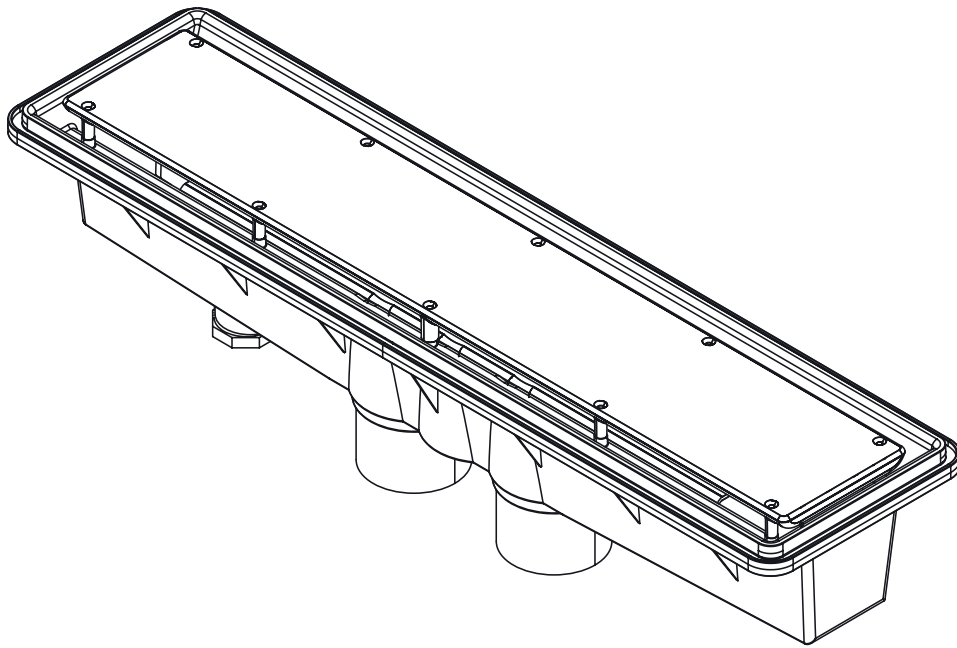




**AVSC<sup>®</sup>**

HEAVY DEBRIS REMOVAL DRAIN



## INSTALLATION AND USER'S GUIDE

**IMPORTANT SAFETY INSTRUCTIONS  
READ, UNDERSTAND AND FOLLOW ALL WARNINGS AND  
INSTRUCTIONS  
SAVE THESE INSTRUCTIONS**

# IMPORTANT SAFETY INSTRUCTIONS

## READ, UNDERSTAND AND FOLLOW ALL WARNINGS AND INSTRUCTIONS

### SAVE THESE INSTRUCTIONS



This guide provides important installation, operation and maintenance instructions related to this equipment. Consult Pentair or a qualified pool professional with any questions.

**Attention Installer:** This guide contains important information that helps ensure proper and safe installation, operation and maintenance of this equipment. Ensure this guide is given to the pool owner and/or operator of this equipment after installation.

**Attention User:** This guide contains important information that helps ensure proper and safe operation and maintenance of this equipment. Retain this guide for future reference.

Call (800) 831-7133 for additional free copies of these instructions or product labels. Refer to [www.pentair.com](http://www.pentair.com) for more information.

#### READ AND FOLLOW ALL INSTRUCTIONS SAVE THESE INSTRUCTIONS



This is the safety alert symbol. When you see this symbol in this guide or on the product itself, look for one of the following signal words and be aware of the potential for personal injury.

**⚠ DANGER** Warns of hazards that may cause death, serious personal injury, or major property damage if ignored.

**⚠ WARNING** Warns of hazards that may cause serious personal injury or major property damage if ignored.

**⚠ CAUTION** Warns of hazards that may or can cause minor personal injury or property damage if ignored.

Carefully read and follow all instructions in this guide or displayed on the equipment. Ensure all product labels are kept in good condition and replace missing or damaged labels immediately.

WHEN INSTALLING AND USING THIS EQUIPMENT, BASIC SAFETY PRECAUTIONS SHALL ALWAYS BE FOLLOWED, INCLUDING THE FOLLOWING IMPORTANT SAFETY INSTRUCTIONS.

ANY MODIFICATION THAT INCREASES THE FLOW RATE OF THE CIRCULATION SYSTEM SHALL REQUIRE RE-EVALUATION OF THE COVER/GRATE AND SUMP TO ENSURE THAT THE FLOW RATING OF THE SUCTION OUTLET FITTING ASSEMBLY (SOFA) IS NOT EXCEEDED.

MISSING, BROKEN, OR CRACKED COVER/GRATES, SUMPS, MUD-FRAMES, OR ANY OTHER SOFA COMPONENT SHALL BE REPLACED BEFORE BATHERS ARE ALLOWED TO USE THE POOL.

LOOSE COVER/GRATES SHALL BE REATTACHED BEFORE BATHERS ARE ALLOWED TO USE THE POOL.

THIS IS AN UNBLOCKABLE VGBA SUCTION OUTLET THAT MAY BE INSTALLED AS THE SOLE SOURCE OF WATER FOR A SINGLE SUCTION OUTLET.

**⚠ DANGER** INSTALLERS, POOL OPERATORS AND OWNERS MUST READ AND UNDERSTAND ALL INSTRUCTIONS AND WARNINGS BEFORE INSTALLING THIS EQUIPMENT. FAILURE TO FOLLOW ALL INSTRUCTIONS AND WARNINGS CAN RESULT IN SERIOUS BODILY INJURY OR DEATH.

**⚠ DANGER** THIS EQUIPMENT SHOULD BE INSTALLED AND SERVICED ONLY BY A QUALIFIED POOL SERVICE PROFESSIONAL. SERIOUS BODILY INJURY OR DEATH CAN RESULT IF THIS PRODUCT IS NOT INSTALLED AND USED CORRECTLY.

**⚠ DANGER** INSTALL THIS EQUIPMENT IN ACCORDANCE WITH THE PROVIDED INSTRUCTIONS. USE ONLY THE PROVIDED COMPONENTS AND MOUNTING HARDWARE. FAILURE TO USE COMPONENTS PROVIDED BY PENTAIR AND INTENDED TO BE USED WITH THIS PRODUCT MAY RESULT IN IMPROPER POSITIONING OR FUNCTIONING OF DRAIN COVER AND MAY CAUSE SEVERE PERSONAL INJURY OR DEATH.

**⚠ WARNING** Only use components and mounting hardware provided with the equipment or genuine Pentair replacement parts. Using components other than these, may result in severe personal injury or death.

**⚠ CAUTION** This equipment is for use with permanent swimming pools. Do not use with storable pools.

A permanently-installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage. A storable pool is constructed so that it is capable of being readily disassembled for storage and reassembled to its original integrity.

**⚠ CAUTION** No modifications, adaptations or alterations shall be made to the structure or flow path of this drain. Any changes are strictly prohibited and will void certification and product warranty.

**⚠ WARNING** Regularly inspect all drain covers for cracks, damage and advanced weathering. If a drain cover becomes loose, cracked, damaged, broken or is missing, close the pool or spa immediately, post a notice and keep the pool or spa closed until an appropriate ANSI/APSP/ICC-16 certified drain cover is properly installed.

**⚠ WARNING** Drain covers deteriorate over time due to exposure to sunlight and pool chemicals. This drain cover must be replaced within 7 years, and the sumps 30 years, from installation (or earlier if the suction outlet fitting assembly becomes damaged in any way). The designated service life begins the month and year in which a suction outlet fitting assembly component is installed, with or without water.

**⚠ WARNING** Drain covers and all other components, including fasteners, should be inspected for damage, tampering and improper installation each operational day. The pool MUST be shut down immediately until the damaged or missing components can be replaced.

**⚠ WARNING** A clearly labeled emergency shut-off switch for the pump must be in an easily accessible, obvious place. Make sure users know where it is and how to use it in case of emergency.

**⚠ WARNING** The design flow rate of the pool should be less than or equal to the maximum flow rate indicated on the drain cover by the manufacturer. Any modification that increases the flow rate of the circulation system shall require reevaluation of the cover/grate and sump to ensure that the flow rating of the drain is not exceeded.

