# 10" ULTRA RETRO VINYL SUCTION OUTLET SUMPLESS



NSF

**640-215x V**

# INSTALLATION INSTRUCTIONS

Designed, Engineered & Manufactured in the USA.

waterway™

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# VINYL ULTRA RETRO SUCTION OUTLET OWNER'S MANUAL

**For Model Numbers: 640-215x V**

**VGBA 2017**

## ⚠ WARNING: IMPORTANT SAFETY INSTRUCTIONS. READ, UNDERSTAND, AND FOLLOW ALL WARNINGS AND INSTRUCTIONS. SAVE THESE INSTRUCTIONS.

**Read and follow all instructions in this owner's manual and on the equipment. Failure to follow instructions can cause severe injury and/or death.**

## SOFA INSTRUCTIONS

**When installing and using this equipment, basic safety precautions shall always be followed, including the following: IMPORTANT SAFETY INSTRUCTIONS. READ, FOLLOW, AND UNDERSTAND ALL INSTRUCTIONS AND WARNINGS.**

**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.**
**SAVE THESE INSTRUCTIONS.**

## IMPORTANT SAFETY INSTRUCTIONS



**WARNING - SUCTION ENTRAPMENT HAZARD**
Suction in suction outlets and/or suction outlet covers which are damaged, broken, cracked, missing, or unsecured can cause severe injury and/or death due to the following entrapment hazards:

**Hair Entrapment:** Hair can become entangled in suction outlet cover.

**Limb Entrapment:** A limb inserted into an opening of a suction outlet sump or suction outlet cover that is damaged, broken, cracked, missing, or not securely attached can result in a mechanical bind or swelling of the limb.

**Body Suction Entrapment:** A negative pressure applied to a large portion of the body or limbs can result in an entrapment.

**Evisceration / Disembowelment Entrapment:** A negative pressure applied directly to the intestines through an unprotected suction outlet sump or suction outlet cover which is damaged, broken, cracked, missing, or unsecured can result in evisceration / disembowelment entrapment.

**Mechanical Entrapment:** There is potential for jewelry, swimsuit, hair decorations, finger, toe, or knuckle to be caught in an opening of a suction outlet cover resulting in mechanical entrapment.

This cover/grate shall only be installed on the sump configuration authorized by these instructions - SOFA configuration 640-215xV, with certified flow rating 191 gpm floor / 160 gpm wall

**USE ONLY GENUINE WATERWAY REPLACEMENT PARTS.**



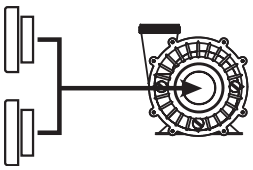
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- **Suction cover life is 7 years, the sump wall fitting life is 14 years, the rest of the components have 25 year life, cover and all SOFA components shall be replaced on or before the end of service life.**
- **The use of adhesives or other attachment methods that prevent access to suction piping or SOFA components is prohibited.**
- **Please refer to Head Loss Curve.**
- **This is a blockable SOFA as marked on the suction cover.**
- **Hand tighten screws, DO NOT USE POWER TOOLS TO INSTALL FASTENERS. Ensure proper thread engagement to prevent cross-threading.**
- **Ensure proper flatness of installation surface.**
- **Damaged Fasteners shall be replaced with original parts, and must be grade 316 stainless steel. The wall fitting shall be inspected for the presence of any CRACK or material loss. Cracked/damaged wall fittings shall be replaced.**
- **No unauthorized field modifications. Unauthorized modifications will void certification.**
- **This product is intended for use on vinyl, fiberglass, and roto-molded pools, spas and hot tubs.**
- **No modification shall be made to SOFA structure or flow path unless the configuration has been certified as a new SOFA.**
- **Service life begins the month and year in which SOFA components are installed with or without water.**
- **For winterization remove the cover and plug the inlet.**
- **Use TORX wrench and screw driver for service and removal of fasteners.**
- **Apply 20 in-lbs torque to TORX Screws.**
- **Observe cover/grate/fasteners for damage each operational day.**
- **During installation ensure components and fastener receptacles are clean, free of debris and obstructions.**
- **Hand-check cover/grate for snugness to the sump/frame/wall fitting after installation.**
- **SOFA installation components with crack, chunks, or pieces broken off, stripped screw holes, and/or unusual discoloration should be replaced.**
- **The mounting surface or interior surface of the pool should be free of deterioration.**
- **Do not exceed the safe flow rating of SOFAs as listed.**
- **All SOFAs should be installed in accordance with Waterway installation instructions.**
- **No modification shall be made to SOFA structure or flow path unless new configuration has been certified as a new SOFA.**
- **Under no condition should SOFA special flow rating be exceeded while the pool is open.**
- **The capacity of secondary circulation system (skimmer, cutters, etc) should not be included when evaluating an individual suction system flow rating.**
- **For the flow rating for pools with multiple blockable SOFAs in one body of water without isolation valves: combine all SOFAs, minus the flow rate of one, if all are not equal use the larger flow rate.**
- **"Blockable" SOFAs in new pools shall be installed in multiple-SOFA system ONLY.**
- **"Blockable" SOFAs in existing pools with single SOFA systems shall be installed with an additional anti-entrapment device or system.**
- **SOFA(s) should be chosen so that the individual suction system flow rate is greater than the pumping systems maximum system flow rate.**
- **The flow rating for existing pools with a single blockable SOFA is the flow rating of the SOFA when installed with an additional device to prevent suction entrapment.**
- **A single blockable SOFA in a system that does not have an additional device or systems shall result in a flow rate of zero.**



