CHANNEL DRAIN INSTALLATION INSTRUCTIONS

VGB SERIES

SUBMERGED, SUCTION, SINGLE, UNBLOCKABLE OUTLET INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS FOR

32CDFLxxx, 32CDFLFRxxx, 32CDFLxxx, 32CDAVxxx, 32CDAVFRxxx, 32CDAVxxx, 32CDLTxxx, 32CDLTFRxxx, 32CDLTVxxx, 32CDAVACxxx, 32CDTxxx and 32CDBTFRxxx

(xxx = COLOR SUFFIX)

MEETS OR EXCEEDS ASME/ANSI A112.19.8a-2008
ANTI-ENTRAPMENT/ANTI-VORTEX

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 pipe, the better! (But do not exceed maximum GPM ratings marked on top of cover or per installation instructions.) TAKE SPECIAL NOTE OF DIVERTER INSTALLATION ON PAGE 10.
• Replace cover and screws within 5 years.

WARNINGS AND IMPORTANT SAFETY PRECAUTIONS

WARNING
INSTALLERS, POOL OPERATORS AND POOL OWNERS MUST READ THESE WARNINGS AND ALL INSTRUCTIONS BEFORE USING THIS PRODUCT!

DANGER
SERIOUS BODILY INJURY OR DEATH CAN RESULT IF THIS PRODUCT IS NOT INSTALLED AND USED CORRECTLY.

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 DRAIN COVER AND MAY CAUSE SEVERE PERSONAL INJURY OR DEATH.
Pool and spa pumps produce high levels of suction, 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.

Pool and spa pumps move large volumes of water, which can pose extreme danger if a person’s hair comes in close proximity to a drain that is not the proper size for the pump or pumps.

Suction entrapment dangers include:

**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.

**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.

**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) or spa 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.

**WARNING** Use these fittings only with a pumping system rated for the corresponding flow or less. 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.

**IMPORTANT NOTICE**

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 VGB 2008 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 five (5) years from installation (or earlier if the cover becomes damaged in any way).

**WARNING** An ANSI/ASME A112.19.8 approved anti-entrapment drain cover must be used for each drain. 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. 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.
IMPORTANT NOTICE

Attention Installer: This manual contains important information about the installation, operation and safe use of this product. This information should be given to the owner and/or operator of this equipment. You may also refer to www.aquastarpoolproducts.com for all warnings and instructions related to the 32" Channel Drains.

Before installing this product, read and follow all warning notices and instructions which are included. Failure to follow safety warnings and instructions can result in severe injury, death, or property damage. Call (877) 768-2717 or visit our website at www.aquastarpoolproducts.com for additional free copies of these instructions. It is absolutely critical that the suction plumbing be installed in accordance with the latest national and local codes for swimming pools.

A pool/spa pump produces high levels of suction, which can pose extreme danger if a person comes in close proximity to an open pool or spa drain or a loose or broken drain cover or grate.

Hydrostatic relief valve

For installations utilizing a hydrostatic relief valve, using a collector tube will maintain a clear path to the hydrostatic valve. At least one hydrostatic relief valve in a set of suction outlets will allow hydrostatic uplift pressure caused by ground water to be relieved into the pool or spa.

Entrapment Avoidance Notice:

The covers used on suction outlets should be approved and listed as conforming to the currently published edition of ANSI/ASME A112.19.8 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.

Pumps improperly sized or installed or used in applications other than for 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.

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

To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

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

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.
WARNINGS AND IMPORTANT SAFETY PRECAUTIONS

**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.

- All types of suction fittings shall not be located on seating areas or on the back rests for such seating areas.
- An approved anti-entrapment suction outlet cover must be used for each drain.
- Never exceed the maximum flow rate stated on the drain cover.
- Regularly inspect drain covers for cracks and signs of advanced weathering.
- 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.
- Install in accordance with the latest APSP standards and CPSC guidelines, follow all applicable national, state and local codes.