**⚠ WARNING** DO NOT OVER-TIGHTEN FASTENERS. Fasteners should never exceed a maximum torque of 15 in-lbs (17 kg/cm). Over-tightening fasteners could cause the cover or sump to crack or break, which may result in severe personal injury or death.

**⚠ WARNING** DO NOT USE POWER TOOLS TO INSTALL FASTENERS. Always install cover screws by hand to ensure proper thread engagement and to prevent cross threading. ALWAYS hand-check the cover to ensure it is properly secured to the sump.

**⚠ WARNING** Do not permit children to use this product.

**⚠ WARNING** The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia in hot tubs, spas and pools.

# IMPORTANT SAFETY INSTRUCTIONS

## READ, UNDERSTAND AND FOLLOW ALL WARNINGS AND INSTRUCTIONS

### SAVE THESE INSTRUCTIONS

#### ENTRAPMENT AVOIDANCE NOTICE:

Covers used on suction outlets should be approved and listed as conforming to the currently published edition of ANSI/APSP/ICC-16 Standard. These covers should be inspected regularly and replaced if cracked, broken or older than the design lifetime indicated on them by the manufacturer. The maximum possible flow rate of the pump should be less than or equal to the maximum approved flow rate indicated on the suction outlet cover by the manufacturer. THE USE OF UNAPPROVED COVERS OR ALLOWING USE OF THE POOL OR SPA WHEN COVERS ARE MISSING, CRACKED OR BROKEN CAN RESULT IN BODY OR LIMB ENTRAPMENT, HAIR ENTANGLEMENT, EVISCERATION AND DEATH.

**⚠ DANGER SUCTION ENTRAPMENT HAZARD!** FILTRATION PUMPS PRODUCE HIGH LEVELS OF SUCTION AND CREATE A STRONG VACUUM, WHICH CAN POSE EXTREME DANGER IF A PERSON COMES IN CLOSE PROXIMITY TO AN OPEN POOL OR SPA DRAIN OR IF A DRAIN COVER IS LOOSE, CRACKED, BROKEN OR MISSING. THE USE OF UNAPPROVED COVERS OR ALLOWING USE OF THE POOL WHEN COVERS ARE MISSING, CRACKED OR BROKEN CAN RESULT IN BODY OR LIMB ENTRAPMENT, HAIR ENTANGLEMENT, BODY ENTRAPMENT, EVISCERATION AND/OR DEATH.



#### SUCTION ENTRAPMENT DANGERS INCLUDE:

**Limb Entrapment:** When a limb is sucked or inserted into an opening resulting in a mechanical bind or swelling. This hazard is present when a drain cover is missing, broken, loose, cracked or not properly secured.

**Hair Entanglement:** When the hair tangles or knots in the drain cover, trapping the swimmer underwater. This hazard is present when the flow rating of the cover is too small for the pump or pumps.

**Body Entrapment:** When a portion of the body is held against the drain cover trapping the swimmer underwater. This hazard is present when the drain cover is missing, broken or the cover flow rating is not high enough for the pump or pumps.

**Evisceration/Disembowelment:** When a person sits on an open pool (particularly a child wading pool) outlet and suction is applied directly to the intestines, causing severe intestinal damage. This hazard is present when the drain cover is missing, loose, cracked, or not properly secured.

**Mechanical Entrapment:** When jewelry, swimsuit, hair decorations, finger, toe or knuckle is caught in an opening of an outlet or drain cover. This hazard is present when the drain cover is missing, broken, loose, cracked, or not properly secured.

**NOTE: ALL SUCTION PLUMBING MUST BE INSTALLED IN ACCORDANCE WITH THE LATEST NATIONAL AND LOCAL CODES, STANDARDS AND GUIDELINES.**

**⚠ WARNING** If the sump, screws or screw holes are damaged in any way that prevents complete insertion of the specified screw, the sump or damaged screw must be replaced. Do not attempt to modify or alter any components in any way. DO NOT attempt to repair stripped, loose or damaged screws or screw bosses. The pool MUST be shut down immediately until these components are replaced.

**⚠ WARNING** Always ensure SUCTION OUTLET FITTING ASSEMBLY components and fastener receptacles are clean and free of debris or obstructions during installation of cover and fasteners.

#### ⚠ WARNING TO MINIMIZE THE RISK OF INJURY DUE TO SUCTION ENTRAPMENT HAZARD:

- A properly installed and secured ANSI/ASME A112.19.8 approved anti-entrapment suction cover must be used for each drain.
- Each suction cover must be installed at least 3 feet (0.9 m) apart, as measured from the nearest point to nearest point.
- Regularly inspect all covers for cracks, damage and advanced weathering.
- If a cover becomes loose, cracked, damaged, broken or is missing, replace with an appropriate certified cover.
- Replace drain covers as necessary. Drain covers deteriorate over time due to exposure to sunlight and weather.
- Avoid getting hair, limbs or body in close proximity to any suction cover, pool drain or outlet.
- Disable suction outlets or reconfigure into return inlets.
- Pump and suction outlet covers must be installed according to PHTA/ICC/ANSI 7 Entrapment Standards.

**⚠ WARNING** Only use fittings with a filtration system rated for the corresponding flow. FAILURE TO DO SO CAN RESULT IN HAIR OR BODY ENTRAPMENT WHICH CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. If in doubt about the rating of your system, consult a qualified pool or spa professional.

**⚠ WARNING** An ANSI/APSP/ICC-16 approved anti-entrapment drain cover must be used for each drain. Pools and spas should utilize two drains per pump. If a drain cover becomes loose, broken or is missing, close the pool or spa immediately and shut off the pump until an approved anti-entrapment drain cover is properly installed with the supplied stainless steel screws.

**⚠ WARNING** Only the supplied 316 stainless-steel screws should be used with the drain cover. Substitute screws such as masonry screws, sheet rock screws or other types of screws should never be used. Screws put into the frame anywhere except in the original screw holes will not hold and will allow the drain cover to come off the main drain, causing an entrapment hazard, including possible limb and body entrapment or evisceration/disembowelment. If the screw holes of the frame are stripped or the brass inserts are missing, loose, or damaged, replace the frame. DO NOT DRILL NEW SCREW HOLES IN THE FRAME AS THIS WILL DAMAGE AND WEAKEN THE FRAME.

**⚠ WARNING** Pumps improperly sized, installed or used in applications other than those which the pump was intended can result in severe personal injury or death. These risks may include but not be limited to electric shock, fire, flooding, suction entrapment or severe injury or property damage caused by a structural failure of the pump or other system component.

**⚠ WARNING** DO NOT increase pump size; this will increase the flow rate through the system and exceed the maximum flow rate stated on the drain cover.

**⚠ WARNING** When setting up pool water turnovers or flow rates the operator must consider local codes governing turnover as well as disinfectant feed ratios.

**⚠ WARNING** The use of adhesives or other attachment methods that prevent access to suction piping or suction outlet fitting assembly components requiring periodic servicing is prohibited.

# IMPORTANT SAFETY INSTRUCTIONS

## READ, UNDERSTAND AND FOLLOW ALL WARNINGS AND INSTRUCTIONS

### SAVE THESE INSTRUCTIONS

**⚠ WARNING** Most states and local codes regulate the construction, installation, and operation of public pools and spas, and the construction of residential pools and spas. It is important to comply with these codes, many of which directly regulate the installation and use of this product. Consult the local building and health codes for more information.

- Dual suction fittings shall not be located on seating areas or on the back rests for such seating areas.
- If the pool or spa has only a single suction outlet or main drain, a Safety Vacuum Release System (SVRS) such as the IntelliFlo® VS+SVRS pump, a gravity drainage system, an automatic shut-off system or a suction-limiting vent system **MUST** be used.
- In the event one suction outlet is completely blocked, the remaining suction outlets serving the system shall have a flow rating capable of the full flow of the pump(s) for the specific system.
- An approved anti-entrapment suction outlet cover must be used for each drain.
- Never exceed the maximum flow rate stated on the drain cover.
- Before each use of the facility, the suction fitting, including fasteners, should be inspected for damage or tampering.
- Close the pool or spa if any suction outlet component is loose, cracked, broken, missing or not securely attached. Replace loose, cracked, damaged, broken or missing drain covers.
- In addition to two or more suction outlets per pump installed in accordance with the latest APSP standards and CPSC guidelines, follow all applicable national, state and local codes.
- The suction outlet to a swimming pool pump pulls a high vacuum. If pump is used with only one suction pipe, anyone blocking pump suction with hair or body will be trapped and held against the suction fitting. Disembowelment or drowning can result.
- Remove the pressure test plugs and/or plugs used in winterization of the pool/spa from the suction outlets.

