

CPSA 6 (b)(1) Cleared
11/6/99
No Mis/Prvt/Blrs or
Products Identified

LOG OF MEETING

DIRECTORATE FOR ENGINEERING SCIENCES

CPSC OFFICE OF THE SECRETARY
Comments Processed

1999 AUG 16 A 10:30

SUBJECT: Pool Anti-Entrapment Devices

DATE OF MEETING: August 10, 1999 PLACE: Bethesda, MD

LOG ENTRY SOURCE: Troy Whitfield, Mechanical Engineer, CPSC

DATE OF ENTRY: August 13, 1999

ATTENDEES: List attached

SUMMARY OF MEETING:

The meeting was requested by Sandy Garber of Vac-Alert™ Industries Inc. The objective of the meeting was to discuss the pool and spa entrapment hazard associated with suction drains and examine a device created by Vac-Alert™ Industries. The meeting opened with introductions and then Mr. Garber presented some background on, and personal experience with, suction entrapment. Mr. Garber discussed five different approaches to addressing the entrapment hazard. The five measures were identified as; dual drains, anti-vortex covers, anti-entrapment devices, gravity flow filter systems, and shut-off switches. It was mentioned that, under certain conditions, the entrapment hazard could still exist with some of the potential solutions. Some of the solutions may also be cost prohibitive. Mr. Garber stated that the Vac-Alert™ Safety Vacuum Release System (SVRS) addresses the hazard and is not cost prohibitive. Mr. Garber went on to state that several states have either mandated the use of anti-entrapment devices or are in the process of mandating the use of such devices.

Ron Schroader, Technical Director of Vac-Alert™, showed a video on the operation of the SVRS. He explained that they train and certify people on the installation of the release system. Information on the system and an optional pump protection device was provided. Mr. Schroader mentioned that hair entanglement hazards are not addressed by the SVRS, but he is working with another company on a design to address the issue.

The meeting concluded with a brief discussion about the 6-hour course requirement on entrapment being incorporated into the Texas Department of Health requirements. Mr. Schroader is assisting in the course development. There was a related discussion about the development of performance standards to evaluate the effectiveness of anti-entrapment devices.

Attachments



ATTENDENCE

DATE: August 10, 1999

LOCATION: CPSC Headquarters Bethesda, MD

<u>Name of Participant</u>	<u>Organization</u>	<u>Phone</u>
1. TROY WHITFIELD	CPSC - Engineering	301 504 0494 x1318
2. JACQUIE ELDER	CPSC - EXHR	301-5040554x2254
3. SHARI DWYER	Product Safety Letter	703-247-3424
4. DANIEL CLARK	U.S. Aquatics	301-562-8422
5. RON SCHROEDER	VAC-ALERT IND., INC	800-374-7405
6. SANDY GARBER	Vac-Alert Ind., Inc	800-374-7405
7. NICK MARCHICA	CPSC - ES	301-504-0494 x1415
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POOL SAFETY

Eliminating Pool and Spa Injuries

1

2

3

4 Why Are Changes Necessary?

- Approx. 100 pool injuries caused by entrapment/entanglement are reported nationwide (CPSC, 1995)
- 20 confirmed fatalities caused by pool and spa drains
- Simple and inexpensive remedies available
- Special Danger to Children
- Slow response to problem from pool industry

5

6 THIS TRAGEDY COULD HAVE BEEN PREVENTED!

7

8 Measures to Alleviate Problem

- Dual drains
- Anti-vortex covers
- Anti-entrapment devices
- Gravity flow
- Shut off switch

9 Dual Main Drains

- Early solution to problem
- May still have practical application at newly constructed pool and spas
- Expensive to retro-fit
- Still possibility of getting entrapped or entangled
- DOES NOT BREAK VACUUM!

10

11 Anti-Vortex Covers

- More effective than flat drain
- Should be mandatory on all pools/spas
- Should be used in conjunction with anti-entrapment devices
- Must be installed and maintained to work effectively
- Subject to degradation by chemicals
- DOES NOT BREAK VACUUM!

12 Shut-Off Switch

- Does not address entrapment
- Entrapped victim can not get to switch
- DOES NOT BREAK VACUUM!

13 Anti-Entrapment Devices

- Vac-Alert Valve
- Play-Safe Pools
- Vacuum Eliminator
- Fail-Safe
- Stingl Switch

14 Why Anti-Entrapment Devices

- Increased awareness that problem still exists
 - 20/20 report
 - re-aired twice due to overwhelming response
 - Oprah Winfrey Show
 - Sally Jessie Raphael Show
 - Pending report to be aired on Dateline NBC

15

16 Why Anti-Entrapment Devices

- Not cost prohibitive
 - Simple and inexpensive to retro-fit
- Not affected by other equipment malfunction or degradation
- Eliminate entrapment as a potentially fatal or life debilitating injury as a result of owning a pool/spa

17 States Recognizing Anti-Entrapment Devices

- Mandated:
 - Ohio
 - South Carolina
- In Process of Mandating:
 - Texas
 - California
 - Utah
 - Arizona
 - North Carolina
 - Michigan

18 Anti-Entrapment Devices will Save Lives!

19

20

NEWS from CPSC

U.S. Consumer Product Safety Commission

Office of Information and Public Affairs

Washington, DC 20207

FOR IMMEDIATE RELEASE

July 12, 1996

Release # 96-166

CONTACT: Rick Frost
(301) 504-0580 Ext. 1166

CPSC to write Guidelines for Pool, Spa and Hot Tub Safety

WASHINGTON, D.C. -- The U.S. Consumer Product Safety Commission will develop safety guidelines for retrofitting older swimming pools and spas to eliminate potential entrapment hazards, according to Ann Brown, CPSC chairman.

Brown made the announcement following a meeting yesterday at CPSC headquarters in Bethesda with more than 70 state and local authorities, pool and spa industry representatives, and pool and spa owners, operators and inspectors. Brown emphasized the need for guidelines to help industry, health officials, inspectors and maintenance personnel prevent deaths and injuries in spas and pools.

"These guidelines will provide information about how to modify and maintain older pools and spas to eliminate potential entrapment hazards," Brown said. "This information could save lives. The people who were at the meeting will provide us invaluable help in making sure that this information gets to where it will do the most good -- into the hands of those who own, operate, maintain and inspect pools and spas."

For years, CPSC has helped set voluntary standards for new pools and spas. The guidelines would be for older pools and spas.

Since 1980, CPSC knows of 18 incidents, including five deaths, involving children between the ages of two and 14 who were injured or died due to body part entrapment involving the drain of a swimming pool, wading pool or spa. In addition, a 16-year-old New Jersey girl died last May in a spa when she was held underwater by suction from one of the spa's pumps.

The U.S. Consumer Product Safety Commission protects the public from the unreasonable risk of injury or death from 15,000 types of consumer products under the agency's jurisdiction. To report a dangerous product or a product-related injury and for information on CPSC's fax-on-demand service, call CPSC's hotline at (800) 638-2772 or CPSC's teletypewriter at (800) 638-8270. To order a press release through fax-on-demand, call (301) 504-0051 from the handset of your fax machine and enter the release number. Consumers can obtain this release and recall information via Internet gopher services at cpsc.gov or report product hazards to info@cpsc.gov.

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POOL NEWS & SPA NEWS

August 9, 1999
Los Angeles, CA 90010

To Whom It May Concern:

The Aug. 18 issue of Pool & Spa News -- the voice of the pool and spa industry -- will feature a Quarterly Market Report on safety features and products on the market. One line of products that the report examines closely are the vacuum-limit switches (and similar devices) that have come to fore recently designed to combat suction entrapment.

The magazine's eight-page report examines a variety of construction guidelines designed to alleviate the problem as well, and features a summary of five specific anti-entrapment devices:

- Vac-Alert Safety Vacuum Release System (SVRS) by Vac-Alert Industries in Ft. Pierce, Fla.
- Fail Safe Flow Blockage Interrupt by Fail Safe, L.L.C. in Aurora, Colo.
- Stingl Switch by Spa Parts Plus in Prescott Valley, Az.
- Play Safe Pool/Spa System by Marpac Industries in Sunrise, Fla.
- True Blue Safety Suction Shutdown by Cal Spas in Pomona, Calif.

The article also examines the plethora of state legislation currently being enacted to prevent suction entrapment tragedies, noting that Ohio is now allowing vacuum-limit switches as a viable anti-entrapment option on municipal and commercial pools.

Pool & Spa News has been publishing for nearly 40 years and is considered the leading trade magazine in the industry. It is the only industry periodical with a paid subscription -- received twice a month by more 16,000 readers worldwide.

Regards,



Bob Dumas
Technical Editor
Pool & Spa News

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ADDENDUM

Since the approval of these rules, several recommendations were made which the department is considering. They are as follows:

Section 265.190(c)(2)(C) maybe changed to read as indicated below. Section 265.190(c)(2)(D) would be deleted.