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## TO REDUCE THE RISK OF ENTRAPMENT HAZARDS:



• Use two or more suction fitting on each pump suction line. The suction fittings shall be separated by a minimum of 3 ft. (91.44 cm), or if any are located closer they shall be located on two different planes (i.e., one on the bottom and one on the vertical wall, or one each on two separate vertical wall).

- In the event of one suction outlet being completely blocked, the remaining suction outlets serving that system shall have a flow rating capable of the full flow of the pump(s) for the specific suction system.
- Dual suction fittings shall not be located on seating areas or on the backrest for such seating areas.
- The maximum system flow rate shall not exceed the flow rating of any listed (per ASME A112.19.8-2007) suction outlet cover installed. In the event of one suction outlet being completely blocked, the remaining suction outlets serving the system shall have a flow rating capable of the full flow of the pump(s).
- Never use a pool or spa if any suction outlet component is damaged, broken, cracked, missing, or not securely attached.
- Replace damaged, broken, cracked, missing, or not securely attached suction outlet components immediately.
- Two or more suction outlets per pump should be installed in accordance with latest APSP Standards and CPSC guidelines, and follow all National, State, and Local codes applicable.
- Replace the suction within 7 years from the installation date.
- Installation of a vacuum release system, which relieves entrapping suction, is recommended.

## WARNING

**Failure to remove pressure test plugs and/or plugs used in winterization of the pool/spa from the suction outlets can result in an increased potential for suction entrapment as described on the previous page.**

**Failure to keep suction outlet components clear of debris, such as leaves, dirt, hair, paper and other material, can result in an increased potential for suction entrapment as described on the previous page.**

**Suction outlet components have a finite life. The cover/grate should be inspected frequently and replaced at least every seven years, or if found to be damaged, broken, cracked, missing, or not securely attached.**

**This fitting is rated at 191 GPM for floor mount and 160 GPM for wall mount. If the fitting is missing or broken, replace with a fitting of equivalent rating or higher. Use of a lower rated suction fitting could result in entrapment of the body which could result in serious injury including drowning.**

**Do not use or operate pool, spa, or hot tub if this suction fitting is missing, broken or not secured per instructions. The suction fitting is intended to prevent entrapment of the body. Use of the spa hot tub with a missing, broken or improperly secured suction grate may result in serious personal injury including drowning.**

**When the pool, spa or hot tub is in operation, suction is created at this fitting. Users of the spa or hot tub must be instructed not to come in contact with this fitting in such a way as to block its orifice. If a user of the spa or hot tub blocks this fitting with his/her body, serious personal injury or drowning may occur.**

**It is imperative to securely attach the suction cover to the wall fittings (use only the original supplied screws or obtain original replacements). Do not over tighten the screws. Inspection of fasteners and observation for damaged/tampered with suction fittings is required. Drilling of new fastener holes is not permitted.**

**Any and all broken or missing parts must be replaced prior to starting spa or pool pump. Never operate spa or pool without drain cover in place and properly affixed, death or serious injury can result.**