***If you have any questions about installation or maintenance of this drain cover, please contact your pool professional. Never attempt to alter or repair the cover or frame on your own.***

VIRGINIA GRAEME BAKER POOL AND SPA SAFETY ACT

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

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

(A) No submerged suction outlets, a gravity drainage system with ASME/ANSI cover(s), one or more unblockable outlets; or
(B) A multiple main drain system without isolation capability with suction outlet covers that meet ASME/ANSI A112.19.8 Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs and either:
   (ii) A properly designed and tested suction-limiting vent system or
   (iii) An automatic pump shut-off system.

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

(A) A multiple main drain system without isolation capability, or a single (VGB 2008 compliant) unblockable or
(B) A safety vacuum release system (SVRS) meeting ASME/ANSI A112.19.17 and/or ASTM F2387, or
(C) A properly designed and tested suction-limiting vent system, or
(D) An automatic pump shut-off system, or
(E) Disabled submerged outlets, or
(F) 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.

NOTE: Always turn off all power to the pool pump before installing the cover or working on any suction outlet.
*Important Acts Codes and Standards Information*

All AquaStar suction outlet fittings (drain covers) are federally regulated by the U.S. Consumer Product Safety Commission (CPSC). This authority was given to the CPSC in 2007 as part of the Virginia Graeme Baker Pool and Spa Safety Act. Visit www.cpsc.org for more information.

**ASME/ANSI A112.19.8 - 2007 Certification**

All AquaStar suction outlets are certified by IAPMO in accordance with ASME/ANSI A112.19.8 - 2007 and/or ASME/ANSI A112.19.8a - 2008 Suction Fitting for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs. To download a current copy of the IAPMO certification, go to http://www.IAPMORT.org.

**NSF/ANSI-50**

All AquaStar suction outlets are certified to comply with NSF/ANSI 50 Circulation system components and related materials for swimming pools, spas/hot tubs. To download a current copy of the IAPMO certification, go to http://www.IAPMORT.org

**Virginia Graeme Baker Pool and Spa Safety Act**

All AquaStar suction outlets comply with the Virginia Graeme Baker Pool and Spa Safety Act, Section 1404(b). This section requires all suction outlet fittings (drain covers) to conform to ASME/ANSI A112.19.8 - 2007 and/or ASME/ANSI A112.19.8a - 2008.

**International Code Council**

AquaStar is an approved component as required by the International Code Council (ICC) building codes, which include the International Residential Code (IRC), and the International Building Code (IBC), collectively known as the iCodes. The ICC updates the iCodes every three years. For more information, visit www.iccsafe.org.

**International Residential Code (IRC)**

Many states and local jurisdictions have adopted the IRC, including Appendix G. Section AG106 addresses Suction Entrapment Avoidance requirements that regulate residential swimming pools and spas. It is important to know if these codes are in effect where the residential pool or spa is being built and which version is being required. Effective in the 2009 version of the IRC is the requirement to build in accordance with ANSI/APSP 7 - 2006 American National Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins. 2003 and 2006 versions do not include a reference to the ANSI/APSP 7 standard. Visit www.iccsafe.org for more information.

**International Building Code (IBC)**

Many states and local jurisdictions have adopted the International Building Code which regulates commercial building projects, including public swimming pools and spas. Section 3109.5 addresses Suction Entrapment Avoidance requirements that regulate public swimming pools and spas. It is important to know if these codes are in effect where the public pool or spa is being built and which version is being required. Effective in the 2009 version of the IBC is the requirement to build in accordance with ANSI/APSP 7 - 2006 American National Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins. 2003 and 2006 versions do not include a reference to the ANSI/APSP 7 standard. Visit www.iccsafe.org for more information.

**ANSI/APSP-7 Suction Entrapment Avoidance Standard**

The Association of Pool and Spa Professionals publishes many swimming pool and spa related standards, including ANSI/APSP 7 - 2006 American National Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins. ANSI/APSP 7 is referenced by the iCodes, and is required by some states and local jurisdictions. It requires all suction outlet fittings (drain covers) to be tested and listed by a nationally recognized testing laboratory as conforming to most recent version of ASME/ANSI A112.19.8. Visit www.apsp.org for more information.
Hydraulic System Specifications

POOL PUMP SUCTION REQUIREMENTS
Pump suction is hazardous and can trap and drown or disembowel bathers. Do not use or allow anyone else to use a pool, spa, or hot tub unless it has at least two (2) suction outlets, or an approved single, unblockable suction outlet, to each pump suction line. Do not use or operate swimming pools, spas, or hot tubs if a suction outlet cover is missing, broken, or loose.

