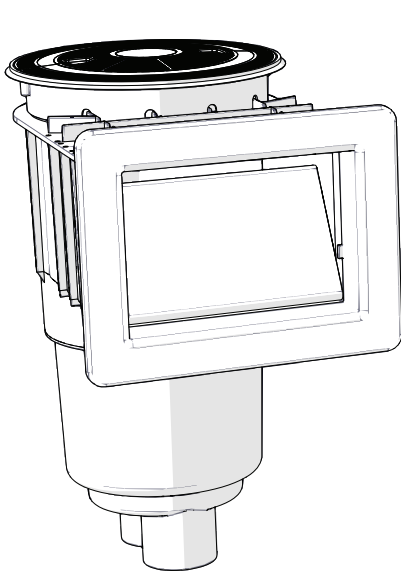


FLOW STAR[®] SKIMMERS

VINYL & FIBERGLASS

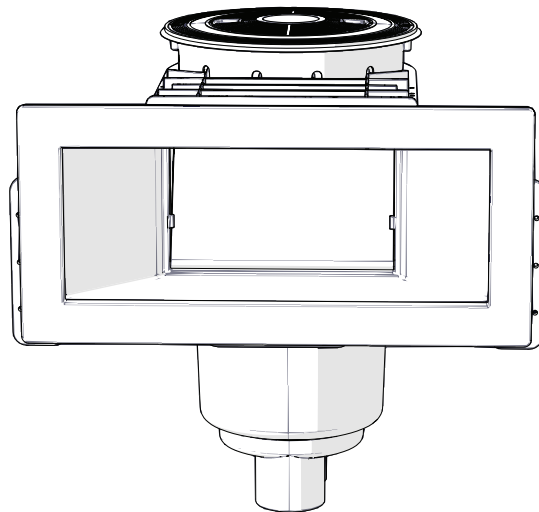
INSTALLATION AND USER'S GUIDE

FOR THE SKIMMER MODELS LISTED BELOW AND THEIR ALTERNATIVE CONFIGURATIONS



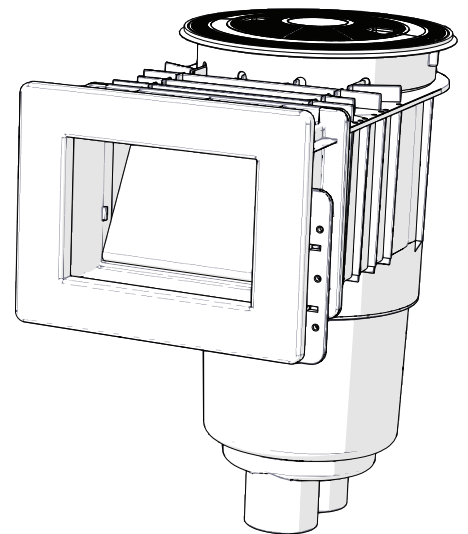
**MODEL # SKRFL12XXX
(FIBERGLASS)**

FLOW STAR SKIMMER WITH
5" DEEP THROAT FOR
FIBERGLASS



**MODEL # SKR36XXX
(FIBERGLASS/VINYL)**

FLOW STAR WIDE MOUTH
SKIMMER FOR FIBERGLASS



**MODEL #
SKRFFL3NXXX (FIBERGLASS)
SKRVFL3NXXX (VINYL)**

FLOW STAR SKIMMER WITH
NARROW 9" DEEP THROAT
FOR FIBERGLASS AND VINYL

*IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS*



VINYL/FIBERGLASS FLOW STAR™ SKIMMER

COMMERCIAL & RESIDENTIAL

INSTALLATION, OPERATION & PARTS



READ AND FOLLOW ALL INSTRUCTIONS

MEETS OR EXCEEDS NSF50-2009/IAPMO SPS3-93



⚠ WARNING!

HAZARDOUS SUCTION. RISK OF HAIR OR BODY ENTRAPMENT, DROWNING OR DISEMBOWELMENT. When an equalizer is used, the opening in the pool shall be protected by a VGB Compliant drain cover rated for 55 GPM or greater.

