



Certified to
NSF/ANSI/CAN 50
ANSI/APSP/ICC-16 2017



UNBLOCKABLE SUCTION OUTLET FITTING ASSEMBLY (SOFA) INSTALLATION, OPERATION, AND MAINTENANCE INSTRUCTIONS

FOR MODEL: 1836xxx and R1836xxx (xxx = COLOR SUFFIX) MEETS OR EXCEEDS ANSI/APSP/ICC-16 2017

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

INSTALLATION REQUIREMENTS AND LIMITATIONS

All SOFAs shall be installed in accordance with AquaStar's installation instructions.

No modification shall be made to a SOFA structure or flow path unless the new configuration has been certified to the original SOFA.

SOFA-configuration specific flow ratings are NOT to be exceeded at any time the pool is open to bathers.

SOFAs marked unblockable are permitted for use in multiple SOFA systems, and single SOFA system.

The flow rating for pools with single, or multiple unblockable SOFAs shall be determined by combining the flow rating of all SOFAs piped together in one body of water.

Select and install a SOFA, or combination of SOFAs, such that the resulting individual suction system flow rating is greater than the pumping system's maximum system flow rate.

Skimmers, gutters, and other overflow systems may not always be operational and could divert all the pump(s) flow through the SOFA suction system, therefore the flow capacity of these systems shall not be included when evaluating an individual suction system flow rating.

SOFAs shall not be located on seats or the backrests for seats.

Pool finish should never exceed top of frame. Taper pool finish down and away from top (or lower) of frame. Top of grate should never be installed lower than the pool finish.

The use of adhesives or other attachment methods that prevent access to suction piping or SOFA components is prohibited.

Installation requires Phillips screwdriver. Hand tighten only. Start installation of screws by hand to ensure proper thread engagement and to prevent cross-threading. Use a hand-held Phillips screwdriver to hand tighten each screw until the screw and SOFA component fit snugly together. The parts and fasteners are snug when there are no visible gaps and they do not move when pulled or pushed by hand. DO NOT USE

POWER TOOLS TO INSTALL FASTENERS.

Covers, when installed, shall not protrude more than 2 in. (51 mm) from the finished surface of the pool in which the SOFA is installed.

MAINTENANCE INSTRUCTIONS

FIELD AND CONFIGURATION MODIFICATION

Any field modification made to this product not authorized by AquaStar Pool Products shall void the VGBA-2017 certification.

No modification shall be made to a SOFA structure or flow path unless the new configuration has been certified as a new SOFA.

SERVICE LIFE

Replace cover assembly and fasteners within ten years. Replace mud frame and sump within thirty years or if damaged. If cover or SOFA components become brittle, show significant color change, or are damaged in any way, remove and replace as it is an indication that they have reached the end of their service life.

Cover and all other SOFA components shall be replaced at or before the end of their service life and that service life begins the month and year in which a SOFA component is installed with or without water.

WINTERIZING

Covers and supports may be removed to access suction piping — Save and store these OEM components in a safe location for reinstallation when not immediately reinstalled after winterizing. Lost or damaged components must be replaced with components sourced from AquaStar for the VGBA-2017 certification of this product to remain valid.

SERVICE INSTRUCTIONS

Service tool required: Phillips screwdriver (*hand-tools only*).

Cover/grate, including fasteners, shall be observed for damage or tampering each operational day.

SERVICE INSTRUCTIONS *(continued)*

Missing, broken, or cracked covers/grates shall be replaced before bathers are allowed to use the pool.

Loose cover/grates and associated components shall be reattached before bathers are allowed to use the pool.

Mud frame, support components, and fastener receptacles shall be clean and free of debris or obstructions during installation of covers and fasteners.

Install drain covers in order of the assembly drawings provided in section "SOFA MODEL SPECIFIC FLOW RATES AND NSF ANSI/APSP/ICC 16-2017 CERTIFICATION DOCUMENTATION" of these instructions.

Start installation of screws by hand to ensure proper thread engagement and to prevent cross-threading, then continue to tighten using hand tools only. **DO NOT USE POWER TOOLS TO INSTALL FASTENERS.**

Hand-check cover/grate for snugness to the sump/frame after installation. Do not over-tighten screws.

Replace covers if components have become brittle, show significant color change, or are damaged in any way.