(C) the pool or spa has; in addition to a main drain with anti-vortex cover, shall have either of the following:

(i) an additional main drain with antivortex cover, or a sidewall outlet with antivortex cover and a third outlet which shall be a sidewall outlet with antivortex cover or a skimmer. These additional outlets need not be balanced with the main drain; or

(ii) one additional suction outlet which may be a main drain with antivortex cover, sidewall outlet with anti-vortex cover, or a skimmer and a corrosion-proof, suction blockage detection device which has been specifically designed and manufactured to prevent entrapment hazards. Such a valve shall meet UL or other applicable standards as confirmed by a testing laboratory. The testing laboratory for determining compliance with these standards shall be properly equipped and qualified for experimental testing, inspections of products at factories, and service/value determination through field inspections. It shall operate as a third-party testing/inspection body. Conformity with standards noted above shall be evidenced by the listing or labeling of such equipment by such a laboratory. Such a valve shall be installed according to the manufacturer's specifications.



Texas Department of Health
Standards for Public Swimming Pool/Spa

Jim Soper
1-512-834-6635

Ohio Mandates Anti-Entrapment Measures

One of the first states to do so, Ohio has set anti-entrapment requirements for new and existing public swimming pools and spas. The measure is an attempt to curtail incidents of bodily entrapment in spa and pool drains.

Promulgated by the Ohio Department of Health, the rules will apply to all existing and new public swimming, wading and specialty use pools, as well as public spas.

According to Michele Willis, chief engineer of the Bureau of Local Services for the Ohio Department of Health, the new rules are a result of a five-year review of existing pool regulations by an ad hoc committee consisting of several public and private agencies, including the Ohio Department of Health, local state agencies and industry representatives.

Under the rules, spas and pools with direct suction plumbing will have to install at least one of two anti-entrapment safety measures — either a dual main-drain system or a vacuum-limit switch. A vent line will also be accepted as an alternative to the vacuum-limit switch for wading and specialty use pools.

Manufacturers of vacuum-limiting switches are praising the measure and have been cooperating with the Department of Health in getting their products approved by the state as a means of fulfilling the safety guidelines.

Mike Low, customer representative for Spa Parts Plus, which distributes the Stingl Switch, an influent blockage detection system, commended the new regulations. "Ohio is the first state that has stepped up to the plate and has actually regulated it effective now," Low says.

The Bureau contacted Low with an interest in reviewing the effectiveness of the Stingl Switch, which the Bureau tested and approved in March.

Another product reviewed by the Bureau is the Vac-Alert Safety Valve from Vac-Alert Industries. The Vac-Alert is a non-electrical valve that monitors the vacuum within the plumbing.

Ron Schroader, technical director for Vac-Alert Industries, says he also was contacted by officials from the Ohio Department of Health to demonstrate the valve before a state inspector. "The main thing they were after was the cease and release operation

of our valve; our valve ceases a suction and releases it from a drain," Schroader explains.

"We're working on guidelines now," says Willis, noting that the Bureau is continuing to look at products to approve for use. "We're not quite done with all the evaluations," she says.

Willis adds that while the new regulations add a measure of safety,

they are not a panacea. "We want to make sure that we say that no one can guarantee that this will prevent all injuries, but the intent behind the rule is if there are safety features that can be added to prevent injuries or death, they should be added to the rule."

Texas and Utah are currently considering similar regulations.



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NEWSPLASH

A Publication of the SC DHEC - Bureau of Water  Volume 5, Number 1  Spring/Summer 1999

sticker posted to operate your swimming pool. This year's sticker is purple and should be prominently displayed at the pool or near the pool rules sign. The inspectors will be looking for the sticker when they conduct an inspection at your facility.

If your sticker has been lost, stolen, or is missing, the **fee receipt certificate letter** may be used in its place. This letter should be laminated and posted in a conspicuous location. The pool inspectors will recognize this as payment of your annual fee. If the sticker or the certificate letter is not posted, this could result in a pool closure.

If you have any questions concerning this information, please call Christie Jelson at (803) 898-3819.

of the month following the month in which the sampling occurred.

◆ If the owner or his/her agent are notified by their laboratory that a sample has exceeded the limit for fecal coliform bacteria, they must close the swimming area immediately and notify the local DHEC office (see contacts listed on the back of this newsletter) within 24 hours.

2. All swimming areas require delineation by rope and buoy, natural barrier or other clearly visible means.

on duty at this swimming area." This sign must be posted at all major entrances to the facility.

Please remember that you must complete and return DHEC Form 1926 and submit satisfactory bacteria test results before receiving your annual operating certificate from the Department. This operating certificate is required before opening for the 1999 swimming season.

For further information regarding changes to R.61-50, *Natural Public Swimming Areas*, contact Jim Ridge at (803) 898-4015.

Tune-up, continued from page 1

regulations specify your life ring rope must reach 1 1/2 times the width of your pool at its widest area. If your pool is exposed to salty air, your shepherd's crook may need some maintenance too.

5. Do you have a valid certified pool operator (CPO) license? The CPO license must be renewed annually through Labor Licensing and Regulation (LLR). For questions concerning CPO licensing call LLR at (803) 896-4430.

Remember that Department staff are available to offer their assistance. Please contact us if you have any questions.

Question Corner



Q. My pool was built with a single main drain. Are there any alternative methods to breaking out a pool's interior in order to add the required second main drain?

A. DHEC supports the U.S. Consumer Products Safety Commission's position that the addition of a second main drain is a safe, reliable method for minimizing aquatic entrapment hazards. However, in rare situations where this is not practical, there are alternatives. Currently there are two devices that have been approved by DHEC as equivalent methods of reducing entrapment dangers in single main drain pools and spas. The first device, the Vacuum Eliminator, was approved for installation in November 1998. The second device manufactured by Vac-Alert was approved in April 1999. Please remember that any change to a pool or spa's equipment or physical structure requires the submittal and approval of a "change order" before the equipment or construction change may take place. This also applies when adding a second main drain or installing devices such as those mentioned above.

Safety Vacuum Release System Standards

totally mechanical, non-electrically operated, *Safety Vacuum Release System (SVRS)* must be tested and approved under A.R.L. or U.L. standards. The SVRS must be tested to assure compliance with A.N.S.I./U.L. 1081, "Swimming Pool Pumps, Filters, and Chlorinators" and applicable portions of NSF 50, "Circulation Systems Components and Related Materials for Swimming Pools, Spas, and Hot Tubs."

The SVRS must be installed in the main drain suction line of each pump to allow the intake of air into the pump suction when a sudden increase in vacuum is present. The SVRS must provide both a primary source, and a secondary back-up source, for air intake under high vacuum conditions. The SVRS must allow enough air into the pump suction, within an elapsed time of one second after the onset of a high vacuum event, to cause cavitation and release of vacuum. With each high vacuum event, the SVRS must lock in the vented position, to assure sustained vacuum release and require manual reset of the SVRS before normal pump suction conditions can resume.

Given a SVRS malfunction, the system must fail in the vented position.

All SVRS air intake ports must be protected by a corrosion resistant screen to avoid any intrusion of foreign matter which might cause system failure.

The SVRS should normally operate in a dry state, and is to include the necessary check valve(s) required to insure the SVRS does not become water filled.

The SVRS must be equipped with a primary air intake port, and a secondary intake port to serve as a back-up air inlet port in the event the primary intake malfunctions.

The SVRS must be field adjustable and field serviceable to accommodate site specific conditions.

The SVRS must be field installed, adjusted and tested by a *SVRS factory authorized installer*.

The SVRS must be manufactured of corrosion and chemical resistant materials.

**A.R.L. - Applied Research Laboratories, 5371 N.W. 161st. Street Miami, Fl.33014-6223

**Cavitation - The formation of a vacuum of air around a pump's impeller, causing it to lose suction power.

Revised 1-21-99

LOUDEN BONDED POOLS, INC.

4306 South U.S. #1
 FORT PIERCE, FLORIDA 34982
 465-2700 * 569-1740 * 286-5760
 Lic. #CPC011421

PROPOSAL SUBMITTED TO Sandy Garber		PHONE 336-8425	DATE March 19, 1997
STREET 2807 Pace Drive		JOB NAME	
CITY, STATE and ZIP CODE Port St. Lucie, FL		JOB LOCATION South Bend	
ARCHITECT	DATE OF PLANS	JOB PHONE	

We hereby submit specifications and estimates for:

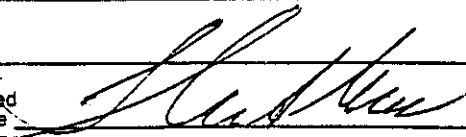
Install 2 new spa maindrains coupled together. Install air switch on patio to operate Hydro Pump.
 Replaster Spa.

Lowest of 4 bids

We Propose hereby to furnish material and labor — complete in accordance with above specifications, for the sum of:
Twenty One Hundred Thirty and .no/100 dollars (\$ **2,130.00**).

Payment to be made as follows:
40% dya of draining. 50% day of plaster. 10% upon completion.

All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tomado and other necessary insurance. Our workers are fully covered by Workman's Compensation insurance.