#### **THE VIRGINIA GRAEME BAKER POOL AND SPA SAFETY ACT**

The Virginia Graeme Baker Pool and Spa Safety Act dictates certain requirements on owners and operators of swimming pools and spas.

#### **Pools or spas constructed on or after December 19, 2008, shall utilize:**

1. A multiple main drain system without isolation capability with suction outlet covers that meet ASME/ANSI A112.19.8a Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs, and either:
  - A safety vacuum release system (SVRS) meeting ASME/ANSI A112.19.17 Manufactured Safety Vacuum Release Systems (SVRS) for Residential and Commercial Swimming Pool, Spa, Hot Tub, and Wading Pool Suction Systems and/or ASTM F2387 Standard Specification for Manufactured Safety Vacuum Release Systems (SVRS) for Swimming Pools, Spas and Hot Tubs.
  - A properly designed and tested suction-limiting vent system.
  - An automatic pump shut-off system.

#### **Pools and spas constructed prior to December 19, 2008, with a single submerged suction outlet shall use a suction outlet cover that meets ASME/ANSI A112.19.8a and either:**

1. A safety vacuum release system (SVRS) meeting ASME/ANSI A112.19.17 and/or ASTM F2387.
2. A properly designed and tested suction-limiting vent system.
3. An automatic pump shut-off system.
4. Disabled submerged outlets.
5. Suction outlets shall be reconfigured into return inlets.

**For more information about the Virginia Graeme Baker Pool and Spa Safety Act, contact the Consumer Product Safety Commission at (301) 504-7908 or visit [www.cpsc.gov](http://www.cpsc.gov).**

**NOTE: Always turn off all power to the pool pump before installing the cover or working on any suction outlet.**

# CUSTOMER SERVICE / TECHNICAL SUPPORT

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**Hours:** 8:00AM to 7:30PM EST (5:00AM - 4:30PM PST)

**Call:** (800) 831-7133

**Visit:** [www.pentair.com](http://www.pentair.com)

**Fax:** (800) 284-4151

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A copy of the **General Certification of Conformity for the AVSC Channel Drain** is available on the Pentair website at [www.pentair.com](http://www.pentair.com) and from Shelia Dorsett at 1620 Hawkins Ave. Sanford, NC 27330, [Shelia.Dorsett@Pentair.com](mailto:Shelia.Dorsett@Pentair.com), Tel: +1 (919) 566-8372

# INSTALLATION

## WATER VELOCITY AND FLOW RATES

The maximum water velocity through drain covers is limited by some local regulations. For example, some state health departments limit the velocity through public pool drain covers to 1.5 ft [0.46 m] per second.

This velocity limit is lower than the flow rating provided by the ANSI/APSP/ICC-16 certification, therefore the local limit applies and must be followed.

Never exceed the flow rating listed on the cover even if local code does not provide a velocity limit.

**TABLE 1:** Actual flow rates for 2.5" and 3" suction lines.

| Part No.     | Sump Type   | 2-1/2" Pipe<br>GPM [LPM] |                      | 3" Pipe<br>GPM [LPM]           |
|--------------|-------------|--------------------------|----------------------|--------------------------------|
|              |             | Floor<br>Installation    | Wall<br>Installation | Floor and Wall<br>Installation |
| AAM-AVSC-Sxx | Single Port | 237 [897]                | 167 [632]            | 302 [1143]                     |
|              | Double Port | 237 [897]                | 184 [697]            | 302 [1143]                     |
| AAM-AVSC-Fxx | Single Port | 237 [897]                | 184 [697]            | 302 [1143]                     |
|              | Double Port | 237 [897]                | 184 [697]            | 302 [1143]                     |

**TABLE 2:** Acceptable pipe size to ensure the maximum recommended system flow rate specified in the latest APSP-7 standard. These numbers are based on 6 ft/s [1.8 m/s] through the branch line.

| Pipe Size<br>Inches [mm] | Flow Rate<br>GPM [LPM] |
|--------------------------|------------------------|
| 1-1/2 [50]               | 37 [140]               |
| 2 [63]                   | 62 [233]               |
| 2-1/2 [75]               | 88 [332]               |
| 3 [90]                   | 136 [514]              |

**TABLE 3:** Flow rates based on open area and velocity ( $Q = AV$ ).

| (A) Open Area<br>in <sup>2</sup> [cm <sup>2</sup> ] | (V) Velocity<br>ft/sec [m/sec] | (Q) Flow Rate<br>GPM [LPM] |
|---|--------------------------------|----------------------------|
| 77.59<br>[501.58]                                   | 1.5 [0.46]                     | 362.8 [1373.3]             |
|   | 2 [0.61]                       | 483.7 [1831]               |
|   | 2.5 [0.76]                     | 604.6 [2288.7]             |
|   | 3 [0.91]                       | 725.5 [2746.3]             |
|   | 3.5 [1.07]                     | 846.5 [3204.4]             |
|   | 4 [1.22]                       | 967.4 [3662]               |
|   | 4.5 [1.37]                     | 1088.3 [4119.7]            |
|   | 5 [1.52]                       | 1209.2 [4577.3]            |
|   | 5.5 [1.68]                     | 1330.2 [5035.4]            |
|   | 6 [1.83]                       | 1451.1 [5493]              |

## CERTIFIED MODELS

| CERTIFIED PART NUMBERS |                        |
|------------------------|------------------------|
| Standard Cover         | AAM-AVSC- <b>SXX</b> * |
| Pebble Top Cover       | AAM-AVSC- <b>FXX</b> * |
| Sump                   | AAM-AVSC- <b>RXX</b> * |