When any SOFA component is held in place by the interior finish of the pool, that surface shall be free of deterioration and voids.

If mud frame or manufactured sump have become brittle, show significant color change, are stripped, or damaged in any way, replace. If plastic anchor or brass anchor kit (BIK4) is stripped or damaged in any way, replace.

REPLACEMENT COVER FOR EXISTING POOLS

When installing covers on existing components ensure that the component is in good condition, and does not show signs of brittleness, significant color change, or damage in any way. If damaged, replace the component.

EXISTING FASTENER SECURITY CHECK

When installing fasteners ensure that the screw hole is not loose (see Fig. 1), has damaged threads (see Fig. 2), is the wrong thread size (see Fig. 3), or does not align with the cover screw hole. For each location that appears to be reusable, test fastener security by partially installing screw in each location and then pulling firmly by hand. If the screw cannot be installed or pulls out, the component is to be considered damaged and should be replaced. Drilling holes into an existing component is not permitted.

When properly secured, the screw shall have at least 3 threads of engagement (see Fig 4). Use a hand-held Phillips screwdriver to hand tighten each screw until the screw and SOFA component fit snugly together. The parts and fasteners are snug when there are no visible gaps and they do not move when pulled or pushed by hand. **DO NOT USE POWER TOOLS TO INSTALL FASTENERS.**



FIGURE 1
IF SCREW HOLE
IS LOOSE



FIGURE 2
IF SCREW HOLE
HAS DAMAGED
THREADS

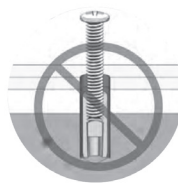


FIGURE 3
IF SCREW IS
THE WRONG
THREAD SIZE

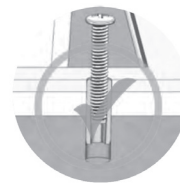


FIGURE 4
ENSURE AT LEAST
THREE THREADS OF
ENGAGEMENT AND
HAND CHECK TO
ENSURE SCREW IS
SECURE

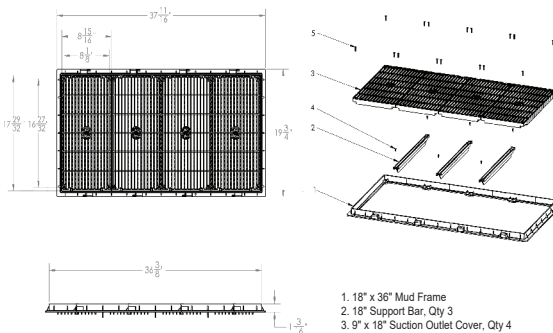
SOFA MODEL SPECIFIC FLOW RATES AND ANSI/APSP/ICC-16 2017 CERTIFICATION DOCUMENTATION

Please use the QR code or link listed below to look up the SOFA-Configuration specific flow rating of the cover that is to be installed. Please remember to cut and fill out the VGBA DRAIN COVER IDENTIFICATION INFORMATION document that is included in these instructions. Permanently post as near as feasible to the pump control and provide a copy of this information to the pool owner to be kept with other important pool-related documents.

MAHC-I Series 18" x 36" With Four 9" x 18" Anti-Entrapment Suction Outlet Covers and Expandable Mud Frame FOR CONCRETE INSTALLATIONS



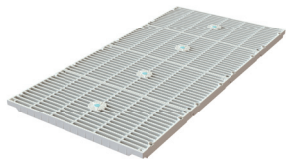
Cover Model #
1836xxx



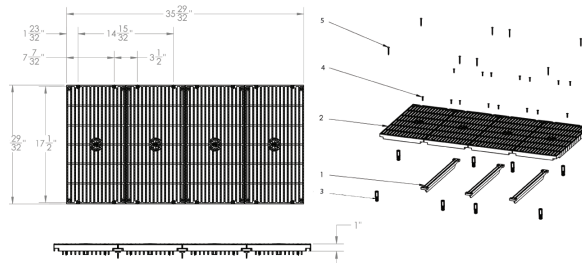
For SOFA Specific Flow Ratings
Please scan QR code or visit www.aquastarpoolproducts.com/flowcode



MAHC-I Series 18" x 36" With Four 9" x 18" Retrofit Anti-Entrapment Suction Outlet Covers FOR CONCRETE INSTALLATIONS