Authorized Signature 

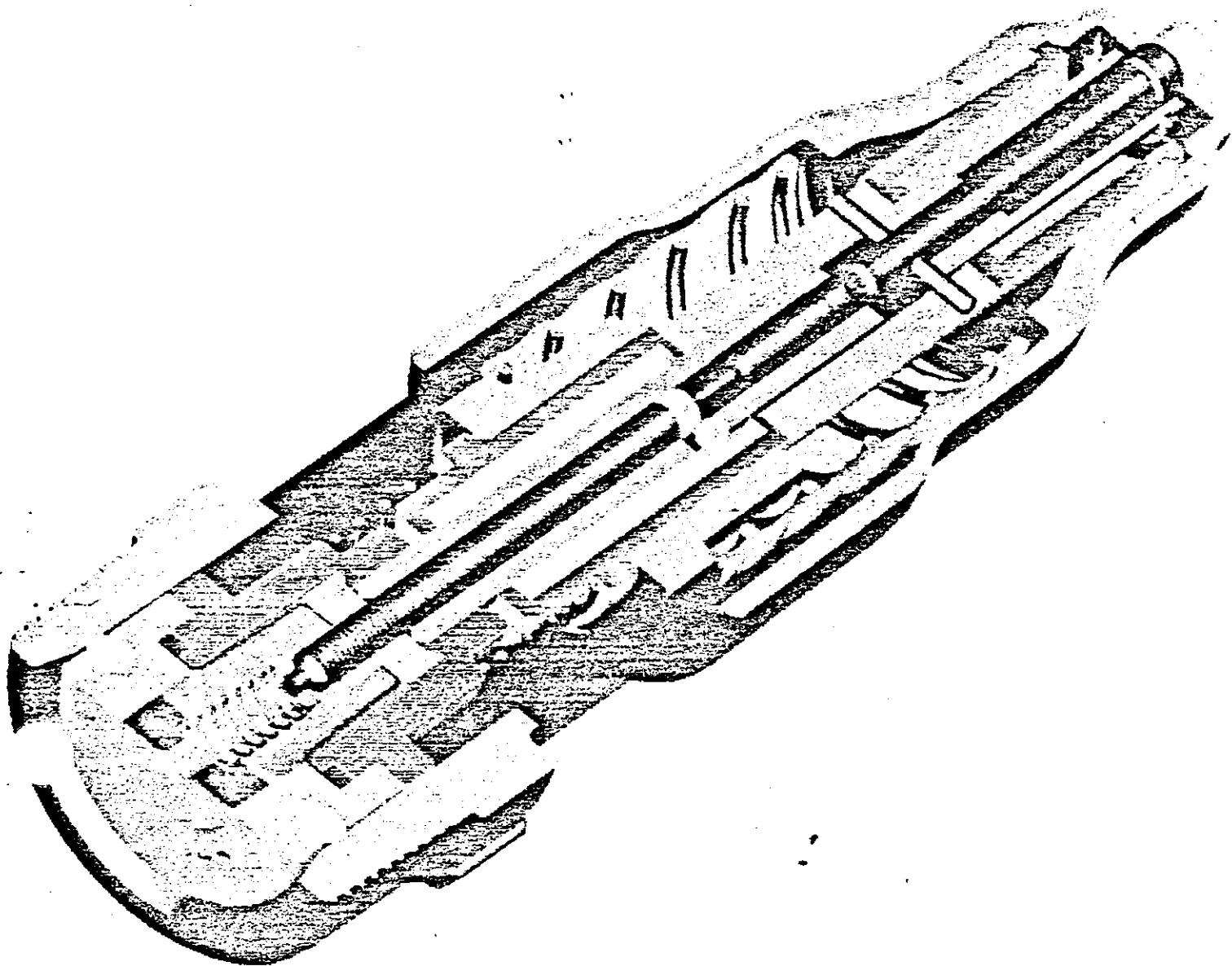
Note: This proposal may be withdrawn by us if not accepted within 30 days.

Acceptance of Proposal — The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Date of Acceptance: _____

Signature _____

Signature _____





CHILD SAFETY TIPS FOR POOL OWNERS

A swimming pool can provide your family with hours of entertainment and the opportunity for healthy recreation. As a pool owner, be aware that you must ensure your child's safety. There is a risk of child drowning when around any body of water.

There is no substitute for constant adult supervision. Most drownings occur during a five-minute-or-less lapse in supervision. By providing barriers between your child and the pool, you can avoid a tragic accident should your child momentarily slip out of sight.

Don't rely on one system—layering safety precautions provides the strongest safeguard.

- ✓ Never leave a child alone—even for a second.
- ✓ Maintain constant eye contact with your children when they are around the pool.
- ✓ Do not consider young children water-safe because they have had swimming lessons. Swimming instructions for children under three

years of age are not recommended.

- ✓ Instruct babysitters about the potential hazards to young children in and around swimming pools and the need for constant supervision.
- ✓ Train all caretakers in life-saving, cardiopulmonary resuscitation and first aid. No exceptions.
- ✓ Install a telephone poolside with emergency numbers posted.
- ✓ Keep toys away from the pool when the pool is not in use. They can lure a child into the pool.
- ✓ Use inflatable toys only under adult supervision. They may deflate or your child may slip off.
- ✓ Post and enforce rules such as No Running, No Pushing, No Dunking and Never Swim Alone.
- ✓ Make sure you have rescue devices accessible poolside.
- ✓ Keep all doors and windows leading from the house

to the pool area secure. Install self-closing mechanisms on doors.

- ✓ Enclose the pool with a barrier. In fact, fencing may be required in certain areas. Check your local city or county building code for more information.
- ✓ Install only child-proof, self-closing, self-latching gates around pool.
- ✓ Vertical bars on a pool fence should be no more than three-and-three-fourths inches apart. Avoid fences such as chain link that provide footholds for little climbers' feet.
- ✓ Place table and chairs well away from the pool fence to prevent children from climbing into the pool area.
- ✓ Investigate installing a pool safety cover.
- ✓ Check to ensure that spa and pool covers pass minimum safety requirements set by the American Society of Testing Materials.
- ✓ Never use a pool with its pool cover partially in place

since children may become entrapped under it.

- ✓ Beware of a free-floating pool cover. A child can slip beneath one unnoticed.
 - ✓ Realize that a child can drown in as little as two inches of water. Drain standing water off of your spa or pool cover.
 - ✓ Investigate using a pool alarm and/or a monitoring system that can be worn by a child.
 - ✓ Remove ladders and steps from aboveground pools. No objects should be in the pool area for a child to climb on and into the water.
 - ✓ Inspect safety and pool equipment regularly. Preventive devices are only effective if they are in working order.
- Sources: Drowning Prevention Society; United States Consumer Product Safety Commission; National Spa and Pool Institute's Operation Water Watch; and the American Academy of Pediatrics.*

HYDRO AIR INDUSTRIES INC.

1317 W. GROVE AVE., ORANGE, CA 92665 ■ 714/974-1920

January 1997

IMPORTANT RECALL NOTICE HAIR ENTRAPMENT HAZARD

Dear Sir/Madam,

In cooperation with the U.S. Consumer Product Safety Commission, Hydro Air Industries is recalling the Main Drain Assembly (P/N 10-6200) employed on all existing spas, hot tubs and swimming pools because of the potential danger of hair entrapment. Under certain circumstances a bather's head can be held under water if the bather's hair becomes entangled in the drain cover as the water and hair are drawn through the drain. Hydro Air has received reports of two deaths and one near drowning involving the 10-6200 series main drain cover.

We have designed a new Main Drain Cover to replace the 10-6200 series design. The replacement cover is being offered at no charge. It has a series of small holes and offers advantages in safety, flow and appearance.

Please advise your dealers, installers, homeowners or anyone else who may have a Spa, Hot Tub or Swimming Pool employing our Main Drain Assembly (P/N 10-6200), of this recall as soon as possible. The part in question is 6 inches in diameter, has 18 3/4" X 5/15" rectangular openings on the face and has the following markings:

"Flow Rate 60 GPM. Hydro Air P/N 10-6200".

All inventory of the 10-6200 should be returned to Hydro Air Industries to be replaced with the new designed Main Drain Cover.

To Assist Hydro Air in contacting homeowners or facility operators that may have the (P/N 10-6200) Main Drain Cover installed, we ask that you send us a list of the full names and addresses for these installations. Upon receipt of this information, we will send the replacement cover to them at no charge.

Hydro Air Industries appreciates your cooperation in this recall. If you have any questions, please contact our office.

Kelsey LaRayne Ruwe
March 23, 1987



September 5, 1998



In Memory of
Kelsey Larayne Ruwe
1987-1998

*As the swimming season approaches...
ask some important questions.*

As the summer season approaches and the pools start to open, the family of Kelsey Larayne Ruwe would like to remind you; before you allow your loved ones to swim in any pool, please ask the following questions:

- 1) Are your grates covering drains bolted down?
- 2) Do you use anti-entrapment devices on your pumps and drains?
- 3) Are your pool staff and lifeguards properly trained in all water safety issues, including grates, drains and the dangers associated with them?

You must ask these questions, and you must demand that the grates are bolted down and pool staff must be properly trained.

In memory of our beautiful girl, Kelsey, warn your loved ones of these dangers and do not frequent any pool that can't give you solid answers.

Help us fight and change pool regulations and guidelines. Write your Congressmen, Senators and city representatives asking that it be mandatory that grates be bolted down and anti-entrapment devices be in place.