**Do not exceed the safe flow rate. Do not increase flow through system by increasing pump size or horsepower.**

**Do not allow children to sit, play or interact with main drains or suction outlet.**

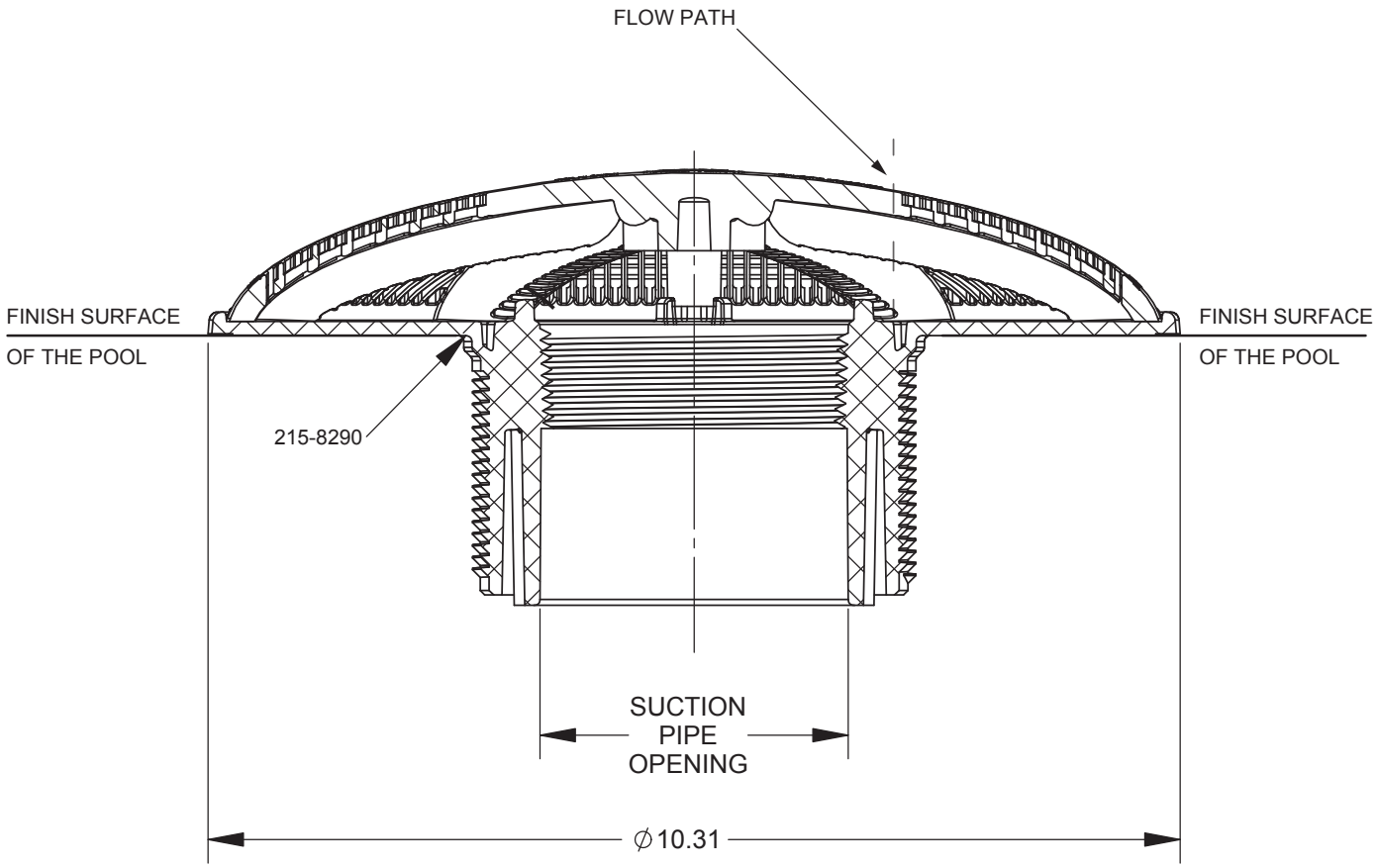
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# FLOW PATH ZONE DIMENSIONS:

**This is a sumpless drain.**




**PVC Pipe:** 3″
**Minimum Sump Depth:** 0″
**Minimum Length Before Reduction:** 16″
**Use Only Supplied Wallfitting:** #215-8290
**Minimum Pipe Offset:** 3 1/4″

**Use of field fabricated sumps is not permitted.**



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# VINYL ULTRA RETRO SUCTION OUTLET - IMPORTANT INFORMATION

The maximum flow rate for Ultra Retro is 191 gallons per minute (GPM) Floor and 160 GPM Wall. Ultra Retro should operate best when used with residential pumps of up to 3 HP. Please ensure your pool or spa pump system meets this specification.

