

Applications:

Model Type: VA-2000S

When Pump is located below water level

Model Type: VA-2000L

When Pump is located either at or above the pool water surface level

Installation Instructions

IMPORTANT – READ THESE INSTRUCTIONS BEFORE INSTALLATION!

The Dangers of Entrapment

If a swimmer or bather becomes stuck to a deep suction drain or suction outlet in a swimming pool, paddling pool, or spa, the force from the circulating pump can be tremendous. This effect is known as; “suction entrapment” and it will hold the bather in its grip until either the vacuum is broken, or until he or she drowns, defying the efforts of rescuers.

What is a Safety Vacuum Release System (SVRS)?

An SVRS is a device capable of providing a vacuum release at a suction outlet caused by a high vacuum occurrence due to a suction outlet flow blockage. The SVRS unit reacts in less than a second to quickly release life threatening system suction. SVRS devices must allow for vacuum release with or without suction outlet cover(s) in place, and shall operate in such a way as to not defeat or disengage other layers of protection installed to protect against suction entrapment.



Vac-Alert™

Safety Vacuum Release System (SVRS)

The Vac-Alert™ - SVRS is a non-electrical self-monitoring, low-maintenance safety system that responds in milliseconds to an increase in pump suction vacuum that can be caused when someone is trapped. The Vac-Alert's spring loaded piston reacts quickly – opening to atmosphere and releasing the life-threatening system suction. Once installed, it takes little or no maintenance. Its non-corroding PVC and stainless steel construction ensure long life and superior performance.



We recommended Vac-Alert to be installed by a professional pool engineer.

FEATURES & BENEFITS OF: VAC-ALERT VA 2000 SVRS

1. **Vac-Alert is the perfect safety solution** for any pump that draws water, including pools, spas, fountains, slides and vacuum ports and will not damage your pump when tripped.
2. **Vac-Alert** (SVRS) is precision engineered to react in milliseconds, stopping accidents before they happen, reducing the risk of fatality.
3. **Vac-Alert** is designed for applications where the pump is either above or below the level of the pool water surface...VA2000S is for submerged and VA2000L is for lift.
4. **Quick to install** The Vac- Alert can be fitted within thirty minutes and an installation DVD is available. Note: Additional time may be required for the solvent cement to properly set to a useable condition inline with manufacturer's specifications. We recommended Vac-Alert to be installed by a professional pool engineer.
5. **The Vac-Alert** is easily plumbed into the pipe-work (suction side only) and is designed to sense sudden increases in vacuum pressure, which triggers the valve pistons to lock, allowing air to enter the system and releasing the vacuum on the main drain.
6. **Vac-Alert is self monitoring**, non electrical and low maintenance.
7. **Long lasting design** features moisture resistant PVC, and stainless steel construction.
8. **Reliability** Vac-Alert has several years' field experience & in some regions internationally legislation requires pool owners use equipment like Vac-Alert to retrofit pools and spas.
9. **Meets all requirements** of the International Code Council, both the International Building Code (IBC) and the International Residential Code (IRC). Meets or exceeds all the ANSI/ASME performance standards for safety vacuum release systems.
10. **Vac-Alert** has a 3-year limited warranty ensures reliability.

CODES OF COMPLIENCE:

Vac-Alert VA-2000 Complies with ASME/ANSI A112.19.17 as required by the International Building Codes (IBC) and the International Residential Codes (IRC)

The Vac-Alert VA-2000 was tested by Applied Research Laboratories and found to comply with ASME/ANSI 112.19.17, "Manufactured Safety Vacuum Release Systems (SVRS) for Residential and Commercial Swimming Pool, Spa, Hot Tub and Wading Pool Suction Systems."

The ASME/ANSI 112.19.17 is the required standard in the International Building Code (IBC) and the International Residential Code (IRC) for items that provide vacuum relief (SVRS).

IMPORTANT: PRIOR TO INSTALLATION

1. Before installing Vac-Alert, you need to determine if the filter pump is installed:

| | | |
|------------------------------------|---|-------------------------|
| A - Below water level (Suction) | – | Model Type: VA 2000S or |
| B - At or above water level (Lift) | – | Model Type: VA 2000L. |
2. You must check the plant-room suction pipe-work to determine if it is metal or plastic. If it is metal a suitable boss/adaptor will need to be fitted to the existing pipe-work. If there are no threaded joints, on-site welding may be necessary.

The Vac-Alert Model VA-2000S (Submerged):

Is designed for: **submerged suction applications**. This applies to all applications where the circulating pump suction is below the level of the pool water surface. This unit incorporates a 0.375" diameter orifice opening installed below the surge tube section. This orifice opening is sized to provide a limited amount of pump start-up surge protection, while at the same time allowing enough air into the piping system to insure dissipation of the dynamic suction force caused by the circulating pump.

The Model VA-2000S SVRS unit also utilizes a check valve assembly equipped with a 0.25 pound spring and a non-vented poppet (no poppet disc or hole through the poppet). This check valve assembly utilizes a light duty spring to minimize the sealing force of the check valve. The non-vented poppet insures that water from the circulating system, under a positive hydrostatic head condition, does not migrate up into the SVRS.