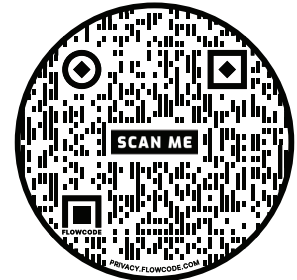


Cover Model #
R1836xxx



1. 18" Retrofit Support Bar, Qty 3
2. 9" x 18" Suction Outlet Cover, Qty 4
3. Dropin SS Concrete Anchor 1/4-20 x 1", Qty 8
4. 10-32 x 3/4" Pan Head Phillips, Qty 16
5. Button Head Socket Cap 1/4-20 x 1-1/2", Qty 8

For SOFA Specific Flow Ratings
Please scan QR code or visit www.aquastarpoolproducts.com/flowcode



1836XXX ASSEMBLY INSTRUCTIONS:

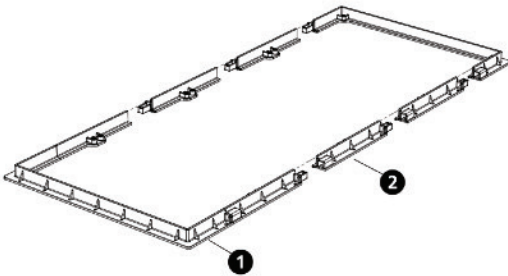
Step 1: Click frame sides (2) Part # 1836FRSxxx into Frame End (1) Part # 1836FRExxx. Click the other frame end (1) onto assembled frame sides (2). The overall size is 19 3/4 x 37 3/4 x 1 3/6 inches (502 x 959 x 30.2 mm).

Step 2: Install support braces (3) Part # 1836Bxxx between screw holes in frame sides (2). Install screws (4) through support braces (3) and into frame sides (2) using a #2 Phillips screwdriver. Hand start and hand tighten only.

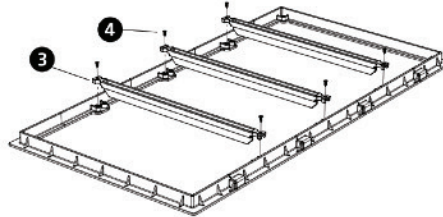
Step 3: Set Covers (5) Part # 918xxx into fully assembled mud frame (1) & (2). Install screws (6) through covers (5) and into threaded inserts located in mud frame (1) & (2). using a #2 Phillips screwdriver. Hand start and hand tighten. **DO NOT USE POWER TOOLS!**

Apply Sikaflex® -1a Sealant or equivalent between frame bottom (7) and sump to hold and seal the product in place while installing the interior finish.

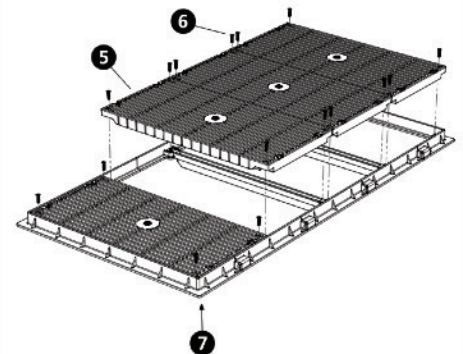
STEP 1:



STEP 2:



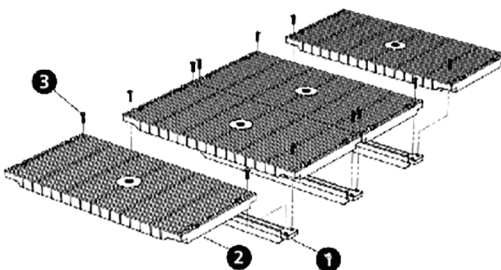
STEP 3:



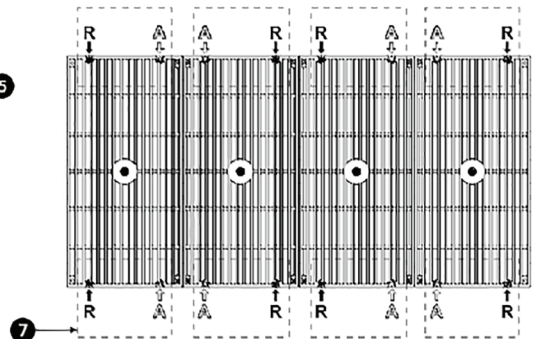
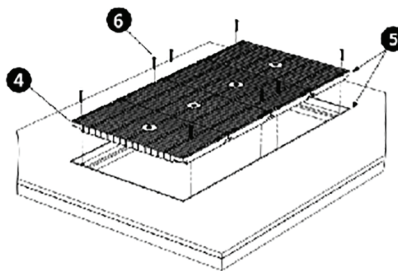
RETROFIT COVER ASSEMBLY INSTRUCTIONS