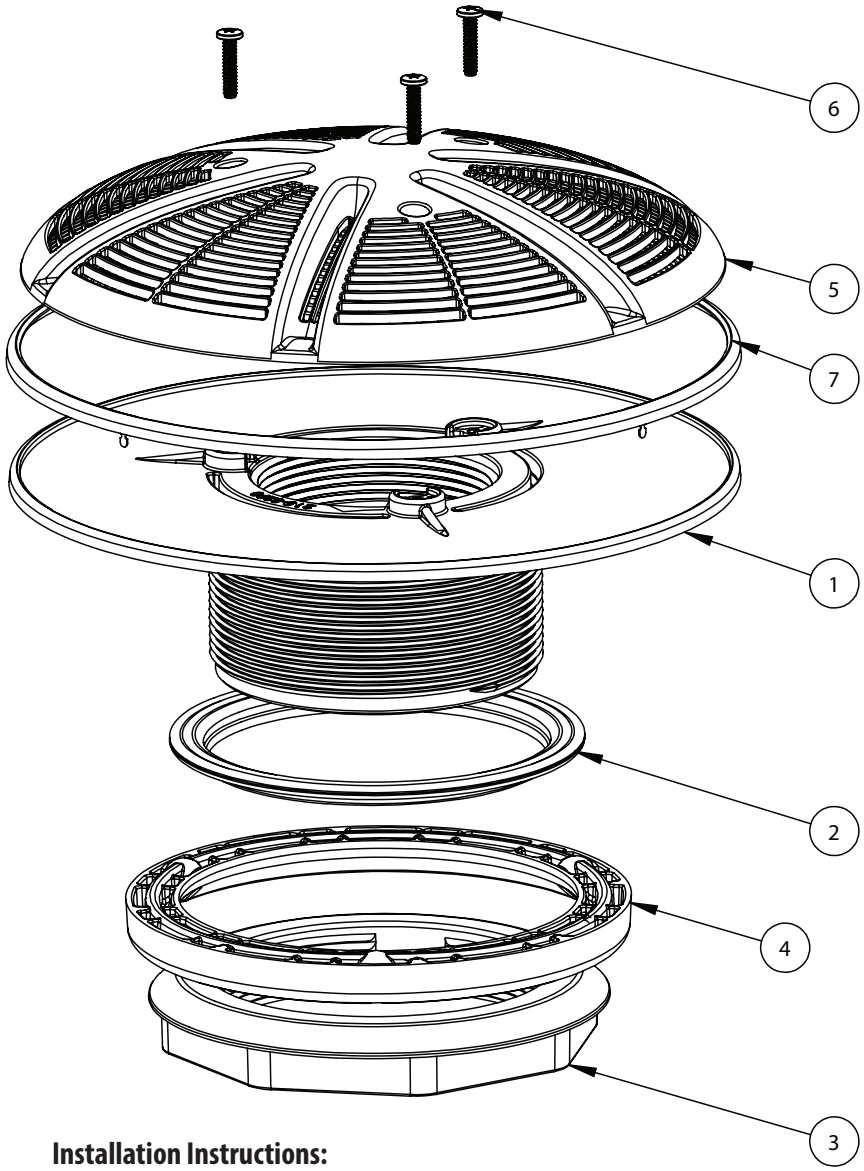
**CAUTION: if you do not have two underwater points of suction in your pool or spa for each pump, safety issues regarding suction entrapment exist and could cause serious injury or death. Although Ultra Retro incorporates patent pending features to better protect from suction entrapment, this product may not resolve all single point of suction issues. If you do not have two underwater points of suction for each pump in your pool or spa, we recommend you contact a licensed pool builder or remodeler to install a second point of suction.**

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# VINYL ULTRA RETRO SUCTION OUTLET COMPONENTS




**Installation Instructions:**

- Using a 5 ¾" hole saw, drill a hole in the fiberglass wall.
- Insert the wall fitting #1 into the opening.
- Install gasket #2 and compensating ring #4 as shown.
- Torque the nut #3 to 50 ft/lbs. Apply 20 in-lbs torque to drain cover #6 3 Security Torx Screws. Ensure proper fit with no play.