NOTE: Skimmer is not equivalent to a main drain. If not using a single, unblockable drain, all pools, spas and hot tubs must have at least two main drains besides skimmer(s) or a "single, unblockable" drain.

⚠ CAUTION!

BLOCKING PUMP SUCTION CAN CAUSE PRESSURE SURGES AND WATER HAMMER, WHICH CAN DAMAGE PUMP OR PIPING AND MAY CAUSE FLOODING.

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

OPERATION

Pump suction pulls water through skimmer. Water flowing into skimmer carries floating leaves, bugs, etc., where they are trapped in the skimmer basket. (Dust, body oils, etc., pass through the basket to be removed by the filter.) Weir door in skimmer opening enhances surface flow and skimming action.

Water Level

Keep pool, spa or hot tub water level at least 1.5" to 2" above bottom of skimmer opening for proper operation.

Float Valve (Optional)

The float valve protects pump from loss of prime if skimmer clogs or flow through skimmer is restricted (See Figure 1 and 2). Trimmer valve plate on bottom of float valve balances flow between skimmer and main drains, or multiple skimmers.

FLOW ADJUSTMENTS

Skimmer Without Float: Adjust valves located before the pump (See Figure 4).

Skimmers With Float: Remove deck lid, skimmer basket and float valve to adjust trimmer plate on bottom

of float (See Figure 5). Move trimmer plate to side to open trimmer port allowing more flow through skimmer and less flow through main drains, or other skimmers; close trimmer plate for less flow through skimmer and more flow through main drains, or other skimmers.

Vacuumping Pool

Remove deck lid and skimmer basket. If there is a float valve, remove it and plug equalizer port that is closest to the pool. Replace basket and place vacuum plate on top of basket. Fill the vacuum hose with water and then place your hand over the end of the hose as you bring it through the skimmer throat, or over the deck to attach it to the vacuum plate (Figure 3). Follow instructions in vacuum owner's manual for vacuuming operation. After vacuuming, remove hose, vacuum plate and basket, unplug equalizer port and reinstall float valve, basket and deck lid. Be sure to use screws to secure it in the deck frame to prevent accidentally dislodging it.

CAUTION: TO PREVENT INJURY, REPLACE DAMAGED OR DEGRADED DECK LIDS BEFORE USING DECK AREA.

Equalizer

Inspect equalizer cover regularly for damage and debris. If water level is too low, the pump may remove all water from the skimmer causing the float valve to

SKIMMER INSTALLATION WITH *OPTIONAL* EQUALIZER LINE INSTALLED

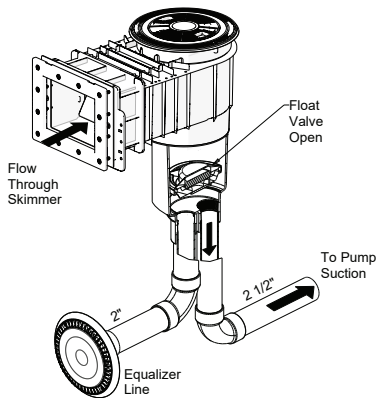


Figure 1: Normal operation: float valve open.

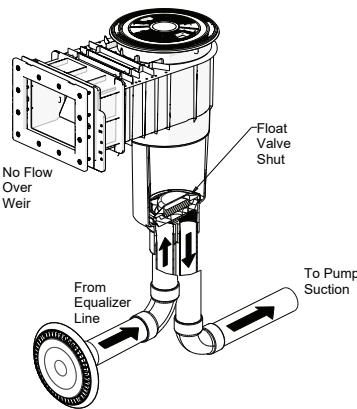


Figure 2: Equalizer operation; float valve closed.

