/V valve.
See Figure 5.

NOTE: A VST-TIP-200 test kit is required for this procedure. The VST kit componentry will be connected to an appropriate P/V valve testing unit.

1. Attach the TIP test kit adapter cap to the P/V test unit.
2. Remove test plug from the VST-EVRPV-200 lower flange using a 1" 6-point socket.
3. Remove brass washer.
4. Insert the TIP stinger fixture into the P/V test port of the lower flange until the O-rings are fully seated.
 - Use a soap solution on all connections to find leaks.
 - The sliding TIP stinger adapter can be used to isolate the UST vapor space for conducting tank testing and 10" pressure decay test. Slide the TIP stinger adapter into the test port and thread into place. The TIP stinger adapter is not needed for normal P/V compliance test.
5. Conduct test in accordance with CARB Test Procedure TP201.E.
6. Once testing is completed:
 - Remove TIP test stinger.
 - Replace brass washer.
 - Replace test plug in the lower flange of the P/V valve.

Figure 5.



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



P/V Valve 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 #: _____

P/V Valve Type (check one):

(product removed from service)

- VST-EVRPV-100 VST-EVRPV-200

Replacement Serial #: _____

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

- Connection or thread problem
- Failed cracking pressure/vacuum test ----->
- P/V valve leaking ----->
- TIP port leak
- Other claim - explain (use space to the right) ----->

Specify the failed test result: _____

Specify the measured leak rate: _____

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.vsthoose.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:

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P/V Valve Return Tag

Distributor Name: _____

Street Address: _____

City, State & Zip: _____

Distributor Phone #: _____

RGAF#: _____

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

9573-001 02/22

This side of tag to be filled in by Distributor

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