In Memory of Kelsey Larayne Ruwe
1987-1998

Gandy
Gamber

501-489-
7709

My daughter Kelsey LaRayne Ruwe was a beautiful 11 year old who was full of energy, grace, love and kindness. Kelsey was very athletic and danced in a professional dance theater company for 8 years. She also was ~~also~~ the only girl who pitched in a boys baseball league for 2 years. She was a delight to all.

Kelsey was killed last year on Sept. 5th 1999 when she was sucked into a pool drain and was pulled into a 10 in. diameter pipe up to her chest. She was entrapped under water for 35 minutes - while 24 firefighters fought and tried to free her to no avail.

Kelsey was killed because of a grate covering a pool drain was not bolted down, and there was no anti-entrapment ^{device} on the pump system. Anti-entrapment devices such as

Vac alert must be in place and be made a mandatory ^{law} that this device is used on all pools.

Kelsey's death was avoidable and preventable. As her family, you must prevent it. As her family, we ask that you set the standard and make the use of anti-entrapment devices like VAC-Alert a mandatory requirement.

In memory of Kelsey Rowe our beautiful girl.

Thank you

Katie Cotto Rowe
(Kelsey's mom)

August 4, 1999

Sandy Garber
Port St. Lucie, Florida

Dear Sandy,

I am very pleased to hear that you will be going to Washington to talk to the Consumer Product Safety Commission regarding mandatory changes to pool and spa safety features.

As you know, my son Jeremy was a victim of a spa drain on June 14, 1999. He was sucked down to the bottom of the spa portion of our pool and held under. Fortunately, my 10 year old son saw him there and came and got me. I understand that I was fortunate that my son was actually released from the suction when I turned off the pool pump. Jeremy was not breathing, his lips were blue and his abdomen was one large hematoma when I pulled him out of the pool. I performed mouth to mouth resuscitation on him and fortunately he came around. After the initial few minutes, it became obvious that the suction wound to his abdomen was going to be the worse of the injuries.

Jeremy turned seven today and I am thrilled that he is here to celebrate. His physical wounds have basically healed although his abdomen remains discolored and emotionally some scars have been left.

I was amazed after Jeremy's accident to find out how often this occurs and how little needs to be done to a pool to make it so this can't happen. I truly believe that there are a great many people such as myself that are not aware of the potential danger and certainly of the simple and relatively inexpensive steps that can be taken to prevent such an accident.

I believe mandatory safety features would help to stop this preventable accident.

I want to thank you for your commitment to this cause and if there is anything I can do to support your efforts please feel free to contact me.

Sincerely,


Kathy Belotto

1951 N.E. 31 Ct. Lighthouse Point, Florida 33064 954-781-0853

August 6, 1999

Sandy Garber
Port St. Lucie, Florida

Dear Sandy:

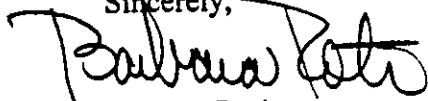
In accordance with our telephone conversation of yesterday, it is my understanding that you are going to Washington, D.C. to appear in front of the Consumer Product Safety Commission to discuss mandatory changes to pool and spa safety features. I fully support your commitment to relaying to the Commission the very real dangers of not installing anti-entrapment devices in pools and spas.

As I have already shared with you, my son Matthew was involved in an incident on April 26, 1998 where he was sucked onto a spa drain while swimming at a friends home. No one in the home realized my son was stuck on the bottom of the spa and only by the grace of God was my son spared. Matthew was very frightened and truly believed that this was going to be the end of his life. However, he would not give up trying to free himself from the drain and rocked back and forth as much as he was able until finally the drain cover broke apart and he came to the surface. Only then did the family become aware that he had been stuck on the bottom of the spa. It wasn't until Matthew came home that I realized the severity of the accident and just how close I came to losing my son. Matthew had a raised circular laceration and bruises on his abdomen and still carries a slight scar. While he was telling me his story and his thoughts of dying when he was under water, we both became aware of how lucky he was to be alive. I thank God for saving Matthew as he is very precious to me.

There is no doubt in my mind that had there been an anti-entrapment device installed in that pool and spa, my son would not have had such a traumatic experience. Since Matthew's accident, I have come to realize that this is not an isolated incident. There have been many such incidents and some children were not as blessed as Matthew. These children lost their lives because there was not an anti-entrapment device installed on the pool and spa drains. Ask any parent and they will tell you that even if one child loses his or her life in this way, it is one child too many. I find it outrageous that these accidents can be so easily prevented by simply installing an anti-entrapment device.

I wish you well on your mission to convince the Consumer Product Safety Commission to pass legislation for mandatory installation of anti-entrapment devices on pool and spa drains. My prayers are with you and if I can assist you in any way in your endeavor, please call on me.

Sincerely,



Barbara Roti
257 S.W. Kimball Circle
Port St. Lucie, Florida 34953
(561)336-0015

CHILD SAFETY WARNING

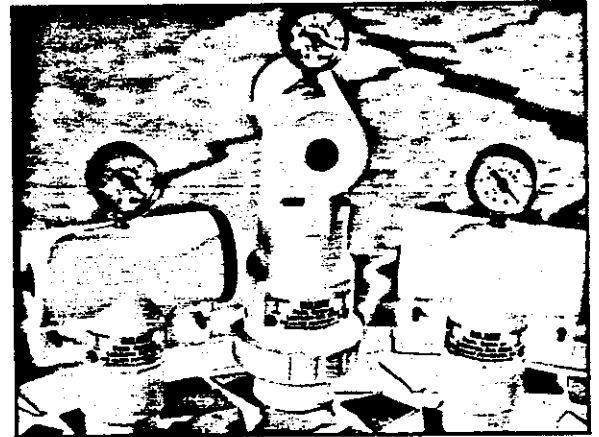
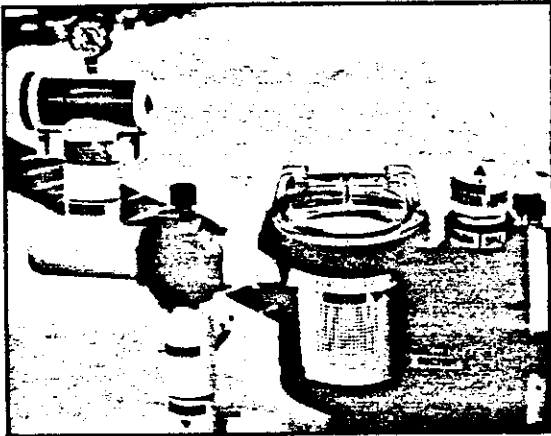
CONFIDENTIAL

PATENTED



The Installation of a Vac-Alert™ Safety Vacuum Release System Would Have Prevented This.

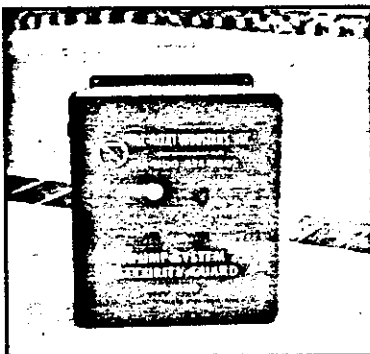
A five year old child (photo left) was trapped on a spa drain, held under water by life-threatening pump suction forces. Fortunately, this child survived the ordeal, but not all are as fortunate.



Safety Vacuum Release Systems For Pools and Spas

The Vac-Alert™ Safety Vacuum Release System (SVRS) is a self-monitoring, non-electrical, low maintenance safety system that has a millisecond response time. The Safety System automatically responds to an increase in pump suction vacuum, that can be caused by main drain blockage or body entrapment. Spring loaded pistons react quickly to high vacuum conditions, opening to atmosphere and releasing life-threatening system suction. The Vac-Alert™ SVRS is constructed of non-corroding PVC and Stainless Steel parts, for long term durability and reliable performance.

The Vac-Alert™ Safety Vacuum Release System also offers as an option ...



Model VA-1100 Pump System Security Guard

The Vac-Alert™ Model VA-1100 Pump System Security Guard is designed to work in conjunction with Vac-Alert™ SVRS products to protect pump equipment from damage caused by continued operation under dry suction or mixed air/water flow conditions. The Vac-Alert™ Model VA-1100 Pump System Security Guard is best applied where a pump is not self-priming and pump suction is not flooded. The Model VA-1100 is enclosed in a NEMA 4X cabinet, and automatically turns equipment off, seconds after the SVRS responds to a high vacuum condition.

Vac-Alert™ Industries, Inc.

"Save a Child's Life / Vac-Alert™ Saves Lives"

Call for Local Sales & Service

1-800-374-7405 • Fax: 561-489-7709

www.vac-alert.com



Girl, 11, trapped underwater by pool drain, dies

An 11-year-old girl trapped underwater for 25 minutes after her leg was caught in a swimming pool drain died Saturday afternoon.

Kelsey Ruwe had been in critical condition since being taken to Children's Mercy Hospital in Kansas City, Mo., on Thursday after officials finally freed her leg, caught up to her calf in the bend of the drain pipe.

Lifeguards and firefighters took turns giving her mouth-to-mouth resuscitation while desperately trying to free her from 4 feet of water. Later they used a garden hose in an attempt to get oxygen to her.