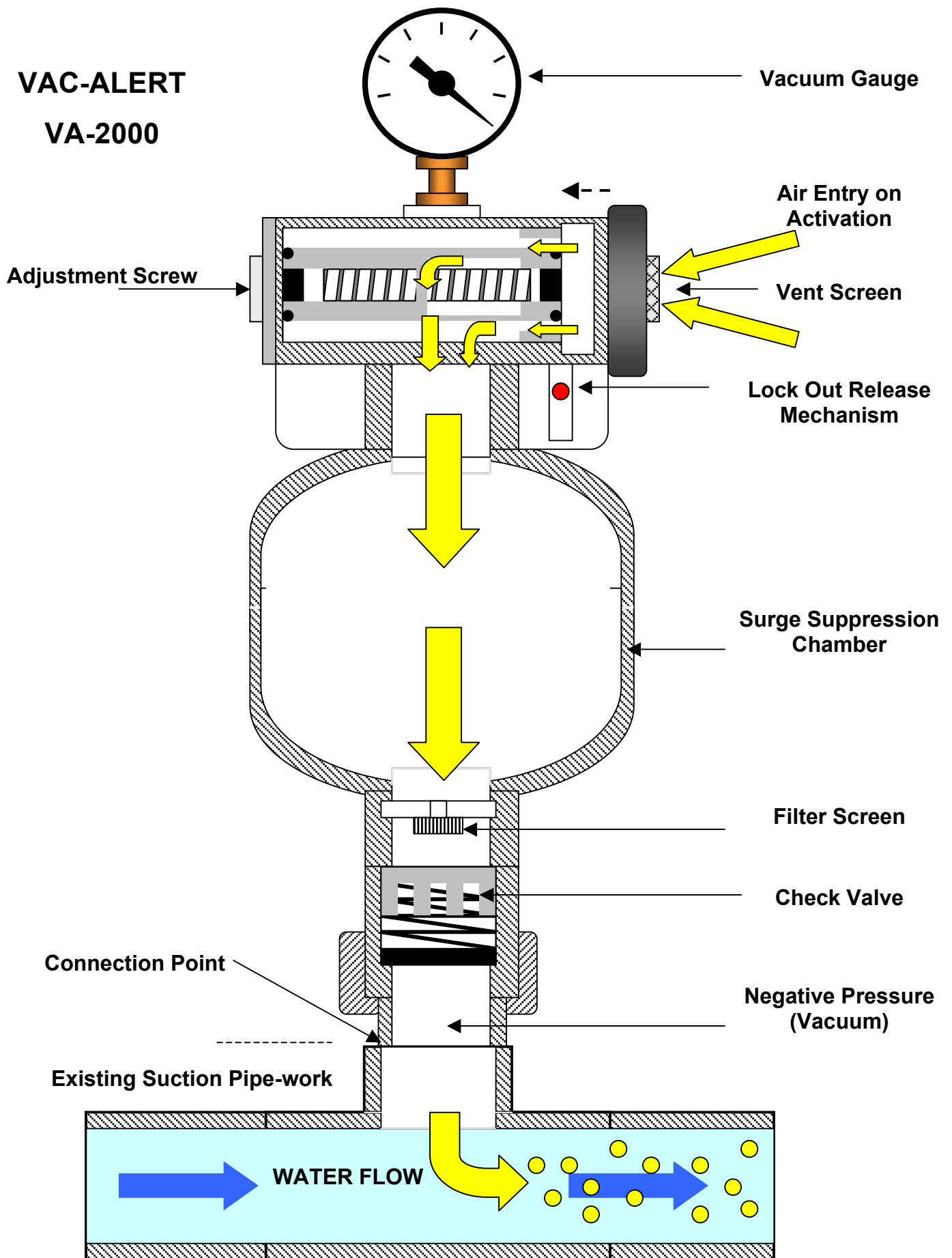
NOTE: For pumps operating 24/7 we recommend installation of the VA-2000S (even if it's a lift application situation).

The Vac-Alert Model VA-2000L (Lift):