Entrapment Protection
The pump suction system must provide protection against the hazard of suction entrapment or hair entrapment/entanglement.

Suction Outlet Covers
All suction outlet covers must be maintained. They must be replaced if cracked, broken, or missing. See page (5) for outlet cover certification requirements. All suction outlets must have correctly installed, screw-fastened covers in place.

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 1-1/2 feet per second. This velocity limit is lower than the flow rating provided by the ASME A112.19.8 certification, therefore 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.

PIPING-GENERAL
For new installations, the piping between drains must be sized to limit the velocity to six (6) feet per second. This limit applies to the branch piping and all fittings between multiple outlets and the tee leading back to the pump. If code requires a lower water velocity, comply with the code. See Chart 1 for information on pipe size flow ratings at six (6) feet per second.

<table>
<thead>
<tr>
<th>ACCEPTABLE PIPE SIZE FOR MAXIMUM RECOMMENDED SYSTEM</th>
<th>FLOW RATE PER APSP-7 (6 ft. /sec inch the Branch Line)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipe Size</td>
<td>1½&quot;</td>
</tr>
<tr>
<td>Flow Rate in GPM</td>
<td>45</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>MAX FLOW RATES (PER OUTLET) MOUNTING POSITIONS (xxx=COLOR SUFFIX)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>Floor</td>
</tr>
<tr>
<td>Wall</td>
</tr>
</tbody>
</table>
SPECIAL NOTE ON CHANNEL DRAINS TO BUILDER, INSTALLER, PLAN CHECKER AND/OR INSPECTOR!

INSTALLATION LAYOUTS
A. See Fig. 1-5 for installation layout with manufactured sump
B. See Fig. 6-7 for installation layout without sump (Field-fabricated sump)
C. Requires Phillips screw driver. Hand tighten only. Do not use electrical or air drills.
D. **SPECIAL NOTE:** USE ONLY PVC TO ABS (transitional glue) for cementing to ABS sump. Do not use fast set, clear, or “hot” blue glues.
E. Measure from underside of high point of the cover to the top of pipe(s) to determine proper sump depth.

MANUFACTURED SUMP INSTALLATION (ONE, TWO, OR THREE PORTS)

**IMPORTANT**
- Single or multiple drain or pipe use.
- Models: 32CDFLxxx, 32 CDAVxxx, 32CDFLVxxx, 32CDAVxxx, 32CDAVACxxx, or 32CDLTxxx, 32CDLTVxxx (AV=Anti-Vortex)
- At IAPMO (a nationally recognized testing lab) All AquaStar Channel Drains have been tested to 3” in sump depth-field-fabricated or manufactured. All AquaStar Channel Drains are VGB 2008 compliant.
- Plumbing to 1 or 2 pumps plus skimmer equalizer are approved-DO NOT exceed maximum flow rate of outlet cover for total system.
- 1, 2, or 3 pipe connections are approved at any port or configuration under manufactured sump or field-fabricated sump respectively.
- ANY PLUMBING CONFIGURATION IS APPROVED BUT DO NOT EXCEED MAXIMUM FLOW RATES OF COVER OR PIPE(S) FLOW RATE(S) - WHICHEVER IS LESSER

MANUFACTURED SUMP INSTALLATION (SINGLE PORT / PUMP INSTALLATION)

**IMPORTANT**
- Single or multiple drain or pipe use.
- Models: 32CDFLxxx, 32 CDAVxxx, 32CDFLVxxx, 32CDAVxxx, 32CDAVACxxx, or 32CDLTxxx, 32CDLTVxxx (AV=Anti-Vortex)
- At IAPMO (a nationally recognized testing lab) All AquaStar Channel Drains have been tested to 3” in sump depth-field-fabricated or manufactured. All AquaStar Channel Drains are VGB 2008 compliant.
- Plumbing to 1 or 2 pumps plus skimmer equalizer are approved-DO NOT exceed maximum flow rate of outlet cover for total system.
- 1, 2, or 3 pipe connections are approved at any port or configuration under manufactured sump or field-fabricated sump respectively.
- ANY PLUMBING CONFIGURATION IS APPROVED BUT DO NOT EXCEED MAXIMUM FLOW RATES OF COVER OR PIPE(S) FLOW RATE(S) - WHICHEVER IS LESSER