Step 1: Assemble the cover (4) by placing the edge of a 9"x18" cover (2) Part # 918xxx into retrofit support brace (1) Part # 1836BRxxx. Install 10-32 x 3/4" pan head screws (3) through cover (2) and into retrofit support brace (1). Repeat for all covers (2), braces (1) and fasteners (3) to make the fully assembled 18"x36" cover (4).

STEP 1:



STEP 2:



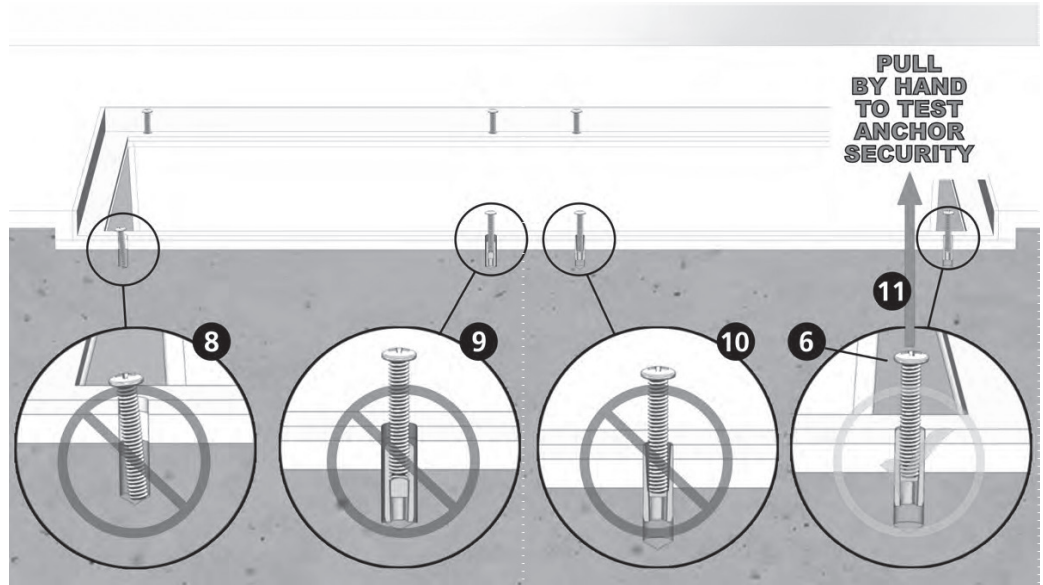
INSTRUCTIONS FOR EXISTING SUMPS

Sump Size: This product is intended for existing sumps with a cover opening size that is 18" wide x 36" long x 1" deep (457 x 914 x 25.4 mm). The minimum distances to the nearest suction outlet pipe opening is 6" (152 mm) measured from interior surface to the suction pipe opening. See Step 2 for sump opening tolerances and additional requirements.