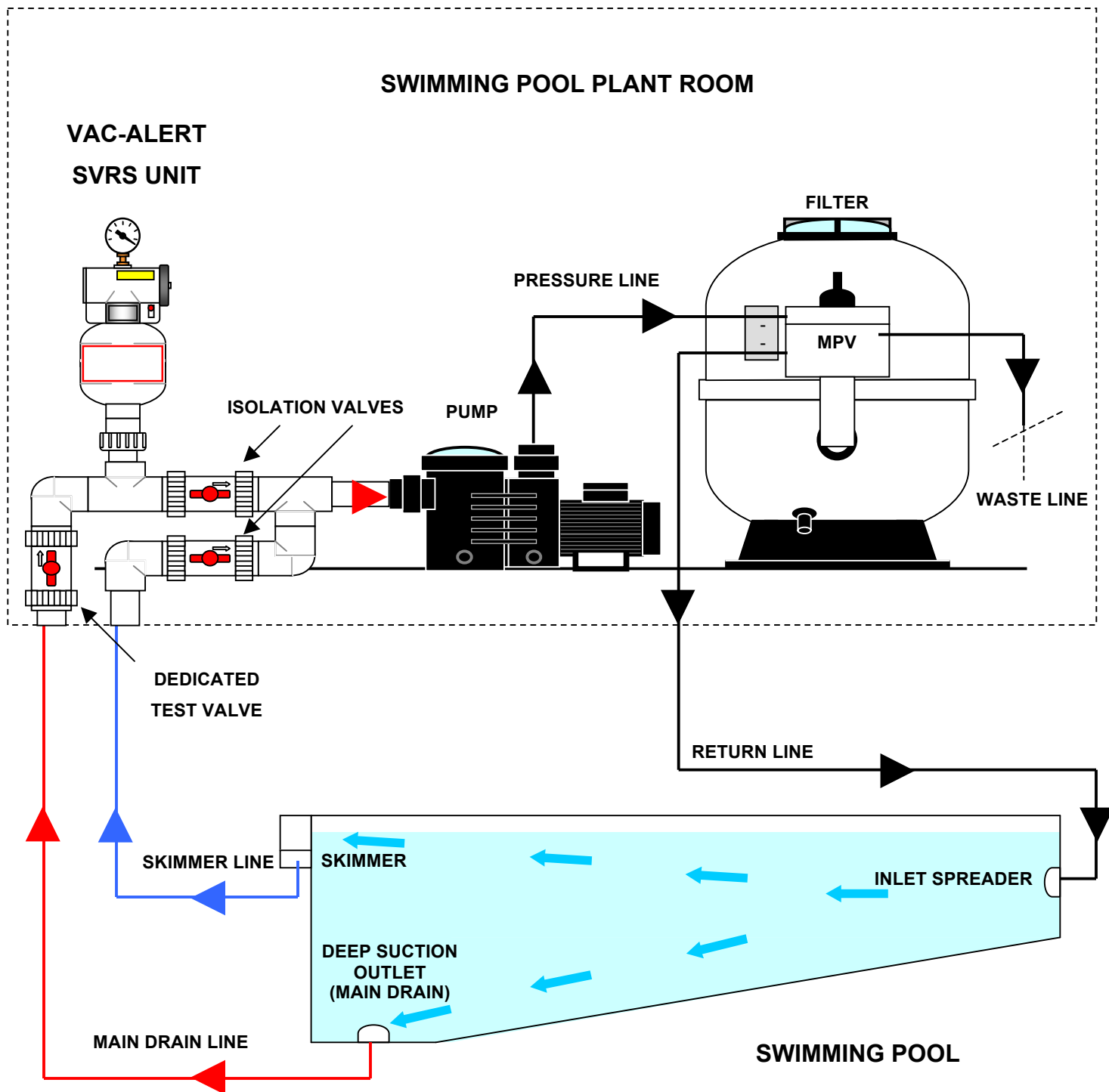
Is designed for: **suction lift applications**. This applies to all applications where the circulating pump suction is either at or above the level of the pool water surface (up to 3.5 feet – 1.1m). This unit incorporates a 0.170" diameter orifice opening installed below the surge tube section. This orifice opening is sized to prevent nuisance tripping of the SVRS unit caused by high vacuum surges typical of many pump start-up conditions.

The Model VA-2000L SVRS unit also utilizes a check valve assembly equipped with a 3.5 pound spring, a poppet disc and a one-way (up only) vented poppet. This check valve assembly permits continued water flow to the circulating pump while the SVRS unit is in the open or vented position. The 3.5 pound spring further compressed by the poppet disc, creates enough sealing force within the check valve to allow partial water flow to the circulating pump for suction lifts up to **3.5 feet (1.10m)**. This is critical to the elimination of circulating pump damage that can be caused by a sustained dry-running condition. The one-way vented poppet allows the surge chamber to be internally recharged when the circulating pump is turned off.

For pumps operating 24/7 we recommend installation of the VA-2000S (even if it's a lift application situation).