MANUFACTURED SUMP INSTALLATION (THREE PORT TEE / SINGLE PUMP INSTALLATION)

IMPORTANT
- Single or multiple drain or pipe use.
- Models: 32CDFLxxx, 32 CDAVxxx, 32CDFLVxxx, 32CDAVVxxx, 32CDFAVxxx, 32CDLTLxxx, 32CDLTVxxx (AV=Anti-Vortex)
- At IAPMO (a nationally recognized testing lab) All AquaStar Channel Drains have been tested to 3" in sump depth-field-fabricated or manufactured. All AquaStar Channel Drains are VGB 2008 compliant.
- Plumbing to 1 or 2 pumps plus skimmer equalizer are approved-DO NOT exceed maximum flow rate of outlet cover for total system.
- 1, 2, or 3 pipe connections are approved at any port or configuration under manufactured sump or field-fabricated sump respectively.
- ANY PLUMBING CONFIGURATION IS APPROVED BUT DO NOT EXCEED MAXIMUM FLOW RATES OF COVER OR PIPE(S) FLOW RATE(S) - WHICHERVER IS LESSER

MANUFACTURED SUMP INSTALLATION (BOOSTER & CIRCULATING PUMP INSTALLATION)

IMPORTANT
- Single or multiple drain or pipe use.
- Models: 32CDFLxxx, 32 CDAVxxx, 32CDFLVxxx, 32CDAVVxxx, 32CDFAVxxx, 32CDLTLxxx, 32CDLTVxxx (AV=Anti-Vortex)
- At IAPMO (a nationally recognized testing lab) All AquaStar Channel Drains have been tested to 3" in sump depth-field-fabricated or manufactured. All AquaStar Channel Drains are VGB 2008 compliant.
- Plumbing to 1 or 2 pumps plus skimmer equalizer are approved-DO NOT exceed maximum flow rate of outlet cover for total system.
- 1, 2, or 3 pipe connections are approved at any port or configuration under manufactured sump or field-fabricated sump respectively.
- ANY PLUMBING CONFIGURATION IS APPROVED BUT DO NOT EXCEED MAXIMUM FLOW RATES OF COVER OR PIPE(S) FLOW RATE(S) - WHICHERVER IS LESSER

MANUFACTURED SUMP INSTALLATION
(DUAL PUMP WITH HYDROSTATIC VALVE INSTALLATION)

IMPORTANT
- Single or multiple drain or pipe use.
- Models: 32CDFLxxx, 32CDAVxxx, 32CDFLVxxx, 32CDAVACxxx, or 32CDLTxxx (AV=Anti-Vortex)
- At IAPMO (a nationally recognized testing lab) All AquaStar Channel Drains have been tested to 3" in sump depth-field-fabricated or manufactured. All AquaStar Channel Drains are VGB 2008 compliant.
- Plumbing to 1 or 2 pumps plus skimmer equalizer are approved- DO NOT exceed maximum flow rate of outlet cover for total system.
- 1, 2, or 3 pipe connections are approved at any port or configuration under manufactured sump or field-fabricated sump respectively.
- ANY PLUMBING CONFIGURATION IS APPROVED BUT DO NOT EXCEED MAXIMUM FLOW RATES OF COVER OR PIPE(S) FLOW RATE(S) - WHICHEVER IS LESSER

FIELD FABRICATED SUMP INSTALLATION (ONE, TWO, OR THREE PORTS)