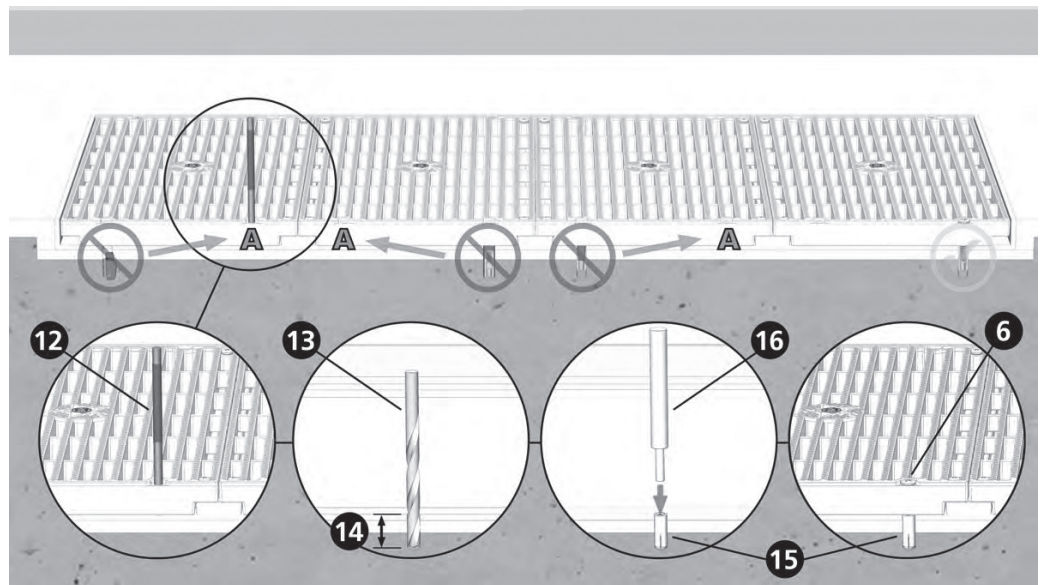
STEP 2: Place assembled cover (4) into existing 18"x36" sump that is clean and free of debris. Confirm the top edge (5) of the cover (4) and interior surface and/or existing frame are approximately flush within $\pm \frac{1}{8}$ " of each other. If the cover (4) does not fit within this tolerance the sump must be modified to achieve this fit or the cover (4) shall not be used. Check cover fastener hole alignment (R) with the existing $\frac{1}{4}$ " - 20 female threaded anchor by test fitting a $\frac{1}{4}$ " - 20 thread x $1 \frac{1}{2}$ " long screw (6) in each location (R). If a location does not align, use the other hole that is located on the same side of the 9"x18" cover (2); this hole is located within the same dashed box (7).

EXISTING FASTENER SECURITY CHECK

Step 3: Temporarily remove the assembled cover (4) and then check each existing $\frac{1}{4}$ " - 20 female threaded anchors. DO NOT USE if the female anchor is missing (8), is loose (9), has damaged threads (10), is the wrong thread size, or does not align with the cover screw hole (R). For each location that appears to be reusable, test fastener security by partially installing a $\frac{1}{4}$ " - 20 thread x $1 \frac{1}{2}$ " long screw (6) in each location and then pulling firmly by hand (11). If the screw cannot be installed, or pulls out, with or without the existing anchor, that location shall not be used. Instead select the other fastener hole, marked (A) in Step 2 and 4 illustrations, located on the same side of the 9"x18" cover (2). Install these alternate fasteners as illustrated in Step 4.



Step 4: Set the assembled cover (4) into the existing 18"x36" sump opening that is clean and free of debris. Using a $\frac{1}{4}$ " diameter center punch (12), or equivalent, mark each location and make a starter hole to center the drill bit in the exact center of the screw hole (A) to be used. Remove cover (4) and carefully set aside. Using a $\frac{3}{8}$ " concrete drill bit and appropriate drill for the environmental conditions, drill a hole (13) 1 to $1 \frac{1}{8}$ inch (25.4 to 28.5mm) deep. Remove all debris from the drilled hole and then measure it to confirm the depth of the $\frac{3}{8}$ inch diameter hole is between 1 inch to $1 \frac{1}{8}$ inches (14). Insert the included concrete anchor (15) into the drilled hole and then complete the anchor installation by driving the tool (16) with a hammer to expand the anchor (15). Set the assembled cover (4) in place. Start installation of screws (6) by hand to ensure proper thread engagement and to prevent cross threading. DO NOT USE POWER TOOLS TO INSTALL FASTENERS. Using a #2 Phillips screwdriver, tighten each screw to 30 to 75 inch-lbf of torque.



WARNING! SUCTION ENTRAPMENT HAZARD

INCREASING PUMP SIZE WILL INCREASE FLOW. When in doubt, consult your pool and spa professional. NEVER use a pool or spa that has a missing or broken suction outlet cover. USING A POOL OR SPA WITH A MISSING OR BROKEN SUCTION OUTLET COVER CAN RESULT IN HAIR OR BODY ENTRAPMENT WHICH CAN CAUSE SEVERE BODILY INJURY OR DEATH. THE VACUUM 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 a 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. AFTER INSTALLATION OF FITTINGS, IF A GAP EXISTS BETWEEN POOL FINISH AND BASE OF COVER IT MUST BE FILLED IN TO AVOID FINGER OR OTHER ENTRAPMENT.