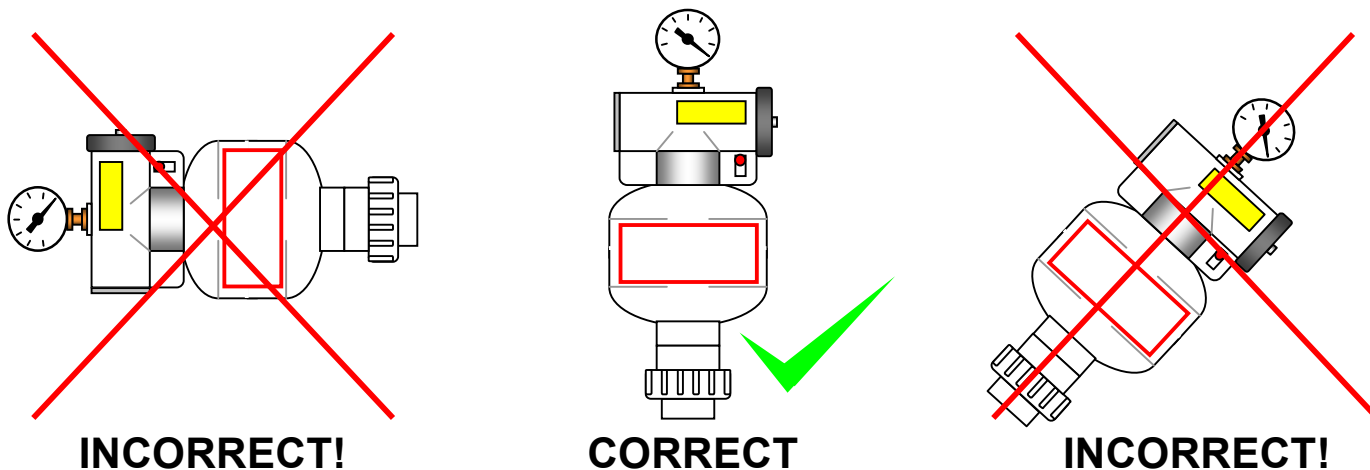


General Circuit Layout



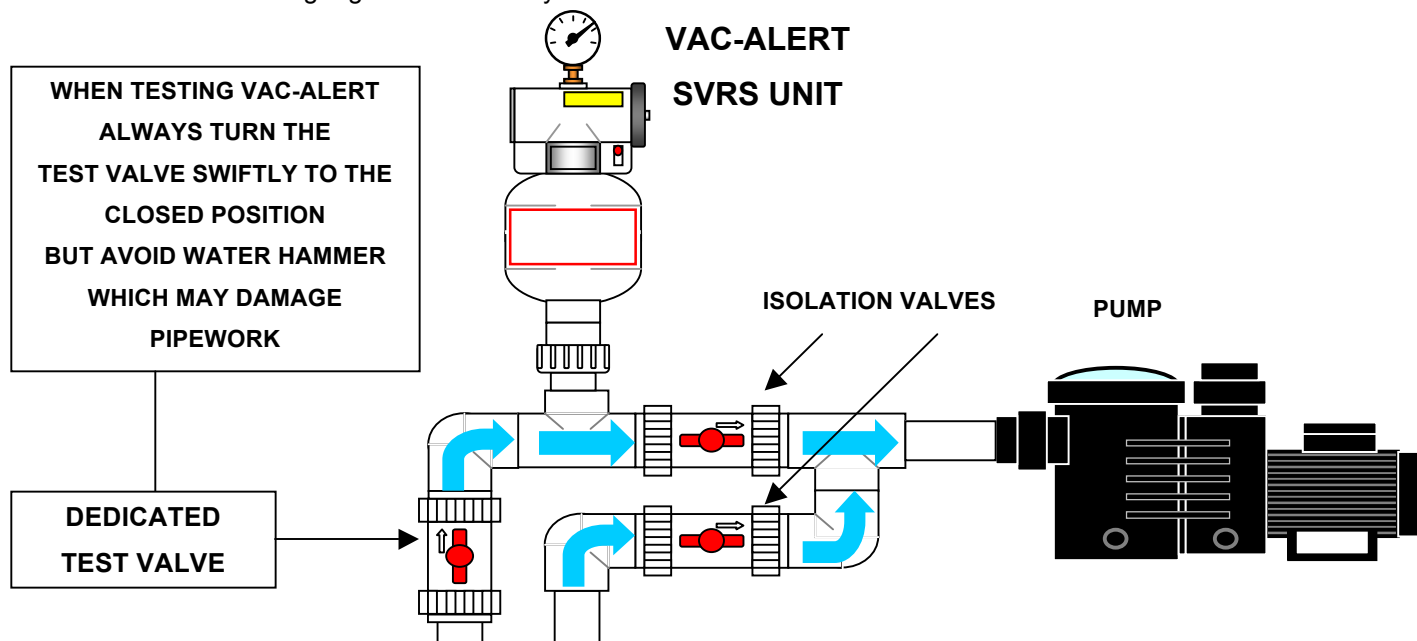
VAC-ALERT Model Type: VA-2000SVRS

The **Vac-Alert** SVRS unit is a safety device designed to be installed on swimming pools, spas, fountains which include a deep suction (main drain) outlet and its function is to guard against bathers/users becoming accidentally entrapped on the deep suction outlet. To ensure correct operation, it is important that the Vac-Alert SVRS unit is properly installed onto the deep suction (main drain) pipe-work line prior to the pump. Vac-Alert must be installed with a **dedicated test valve** prior to the unit. (See above diagram showing a typical pool layout).