IMPORTANT
- At IAPMO (a nationally recognized testing lab) All AquaStar Channel Drains have been tested to 3" in sump depth-field-fabricated or manufactured. All AquaStar Channel Drains are VGB 2008 compliant.
- Plumbing to 1 or 2 pumps plus skimmer equalizer are approved- DO NOT exceed maximum flow rate of outlet cover for total system.
- 1, 2, or 3 pipe connections are approved at any port or configuration under manufactured sump or field-fabricated sump respectively.
- ANY PLUMBING CONFIGURATION IS APPROVED BUT DO NOT EXCEED MAXIMUM FLOW RATES OF COVER OR PIPE(S) FLOW RATE(S) - WHICHEVER IS LESSER
- "A" should be a min. 3" to bottom of cover.
- Single or multiple drain use.
- Models: 32CDFLxxxx, 32CDLTFxxx, or 32CDAVACxxx. (AV=Anti-Vortex)

FIELD FABRICATED SUMP INSTALLATION (SINGLE PIPE CONSTRUCTION)

IMPORTANT

- At IAPMO (a nationally recognized testing lab) All AquaStar Channel Drains have been tested to 3" in sump depth-field-fabricated or manufactured. All AquaStar Channel Drains are VGB 2008 compliant.
- Plumbing to 1 or 2 pumps plus skimmer equalizer are approved-DO NOT exceed maximum flow rate of outlet cover for total system.
- 1, 2, or 3 pipe connections are approved at any port or configuration under manufactured sump or field-fabricated sump respectively.
- ANY PLUMBING CONFIGURATION IS APPROVED BUT DO NOT EXCEED MAXIMUM FLOW RATES OF COVER OR PIPE(S) FLOW RATE(S) - WHICHER IS LESSER
- "A" should be a min. 3” to bottom of cover.
- Single or multiple drain use.
- Models: 32CDFLFRxxx, 32CDLTFRxxx, or 32CDAVFRxxx. 32CDAVACFRxxx, (AV=Anti-Vortex)


SPECIAL NOTE:

- "HALF-PIPE" DIVERTER INCLUDED WITH ALL "FL" (FLAT) CHANNEL DRAINS SHOULD BE USED WITH ALL SINGLE (1) & TWO (2) PIPE INSTALLATIONS WHEN TOTAL FLOW RATES EXCEED 250 GPM.
- USE SILICONE WHEN SETTING DIVERTER FOR REMOVAL & RE-INSTALLING WHEN WINTERIZING, DRAINING, ETC.
- IF SINGLE PIPE: SILICONE DIVERTER ABOVE PORT OR PIPE - ON CENTER.
- IF TWO PIPES: SILICONE DIVERTER ABOVE PORT OR PIPE NEAREST TEE CONNECTION TO PUMP.
NOTES: UNLESS OTHERWISE SPECIFIED
1. ITEM 5 TO BE REMOVED AFTER GUNITE/PLASTER APPLICATION. PRESERVE SCREWS FOR INSTALLATION OF SUCTION GRATE.

COLOR CODES
01 WHITE
02 BLACK
03 LIGHT GRAY
04 BLUE
05 DARK GRAY
06 BONE
07 TAUPE
08 TAN

PARTS LIST
ITEM PART NUMBER DESCRIPTION QTY
1 32CDFL101-08_FRAME 32" CHANNEL DRAIN, FRAME 1
2 32CDFL101-08_COVER 32" CHANNEL DRAIN, COVER, FLAT 1
3 32CDFL101-08_PLUG 32" CHANNEL DRAIN, PLUG 2
4 #10 FLAT HEAD PHILLIPS SCREW #10 8

APPROVALS
DRAWN BY:
CHECKED BY:
APPROVED BY:

AQUASTAR POOL PRODUCTS, INC.
1666 GARNET AVE, SAN DIEGO, CA 92109, (877) 768-2717

TITLE
32" Channel Drain, Flat, No Sump

SCALE: 0.188

PARTS LIST
ITEM PART NUMBER DESCRIPTION QTY
1 32CD-FL-FR101-08_FRAME 32" CHANNEL DRAIN, FLAT, NO SUMP, FRAME 1
2 32CD-FL-FR101-08_COVER 32" CHANNEL DRAIN, FLAT, NO SUMP, COVER 1
3 32CD-FL-FR101-08_SUPPORT 32" CHANNEL DRAIN, FLAT, NO SUMP, SUPPORT 4
4 #10 FLAT HEAD PHILLIPS SCREW #10 8
5 32" CHANNEL DRAIN, INSTALLATION PLATE 1

