



## VGB SERIES

# SUBMERGED, MULTIPLE AND SINGLE SUCTION OUTLET INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS FOR MODELS:

914xxx, 1216xxx, 24xxx, 9MFxxx, 12MFxxx, 18MFxxx, P18xxx, R9MFxxx, R12MFxxx, R18MFNFxxx, SUN18HPHxxx, WAV9WRxxx, WAV12WRxxx,  
WAV18WRxxx, WAV24xxx

(xxx = COLOR SUFFIX)

MEETS OR EXCEEDS ANSI/APSP 16-2011

ANTI-ENTRAPMENT



**READ AND FOLLOW ALL INSTRUCTIONS**



### ⚠ **WARNING!**

IMPROPER INSTALLATION OR USE OF THIS PRODUCT MAY PRESENT A RISK OF HAIR OR BODY ENTRAPMENT AND DROWNING. Install this equipment in accordance with the instructions provided. Use only with the components and mounting hardware provided. FAILURE TO FOLLOW THESE INSTRUCTIONS AND/OR USE WITH COMPONENTS NOT PROVIDED BY AQUASTAR POOL PRODUCTS AND INTENDED TO BE USED WITH THIS PRODUCT MAY RESULT IN IMPROPER POSITIONING OR FUNCTIONING OF SUCTION OUTLET AND MAY CAUSE SEVERE PERSONAL INJURY OR DEATH.

### SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE


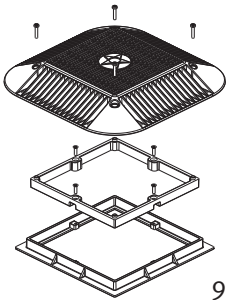
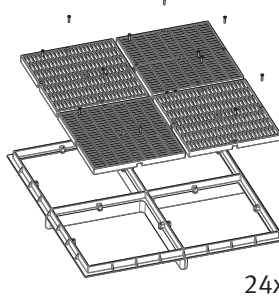
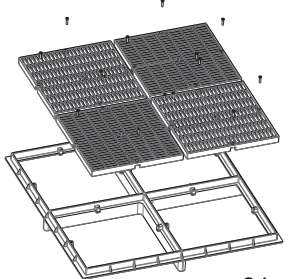
- If not a single, unblockable outlet, in the event of one suction outlet being completely blocked, the remaining suction outlets serving the system shall have a flow rating capable of the full flow of the pump(s) or the specific suction system. If in doubt about the rating and/or head loss curve of your system, consult a qualified pool or spa professional and/or your respective equipment manufacturer(s). Also, double-check with your local building/health authorities regarding single vs. multiple drain installations, etc.
- All sizes of connecting pipe are acceptable, pending velocity and GPM calculations. The larger, the better! DO NOT exceed maximum flow rate(s) of cover or pipe(s) flow rate(s), whichever is less.
- Replace cover and screws within five years.


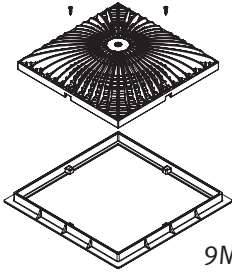
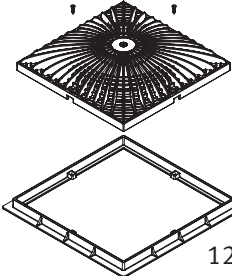
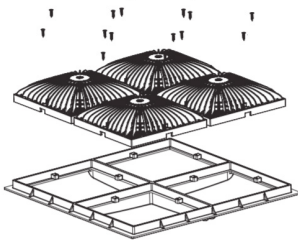
#### SPECIAL NOTES:


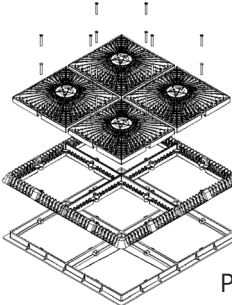
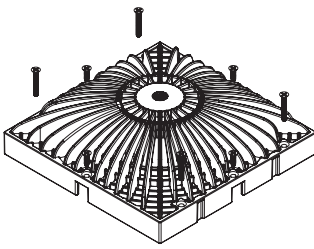
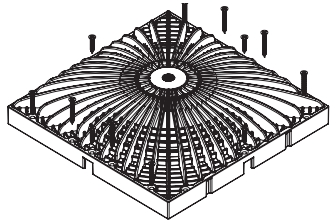
- Go to [www.AquaStarPoolProducts.com](http://www.AquaStarPoolProducts.com) to download a General Certificate of Conformity (GCC).
- Pool finish should never exceed top of frame.
- Taper pool finish down and away from top (or lower) of frame.
- Top of grate should never be installed lower than the pool finish.
- Take special notice when retrofitting into an existing frame where possible existing multiple layers of re-plastering have created a concave situation, either chip or grind down old surface or install new frame at higher level. Use of bushing kit may also be required to achieve proper elevation.