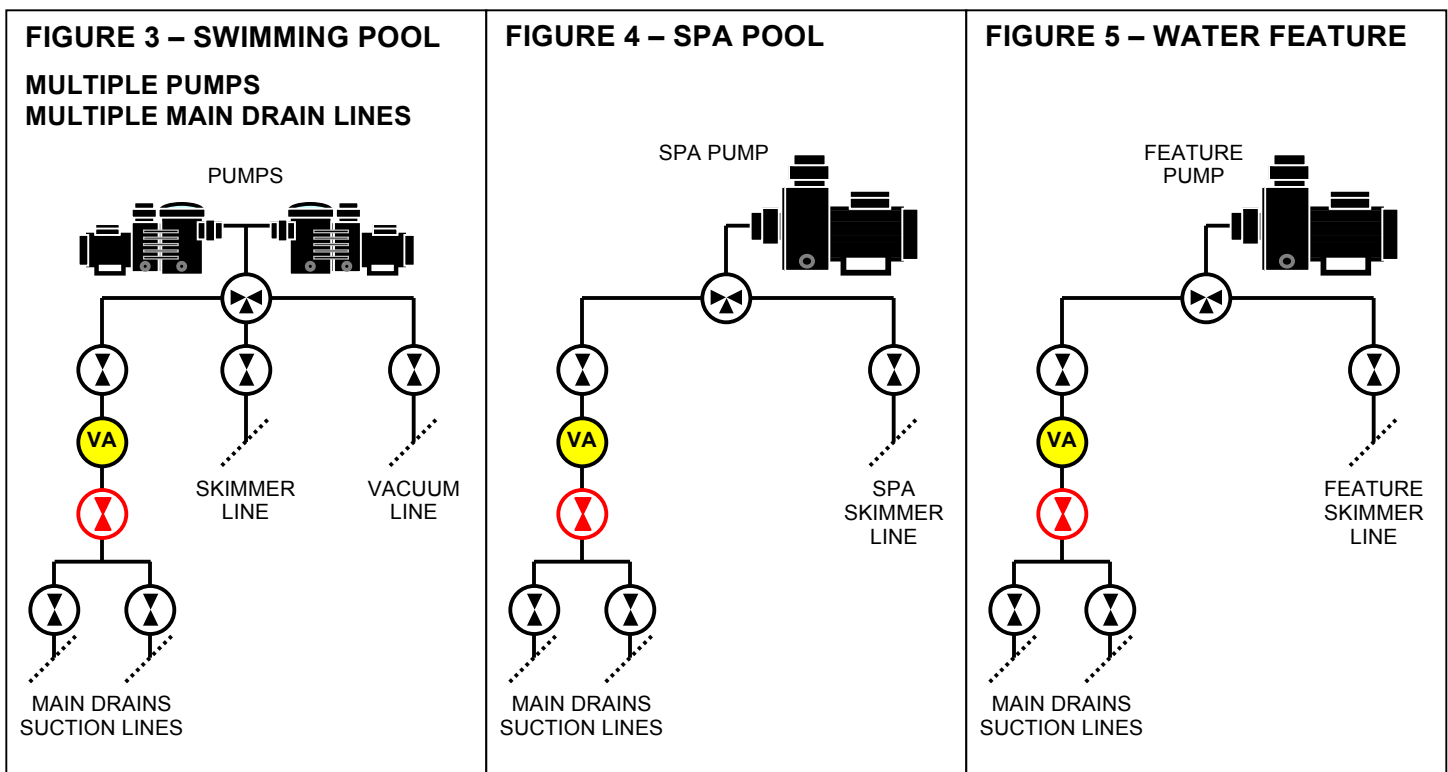
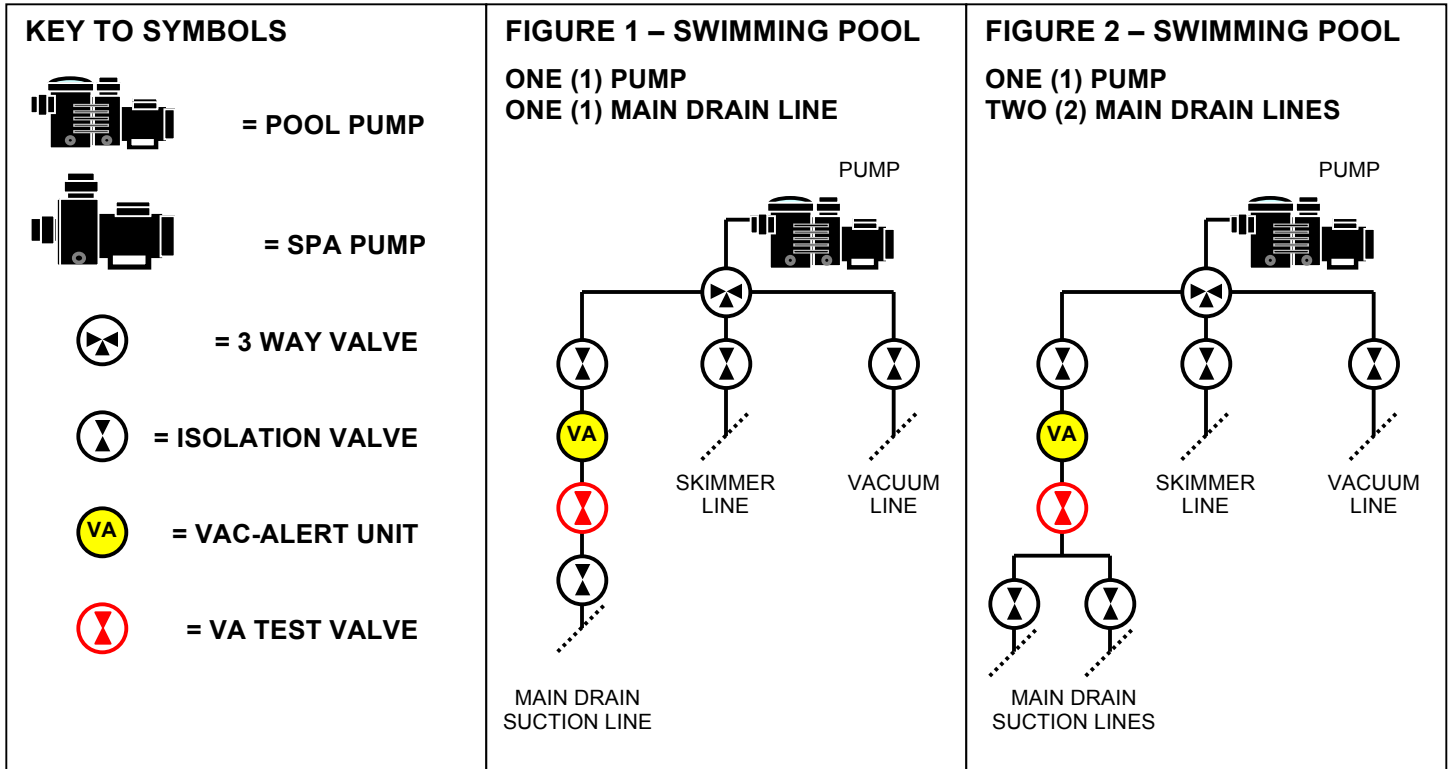
Installing Vac-Alert

