MODEL HLF-300

HASA Liquid Feeder™

Safe, Clean and Clear Water

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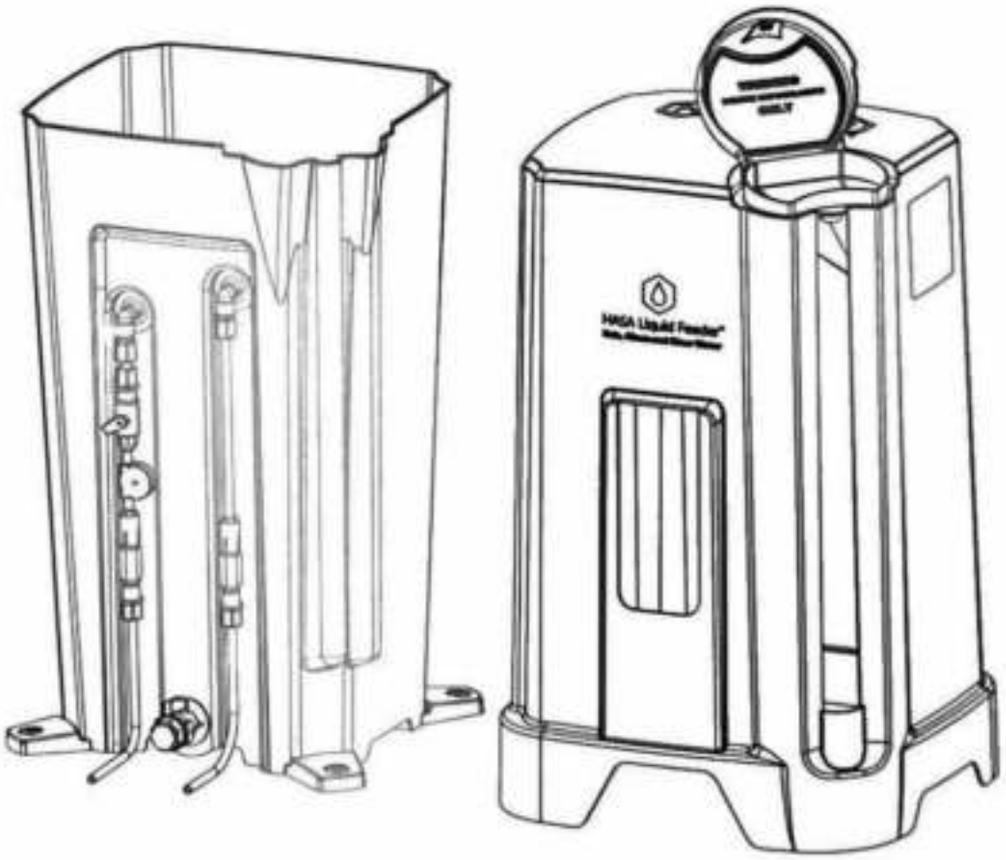
Safe, Clean and Clear Water

The HASA LIQUID FEEDER™ is a non-electric automatic daily chlorine feeder that will maintain a steady free chlorine level in a swimming pool. It is designed to feed a controlled amount of LIQUID POOL CHLORINE (SODIUM HYPOCHLORITE) into the swimming pool through an advanced innovative technology.

ALWAYS THINK SAFETY FIRST!

READ AND OBEY ALL LABEL WARNINGS AND SAFETY PRECAUTIONS WHEN USING POOL CHEMICALS. **INTRODUCTION OF ANY CHEMICAL OTHER THAN SODIUM HYPOCHLORITE IN THE HASA LIQUID FEEDER™ MAY RESULT IN DANGEROUS CHEMICAL REACTIONS. NEVER MIX CHEMICALS.** FOR QUESTIONS REGARDING INSTALLATION OR OPERATION, PLEASE E-MAIL INFO@HASAPOOL.COM.



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THE HASA LIQUID FEEDER™ ASSEMBLY

Materials List

A. Feeder Reservoir with pre-plumbed fittings (Figure 3)

B. Feeder Cover (Figure 3)

C. Feet (4) (Figure 2)

E. "IN" and "OUT" Float Arms (Figure 4—one each) (Photo #1)

F. ¾" Feeder Drain Valve Assembly (Photo #2)

G. 12' x ⅜" OD Tubing Bundle (Photo #3)

H. ¼" NPT x ⅜" Supply Adapters (2) (for supply and return lines from Feeder) (Photo #4)

I. ¼" NPT Tap (Photo #5)

J. Inline Strainer (Optional) (Photos #8 and #9)

Note: Fittings supplied from HASA come pre-Teflon taped. If damaged or scarred, re-Teflon tape. Teflon tape not included.