APPROVALS
DRAWN BY:
CHECKED BY:
APPROVED BY:

AQUASTAR POOL PRODUCTS, INC.
1666 GARNET AVE, SAN DIEGO, CA 92109, (877) 768-2717

TITLE
32" Channel Drain, Flat, No Sump

SCALE: 0.188
NOTES: UNLESS OTHERWISE SPECIFIED
1. ITEM 9 TO BE REMOVED AFTER GUNITE/PLASTER APPLICATION.
   PRESERVE SCREWS FOR INSTALLATION OF SUCTION GRATE.

AQUASTAR
POOL PRODUCTS, INC.
1666 GARNET AVE, SAN DIEGO, CA 92109, (877) 768-2717

TITLE
32" CHANNEL DRAIN ANTI-ENTRAPMENT SUCTION OUTLET COVER AND 3 PORT SUMP

PARTS LIST

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<td>2</td>
<td>32CD101-08_COVER</td>
<td>32&quot; CHANNEL DRAIN, COVER</td>
<td>1</td>
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<tr>
<td>3</td>
<td>32CD101-08_PLUG</td>
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<td>5</td>
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<td>#10 X 1&quot; FLAT HEAD PHILLIPS SCREW, SS</td>
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<td>32&quot; PORT MANUFACTURED SUMP DRAIN</td>
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</table>

COLOR CODES
- WHITE 01
- BLACK 02
- LIGHT GRAY 03
- BLUE 04
- DARK GRAY 05
- BONE 06
- TAUPE 07
- TAN 08

NOTES: UNLESS OTHERWISE SPECIFIED
1. ITEM 5 TO BE REMOVED AFTER GUNITE/PLASTER APPLICATION.
   PRESERVE SCREWS FOR INSTALLATION OF SUCTION GRATE.
NOTES: UNLESS OTHERWISE SPECIFIED
1. ITEM 3 TO BE REMOVED AFTER GUNITE/PLASTER APPLICATION.
   PRESERVE SCREWS FOR INSTALLATION OF SUCTION GRATE.

PARTS LIST

ITEM PART NUMBER DESCRIPTION QTY
1 32CD-AV-FR101-08_FRAME 32" CHANNEL DRAIN, FRAME 1
2 32CD-AV-FR101-08_COVER 32" CHANNEL DRAIN, ANTI-VORTEX, NO SUMP, COVER 1
3 32CD-AV-FR101-08_SUPPORT 32" CHANNEL DRAIN, SUPPORT 4

COLOR CODES
01 WHITE
02 BLACK
03 LIGHT GRAY
04 BLUE
05 DARK GRAY
06 BONE
07 TAUPE
08 TAN

1. ITEM 8 TO BE REMOVED AFTER GUNITE/PLASTER APPLICATION.
   PRESERVE SCREWS FOR INSTALLATION OF SUCTION GRATE.
NOTES: UNLESS OTHERWISE SPECIFIED

1. ITEM 6 TO BE REMOVED AFTER GUNITE/PLASTER APPLICATION.
   PRESERVE SCREWS FOR INSTALLATION OF SUCTION GRATE.

AQUASTAR
POOL PRODUCTS, INC.
1666 GARNET AVE, SAN DIEGO, CA 92109, (877) 768-2717

TITLE
32" CHANNEL DRAIN DEBRIS CATCHER SUCTION OUTLET W/SUMP

PARTS LIST

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QTY</th>
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<tbody>
<tr>
<td>1</td>
<td>32CD101-08_SUMP</td>
<td>32&quot; PORT MANUFACTURED SUMP BUCKET</td>
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<tr>
<td>2</td>
<td>32CDFLAC101-08_INSERT</td>
<td>32&quot; LEAF TRAP INSERT</td>
<td>1</td>
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<tr>
<td>3</td>
<td>32CDFLAC101-08_COVER</td>
<td>32&quot; LEAF TRAP COVER</td>
<td>1</td>
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<tr>
<td>4</td>
<td>NUMBER_10_PHF</td>
<td>#10 PAN HEAD PHILLIPS SCREW</td>
<td>8</td>
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<tr>
<td>5</td>
<td>32CD101-08_PLUG</td>
<td>32&quot; CHANNEL DRAIN, PLUG</td>
<td>2</td>
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<tr>
<td>6</td>
<td>32_CD-AV-FR101-08_SUPPORT</td>
<td>32&quot; CHANNEL DRAIN, SUPPORT</td>
<td>4</td>
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<td>7</td>
<td>32CD-AV-FR101-08_FRAME</td>
<td>32&quot; CHANNEL DRAIN, FRAME</td>
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COLOR CODES