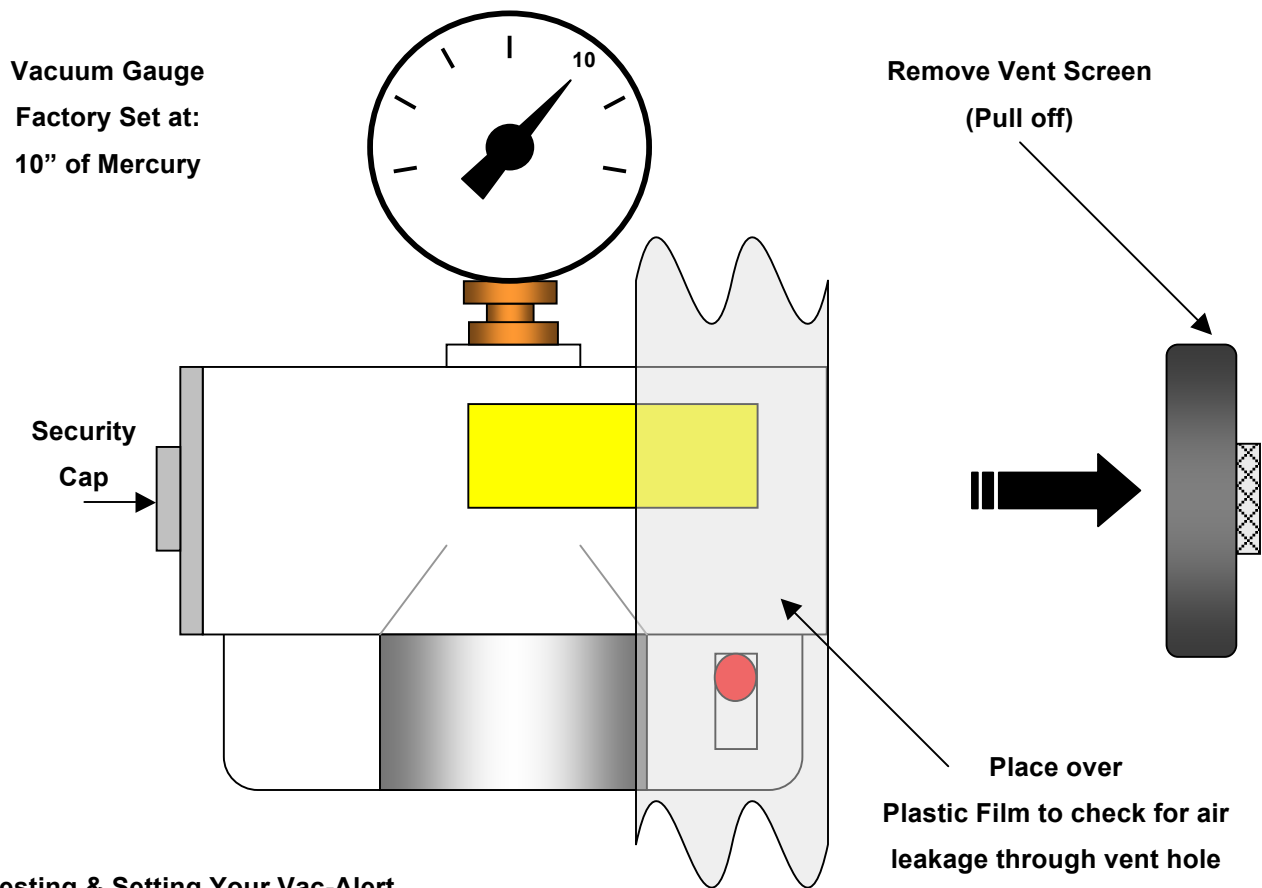
1. The Vac-Alert should be fitted to the (main drain) deep suction pipe-work which is of a size no greater than **10" (250mm)** in diameter and with a maximum flow through of: **250m³/hr.** Vac-Alert must not be fitted to pipe-work of a greater diameter and flow rate than stated.
2. Vac Alert should be installed on: The main suction line, and use one unit for each pump. Systems with dual pumps may need multiple units. Refer to installation layout diagrams on page 6 of these instructions to decide optimum position.
3. It is important that when installing Vac-Alert a record is kept of the units' serial number, the pump type/size & serial number and the reading from the Vacuum gauge during normal running conditions. This information **must** be recorded on the warranty card supplied with the unit and returned to MSI.
4. Non return & Hydrostatic relief valves **MUST NOT BE** fitted to the same pipe-work line as the Vac Alert!
5. Your Vac-Alert Unit must be installed in a true – vertical plane and **MUST NOT** be installed at an angle or in the horizontal plane. (See diagram above).
6. Your Vac-Alert must be installed on the main suction line with a dedicated ball or butterfly valve, in the pipe-work below the unit. This is to be used for testing and adjusting the unit. See diagram below.
7. Your Vac-Alert must be installed in a position where it is accessible for testing, servicing & monitoring. The vacuum gauge must be easily visible at all times.