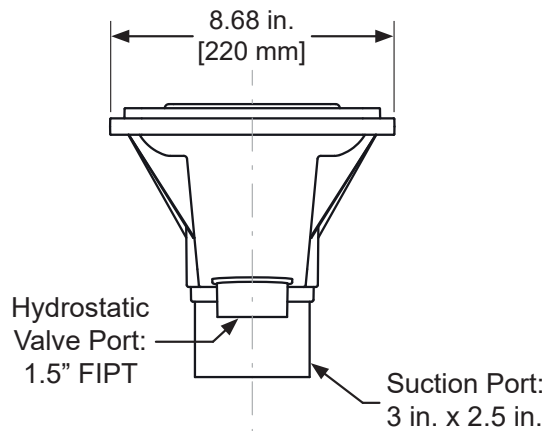
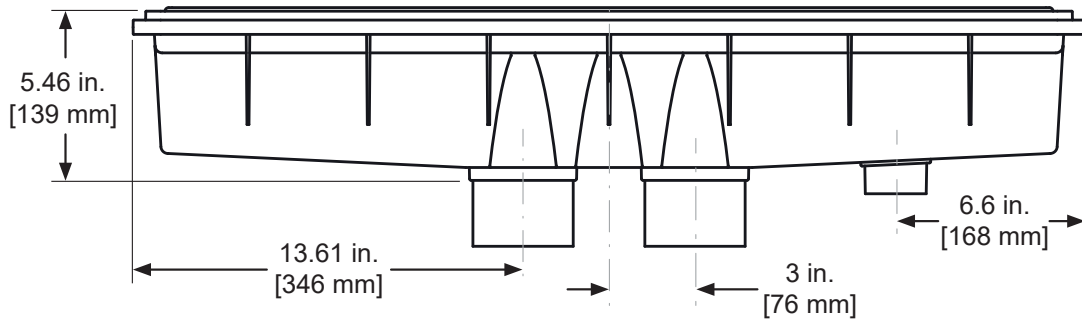
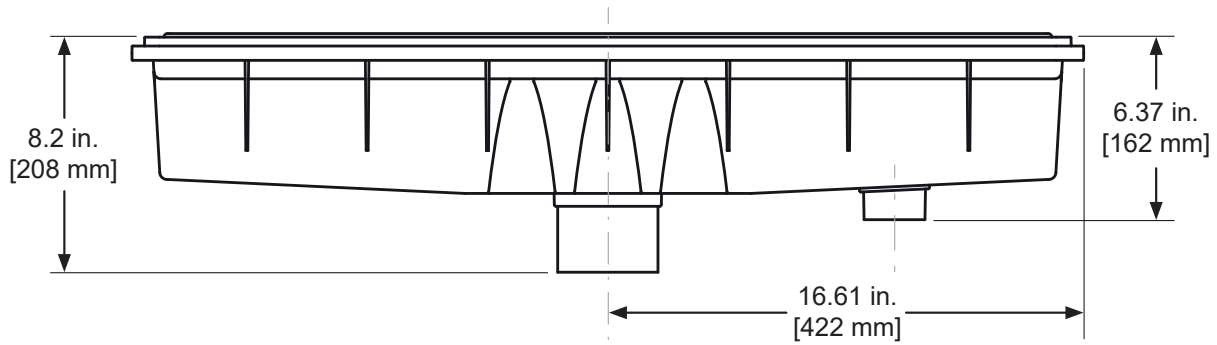
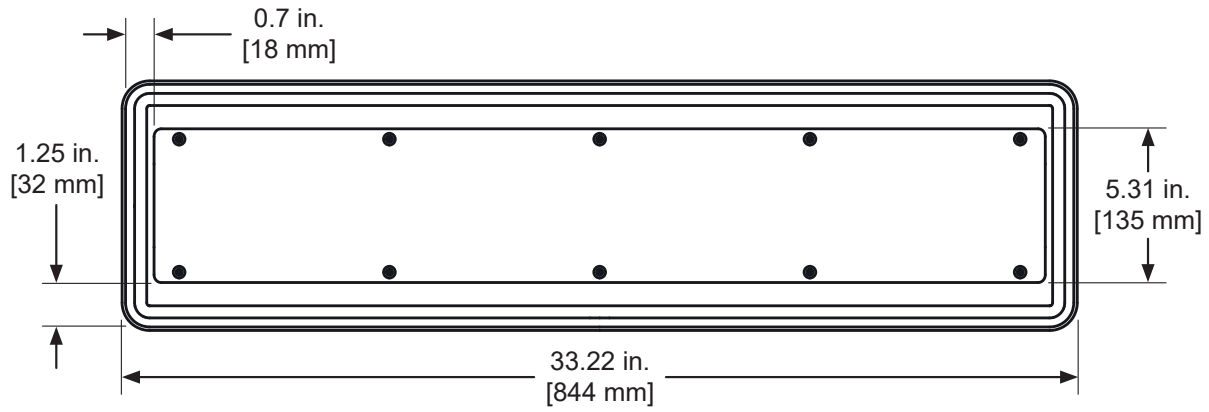
**Note (\*)**: "**XX**" represents the color number code.  
Refer to the COLOR NUMBER CODES table.

| COLOR NUMBER CODES |    |           |    |
|--------------------|----|-----------|----|
| White              | 01 | Euro Blue | 05 |
| Light Gray         | 02 | Dark Blue | 06 |
| Gray               | 03 | Gold      | 08 |
| Black              | 04 |           |    |

The P/Ns listed below are for ordering purposes only.

| COLOR      | STANDARD COVER |        | PEBBLE TOP COVER |        | STANDARD COVER W/ COUPLINGS |        | PEBBLE TOP COVER W/ COUPLINGS |        |
|------------|----------------|--------|------------------|--------|-----------------------------|--------|-------------------------------|--------|
|            | Single         | Dual   | Single           | Dual   | Single                      | Dual   | Single                        | Dual   |
| Black      | 285004         | 286114 | 288104           | 289104 | 280057                      | 280064 | 280071                        | 280078 |
| Gray       | 285003         | 286123 | 288103           | 289103 | 280058                      | 280065 | 280072                        | 280079 |
| White      | 285001         | 286101 | 288101           | 289101 | 280059                      | 280066 | 280073                        | 280080 |
| Gold       | 285008         | 290208 | 288108           | 289108 | 280060                      | 280067 | 280074                        | 280081 |
| Dark Blue  | 285006         | 286136 | 288106           | 289106 | 280061                      | 280068 | 280075                        | 280082 |
| Light Gray | 285002         | 286102 | 288102           | 289102 | 280062                      | 280069 | 280076                        | 280083 |
| Euro Blue  | 285005         | 286125 | 298235           | 296205 | 280063                      | 280070 | 280077                        | 280084 |

# DRAIN DIMENSIONS





## INSTALLING THE DRAIN

**⚠ WARNING** BEFORE INSTALLING THE DRAIN, INSTALLERS, POOL OPERATORS AND POOL OWNERS MUST READ AND UNDERSTAND ALL WARNINGS AND SAFETY PRECAUTIONS GIVEN IN THIS MANUAL.

**⚠ WARNING** ONLY USE THE 316 STAINLESS STEEL COVER SCREWS PROVIDED WITH THE DRAIN. SUBSTITUTE SCREWS SUCH AS MASONRY SCREWS, SHEET ROCK SCREWS OR OTHER TYPES OF SCREWS SHOULD NEVER BE USED. WILL CAUSE THE COVER TO COME LOOSE AND COULD RESULT IN SEVERE INJURY OR DEATH.

**⚠ WARNING** If any component of the drain is damaged in any way, the component must be replaced immediately. DO NOT attempt to modify or alter any components. DO NOT attempt to repair stripped, loose or damaged screws or screw bosses. The pool MUST be shut down immediately until these components are replaced.

- Using the suction-line pipe size, route the main suction line to where the drain will be installed.
 

**Note:** Pentair recommends using the same pipe size all the way to the pump. However, if the suction line is reduced during plumbing installation, at least 40 in. [1016 mm] of plumbing is required between the top of the drain and pipe reduction. Refer to **FIGURE 1**.

- If desired, a hydrostatic valve assembly may be purchased separately and installed.
 

**If NOT installing a hydrostatic valve,** install the provided Valve Plug (A) into the open valve port. Refer to **FIGURE 2**.

- Install the drain in the middle of the deepest point of the pool and ensure it is both level and at the proper height.

**⚠ CAUTION** Use only PVC to ABS Primer/Cement when making plumbing connections to the drain/sump. Use of other solvents or glues may lead to failure of plumbing connections and result in property damage and/or personal injury.

- If an optional Gunitite Cover (P/N 295300) is used, remove the gunitite cover from the Sump (B) before applying the finished surface.
 