**NOTE:** For fastener repair, evaluation and replacement - if fastener #6 or fastener receptacle #1 is damaged in any manner such that that the required torque cannot be achieved, both parts must be replaced

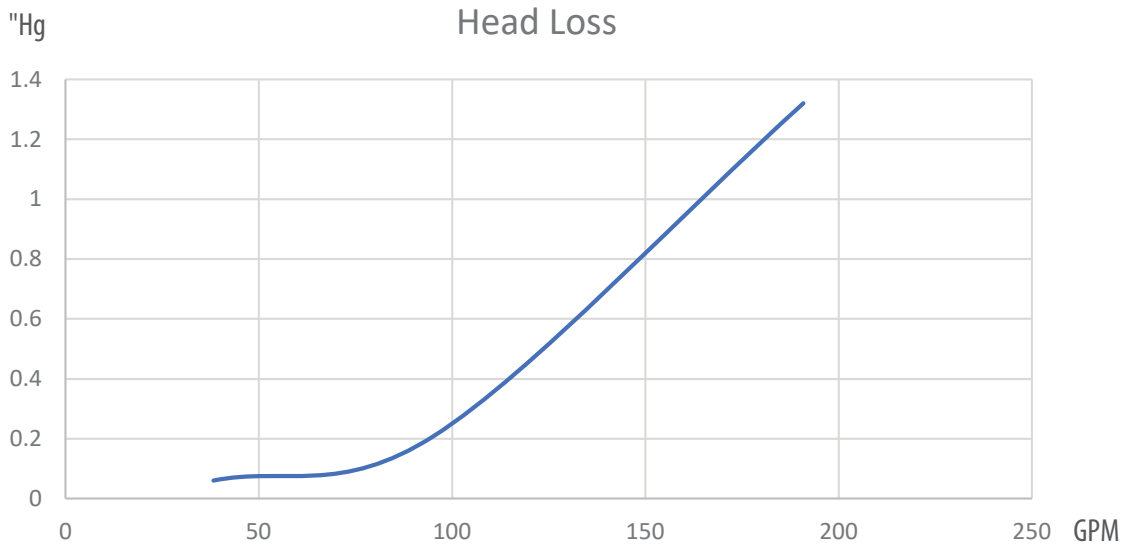
| *Item* | *Part No.* | *Description* |
|---|---|---|
| 1 | **215-8290** | 10 INCH ULTRA RETRO WALL FITTIN 3"SLP X 3"NPT |
| 2 | **806-7540-EP** | ELL GASKET POWER STREAM EPDM 50 SHORE |
| 3 | **718-3300** | NUT, MEGA NUT |
| 4 | **218-2561** | TRI-SEAL COMPENSATING RING, POWER STREAM |
| 5 | **642-3170 V** | COVER 10" RETRO VINYL LINER VGB2008 |
| 6 | **819-0913** | #10 X 7/8" SECURITY SCREW PAN HD TORX DRIVE TYPE B |
| 7 | **916-2140** | 10 INCH ULTRA RETRO METAL TRIM RING |

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# VINYL ULTRA RETRO SUCTION OUTLET HEAD LOSS CURVE




3" Connection: 16" downstream of the retrofit sump connection, (3" sch 40)

| | 20% | 50% | 100% |
|---|---|---|---|
| Flow Rate (GPM) | 38.3 | 95.4 | 190.9 |
| Total Head Loss ("Hg) | 0.06 | 0.21 | 1.32 |

## WARRANTY

**For product registration visit: www.waterwayplastics.com.**
**For Warranty questions or claims please contact point of purchase.**

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# Installation Information Label
# 10" Vinyl Ultra Retro Suction

Cover/Grate Model#: 640-212x V, 640-213x V, 640-214x V
Life & years from the date of installation: 7 Years

| | Flow Ratings |
|---|---|
| Floor Flow Rate: | 178 GPM @ 3.53 fps |
| Wall Flow Rate: | 132 GPM @ 3.03 fps |

Cover/Grate Model#: 640-215x V
Life & years from the date of installation: 7 Years

| | Flow Ratings |
|---|---|
| Floor Flow Rate: | 191 GPM @ 3.53 fps |
| Wall Flow Rate: | 160 GPM @ 3.03 fps |

Location of the Installed SOFA, such that it can be successfully identified in the future:

_____

The date the cover/grate was installed in the pool, where the month and year indicators on the label are easily activated in the field:

_____

Installer shall fill-in the location of the installed SOFA and the cover/grate Installation before giving this information label to the pool owner. This Installation Information Label shall be permanently posted as near feasible to the pump control, and that a copy of this information be given to the pool owner, to be kept with other important pool related documents.