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 above.

WARNING! – 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 above.

WARNING! – Suction outlet components have a finite life. The cover/grate should be inspected before each use of facility and replaced at least every five years or if found to be damaged, broken, cracked, missing, not securely attached or missing screws. **DO NOT** use facility until corrected!

WARNING! TO REDUCE THE RISK OF ENTRAPMENT HAZARDS

These are VGBA-2017 Unblockable SOFA approved for use in single or multiple outlet systems and they can be installed on the floor, wall, or both. Suction fittings shall not be located on seating areas or on the backrest for such seating areas. The maximum operating flow rate of a pump or pumps shall not exceed the flow rating of the SOFA Configuration. Never use 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. This suction outlet must be installed in accordance with all applicable national, state, and local laws, codes, and ordinances. Using gray medium set glue is recommended when attaching PVC pipe to AquaStar's PVC-based sump buckets. The use of blue glue or related hot glues, clear glues, or any fast-setting cement is not recommended. The drain covers can be installed over manufactured or field-built sumps that meet or exceed the SOFA Model-specific sump specifications. The flow rating of multiple outlet systems is calculated by summing the SOFA Model-specific flow ratings. The flow rating of a single outlet system is the SOFA Model-specific flow rating.

As the manufacturer, AquaStar Pool Products, Inc., hereby certifies that their suction outlet fitting assemblies and drain covers manufactured on or after May 24, 2021 meet or exceed the requirements of ANSI/APSP/ICC-16 2017. Products manufactured before May 24, 2021 meet or exceed the requirements of the Virginia Graeme Baker Pool & Spa Safety Act, ASME/ANSI A112.19.8-2007, VGBA 2008 and ANSI/APSP 16-2011 standards and safety regulations as set forth by the Consumer Products Safety Commission. A copy of this certificate of compliance is available on AquaStar Pool Products Inc.'s website, www.aquastarpoolproducts.com.

VGBA DRAIN COVER IDENTIFICATION INFORMATION

ATTENTION INSTALLER - Please carefully cut along the dashed line and remove from instructions. Fill in the blank spaces below upon installing drain cover. Permanently post as near as feasible to the pump control and provide a copy of this information to the pool owner to be kept with other important pool-related documents.

Manufacturers Name:

AquaStar Pool Products Inc.

Cover/Grate Part Number:

Please check the box (☒) of the cover being installed:

☐ 1836xxx

☐ R1836xxx



SOFA FLOW RATING

For SOFA flow rating please scan the QR code or visit www.aquastarpoolproducts.com/flowcode

Service Life of the Cover Grate:

10 years from the date of installation

Certified Suction Outlet Fitting Assembly (SOFA) Flow Ratings:

Please use the QR Code or Link to find the SOFA Specific flow rate for your configuration.

SOFA Model #: _____

Orientation: _____ (wall or floor) **SOFA Flow Rating:** _____ GPM

Location of the Installed Suction Outlet Fitting Assembly:

Please describe the location of the suction outlet fitting assembly.

Location: _____

Installation Date:

Please mark the month and year that the drain cover was installed below.

Month

1	2	3	4	5	6
7	8	9	10	11	12

Year

21	22	23	24	25	26
27	28	29	30	31	32

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A Safe Drain is No Accident™

VGBA Compliance Every Pool, Every Time

IMPORTANT SAFETY INFORMATION

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** the section of the included installation instructions explaining how to calculate the suction system flow ratings and that of the installed pumping system.

This is an UNBLOCKABLE VGBA Suction Outlet that may be installed as the sole source of water for a single suction. Please check local building/health authorities regarding single versus multiple drain installations.

THIS LABEL IS TO BE REMOVED BY THE INSTALLER ONLY

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Manufacturers Name:

AquaStar Pool Products Inc.

Cover/Grate Part Number:

Please check the box (☒) of the cover being installed:

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SOFA Model #: _____

Orientation: _____ (wall or floor) **SOFA Flow Rating:** _____ GPM

Location of the Installed Suction Outlet Fitting Assembly:

Please describe the location of the suction outlet fitting assembly.

Location: _____

Installation Date:

Please mark the month and year that the drain cover was installed below.

Month

1	2	3	4	5	6
7	8	9	10	11	12

Year

21	22	23	24	25	26
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