

VST Installation Procedure for Conventional and Diesel Safety Breakaway Devices

Reattachable Breakaway Part Number Series: VST-CP and VST-DS



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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. 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:

- 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.

INSTALLATION PREPARATION

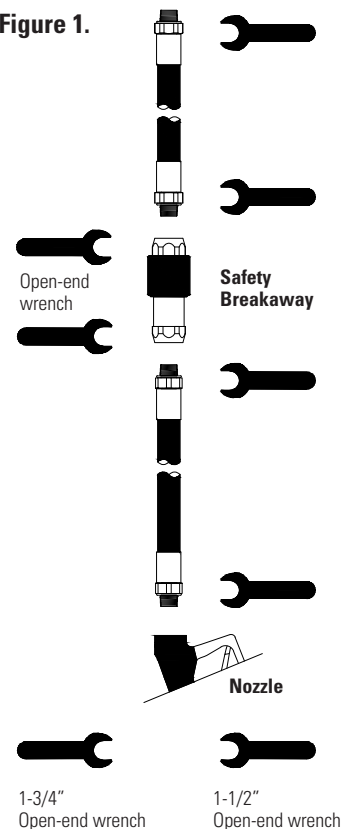
These procedures must be followed to ensure leak-proof installation and operation of these safety breakaway products.

- 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. (Pull nozzle lever.)
If the nozzle has an interlock device, engage the interlock before pulling the lever.
- 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 hanging hardware assembly.

INSTALLATION

- Initial inspection:
 - Carefully unpack safety breakaway from shipping carton.
 - Inspect safety breakaway for any damage to threads, exterior, etc.
- These are pipe thread connections. Use of thread sealant is recommended. Do not use Teflon tape. With pipe thread connections, the amount of torque necessary to obtain a seal is dependent on the mating materials and the thread condition. **Only enough torque to achieve sealing should be used.**
- Attach breakaway on mating connections and tighten to finger tight. After finger tight, use wrenches **ONLY** on the hex flats to tighten an additional 1 to 1½ TFFT (turns from finger tight.) This is normally sufficient to obtain a proper seal. Do not exceed 40 ft.-lbs. for 3/4" pipe threads or 48 ft.-lbs. for 1" pipe threads.
 - DO NOT OVER TIGHTEN.
 - DO NOT USE channel locks or pliers to tighten connections.
 - Always follow FLOW DIRECTION ARROW (where applicable).
- Visually inspect all hose connections for signs of potential leak points. Repair any issue immediately before proceeding.
- 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 the breakaway connections for liquid leaks and make proper adjustments at the hose connections if necessary.
- Check the nozzle shut-off action by dispensing fuel into an approved container at least three times to assure proper automatic operation. The fuel flow-rate must be greater than 3 gpm for the automatic shut-off mechanism to operate.

Figure 1.



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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 hold-open latch will disengage automatically when the liquid covers the vent hole in the spout.

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).

BREAKAWAY REATTACHMENT PROCEDURES

1. Follow **INSTALLATION PREPARATION** steps 1 – 4.
2. Prior to performing the in-line reassembly, inspect both safety breakaway halves for damage that may have occurred during separation. Be sure that the mating parts are suitable for reconnection. Include looking for external damage to the product, damaged threads, damaged O-rings, proper placement of O-ring, etc. **IF DAMAGE IS DETECTED, DO NOT REASSEMBLE. REPLACE WITH NEW PRODUCT.**
3. Lightly lubricate **ALL** O-rings on mating connections with petroleum jelly or other suitable lubricant.
4. Carefully align the two (2) breakaway halves.
 - a. Align the two (2) anti-rotation studs inside the breakaway half on the curb hose with the two (2) slots on the other half of the breakaway attached to the whip hose. **See Figure 2.**

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

5. The two (2) aligned breakaway halves need to be assembled concentrically (properly aligned) until they snap into place.
 - a. Listen for a “click” to indicate that the two halves have been properly reattached.

NOTE: If the two (2) breakaway halves become misaligned or otherwise do not snap together easily, pull them apart and repeat steps 4 and 5.

6. After the two (2) breakaway halves are properly snapped together, give the reassembled breakaway a strong pull to verify that it is properly connected.

7. Follow **INSTALLATION** steps 5 – 7.

8. If any breakaway separation occurs due to abnormal line pressure surges, remove both halves of the breakaway from the hanging hardware hoses so that better leverage can be obtained to snap the two (2) breakaway halves back together properly.

- a. Listen for a “click” to indicate that the two halves have been properly reattached.

9. Follow **INSTALLATION** steps 2 – 7.

MAINTENANCE

Inspect safety breakaways regularly for damage, loose connections or leaks. Replace as necessary. Subject to customer abuse, safety breakaways 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.

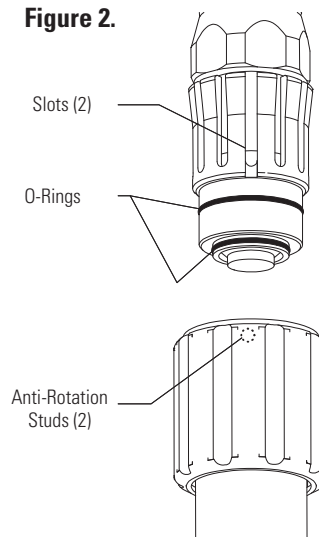
NOTE: Due to abuse, misuse, changing fuel formulas, variation in maintenance practices, environmental conditions and/or conditions beyond the manufacturer’s control, dispensing equipment may need replacement before five (5) years. Inspections and proper maintenance procedures should be followed by the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

WARNING

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

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

Figure 2.



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