Installing Vac-Alert Continued...

8. Select from the circuit diagrams one that suits your application & install Vac-Alert accordingly.
9. DO NOT use 2/3 way valves as test valves! Always use a full bore – ball valve or butterfly valve.



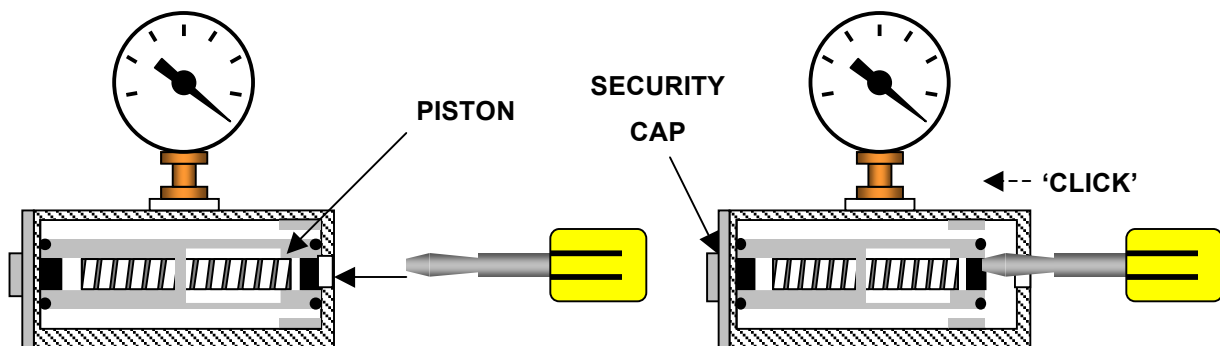


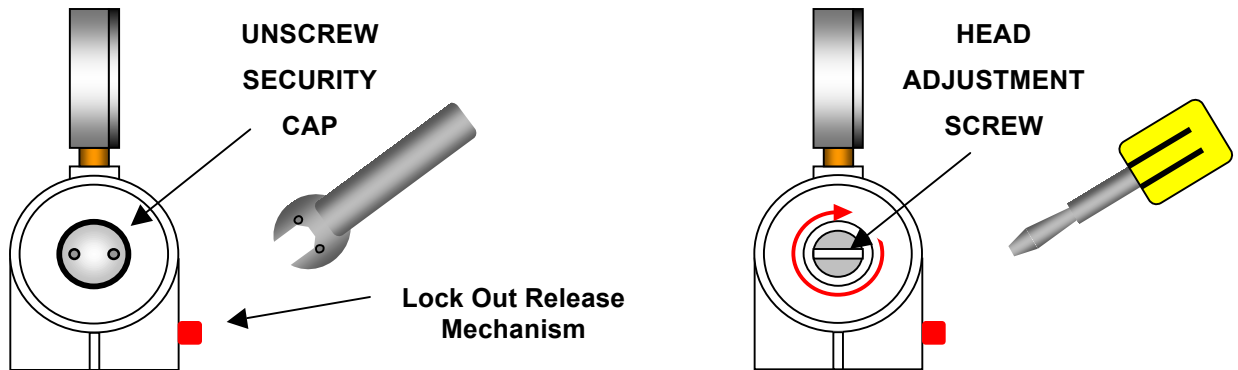
Testing & Setting Your Vac-Alert

1. Your Vac-Alert unit has been factory adjusted to accommodate system vacuum levels up to 10" of mercury. Vacuum levels higher than this will require on site adjustment of the Vac-Alert unit.
2. Normal operating vacuum is the reading obtained from the Vac-Alert Vacuum gauge when there is no air leakage through the vent port (vent screen).
3. **IMPORTANT:** Before adjusting or testing your Vac-Alert, any secondary source lines must be closed.
4. With the pump running (and all secondary lines closed off), remove the vent screen and check for air leakage. This can be achieved by either holding the palm of your hand or placing some plastic film over the vent hole exposed by the removal of the screen. If a leak is present the unit will need to be adjusted to accommodate the higher vacuum level.

On Site Adjustment of your Vac-Alert

5. Before adjusting: Turn pump off.
6. With Vent screen removed; insert a screwdriver into the exposed vent hole and push the piston forward until you hear a 'click' when the piston is locked.