"There were seven guys pulling her, only trying to move her a few inches, and they couldn't," Sgt. Tim Witcig said.

Kelsey and a friend had been flipping coins to the bottom of the pool, then diving in to retrieve them. One of the coins fell through a grate and into the drain.

When the girls picked up the grate, Ruwe stuck her foot in to try to scoop up the coin but it got jammed in the 4-inch drain.

The pressure of the draining water pulled her leg deeper into the drain.

The pool's pump was turned off, but firemen couldn't budge the trapped leg. Firefighters managed to reverse the pressure by hooking up a hose and pumping water out.

Kevin -
Miami Herald
June 16, 1999
Broward Edition
Pam

Powerful pumps of whirlpools a danger to kids, officials say

By DAVID GREEN
Herald Staff Writer

Jeremy Belotto hoped to surprise his cousins Monday by dunking himself in his family's whirlpool and then popping back up.

Two minutes later, the 6-year-old was still at the bottom. Although his mother pried him off the bottom before he drowned, the Lighthouse Point youth fell victim Monday to what safety officials consider a serious health hazard — children sucked under by powerful vacuum pumps.

"He's doing fine now, thank God," said Jeremy's mother, Kathy Belotto, from Broward General Medical Center's intensive care unit on Tuesday. "They gave him graham crackers. He's actually eating solid food now."

Between 100 and 200 people are trapped by whirlpool intake valves each year across the country, according to the spa industry. Like Jeremy, most escape with bruised bellies.

Some, however, are not as lucky.

In 1994, a 12-year-old girl drowned in the outdoor whirlpool at the Fontainebleau Hilton Spa in Miami Beach. While she was competing with friends to see who could stay underwater longest, the intake valve sucked in her hair. Last year, an 11-year-old Missouri girl died after she tried to

retrieve a ball from a spa's intake drain. It sucked in her entire leg. In Broward County, such incidents are relatively rare, averaging one per year out of roughly 60,000 emergency calls. But rescue officials say the issue is critical in southern Florida, home to one of the nation's highest concentrations of pools and spas.

Most Jacuzzi entrapments begin as they did with Jeremy Belotto — frolicking in the absence of adult supervision. In Jeremy's case, his mother had ducked inside for a moment to help another son change out of his swimsuit.

Jeremy dove to the bottom of the whirlpool, where the drain sucked in his swimsuit, drawing, thrashing underwater, he could not break free.

His brother was swimming in the adjacent pool, and noticed Jeremy had vanished. He scrambled over and jumped in.

"I tried lifting him," recounted 10-year-old Nick Belotto. "He wouldn't budge. I ran inside and screamed for my mom."

Kathy Belotto sprinted out and leapt into the whirlpool. She yanked her son out of his swimsuit and performed CPR.

Although he was initially limp and not breathing, she was able to resuscitate her son. Jeremy suffered a bruised stomach; doctors expect him to make a full recovery.

Spa industry officials say the problem begins with powerful vacuum pumps, which on average suck in 80 gallons of water per minute. It requires roughly 380 pounds of force to remove a person stuck to an intake grate.

"A kid could never release himself from that," said Steve Finn, president of American Whirlpool Products Corp., a Hollywood whirlpool and spa manufacturer.

Compounding the problem are flat grates over intake valves and the absence of a second pipe that can draw in water if the first one becomes blocked.

Neither are required by state law, which places no safety requirements on home whirlpools.

The result: A vacuum force that can disembowel a child in a matter of seconds. Or keep him pinned underwater until he drowns.

"I've been in this business since 1967, and I can tell you, this kind of accident is far too common," said Ron Schroeder, technical director at Vac-Alert Industries Inc., a Fort Pierce manufacturer of spa safety devices. "There's absolutely no legislation governing this whatsoever."

Short of stricter state laws, rescue officials say there are steps whirlpool owners can take to avoid such accidents: Install a second intake pipe; cover the intake site with a raised rather than flat

SAFETY TIPS

- Never allow children to use the whirlpool unsupervised.
- Install a fence around the whirlpool to keep children out.
- Install a second intake pipe in the whirlpool's pump system.
- Grates over the intake site should be round, not flat, and should require tools to remove.
- Pump shut-off valve should be within easy reach.
- Install a "vacuum breaker," which shuts off pump if intake is blocked.
- Teach children that intake sites are dangerous and should be avoided.
- Adults should learn CPR.
- Never drink alcohol before or while using a whirlpool — it causes drowsiness and leaves the whirlpool user vulnerable to being trapped by an intake pipe.

grate; add a "vacuum breaker." These devices inject air into the pumping system when the intake grate is blocked. They cost several hundred dollars, take half an hour to install and require no maintenance.

For the Belotto family, Monday's whirlpool accident was nearly the second tragedy to strike their family in the past several years. Jeremy's father, Joseph Belotto, was among five Fort Lauderdale parks workers fatally shot in 1996 by a disgruntled former parks employee.

A former court clerk accused of swiping \$1,200 in divorce filing fees at the crook that her ex-boss are making her out to be, her attorney told a jury on Tuesday.

Rather, Carmen Chandler, 33, is a victim of circumstance — an inexperienced employee who was poorly trained for the job and then required to use a glitch-filled computer program that has since been replaced, attorney Phil Massa said.

"They took a young girl and gave

her two weeks of half-baked training, and they put her on a program that they had to change," Massa said in opening statements, calling the "heft" a computer error. "They had a laundry list of problems on that computer system."

Prosecutor Mark Smith, meanwhile, called Chandler "a thief." Charged with grand theft, resisting arrest, battery on a police officer and five counts of official misconduct, she faces up to a year in jail if convicted.

Boy caught in vortex saved by quick acts

By DONNA PAZDERA

STAFF WRITER

The cloth drawstrings on Jeremy Belotto's swim trunks turned into a ball and chain when they were sucked into a whirlpool's drain.

Jeremy, 6, of Lighthouse Point, was held underwater for more than a minute on Monday afternoon while he and five friends played in the pool. The drawstrings pulled Jeremy's stomach to the drain, said Kelly Andrews, a pediatric emergency room nurse at Broward General Medical Center. Jeremy was freed when the pump was shut off. His mother resuscitated him using CPR.

On Tuesday, Jeremy was in good condition at Broward General. The worst injury he suffered was a suction burn on his abdomen, Andrews said.

What happened to Jeremy shows how dangerous pool and spa

drains can be, Andrews said. Between 1990 and 1996, seven people died after being pulled against a drain by the suction of a pump, according to the Consumer Product Safety Council. In each case, the victim's limbs or hair became entangled in the pool's drain, making it virtually impossible to free the person.

Consumer and fire-rescue officials say there are many others, like Jeremy, who have been pulled underwater by drains and have survived. Some of them are eviscerated by the force of the drain. Others are permanently scarred.

One of those is Scott Garber.

It took three trips for his father,

Sandy Garber — a paramedic and a weightlifter — to free his son from the bottom of the whirlpool in February 1996.

Scott, then 6, was sucked into the spa's drain as he floated about 6 inches above it, Sandy Garber said. The force was so strong, that when he finally freed Scott, he pulled up the child, along with a chunk of concrete and the drain cover still attached to his stomach.

"I could not put my hands anywhere underneath him," said Sandy Garber, a Palm Beach Coun-

Rv the time of her arrest on Feb. 28, Chandler had worked in Family Services Division of the Palm Beach County Courthouse in West Palm Beach for less than a year. Her duties were to assist citizens filing for divorce, adoptions or name changes. Filing for divorce costs \$241, but those who cannot afford the fee typically get a refund.

Five times between November 1997 and January 1998, Chandler punched the "exempt" key on the office's computer, declaring people

indigent after they already had paid the fee in cash, Smith said. "The clerk's office never saw that money," Smith said. "The evidence will show that money went straight into the defendant's pocket. She never turned it in."

But while Smith said that everyone in the Family Services Division gets six to eight weeks of intensive training, Massa said Chandler was pulled from her usual job copying documents, given two weeks of inadequate training and put in front

Spa drains' grip imperils lives

ty firefighter who lives in Port St. Lucie. "You can't break the [suction]."

He managed to pull his son free by grabbing his shoulders.

More than three years later, Scott still has an 11-inch scar on his stomach, his father said.

Until his son's accident, Sandy Garber was unaware of the dangers of pool and spa drains. Even in his emergency work, he had never heard of such a case.

"I thought something was wrong with my spa," he said.

The biggest flaw, he said, is that his spa drain did not have an automatic cutoff when a blockage was

Such devices are not very expensive, compared to the cost of other swimming pool necessities, Garber said. For less than \$200, one can buy an automatic shutoff device and a dome-shaped drain cover, which prevents objects from getting sucked into a vortex, he said.

Many pools and spas have flat drain covers, which create a vacuum when something is suctioned against them, Garber said.

About a week ago, Garber became the spokesman for a Fort Pierce-based company called Vac-

Alert that manufactures a valve that automatically releases an object held inside the drain. Garber put the valve in his drain system following his son's accident.

"I was made spokesman because I believe in the product," Garber said.

Ron Schroader, a principal with Vac-Alert, said when the drain pump senses an increase in suction, it releases whatever is being held within a tenth of a second.