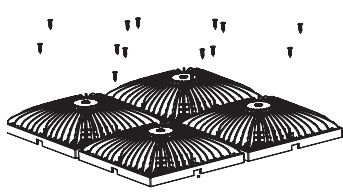
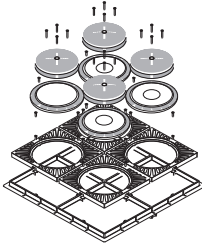
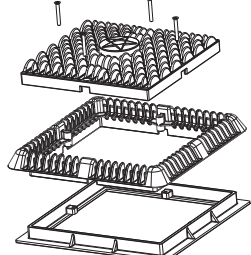
ALL MODELS LISTED BELOW = ANTI-ENTRAPMENT/ANTI-VORTEX AND FOR SINGLE OR MULTIPLE USE


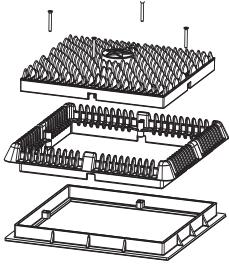
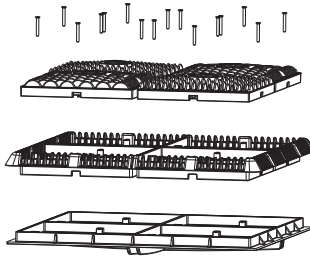
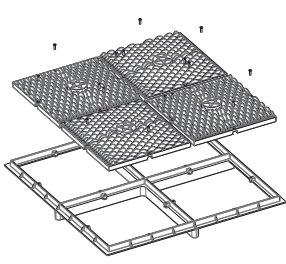
MAX FLOW RATES (PER OUTLET) MOUNTING POSITIONS (xxx=COLOR SUFFIX)

Model#	 914xxx	 1216xxx	 24xxx
 VGB COMPLIANT			
Floor	560 GPM @ 2.1 fps	460 GPM @ 1.5 fps	1531 GPM @ 1.4 fps
Wall	300 GPM @ 1.2 fps	445 GPM @ 1.4 fps	1531 GPM @ 1.4 fps
Dimension A	2 - 1/4"	2 - 1/4"	12"
Max B	5/8"	5/8"	5/8"
Min Sump Depth	3"	3"	12"

Model#	 VGB COMPLIANT	 9MFxxx	 12MFxxx	 18MFxxx
Floor	258 GPM @ 2.3 fps	274 GPM @ 1.2 fps	293 GPM @ 0.6 fps	
Wall	274 GPM @ 2.4 fps	278 GPM @ 1.3 fps	Floor Only	
Dimension A	1 - 15/16"	2 - 1/8"	4 - 15/16"	
Max B	5/8"	5/8"	5/8"	
Min Sump Depth	3"	3"	6"	

Model#	 VGB COMPLIANT	 P18xxx	 R9MFxxx	 R12MFxxx
Floor	740 GPM @ 1.5 fps	258 GPM @ 2.3 fps	274 GPM @ 1.3 fps	
Wall	740 GPM @ 1.5 fps	274 GPM @ 2.5 fps	278 GPM @ 1.3 fps	
Dimension A	4 - 3/4"	1 - 15/16"	2 - 1/8"	
Max B	5/8"	5/8"	5/8"	
Min Sump Depth	6"	3"	3"	

Model#	 VGB COMPLIANT	 R18MFNFxxx	 SUN18HPHxxx, RSUN18HPRxxx	 WAV9WRxxx
Floor	293 GPM @ 0.6 fps	1000 GPM @ 3.1 fps	224 GPM @ 1.5 fps	
Wall	Floor Only	644 GPM @ 2.0 fps	224 GPM @ 1.5 fps	
Dimension A	4 - 15/16"	4 - 1/2"	2 - 13/16"	
Max B	5/8"	5/8"	5/8"	
Min Sump Depth	6"	6"	3"	