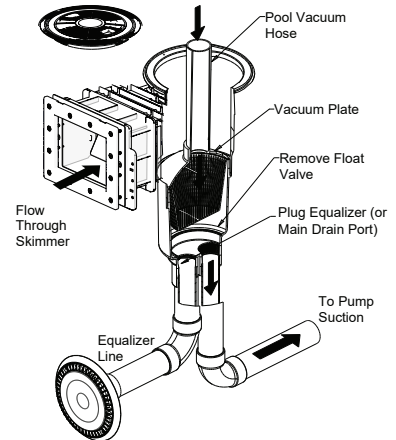


Figure 3: Vacuuming pool; float and check valves removed, equalizer port plugged.

close, diverting pump suction to equalizer (or main drain) line allowing some water to reach the pump. Float valve will remain closed until pump stops. If pump starts again before stoppage is cleared, float will close again until pool water level returns to normal.

WARNING! LOW WATER LEVEL CAN MAKE IT DIFFICULT TO EXIT POOL AND MAY DAMAGE PUMP AND OTHER POOL EQUIPMENT.

Note: An equalizer line is a way to bypass the skimmer and it is intended to prevent damage to the pump when pool water level is below the throat of the skimmer or the basket is full. You must check your local code as some require equalizer lines, others don't allow them and others leave it to the pool designer. When equalizer line is used the cover inside the pool must be VGB compliant, meeting the requirements of ASME/ANSI 112.19.8a-2008 or ANSI/APSP-16.

BALANCING SKIMMER AND MAIN DRAIN CIRCULATION

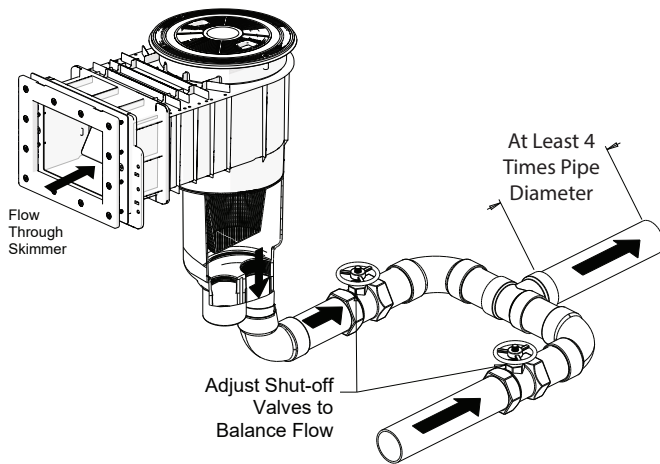


Figure 4: Typical residential installation without float valve. Use with at least two main drains.

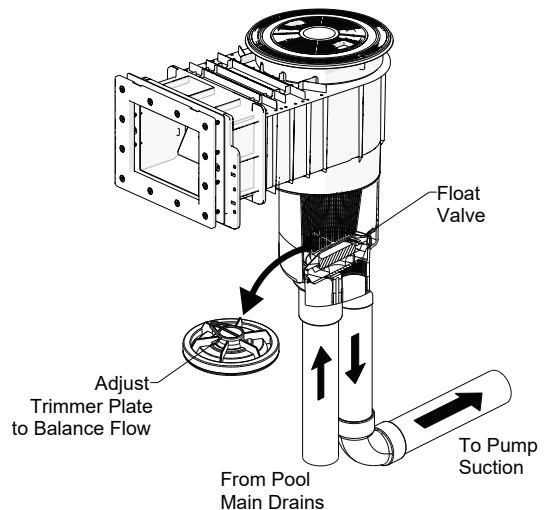


Figure 5: Typical residential installation with optional float valve. Use with at least two main drains.

MAINTENANCE

Weir Door: Periodically check weir for free operation. Replace if damaged or worn.

Strainer basket: Check strainer basket as often as needed for accumulated leaves, debris, etc. Empty basket as required.

Float Valve (optional): Periodically check that float valve is operating freely and is not waterlogged. Restart the pump to reset float valve if it is closed. If necessary, tighten trimmer plate pivot screw to maintain desired flow balance.

Equalizer Fittings: Periodically check that wall fittings are correctly installed and that covers are tight to fittings.

Water level: Maintain water level at least 1.5 to 2" above bottom of skimmer opening for proper operation. Adjust trimmer plate if necessary.