Schroader knows firsthand the perils of being sucked into the vacuum of a drain. About 16 years ago, he was working on a pool drain as a repairman when his finger got

sucked into a pipe. Schroader was wearing a scuba tank, but nearly ran out of air trying to free himself. He was saved when someone shut off the power to the pump, Schroader said.

Then he echoed Garber's recollection of what happened to his son:

"It happened so fast."

Donna Pazdera can be reached at dpazdera@sun-sentinel.com or 954-356-4572

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LOWER KEYS

VAC-Alert

April 15, 1999

Marathon Garden Club Clearance Sale of RAINFOREST PLANTS & CUTTINGS

Saturday, April 17th 9 a.m. - 4 p.m.

Over 500 pieces including

- ORCHIDS
- BROMILIADS
- GINGERS • TREE FERNS
- NATIVE PALMS
- LIGNUMVITES & MORE..

PLUS - Bake Sale & White Elephants

Saturday, April 17th 5270 Overseas Hwy. Marathon

A NEW DAY DAWNING IN POOL SAFETY

By Keith Monti

We hear of children dying in swimming pools every summer and we all hang our heads and say how sad it is. Many of those kids die from horsing around in the water. But for years a silent killer has waited for children at the bottom of every swimming pool!

Not a great many kids die from being stuck on a suction line at the bottom of a pool, but from now on, even one will be too many. A young girl in Kansas City, Mo. died while diving for coins tossed into the pool by friends. One of the coins fell into the main drain, the girl removed the grate and her foot was sucked into the four inch main drain line. She was trapped for twenty five minutes before she died. Firefighters turned off the pump to try to break the suction, but with no luck.

With the summer swimming season just ahead, pool owners are asked to look at new safety system, Vac-Alert, that is fast becoming the standard of the industry. Within one second of sensing a rise in the vacuum pressure on the suction line the Vac-Alert reacts and breaks the suction on the line. If the obstruction causing the pressure rise is

cleared, Vac-Alert allows the return to normal operation after being reset.

It is easy to install and gives peace of mind about a real threat. As a former pool owner and a parent, I urge you to check this out. Yes it is a freak type of accident and does not happen all that often, but if it happens to your child, one time is too many.

For information call: Vac-Alert @ 1-800-374-7405, Fax 1-561-489-7709 or go in the web @ <http://www.vac-alert.com>.

Kids don't always stop to think, they believe that they are indestructible parents know better and should take all the precautions that they can to keep their children safe. Happy summer!

INCORP INFO from page 1

The information is out there for every election. Talk to friends and neighbors, find out what they think, the more you know the better off you are. For the folks in Key Largo, Marathon and Big Pine Key there will be meetings all summer and into the fall. The next meeting on Big Pine will be April 21 at the Vineyard Christian Center on County Rd. at 7pm and will be open to anyone who wishes to come and get information about incorporation. The subject for the meeting will be "What is incorporation and how will it effect us." Ty Symroski and Debbie Horan will be there to help answer your questions. Tell your friends and bring your questions. Watch the

of FEMA negotiate deal for it will still Federal itself and will be the battles for liberty, as given to United States things th in Monro

In da order of the Palm Beach around the work together voters. It in Monroe ones who lives. Re Servants not the in Monroe

Get incorporated share the vote. If count and doesn't e

B. AS HC This

Vac-Alert Industries, Inc.

VA-900-C

Installation Instruction Sheet

Please Read carefully and completely before beginning installation!

The Vac-Alert™ system: **Do not lubricate this valve.** Vac-Alert™ Industries, Inc. has inspected and tested this to insure proper operation. If you need technical assistance or are questioning the install procedure, please call: 1-800-347-7405 from: 8:30 a.m. to 3:30 p.m. EST. Mon. - Fri. Please have your AST number ready.

Typical install:

Notice: there should be no "Check valve" or any valve whatsoever, between the Main Drain fixture and the Vac-Alert™ safety valve itself. This insures proper operation and no false vacuum drop in the system. If cutting plumbing is not an available option, please purchase Snap Saddle, Spears Part # 463-020 or Saddle Tee (Part #466S-?) In accordance to pipe size). This adapter saves time and cutting into plumbing, ask distributor for details. It is imperative and required that installer uses a battery operated cordless drill, if needed, when installing these saddle tee adapters. **Do not attempt to lubricate this valve. Please use "Dry Mount" technique.**

The Vac-Alert™ safety system has been pre-set at the factory. It is important you Match the spring value to the vacuum in existing system. It is recommended you calibrate in accordance with optimum flow of this system.

To MANUALLY ADJUST VALVE FOR A QUICKER REACTION, TURN RIGHT VACUUM ADJUST SCREW (RED LETTER LABEL FACING YOU) COUNTER-CLOCKWISE (1) REVOLUTION OR LESS. FOR A MORE RIDGED REACTION, TURN VACUUM ADJUST SCREW (1) REVOLUTION CLOCKWISE OR LESS.

AST helpful reminders:

- Never install a greater spring value than the vacuum reading on pump system.
- Install unit within 2 Feet of suction portal of pump.
- Install vertical with Vacuum gauge at top.
- Valve is never to be lubricated!
- Do Not overtighten Vacuum Gauge this will crack body and void warranty.



- Never install a Va-900-P or a Va-900-S on a Commercial or Public application!
A Vacuum reading of 10 inches or higher is a HIGH VACUUM SYSTEM and requires a VA-900-C !
 - Separate Springs can be obtained from distributor (keep a few different values with you to save trips.)
 - Over tightening screws will defeat and override vacuum setting by manufacturer, and Void Warrantee.
 - Whenever possible utilize the "dry mount" procedure when calibrating system.
 - Existing air leaks in equipment or plumbing may cause malfunction in the Vac-Alert safety system.
- Vac-Alert™ Industries, Inc. accepts no responsibility or liability for existing faults or defects on any system as pertaining to this Safety System or it's operation.*

- Secure all suction lines except main drain line before attempting calibration of system.
 - Explain to Pool Operator this system is to protect from "body entrapment" not "hair entrapment".
- When reaction time is satisfactory, snap in screened vents (2 per unit). Deliver this warranty sheet to customer.
Vac-Alert™ support services: 1-800-347-7405. Do not attempt to lubricate this valve.

Never leave any spa or pool unattended with full suction on the Main Drain fixture.

NEVER LEAVE ANY CHILD UNATTENDED AT OR BY, ANY BODY OF WATER!!

**Do not attempt to adjust setting, Unless you are a Authorized Service Technician.
Do not lubricate this valve. "Absolutely no lubrication is required, needed or warranted."**

Vac-Alert™ Industries, Inc.
<http://www.vac-alert.com>

1-800-374-7405



Vac-Alert Industries, Inc.

Swimming Pool & Spa

Safety Valve

800-374-7405 ♦ FAX: 861-489-7709

3245 OLEANDER AVENUE
OLEANDER BUSINESS PARK
FT. PIERCE, FL 34982

<http://www.vac-alert.com>

S PRING COLORS AND POUND VALUES

The Safety System in this box contains the (spring value) underlined below

2 Lb.

Green

3 1/2 LB.

Yellow

5 LB.

Red

10 LB.

Black

12 LB.

White

15 LB.

Pink

18 LB.

Orange

Save a child's Life!



1-800-374-7405

Installation Form: THIS FORM MUST BE RETURNED TO ADDRESS BELOW .

A. Valve serial number _____ VA-900-_____
B. Date installed _____
C. Installer name _____
D. Horse Power _____ Spring Value installed _____
E. Vacuum @ (SVRS) head _____ inches (On VA-900-C only)

Boxed information mandatory

1. Flow Rate _____ g.p.m.

2. Filter pump ___ Jet Pump ___ Vacuum pump ___

Other _____

3. Did valve trip three consecutive times ? _____

4. Did pool or spa have dual main drains ? _____

Comments: _____

Signed: _____ Date: _____

Boxed information mandatory

It is *mandatory* this sheet be faxed to 561-489-7709, or mail to:
Vac-Alert Industries, Inc.
3245 Oleander Ave. Ft. Pierce, Fl. 34982.

Failure to comply will cause loss of A.S.T. Status.

A.S.T. I.D.#											
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Boxed information mandatory

Dear Vac-Alert Safety System Owner,
 Your new Vac-Alert anti-body entrapment system has passed a 21 point quality control procedure. If you feel this unit is defective or damaged due to shipping or handling, it is your obligation to call: 1-800-374-7405 and ask to speak to our technical support staff to answer any questions you may have. This system requires no lubrication whatsoever. Lubricating this valve may cause failure and will void warranty. Vac-Alert assumes no liability or responsibility implied or otherwise if system is lubricated. We highly recommend the use of a Anti-Vortex main drain grate in conjunction with this system. This system is not an effective defense against Hair entrapment and under no circumstances should any child ever be left unattended at or by, any body of water. Never sit, lay, or swim near or by suction ports, suction fittings or main drains.

KEEP CHILDREN AWAY FROM DRAINS.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

Your Assurance of Quality

DATE

This unit is warranted free of defects for a period of One year. This warranty applies to original purchaser only. This unit will be repaired or replaced at the discretion of Vac-Alert Industries, Inc., provided it is returned to the Manufacturer Freight Prepaid.