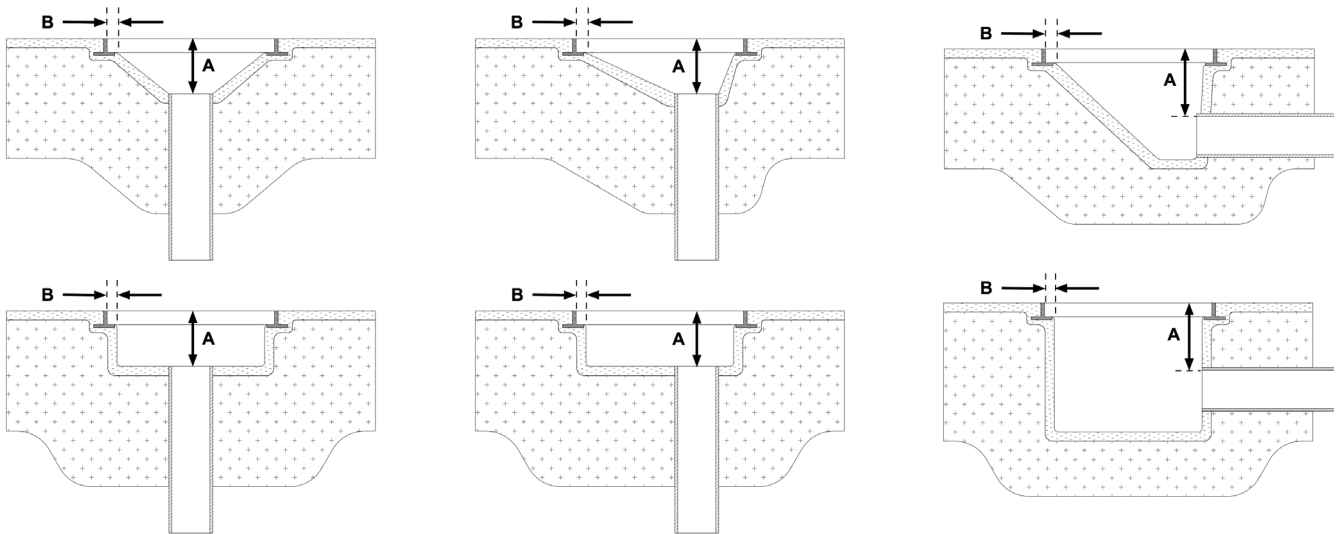
Model#				
	VGB COMPLIANT	WAV12WRxxx	WAV18WRxxx	WAV24xxx
Floor		361 GPM @ 1.3 fps	628 GPM @ 1.1 fps	1444 GPM @ 1.3 fps
Wall		361 GPM @ 1.3 fps	628 GPM @ 1.1 fps	1444 GPM @ 1.3 fps
Dimension A		2 - 13/16"	5 - 13/16"	11 - 13/16"
Max B		5/8"	5/8"	5/8"
Min Sump Depth		3"	6"	12"

### INSTALLATION LAYOUTS

- A. Requires Phillips screw driver. Hand tighten only. Do not use electrical or air drills.
- B. Top of all suction outlets shall not exceed 2" above pool floor or wall

## MANUFACTURED AND FIELD-BUILT SUMP DIMENSIONS

Note: In accordance with ANSI/APSP-16 2011, § 2.3.4 minimum sump depth is either the value shown in rows "Dimension A" or 1.5 times the nominal pipe diameter of the suction pipe, whichever is shallower. For additional information on proper drain installation refer to The Association of Pool & Spa Professionals ANSI/APSP-7 Standard and the U.S. Consumer Product Safety Commission Guidelines for Entrapment Hazard.



## DRAIN COVER EXPIRATION

At AquaStar, based on UV, structural and fastener testing, we've determined that our drain covers should be replaced every five years from the date of installation. We have partnered with you to make sure your customers are in compliance with the law, if you need help our customer service department is here to assist in any way we can.

## **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/disebowelment 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 WITH A TWO-PART EPOXY 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**

If not an approved single, unblockable outlet, a minimum of two functioning suction outlets per pump must be installed. Suction outlets in the same plane (i.e. floor or wall) must be installed a minimum of three feet (3') (1 meter) apart, as measured from center point to center point. Dual suction fittings shall not be located on seating areas or on the backrest for such seating areas. If any suction outlets 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 walls). The maximum system flow rate shall not exceed the flow rating of any listed (per ANSI/APSP 16-2011) suction outlet cover installed. 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. In addition to two or more suction outlets per pump installed in accordance with latest APSP, Standards and CPSC guidelines, follow all applicable national, state and local code. Use only transitional (typically green) glues when attaching PVC pipe to ABS fittings. Use gray medium set glue when attaching PVC pipe to our PVC based double deep sump buckets. Do not ever use blue glue or related hot glues, clear glues or any fast setting cement.

As the manufacturer, AquaStar Pool Products, Inc., hereby certifies that their suction outlet and drain covers meet or exceed the requirements of the Virginia Graeme Baker Pool & Spa Safety Act, VGB 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 under news & information: [www.aquastarpoolproducts.com](http://www.aquastarpoolproducts.com)

A Safe Drain is No Accident™