Winterizing: Drain pool until level is below skimmer inlet. Remove cover, basket and float. For dual port skimmers, plug bottom ports with standard pipe plugs. For single port skimmers, use standard plug #PTK. Cover skimmer to prevent rainwater or snow from entering the skimmer where it could freeze.

WARNING! FALLING AND TRIPPING HAZARD. THE DECK LID MUST BE INSTALLED FLUSH WITH THE DECK LEVEL.

Skimmer deck lid is made of impact and weather resistant materials, but extended use (5-10 years) may lead to reduced strength. Regularly check condition of skimmer lid. Look for cracks, chips, deterioration of plastic, etc. If any sign of damage or deterioration is found, replace the deck lid and fasteners.

SKIMMER LAYOUT AND SUCTION LINE SIZING

Skimmers are critically important for removing floating contaminants, oils, and debris; for this reason modern pool building codes require that the number of skimmers installed are capable of handling 100% of the filtration flow rate.

1. The minimum number of skimmers needed is based on facility type (See Table 1).
2. When selecting the location for skimmers, at least one should be placed so that the prevailing wind blows towards the skimmer.
3. Size suction pipe based on the design flow rate such that the water velocity in the pipe will not exceed six feet per second. To increase system flow capacity

for long pipe runs, use multiple pipes (both ports) or larger pipe (2.5" spigot, or 3"/4" adapter bushing #BFB101). See figures 4, 5 and 6 piping layout.

Table 1: Skimmers Required Per Square Foot Area

Facility Type	Area Per Skimmer (sq. ft.)
Public Pool	500
Residential Pool	800
Public and Residential Spa	150

Example: A public pool that is 1000 sq. ft. requires at least two skimmers

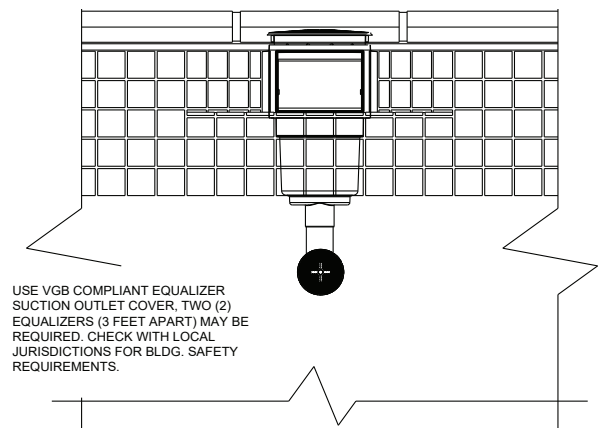


Figure 6: Skimmer Equalizer Drain Cover
Example - Model # 6HPHxxx installed on 6HA25T20Sxxx Bulkhead Adapter (xxx - Color Code).

PIPE CONNECTIONS AND TESTING

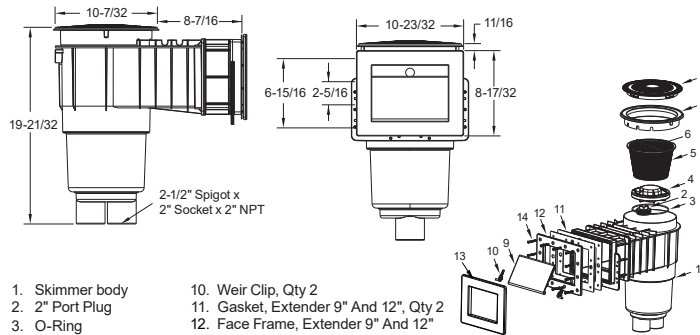
Connect pump inlet line to rear port in bottom manifold. Skimmer manifold is PVC, and comes in a variety of configurations. For threaded connections inside skimmer manifold, do not use pipe dope; to seal joint use RTV Silastic #732 (preferred), Teflon tape or Plasto-Joint Stik. For slip connections, apply PVC primer to PVC pipe only. Then apply PVC to PVC solvent cement to both pipe and slip connections. Consult distributor for correct solvent cement for pipe used. Assemble joint per cement manufacturer's instructions, allowing recommended set time before pressure testing.