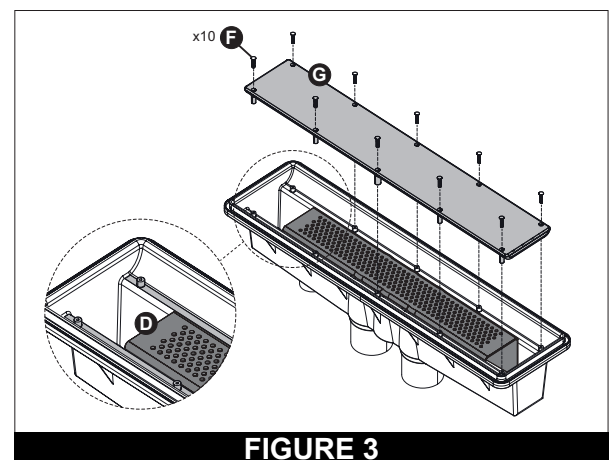
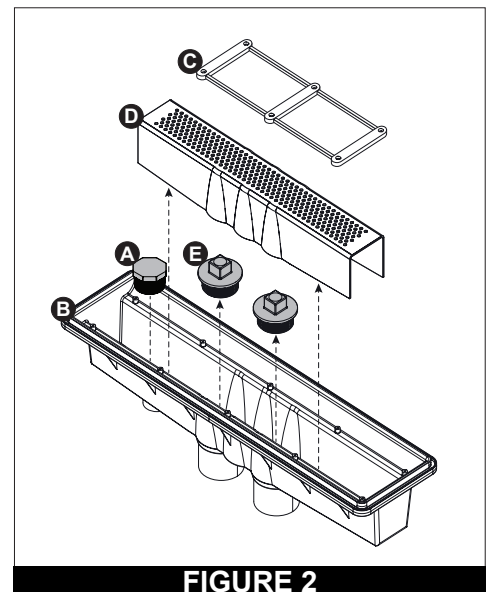
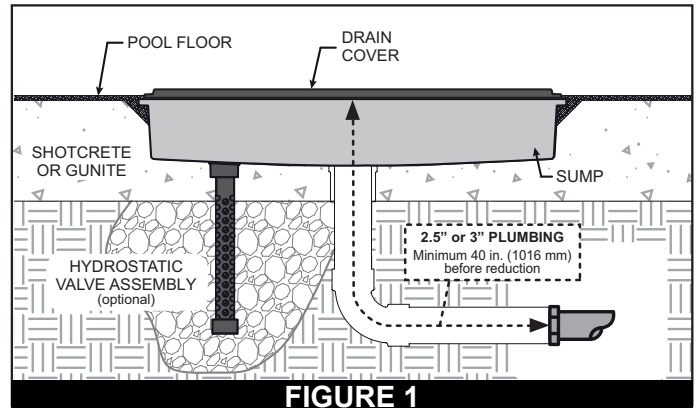
**Note:** The drain cover should protrude no more than 2 in. (51 mm) above the finished surface of the pool.
- After the finished surface has set, remove and discard the plate taped to the Sump (B).
- Remove the Support Bar (C) and Baffle (D) from the Sump (B). Discard the Support Bar (C). Refer to **FIGURE 2**.
- After pressurization is complete, remove the Pressure Plugs (E) in the bottom of the Sump (B) using the Test Plug Removal Tool - P/N 285000. Refer to **FIGURE 2**.
- Glue the Baffle (D) into the Sump (B) using the provided PVC cement.
 

**Note:** Ensure the three rounded guides in the middle of baffle and sump align.

**Note:** The top of the Baffle (D) must be flush with the inner edge of the sump as shown in **FIGURE 3**.
- Using all ten provided 316 Stainless Steel T20 Drain Cover Screws (F), secure the Drain Cover (G) to the Sump (B). Refer to **FIGURE 3**.

**⚠ WARNING** DO NOT OVER-TIGHTEN FASTENERS. Fasteners should never exceed a maximum torque of 15 in-lbs (17 kg/cm). Over-tightening can cause the cover or sump to crack or break, which may result in severe personal injury or death.

**⚠ WARNING** DO NOT USE POWER TOOLS TO INSTALL FASTENERS. Always install cover screws by hand to ensure proper thread engagement and to prevent cross threading. ALWAYS hand-check the cover to ensure it is properly secured to the sump.



## SPLIT DRAIN REQUIREMENTS

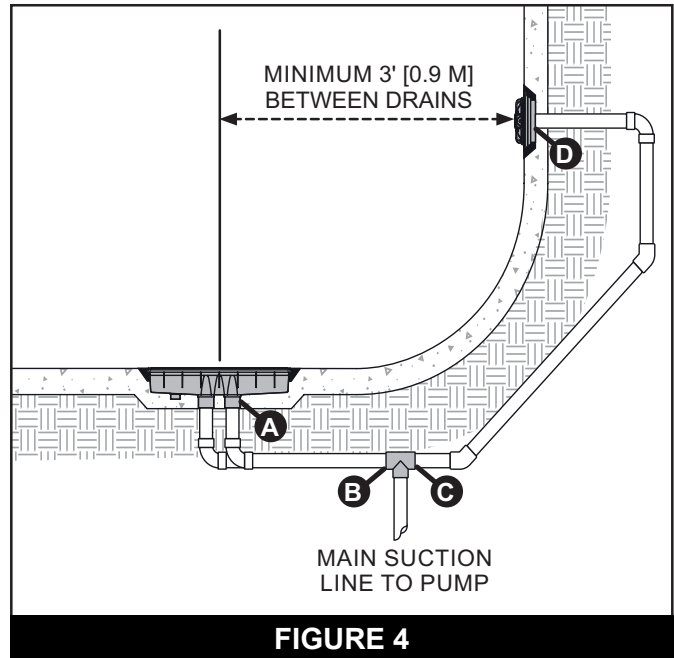
Some local laws may require the installation of a split suction outlet.

In these cases, it is recommended that the additional suction outlet have an equal or greater maximum flow rate than the drain.

The suction outlet having the lowest maximum flow rate will determine the total maximum flow rate of the main suction line.

**Although the AVSC drain has been certified as unblockable, follow the instructions below when split suction is desired or required (see FIGURE 4):**

- When using the same pipe size between sections, the distance between points 'A and B' and 'C to D' must be equal in order to maintain hydraulic balance. Refer to **FIGURE 4**.
- Different pipe sizes may be used as long as hydraulic balance between ports is maintained.



## VALVE PLUMBING

### STANDARD SKIMMERS

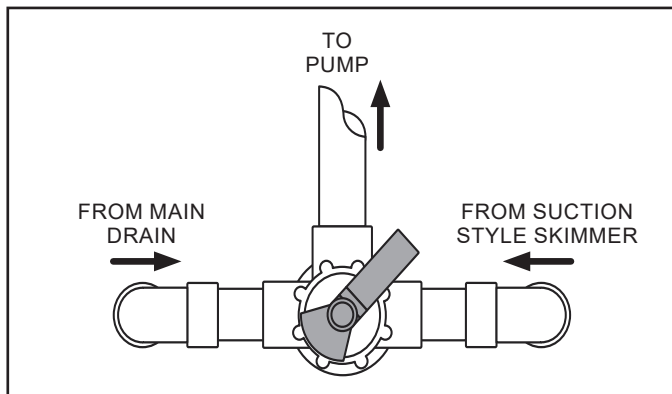
When using a standard skimmer, suction should be diverted so that the suction line from the main-drain is about half way open and the suction line from the skimmer is completely open. Refer to **FIGURE 5: STANDARD SUCTION SKIMMER**.

This allows the skimmer to remove the maximum amount of debris from the water surface, before it sinks to the bottom of the pool.

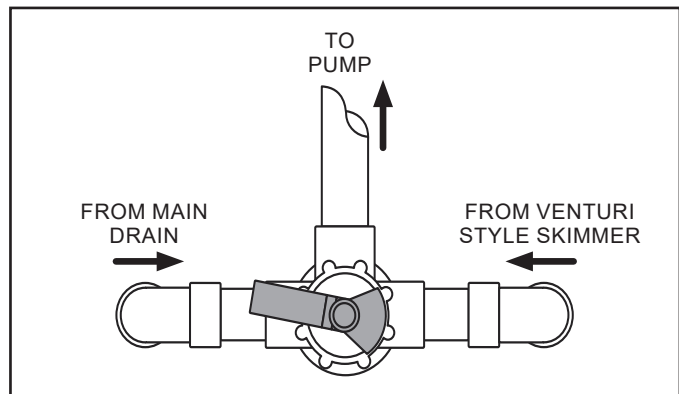
### VENTURI STYLE (QUIKSKIM® / QUIKSKIM ULTRA®) SKIMMERS

When a QuikSkim or QuikSkim-Ultra skimmer is installed in a pool that is set up to use the venturi skimming feature, suction should be diverted so that all water is pulled through the main-drain and none of the suction is pulled from the skimmer. Refer to **FIGURE 6: VENTURI STYLE SKIMMER**.

This allows the main-drain to maximize debris removal from the bottom of the pool, while the venturi skimmer removes debris from the water surface without sacrificing suction.



**FIGURE 5: STANDARD SUCTION SKIMMER**



**FIGURE 6: VENTURI STYLE SKIMMER**

# MAINTENANCE

**⚠ WARNING** Drain covers deteriorate over time due to exposure to sunlight and pool chemicals. This drain cover must be replaced within 7 years, and the sumps 30 years, from installation (or earlier if the suction outlet fitting assembly becomes damaged in any way). The designated service life begins the month and year in which a suction outlet fitting assembly component is installed, with or without water.