Please keep this document with your other important papers.

Vac-Alert assumes no Liability or Responsibility if this unit is installed improperly or altered. This system must be installed by a Properly trained Vac-Alert Industries Factory Authorized Service Technician.

Installed by: _____ Date: _____ Vac-Alert System # VA-900-____ P, S, or C.

ONLY VA-900-C SYSTEMS ARE DESIGNATED TO BE INSTALLED ON "COMMERCIAL" OR "PUBLIC" FACILITIES.
Each unit has Specific serial number and Designation.

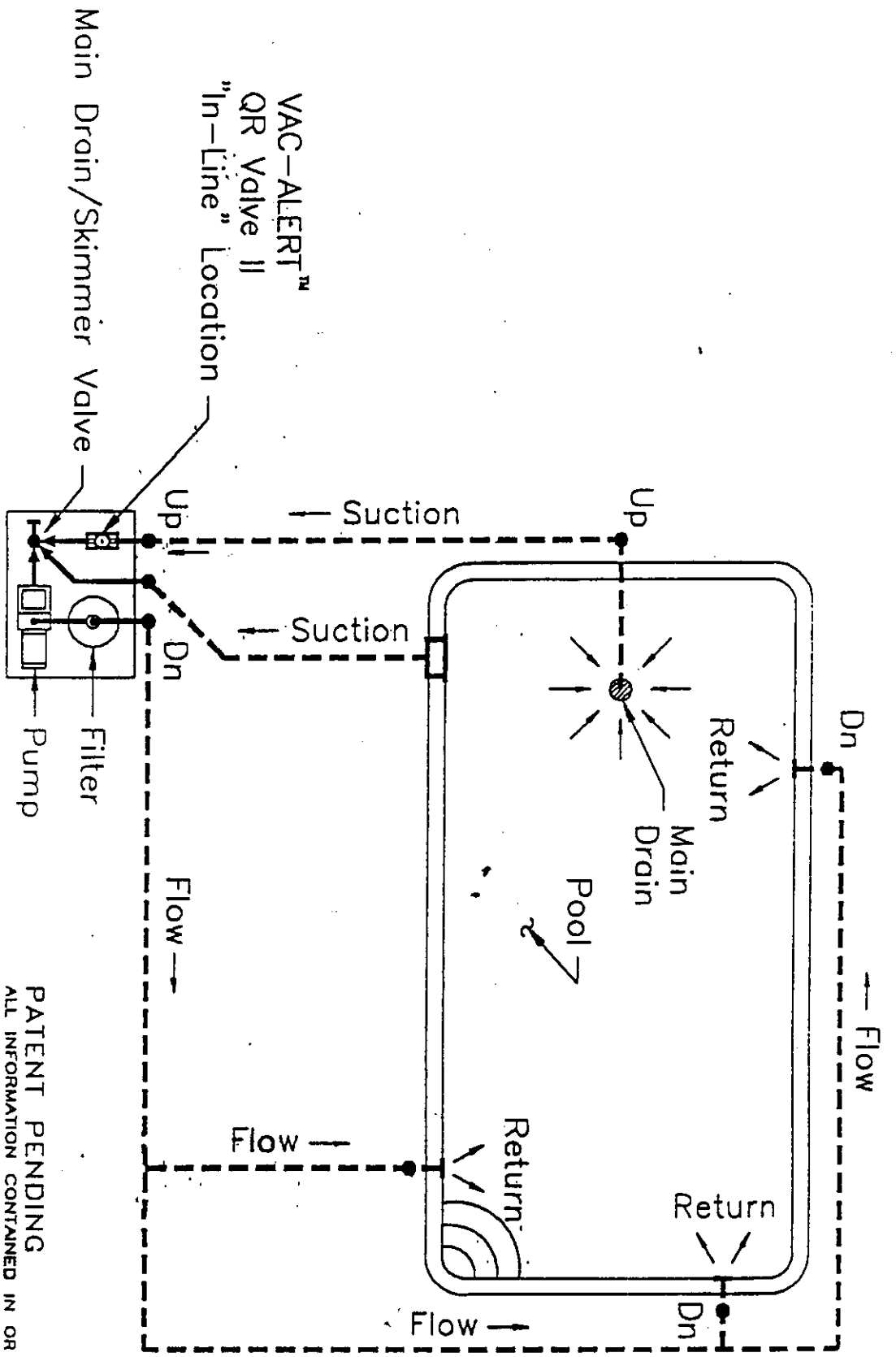
Installers I.D.

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Sincerely,
 Vac-Alert Industries, Inc.
 www.vac-alert.com
 1-800-374-7405

This Vac-Alert System unit ARL Serial # _____





VAC-ALERT™
 QR Valve II
 "In-Line" Location

Main Drain/Skimmer Valve

Up
 Suction
 Dn
 Suction
 Filter
 Pump

Flow →

Flow ↑

Flow →

Flow →

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 ALL INFORMATION CONTAINED IN OR DISCLOSED
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 REPRODUCTION AND SALES RIGHTS ARE RESERVED BY
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2004 RUSCHELL MARY RUSCHELL KEVIN MULVEY VAC-ALERT™ EMERGENCY QR VALVE II INSTALLATION LAYOUT		98017
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Triodyne Inc.

Consulting Engineers & Scientists - Safety Philosophy & Technology
5950 West Touhy Avenue Niles, IL 60714-4610 (847) 677-4730

FAX: (847) 647-2047

e-mail: infoserv@triodyne.com

www.triodyne.com

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Triodyne Inc.

(Est. 1969)

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Peter Warner

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Triodyne Fire & Explosion Engineers, Inc.

(Est. 1987)

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July 28, 1999

Mr. Ron Schroeder
Vac-Alert Industries, Inc.
3245 Oleander Avenue
Oleander Business Park
Ft. Pierce, FL 34982

Re: Anti-Hair Entanglement Drain

Dear Ron:

Enclosed please find photographs of our prototype anti-hair entanglement drain insert for your perusal.

Once you've looked them over, give me a call with your thoughts.

Sincerely,

Peter J. Poczynok, P.E.
Mechanical Engineer

PJP/cmb

SAFETY PRODUCTS:

Triodyne Safety Systems, L.L.C.

(Est. 1998)

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Niles, IL 60714-4610
(847) 677-4730
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Andrew B. Czmar

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Institute for Advanced Safety Studies

(Est. 1984)

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Director of Operations

Paula L. Barnett

Information Services

Marna S. Sanders

Senior Science Advisor

Theodore Liber, Ph.D.

MANUFACTURING:

Alliance Tool & Mfg. Inc.

(Est. 1945)

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Ray Gach

Founders/Consultants

Joseph Gansacz
Albert Kanikula

CONSTRUCTION:

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(Est. 1993)

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Biomechanics

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Industrial Hygiene/Safety/Chem.

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Information Science

David W. Levinton, Ph.D.

Senior Metallurgical Advisor

Steven R. Schmid, Ph.D.

Food Processing Equipment

SPEARS DISTRIBUTION CENTER



1838 Forms Drive
Carrollton, Texas 75007

(972) 245-0387

Inside Texas (800) 441-1437
Outside Texas (800) 527-0650

FAX# 972-245-4205

★ FAX TRANSMITTAL ★

DATE SENT: 8/4/99

NUMBER OF PAGES
(INCLUDING THIS COVER PAGE) 2

FAX TO: _____

FAX NUMBER: 561-489-7709

ATTENTION: Ron

FROM: John Immel

SUBJECT: I have enclosed the installation instructions for our clamp-on saddles.

If you want to reprint our published information please add the following acknowledgements:
Prices subject to change without notice. Product photographs and drawings are courtesy of
Spears Manufacturing Company are representative and may not fully reflect product
configurations.

If possible, I would appreciate a copy of the finished document for my files.

Thank you very much for your interest in our product. Please feel free to contact me if you
have any questions.

Sincerely,

SIMPLE INSTALLATION

1. Using a standard industrial grade hole-saw, cut specified hole in desired position on pipe according to recommended hole saw size engraved on the saddle. *Note: Care must be taken to deburr hole and remove all residue from hole area to assure tight fit and avoid leakage.*
2. Fully seat o-ring in groove on underside of saddle outlet component. Position over hole and fully seat saddle onto pipe. *Note: Saddle outlets are piloted. Be sure pilot lip fully engages with hole in pipe.*
3. Place strap component opposite outlet and secure with bolts (4), nuts (4) and washers (8). *Important: Washers MUST be placed under each bolt head (1) and under each nut (1) to avoid damage to saddle.*
4. Tighten bolts to specified torque.