WARNING! PLASTIC CEMENTS AND PRIMERS CAN BE FLAMMABLE, POISONOUS OR BOTH. CLOSELY FOLLOW CEMENT MANUFACTURER'S INSTRUCTIONS.

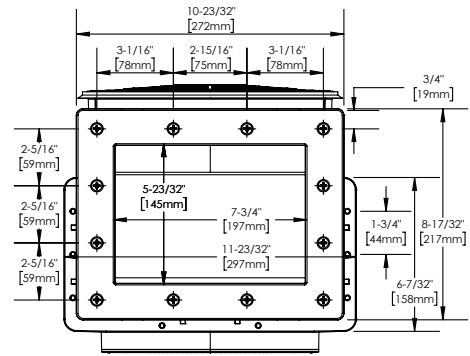
PARTS LIST AND DIMENSIONS

Flow Star Skimmer with 9" Deep Throat, Float Assembly, Basket, Lid, Adjustable Collar For Fiberglass/Vinyl

Model # SKRFFL3Nxxx/SKRVFL3Nxxx



1. Skimmer body
 2. 2" Port Plug
 3. O-Ring
 4. Float Assembly
 5. Basket
 6. Skimmer Basket Rod
 7. Collar
 8. Lid
 9. Weir Assembly
 10. Weir Clip, Qty 2
 11. Gasket, Extender 9" And 12", Qty 2
 12. Face Frame, Extender 9" And 12"
 13. Cover
 14. 12 x 1-1/4" Flat Head Phillips, 316 SS, Qty 12
- For Vinyl*
14. 12 x 1-1/4" Flat Head Phillips, 316 SS, Qty 12
- For Fiberglass*
14. 12 x 1-3/4" Flat Head Phillips, 316 SS, Qty 12



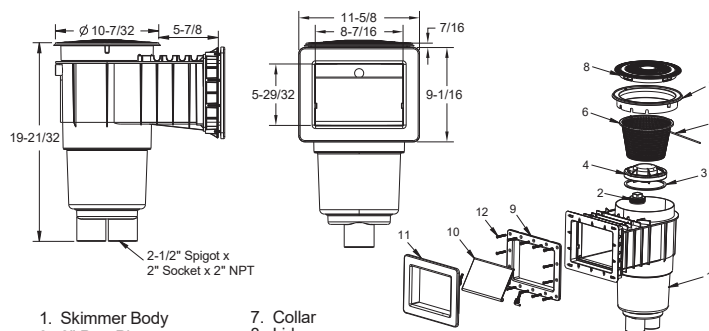
CUT OUT PANEL OTHER THAN WOOD
 A-HEIGHT MAX 5-13/16" (148 mm) MIN 6-1/16" (154 mm)
 B-WIDTH MAX 8" (203 mm) MIN 8-1/4" (210 mm)

CUT OUT PANEL FOR WOOD PANEL WITH VINYL LINER
 A-HEIGHT MAX 7-9/16" (192 mm) MIN 7-13/16" (198 mm)
 B-WIDTH MAX 9-7/8" (251 mm) MIN 10-1/8" (257 mm)

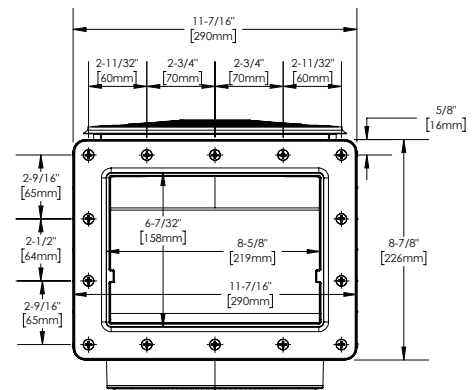
DRILL or PUNCH 12 HOLES 1/4" DIAMETER AS SHOWN.