**⚠ WARNING** Drain covers and all other components, including fasteners, should be inspected for damage, tampering and improper installation each operational day. The pool MUST be shut down immediately until the damaged or missing components can be replaced.

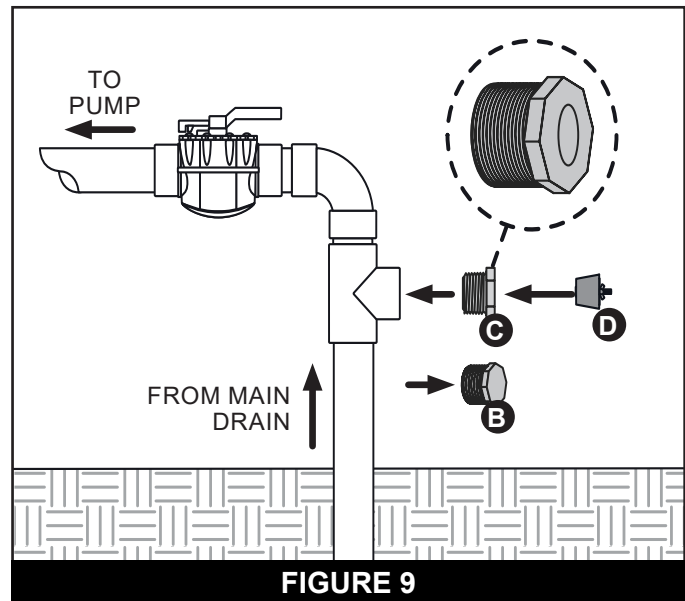
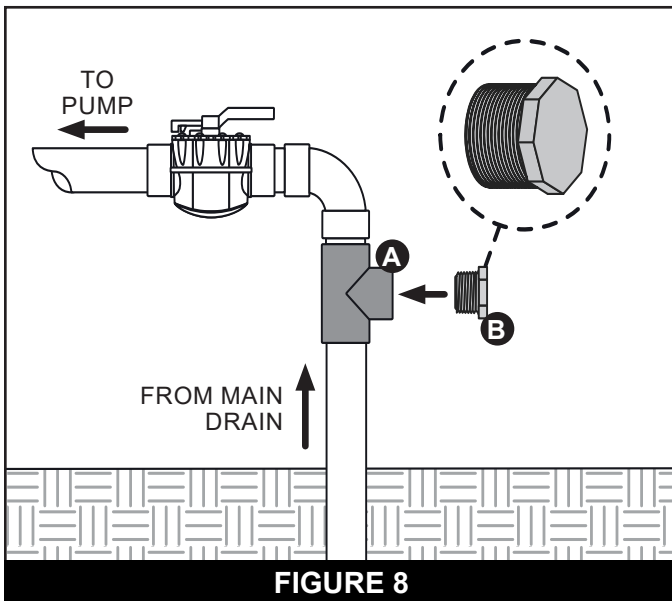
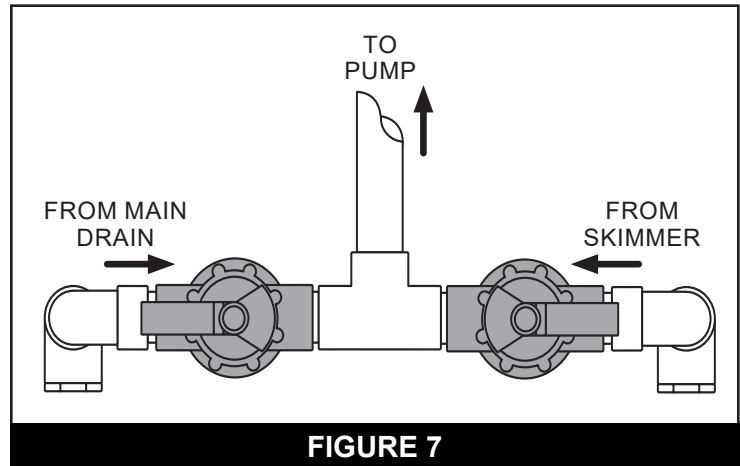
**⚠ WARNING** DO NOT attempt to modify or alter any components in any way. DO NOT attempt to repair stripped, loose or damaged screws or screw bosses. The pool MUST be shut down immediately until these components are replaced.

## GENERAL MAINTENANCE

- Regularly inspect all drain covers for cracks, damage and advanced weathering. If a drain cover becomes loose, cracked, damaged, faded, discolored, broken or is missing, close the pool or spa immediately, post a notice and keep the pool or spa closed until an appropriate ANSI/APSP/ICC-16 2017 certified drain cover is properly installed.
- Drain covers deteriorate over time due to exposure to sunlight and pool chemicals. This drain cover must be replaced within seven years from installation (or earlier if the cover becomes damaged in any way).
  - Note:** The designated service life begins the month and year in which the drain is installed, with or without water.
- Any field modification made to this drain other than what is described in this installation manual is strictly prohibited and will void the product certification and product warranty.
  - Note:** Never modify the structure or flow path of the drain. Any changes are strictly prohibited and will void the product certification and warranty.
- Only use covers designed for this drain.
- Replace or reattach loose, cracked, damaged, broken or missing drain covers or fasteners before bathers are allowed to use the pool.
- Ensure drain components and fastener receptacles are clean and free of debris or obstructions during installation of the cover/grate and fasteners.

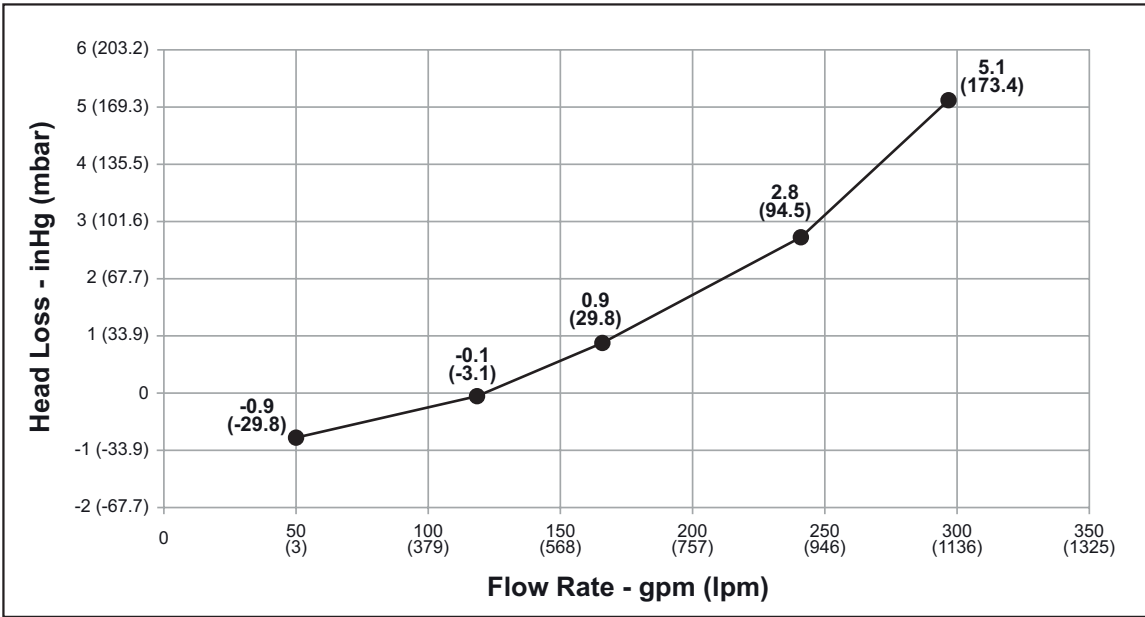
## WINTERIZING

1. To ensure sufficient draining of suction lines during the winterizing process, a 2-Way Shut-off Valve should be installed in each branch of the suction line leading to the filtration pump. Refer to **FIGURE 7**.
2. Between the valves and drain, install a Tee Fitting with a 2-inch Threaded Branch (A). Refer to **FIGURE 8**.  
This will allow a Threaded Plug (B) to be removed later in the setup.
3. Ensure the suction line, coming from the main drain, is closed.
4. Remove the Threaded Plug (B) and install a 1.5-inch Slip Reducer Bushing (C). Refer to **FIGURE 9**.
5. Install a Plug with an Air Valve (D) into the Reducer Bushing (C). Refer to **FIGURE 9**.
6. With the main-drain valve closed, blow out the main-drain line for a minimum of 30 seconds. This provides an airlock in the line and prevents water from freezing in the pipe.