01 WHITE
02 BLACK
03 LIGHT GRAY
04 BLUE
05 DARK GRAY
06 BONE
07 TAUPE
08 TAN

SCALE 0.125

APPROVALS

DRAWN BY

CHECKED BY

ENGR

REV  DESCRIPTION  CO NO  BY/DATE  APVD/DATE
-  -  -  -

REVISIONS

PARTS LIST

1. ITEM 5 TO BE REMOVED AFTER GUNITE/PLASTER APPLICATION.
   PRESERVE SCREWS FOR INSTALLATION OF SUCTION GRATE.
NOTES: UNLESS OTHERWISE SPECIFIED
1. ITEM 7 TO BE REMOVED AFTER GUNITE/PLASTER APPLICATION.
   PRESERVE SCREWS FOR INSTALLATION OF SUCTION GRATE.

COLOR CODES
01 WHITE
02 BLACK
03 LIGHT GRAY
04 BLUE
05 DARK GRAY
06 BONE
07 TAUPE
08 TAN

SECTION C-C
NOTES: UNLESS OTHERWISE SPECIFIED
1. ITEM 4 TO BE REMOVED AFTER GUNITE/PLASTER APPLICATION.
PRESERVE SCREWS FOR INSTALLATION OF SUCTION GRATE.

COLOR CODES
01 WHITE
02 BLACK
03 LIGHT GRAY
04 BLUE
05 DARK GRAY
06 BONE
07 TAUPE
08 TAN

PARTS LIST
ITEM PART NUMBER DESCRIPTION QTY
1 32CDFLAC101-08_INSERT 32" LEAF TRAP INSERT 1
2 32CDFLAC101-08_COVER 32" LEAF TRAP COVER 1
3 32CD-AV-FR101-08_FRAME 32" CHANNEL DRAIN, FRAME 1
4 32CD-AV-FR101-08_SUPPORT 32" CHANNEL DRAIN SUPPORT 4
5 DCP101-08 32" DEBRIS CATCHER CHANNEL DRAIN COVER 1
6 10X175_FHP #10 X 1-3/4 FLAT HEAD PHILLIPS SCREW, SS 8

COLOR CODES
01 WHITE
02 BLACK
03 LIGHT GRAY
04 BLUE
05 DARK GRAY
06 BONE
07 TAUPE
08 TAN

NOTES: UNLESS OTHERWISE SPECIFIED
1. ITEM 9 TO BE REMOVED AFTER GUNITE/PLASTER APPLICATION.
PRESERVE SCREWS FOR INSTALLATION OF SUCTION GRATE.
**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.

**WARNING! TO REDUCE THE RISK OF ENTRAPMENT HAZARD**

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 near point to near 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 ASME/ANSI A112.19.8-2007) 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, IAF Standards and CPSC guidelines, follow all national, state and local codes applicable. 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 skimmers and double deep sump buckets. In both cases, do not ever use blue glue or related hot glues, clear glues or any fast setting cement.

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 (5) years or if found to be damaged, broken, cracked, missing, not securely attached or missing screws. DO NOT use facility until corrected!

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 ASME/ANSI A112.19.8a-2008 standards and safety regulations as set forth by the Consumer Products Safety Commission.

A copy of this certificate is available on AquaStar Pool Products Inc’s website under news & information: www.aquastarpoolproducts.com

A Safe Drain is No Accident™

AQUASTAR pool products

P 877-768-2717  F 877-276-POOL  info@aquastarpoolproducts.com  www.aquastarpoolproducts.com

Rev 080809