Flow Star Skimmer with 5" Deep Throat, Float Assembly, Basket, Adjustable Collar For Fiberglass

Model # SKRFL12xxx



1. Skimmer Body
2. 2" Port Plug
3. O-Ring
4. Float Assembly
5. Skimmer Basket Rod
6. Basket
7. Collar
8. Lid
9. Gasket
10. Weir Assembly
11. Cover
12. 12 x 1-3/4" Flat Head Phillips 316 SS, Qty 14

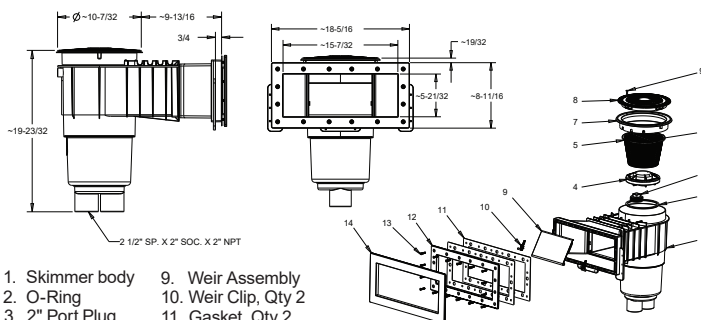


CUT OUT PANEL OTHER THAN WOOD
 A-HEIGHT MAX 6-9/16" (167 mm) MIN 6-13/16" (173 mm)
 B-WIDTH MAX 9-1/8" (232 mm) MIN 9-3/8" (238 mm)

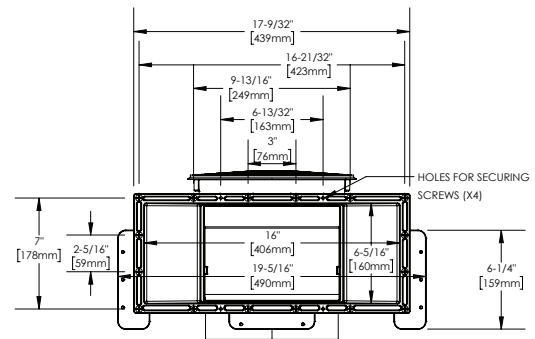
DRILL or PUNCH 14 HOLES 1/4" DIAMETER AS SHOWN.

Flow Star Wide Mouth Skimmer with 9" Deep Throat, Float Assembly, Basket, Lid, Adjustable Collar For Fiberglass/Vinyl

Model # SKR36xxx



1. Skimmer body
 2. O-Ring
 3. 2" Port Plug
 4. Float Assembly
 5. Basket
 6. Basket Rod
 7. Collar
 8. Lid
 9. Weir Assembly
 10. Weir Clip, Qty 2
 11. Gasket, Qty 2
 12. Face Frame
 13. 12 x 1-1/4" Flat Head Phillips, 316 SS, Qty 14
 14. Decorative Cover
 15. 12 x 1-1/2" Pan Head Phillips, 316 SS, Qty 4
 16. 12 x 5/8" Pan Head Phillips, 316 SS, Qty 4
- Also Included*



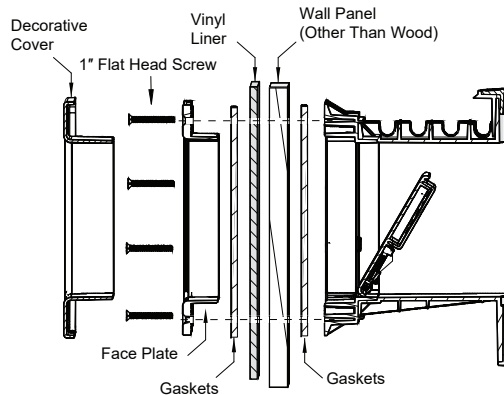
CUT OUT PANEL OTHER THAN WOOD
 A-HEIGHT MAX 6" (152 mm) MIN 6-1/4" (159 mm)
 B-WIDTH MAX 15-9/16" (395 mm) MIN 15-13/16" (402 mm)

CUT OUT PANEL FOR WOOD PANEL WITH VINYL LINER
 A-HEIGHT MAX 7-11/16" (195 mm) MIN 7-15/16" (202 mm)
 B-WIDTH MAX 17-7/16" (443 mm) MIN 17-11/16" (449 mm)

DRILL or PUNCH 16 HOLES 1/4" DIAMETER AS SHOWN.