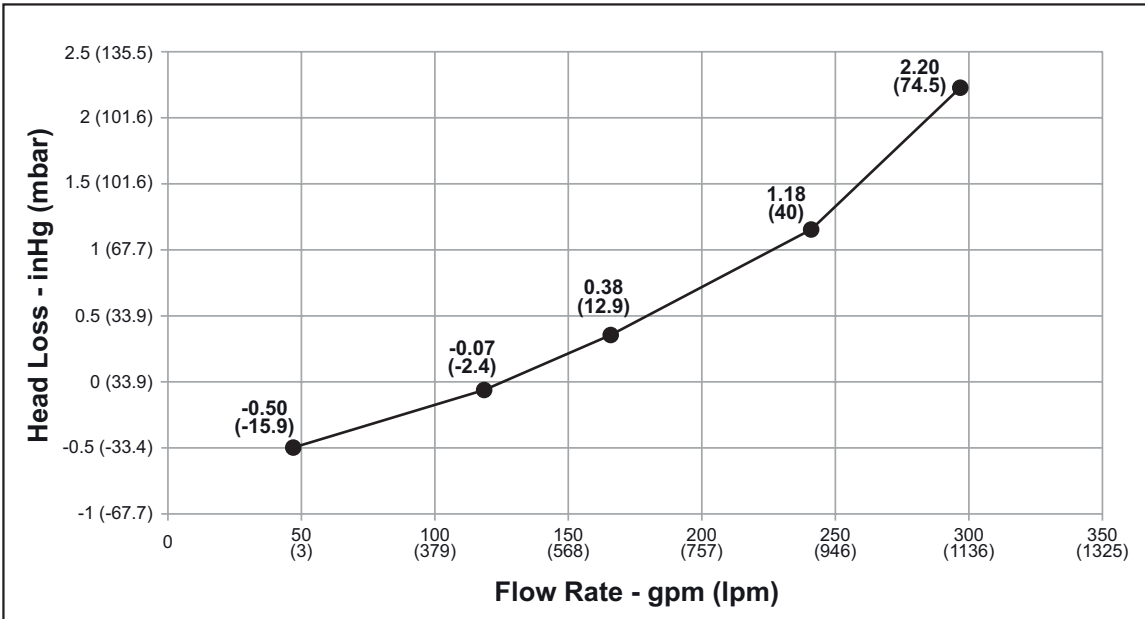


## HEAD LOSS CURVES

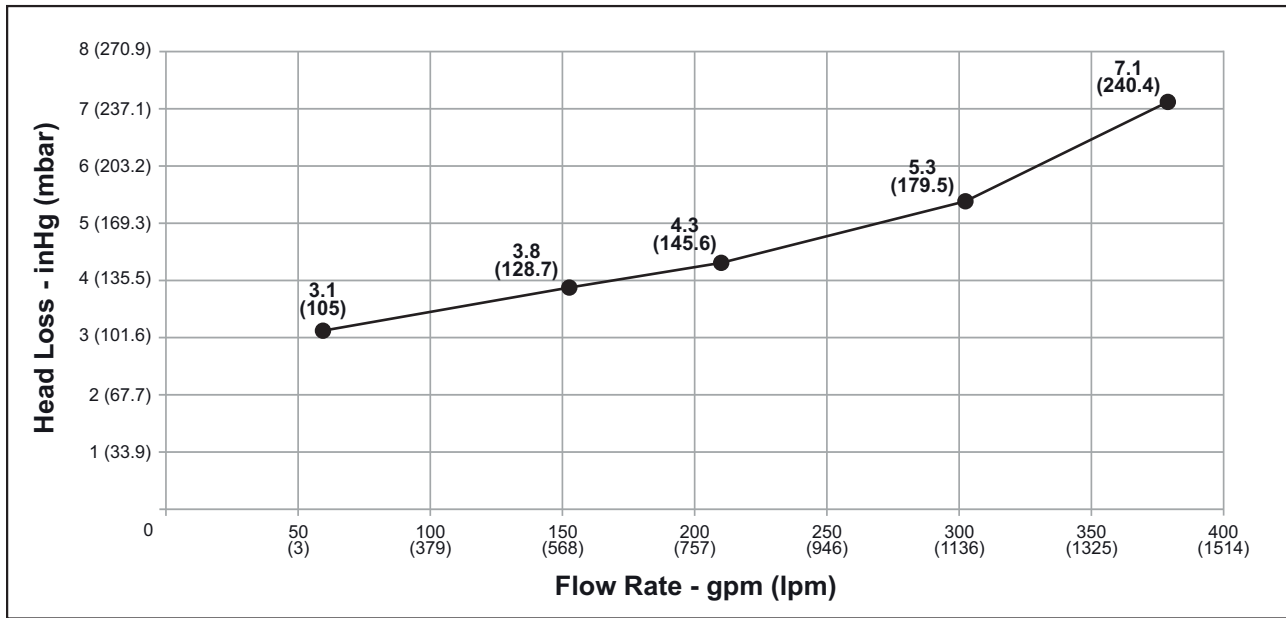
### Single Port Drain (2½ Inch Plumbing)



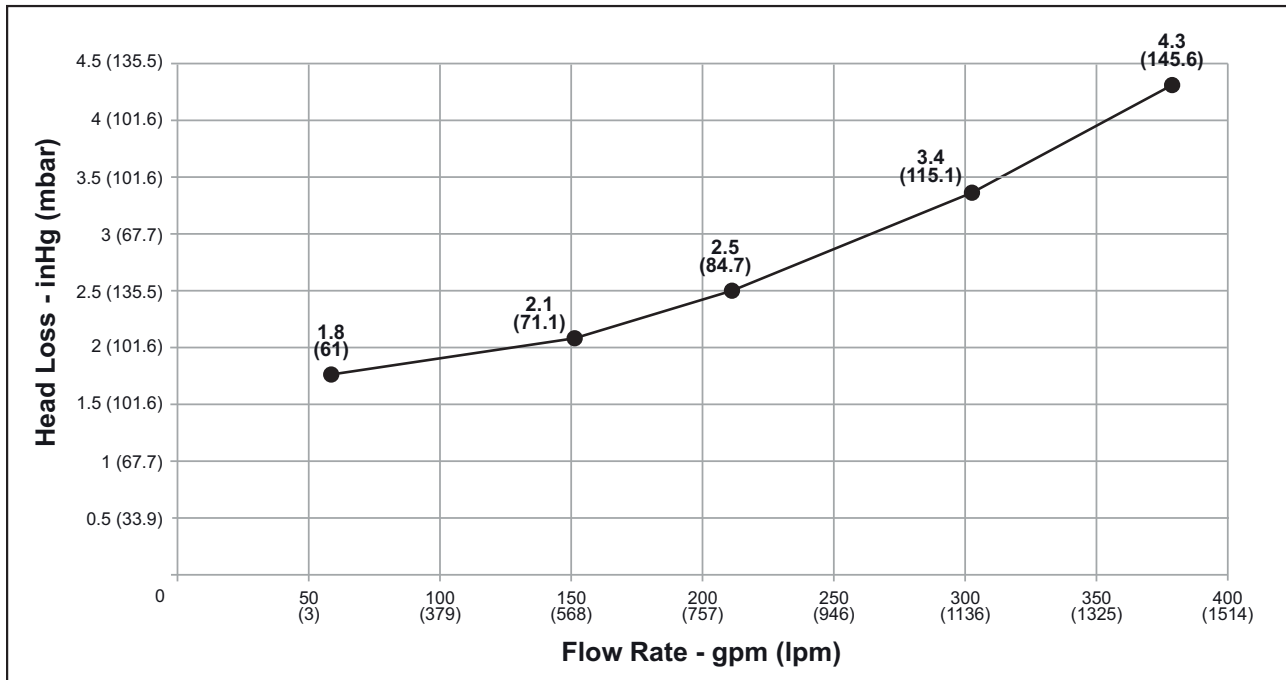
### Dual Port Drain (2½ Inch Plumbing)