## 10" Round Ultra Retro Suction Outlet -Vinyl: 640-212x V, 640-213x V, 640-214x V

Floor Flow Rate: 178 GPM @ 3.53 fps Wall Flow Rate: 132 GPM @ 3.03 fps

## 10" Round Ultra Retro Suction Outlet -Vinyl: 640-215x V

Floor Flow Rate: 191 GPM @ 3.53 fps Wall Flow Rate: 160 GPM @ 3.03 fps

Removable Tags for Blockable Cover/Grate Packaging
"READ, FOLLOW, AND UNDERSTAND ALL INSTRUCTIONS AND WARNINGS". "This VGBA Suction outlet has an installation specific flow rating and this product SHALL NOT be installed on a pumping system that is capable of exceeding this limit, which varies based on the number and location of installed suction outlets. READ and FOLLOW this section of the included installation instructions explaining how to calculate the suction system flow ratings and that of the installed pumping system.

⚠"WARNING! This is a BLOCKABLE VGBA Suction Outlet that must ONLY be installed in a multiple VGBA Suction Outlet System." (9.8.2.1)

This is a BLOCKABLE VGBA Suction Outlet. It must ONLY be installed in a suction system that also includes one or more of the following devices or systems designed to prevent suction entrapment, when and if the suction cover marked for single use and used as the sole source of water for a single suction outlet :

- Safety Vacuum Release System
- Suction Limiting Vent System
- Gravity Drainage System
- Automatic Pump Shut-Off System
- Drain Disablement
- Other Systems determined by Consumer Product Safety Commission to be equally effective as , or better than above-mentioned systems at preventing or eliminating the risk of injury or death associated with pool drainage system.

THIS TAG/LABEL IS TO BE CUT & REMOVED BY THE INSTALLER ONLY

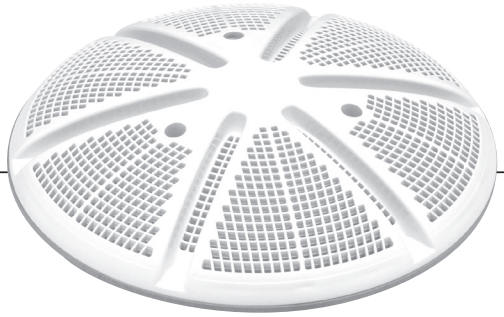


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# CERTIFICATION OF COMPLIANCE

## 10" ROUND, VINYL ULTRA RETRO SUCTION OUTLET: P/N 640-215x V



Contents: 1

Part Number: **640-215x V**

| | |
|---|---|
| Description: | **Round Ultra Retro Suction Outlet - Vinyl** |
| Size: | **10"** |
| Type: | **Blockable** |
| Life: | **7 year** |
| Open Area: | **20.4 in²** |
| GPM @ 1.5 fps: | **95** |
| Floor Flow Rate: | **191 GPM @ 3.53 fps** |
| Wall Flow Rate: | **160 GPM @ 3.03 fps** |
| Place of Manufacturer: | **Oxnard, CA** |

NSF

**VGBA 2017**

For Date of Manufacture please see the manufacture mark on product




Date of Installation: _____

Name of Installer: _____

Signature of Installer: _____

This product has been tested to ANSI/ASME 112.19.8-2007 (ANSI/APSP - 16. 2017) per §1404 of the Virginia Graham Baker (VGBA 2017) Pool and Spa Safety Act. Certified by: NSF International, Inc., 729 N. Dixboro Rd., Ann Arbor, MI 48105, 734-769-8670. Testing report from May, 2021.

This product is certified to comply with §1404 of the Virginia Graham Baker (VGBA 2017) Pool and Spa Safety Act. A copy of the test results for the above may be found at www.waterwayplastics.com or go to www.nsf.org. This product is manufactured by Waterway Plastics, Oxnard, CA 93030. Test records are kept by Ray Mirzaei at Waterway Plastics.

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