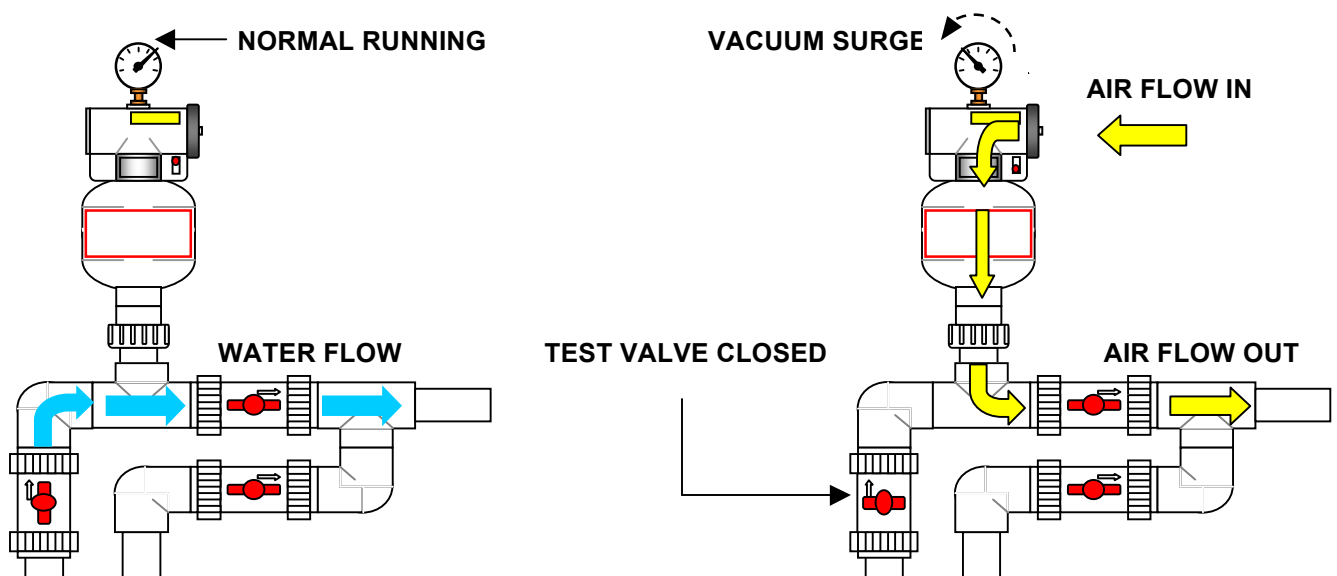


Adjusting Your Vac-Alert (Continued)

7. Unscrew (anticlockwise) the stainless steel security cap using the tool provided.
8. Using a flat head screwdriver turn the head adjustment screw – 3 full turns in a clockwise direction.
9. Replace the security cap, then press down the red – reset lever to unlock the piston.
10. Restart the pump and re-check for air leakage. If an air leak is still present, repeat the procedure as in steps 7 – 9 above.

Testing Your Vac-Alert

11. Before testing, ensure the vent screen is free of debris & is correctly in place.
12. With the pump fully primed and running use the test valve to simulate an entrapment condition.
13. Swiftly rotate the dedicated test valve lever, (but avoid water hammer) the gauge pressure will increase and the piston inside the Vac-Alert unit will lock open causing the pump to cavitate. Turn the pump off and press down the red – re-set (lock-out release) lever to reactivate the unit.
14. Repeat this test procedure at least three times in succession to ensure successful operation.
15. If the Vac-Alert piston does not lock out with the test valve closed you must check to ensure that there is no air entering the system via the pipe-work joints or cracks. If the system is free of air, it may be that the pump is not generating a sufficient vacuum to trigger the Vac-Alert, in which case you will need to adjust the unit by turning the adjustment screw in an anticlockwise direction and re-test the unit to ensure the piston activates each time the test valve is closed.



Periodic Maintenance

16. Test the Vac-Alert at least once a month to ensure correct operation.
17. Periodically (every 3 months) remove the vent screen and clean from debris.
18. The Vac-Alert is a sealed unit and otherwise requires no internal maintenance if installed correctly.

VAC-ALERT: QUESTIONS & ANSWERS

Does Vac-Alert™ Va-2000 meet the new state codes?

Vac-Alert™ VA-2000 meets or exceeds all new state codes regarding entrapment protection. Vac-Alert™ is third-party tested to meet the performance requirements complying with ASME/ANSI 112.19.17 manufactured safety vacuum release system (SVRS).

Will Vac-Alert™ affect my operating system suction or return pressure?

Properly installed, Vac-Alert™ VA-2000 will not affect operating flow. Vac-Alert™ is designed to react to a sudden spike in suction. Water never enters the unit itself; therefore your system will not be negatively affected.

How does Vac-Alert™ prevent entrapment?

Piston activation introduces air into the suction line and quickly cavitates pump and releases the suction force.

How do I maintain Vac-Alert™ VA-2000?

Vac-Alert™ is made from durable PVC, Viton and rust resistant 316 stainless steel; which guarantees long-lasting reliable service. The Vac-Alert™ all mechanical, non-electrical design ensures that you will never be forced to replace costly electrical switches, relays or solenoids that are destroyed by chemical vapor and moisture intrusion. Vac-Alert™ VA-2000 comes with a 3-year limited warranty.

Should I install a Vac-Alert™ on every pump?

Most state codes require one (1) SVRS for every pump that draws water from the pool. This includes pumps dedicated to spas, fountains, slides and other amenities.

Will Vac-Alert™ “burn up” my pump if it trips?

The VA-2000 is designed with a check valve to maintain an approximate 30% flow if tripped. This is more than adequate flow to protect the pump but allows no strong suction force to be re-established.

How is Vac-Alert™ VA-2000 installed?

Vac-Alert™ is easily installed and field adjusted. Vac-Alert™ is vertically mounted by “teeing” into the suction line between the main drain outlet and the pool pump. A detailed installation video and field guide is included with every Vac-Alert™.

How do I ensure Vac-Alert™ is working properly?

Vac-Alert™ Should be tested once per month, as per manufacturer’s recommendations.