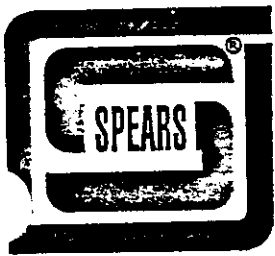
Saddle x Outlet Size	Recommended Hole Size	Recommended Bolt Torque ft/lbs	Saddle x Outlet Size	Recommended Hole Size	Recommended Bolt Torque ft/lbs
2 x 1/2	3/4	8	4 x 1-1/4 ¹	1-3/4	8
2 x 3/4	7/8	8	4 x 1-1/2	1-3/4	8
2 x 1	1-1/8	8	4 x 2	2-1/4	8
2 x 1-1/4	1-1/2	8	4 x 2-1/2 ¹	3	8
2 x 1-1/2	1-1/2	8	4 x 3	3	8
3 x 1/2 ¹	7/8	8	6 x 1/2 ¹	1-1/8	10
3 x 3/4	7/8	8	6 x 3/4 ¹	1-1/8	10
3 x 1	1-1/8	8	6 x 1	1-1/8	10
3 x 1-1/4 ¹	2-1/4	8	6 x 1-1/4 ¹	2-1/4	10
3 x 1-1/2 ¹	2-1/4	8	6 x 1-1/2 ¹	2-1/4	10
3 x 2	2-1/4	8	6 x 2	2-1/4	10
4 x 1/2 ¹	1-1/8	8	6 x 2-1/2 ¹	3	10
4 x 3/4 ¹	1-1/8	8	6 x 3	3	10
4 x 1	1-1/8	8	6 x 4	4	10

1 Outlet sized with bushing

NOT FOR USE WITH COMPRESSED AIR OR GASES

THREADED CONNECTIONS — Use a quality grade thread sealant. **WARNING: SOME PIPE JOINT COMPOUNDS OR TEFLON PASTES MAY CONTAIN SUBSTANCES THAT COULD CAUSE STRESS CRACKING TO PLASTIC.** Spears Manufacturing Company recommends the use of Spears BLUE 75™ Thread Sealant which has been tested for compatibility with Spears products. Please follow the sealant manufacturer's application/installation instructions. Choice of an appropriate thread sealant other than those listed above is at the discretion of the installer. 1 to 2 turns beyond FINGER TIGHT is generally all that is required to make a sound plastic threaded connection. Unnecessary OVER TIGHTENING will cause DAMAGE TO BOTH PIPE AND FITTING.

Prices subject to change without notice. Possession of this price schedule shall not be construed as an offer to sell the products listed. Product photographs and drawings are representative and may not fully reflect product configurations.



SPEARS MANUFACTURING COMPANY
BRANCH OFFICE
1838 FORMS DRIVE CARROLLTON, TEXAS 75007
Telephone # (972) 245-0387 Fax # (972) 245-4205

January 21, 1999

Re: Saddle Information

Dear Ron:

Thank you very much for your interest in our product. Per your request for information on our saddle product I have enclosed ".tif" files of saddle photographs and our saddle installation recommendations. Listed below is saddle product pricing information:

Snap-on Saddle

<u>PART #</u>	<u>DESCRIPTION</u>	<u>LIST PRICE</u>
463-020	2 PVC Snap-on Saddle Socket	\$3.90

Clamp-on Saddle

<u>PART #</u>	<u>DESCRIPTION</u>	<u>LIST PRICE</u>
466-338	3X2 PVC Clamp-on Saddle Socket Buna O-ring/Zinc-plated Bolt	\$17.83
466S-338	3X2 PVC Clamp-on Saddle Socket Buna O-ring/Stainless Steel Bolt	\$29.07
466-420	4X2 PVC Clamp-on Saddle Socket Buna O-ring/Zinc-plated Bolt	\$22.84
466S-420	4X2 PVC Clamp-on Saddle Socket Buna O-ring/Stainless Steel Bolt	\$36.57
466-528	6X2 PVC Clamp-on Saddle Socket Buna O-ring/Zinc-plated Bolt	\$39.30



SPEARS MANUFACTURING COMPANY

BRANCH OFFICE

1838 FORMS DRIVE CARROLLTON, TEXAS 75007

Telephone # (972) 245-0387 Fax # (972) 245- 4205

January 21, 1999

<u>PART #</u>	<u>DESCRIPTION</u>	<u>LIST PRICE</u>
466S-528	6X2 PVC Clamp-on Saddle Socket Buna O-ring/Stainless Steel Bolt	\$59.90

We are pleased to provide you with product information for reprint in your literature. However, we require that you submit any and all text that refers to Spears product for corporate review and approval prior to publication.

I trust that the enclosed information will assist you in the promotion of your product. Please feel free to contact me if you have any questions.

Sincerely,

John Immel
Technical Service Representative



SADDLE INSTALLATION

The integrity of a saddle connection is dependent upon techniques used during installation. Great care must be used during assembly to insure a proper joint is obtained.

PVC saddle connections are designed for use on low pressure applications. Due to the nature of their design, they do not exhibit the same structural stability as a tee style fitting, and therefore are not intended for use in high pressure applications.

RECOMMENDATIONS

Spears Manufacturing Company recommends Industrial Polychemical Services (IPS) #719 Solvent Cement and #P-68 Primer or equivalent when assembling Spears' saddles to PVC pipe. This is an extra-heavy bodied cement with gap filling properties for use in applications of this type where sizable gaps may exist.

Clamps or strapping devices should be used during assembly to compress the pipe and fitting as the cement cures. Ratchet and screw lock band clamps, ear clamps, and spring type clamps such as those manufactured by Oetiker or equivalent are recommended. The manufacturer's recommendations for these products should be reviewed prior to installation. Clamps should be left in place after assembly as an added safety precaution.

Joining Spears' saddles to pipe should be conducted as follows:

The surfaces to be joined must be wiped clean.

Using the appropriate size applicator, apply a coat of primer to the saddle and pipe wall.

While the primer is still wet, apply a generous coat of heavy bodied solvent cement to the pipe surface first, and then to the fitting. Apply a second coat of cement to the pipe surface, covering an area slightly larger than the saddle, at this time.

Immediately push the saddle on to the pipe and rotate the fitting slightly in each direction while lining up the waterway outlet. This will help evenly distribute the cement. Hold in place a few seconds to prevent movement until initial bonding occurs.

Remove excess cement.

Assemble a clamp or strap device around the pipe and fitting near each end of the saddle connection. Be sure adequate compression occurs between the pipe and fitting.

Allow cement to cure.

NOTE: Be certain the saddle is positioned correctly, and that the waterway has not been obstructed during assembly procedures.

Contact Spears Technical Services Department for additional information if necessary.

APPLIED



RESEARCH LABORATORIES

5371 N.W. 161st STREET • MIAMI, FLORIDA 33014-6223
PH. (305) 624-4800 • Email: artest@aol.com • FAX: (305) 624-3662

August 4, 1999

Mr. Ron Schroader
Vac-Alert Industries, Inc.
Oleander Business Park
3245 Oleander Avenue
Ft. Pierce, FL 34982

Re: ARL Accreditation

Dear Mr. Schroader:

In accordance with your request, I am pleased to provide you with some information about Applied Research Laboratories (ARL), our accreditation and the services we provide.

ARL is a full service national and international accredited testing agency that provides testing for compliance to standards for safety as well as performance testing for a wide variety of consumer products. We are independent of any government or manufacturing organization and have been engaged in testing for consumer safety for more than fifty (50) years.

We provide a broad test capability specializing in heating; ventilation and air-conditioning products; household appliances; electrical and electronic equipment; medical and hospital equipment; mechanical testing; chemical and mechanical anchor testing; environmental; fire related and physical testing.

What makes us truly distinctive is the Listing, Labeling and Follow-up Service program we provide clients following successful testing of their products. This program is designed to assure regulatory officials that products included in our Listed Products Directory have been tested and found to comply with current, nationally recognized standards and are under a continuing reinspection program.

Under the program, eligible products are include in ARL's Listed Products Directory. At the same time, manufacturers of these products are furnished with non-removable ARL labels for application at the factory. Our Follow-Up Service Department conducts periodic no-notice inspections of the manufacturing facilities to ensure continuing compliance with production requirements and certain other record-keeping requirements imposed by ARL. These inspections enable ARL engineers to verify that the factory continues to produce manufacturing replicas of what was originally tested.

TESTING FOR CONSUMER SAFETY

Mr. Ron Schroeder
August 4, 1999
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ARL is recognized in every state of the United States and by international agencies in numerous countries such as MITI (Ministry of International Trade and Industry), which includes recognition for testing to Japanese Industrial Standards (JIS). In addition, we are currently able to provide our Listed clients with CSA (Canadian Standards Association) approval and the European Union (EU) mark on any Listed product.

ARL currently holds a National Evaluation Report as an approved Testing Laboratory. This published report includes approval by the following agencies: ICBO (International Congress of Building Officials), SBCCI (Southern Building Code Congress, International), BOCA (Building Officials and Code Administrations) and CABO (Council of American Building Officials).

ARL is also accredited by such regulatory agencies as IAPMO (International Association of Plumbing and Mechanical Officials), ISTA (International Safe Transit Association), BIFMA (Business and Institutional Furniture Manufacturers Association), CAMA (Concrete Anchor Manufacturing Association) and many more.

In addition, ARL is accredited as a NRTL "Nationally Recognized Testing Laboratory".

Enclosed is a copy of our "Introduction to ARL" packet. If I can be of any further assistance, please do not hesitate to contact me.

Very truly yours,



Alan B. Sukert,
Director of Engineering

ABS/cg
Enclosures