INSTALLATION INSTRUCTIONS

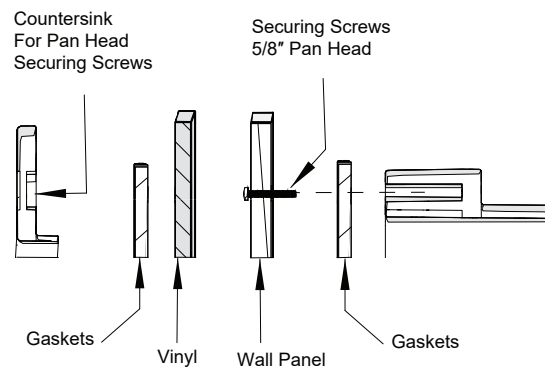
Figure 7: Skimmer Installation Cut-away



INSTRUCTIONS FOR OTHER THAN WOOD PANEL

1. Drill and cut wall panel section per above dimensions on previous page.
2. Place gasket on skimmer face, making sure holes in gasket align with holes in skimmer face. A very light application of silicon sealant will assist in holding gasket in place.
3. Align skimmer face and gasket with drilled panel holes and fasten to wall panel. For SKR36xxx use the top center and bottom center holes with the pan head securing screws (Figure 8). Use appropriate holes and four screws.
4. If vinyl liner pool, install liner before proceeding to step 5.
5. Align second gasket and face plate. Tightly fasten the skimmer face with provided screws. If vinyl liner pool, pierce liner through face plate holes one at a time prior to inserting screws. Screws must go through face frame, gasket, liner, wall panel, gasket, and into skimmer face.
6. Install skimmer face cover, (Not available with SKR36xxx). If vinyl liner pool, cut out liner along inside edge of the skimmer face cover.

Figure 8: SKR36xxx Securing Screws



INSTRUCTIONS FOR WOOD PANEL WITH VINYL

1. Cut out wall panel approximately 1/8" larger than outside dimensions of skimmer face (NOT face frame or cover).
2. Insert skimmer into panel cut out from rear. Butt the mounting flange against the rear of the panel. Use "U" shims, if necessary to make the face of the skimmer flush with the inside of the pool. Fasten the skimmer to the rear of the wood panel by securing with stainless or brass wood screws through the skimmer mounting flange.
3. Place gasket on skimmer face, make sure the holes in the gasket align with holes in skimmer face. A very light application of silicon sealant will assist in holding gasket in place.
4. Install vinyl liner.
5. Align second gasket and face plate. Fasten tightly to skimmer face with provided screws. Pierce liner through face plate holes one at a time by inserting screws.
6. Install skimmer face cover, (Not available with SKR36xxx). Cut out liner along inside edge of the skimmer face cover.

LIMITED WARRANTY

Skimmers manufactured by AquaStar are warranted to be free of defects in material and workmanship for one year from date of installation. The foregoing warranties relate to the original consumer purchaser ("Purchaser") only. AquaStar shall have the option to repair or replace the defective product, at its sole discretion. Purchasers must pay all labor and shipping charges necessary to replace the product covered by this warranty. Requests for warranty service must be made through the installing dealer. This warranty shall not apply to any product that has been subject to negligence, misapplication, improper installation or maintenance, or other circumstances which are not in AquaStar's direct control. This warranty sets forth AquaStar's sole obligation and Purchaser's exclusive remedy for defective products. AQUASTAR SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL OR CONTINGENT DAMAGES WHATSOEVER. THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES, IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND SHALL NOT EXTEND BEYOND THE DURATION OF THE APPLICABLE EXPRESS WARRANTIES PROVIDED HEREIN. Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. Supersedes all previous publications.

A Safe Drain is No Accident™
VGB Compliance Every Pool, Every Time





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