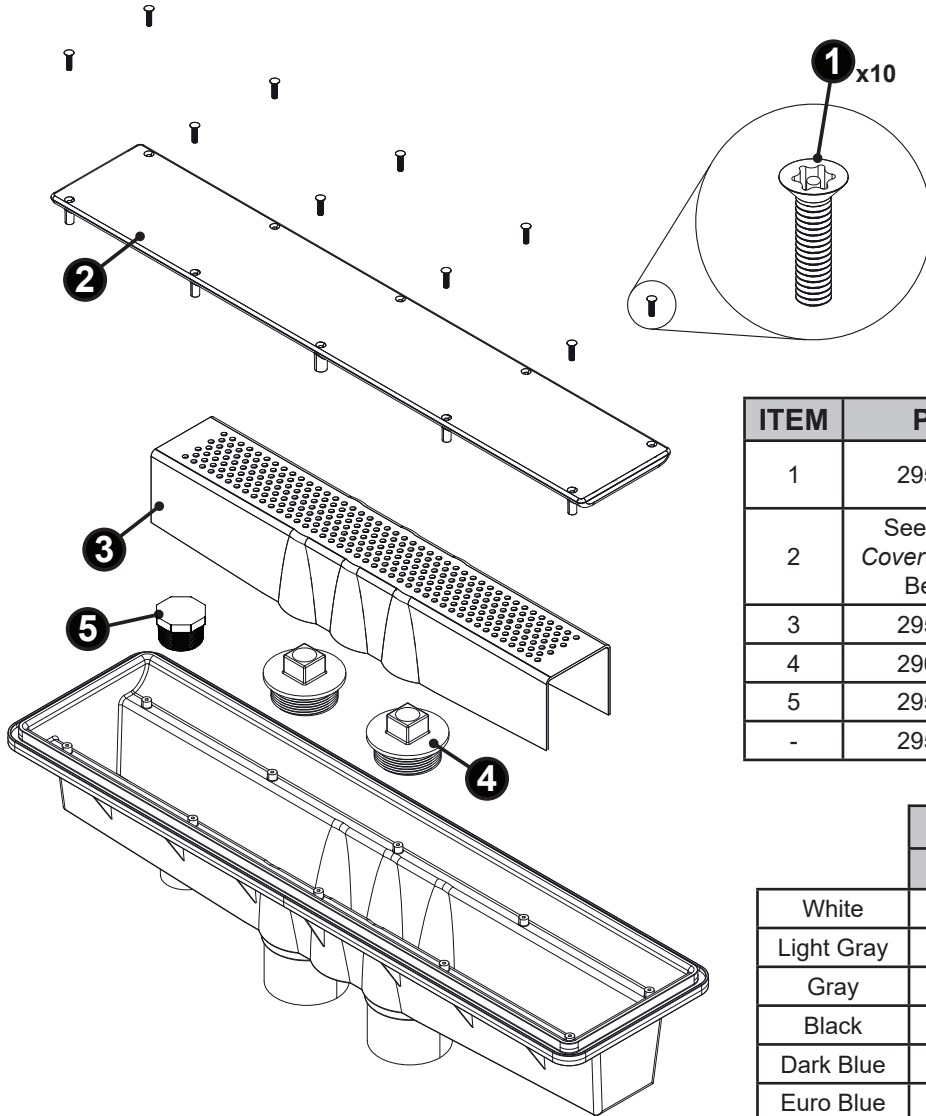
### Single Port Drain (3 Inch Plumbing)



### Dual Port Drain (3 Inch Plumbing)



# REPLACEMENT PARTS



| ITEM | P/N                           | DESCRIPTION  |
|------|-------------------------------|--|
| 1    | 295314                        | Drain Cover Screws, T20, 1-3/8", 316 Stainless Steel (Qty. 10) |
| 2    | See Drain Cover Options Below | Drain Cover  |
| 3    | 295290                        | Baffle (includes PVC cement)                                   |
| 4    | 290060                        | Pressure Plugs and O-rings                                     |
| 5    | 295600                        | Hydrostatic Port Plug  |
| -    | 295300                        | Gunite Cover   |

## DRAIN COVER OPTIONS

|            | Standard | Pebble Top | Insert |
|------------|----------|------------|--------|
| White      | 295301   | 298601     | 295001 |
| Light Gray | 295302   | 298302     | 295202 |
| Gray       | 295003   | 298200     | 295013 |
| Black      | 295304   | 298204     | 295204 |
| Dark Blue  | 295346   | 298206     | 294206 |
| Euro Blue  | 295305   | 298205     | 295205 |
| Gold       | 295308   | 298268     | 295208 |

# GENERAL CERTIFICATION OF CONFORMITY AVSC CHANNEL DRAIN

Pentair Water Pool and Spa, Inc., 1620 Hawkins Ave., Sanford, NC 27330, (800) 831-7133, hereby certifies that the following model numbers meet or exceed the requirements of Section 1404b of the current Virginia Graeme Baker Act Pool & Spa Safety Act and ANSI/APSP/ICC-16 standards and safety regulation 16 CFR 1450 Virginia Graeme Baker Pool & Spa Safety Act Regulations set forth by the Consumer Products Safety Commission:

| "xx" defines the color code. |             |                       | 2.5" Pipe         |                  | 3.0" Pipe                |
|------------------------------|-------------|-----------------------|-------------------|------------------|--------------------------|
| Part No.                     | Sump Type   | Open Area             | Flow Rating Floor | Flow Rating Wall | Flow Rating Floor & Wall |
| AAM-AVSC-Sxx                 | Single Port | 77.59 in <sup>2</sup> | 237 GPM           | 167 GPM          | 302 GPM                  |
|                              | Double Port | 77.59 in <sup>2</sup> | 237 GPM           | 184 GPM          | 302 GPM                  |
| AAM-AVSC-Fxx                 | Single Port | 77.59 in <sup>2</sup> | 237 GPM           | 184 GPM          | 302 GPM                  |
|                              | Double Port | 77.59 in <sup>2</sup> | 237 GPM           | 184 GPM          | 302 GPM                  |

Assembly numbers may vary. See instruction manual for assembly type.

## IAPMO CERTIFIED

These products were tested by IAPMO R&T Lab and certified to the aforementioned safety regulations, by IAPMO Research and Testing, 5001 E. Philadelphia St. Ontario, CA 91761 – USA +1 909.472.4100.

Product certification commenced October 7, 2019 to March 31, 2021, and is re-certified annually through continuous compliance inspections.

Test results can be obtained from: [www.pentair.com](http://www.pentair.com) and/or <http://pld.iapmo.org/>

A copy of this certificate is available on the Pentair website: [www.pentair.com](http://www.pentair.com) and from Shelia Dorsett, 1620 Hawkins Ave. Sanford, NC 27330.

Shelia.Dorsett@Pentair.com Tel: +1 (919) 566 8372

Each product contains a circular date stamp on the top or bottom of the product showing the month and year of manufacture. These products are manufactured at Aquastar Pool Products Inc., Ventura, California in the United States of America.

## Installation Record

Note to installer/owner:

Enter the information below: Please keep this page as a record of the installation date.

Date of Manufacture (time stamp located on the product): \_\_\_\_\_

Description of Drain Location: \_\_\_\_\_

Date Installed: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

(With or without water in pool or spa) (Seven (7) years from installation)

Installed by: \_\_\_\_\_

1620 HAWKINS AVE., SANFORD, NC 27330 • (919) 566-8000  
10951 WEST LOS ANGELES AVE., MOORPARK, CA 93021 • (805) 553-5000

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P/N 230203 REV. A 9/19/23

CUT ALONG LINE