HASA LIQUID FEEDER™ (HLF™) INSTALLATION: WARNING—Before installing the HLF™ unit, make sure that the pump is turned off and that all power to the system is turned off. Ensure that no one will turn on the electricity or power to the pump during the installation process.

Step One: Select an area for unit placement near the pool pump and filter equipment. Make sure the area is level and allows for good access to the front of the HLF™. Refer to installation diagram (Figure 1).

Step Two: Install HLF™ feet (Figure 2). Turn the feeder reservoir upside down and push the feet into the four corner slots of the reservoir and secure the feet onto feeder. Screw in ¾" drain valve assembly into HLF™ bottom drain port (Figure 5, See Photo #2). Apply Teflon tape to drain valve assembly before threading into bottom drain port. Turn feeder reservoir back to upright position.

Step Three: With breaker to pool equipment turned off, complete the following steps:

A. Identify area to drill and tap HLF™ supply line adapter. Should be installed between pump and filter (Figure 1), ideally tapping into a PVC fitting for better tapping capability. Ensure that tubing has a proper pathway from the plumbing to the feeder. Avoid pinching, pulling or restricting the tubing. ***Note: Tubing can be run from the front or the sides of the HLF™.**

B. Using 7/16" drill bit, drill hole in identified area for installing supply adapter (letter 'h' Photo #4). Be sure to drill hole straight, avoiding having drill at an angle (perpendicular to the pipe). Best drill area is on the side of the pipe/fitting parallel to the ground. *Be careful to not damage the plumbing on the opposite side of the drilled hole.* ***Note: Sun-rotted or ultraviolet (UV) damaged polyvinyl chloride (PVC) may be brittle and crack. It is always best to install into proper PVC fitting.**

C. Using supplied ¼" NPT Tap (letter "i" Photo #5), begin creating thread in hole drilled from **step b** in PVC to thread the supply adapter into. ***Note: To avoid cross-threading when creating thread, go slow and straight, avoiding angles (perpendicular to PVC). Thread tap, using a wrench (not included), into PVC.**

D. Thread in Teflon taped ¼" NPT supply adapter (letter "h" Photo #4).

Step Four: Unscrew drain plug from pump strainer (Figure 1, Option A, See Photo #10). Thread in ¼" NPT return adapter (letter "h" Photo #4) into pump strainer drain port. If not able to, then drill and tap plumbing right before the pump (Figure 1, Option B, See Photo #11). Teflon tape return adapter (letter "h" Photo #4).

Step Five: Unscrew nut from supply adapter (letter "h", Photo #4). Inside is an o-ring seated in adapter housing, black plastic ferrule and metal ferrule. Follow these steps:

A. Slide compression nut onto supplied tubing, and then push on metal ferrule and plastic ferrule onto tubing ~ ¼". Metal ferrule should push on smooth side towards the compression nut. Plastic ferrule should push on non-flat side towards metal ferrule.

B. Next, ensuring that o-ring stays properly seated, push tubing into adapter housing until it fully seats and then tighten compression nut onto adapter housing until tubing is secure inside the fitting. **See Photo Step 1 - Complete on page 14 for illustration.**

Step Six: Stretch the tubing (See Photo #3) to the front of the feeder reservoir (Figure 3, Photo #3). The supply "IN" line will be on the right when facing the front of the feeder. Cut tubing to appropriate length to push the supply line tubing into the quick connect check valve—allowing water flow into the feeder tank. Allow enough slack in tubing to naturally hang.

Step Seven: With the remaining tubing, push one end of the tubing into the return "OUT" check valve (left side when facing feeder, Figure 3). Stretch tubing to installed supply adapter on pump. Measure and cut away excess tubing. Unscrew compression nut and repeat adapter tubing installation as shown in Step 5.

Step Eight: Install float arms, as marked, in float arm housing inside of feeder. Place "IN" float into "IN" housing, as shown. Place "OUT" arm in "OUT" housing. (Figure 4, See Photo #1)

Step Nine: After checking that all connections are tight and secure, fill the tank with water to the "OUT" float level. (Figure 4). Fresh water from the hose or clean pool water can be used. When the HLF is completely filled, some bulging of the reservoir may occur.

Step Ten: Turn on breaker to pool equipment. Turn on pool pump. Once the pump has re-primed, check all fittings and tubing for visible leaks. Watch as water level in tank will be rising. Place feeder cover (Figure 3) on the feeder reservoir.
Add initial liquid chlorine (sodium hypochlorite) through the open fill lid on top (Figure 3). Pour SLOWLY towards top edge of funnel to allow a gentle swirl and prevent splash-back. Start with 2 gallons (minimum) to 8 gallons (maximum) of liquid pool chlorine (amount is dependent on bather load and water temperature).

Always fill liquid sodium hypochlorite through the top lid funnel only. Do not fill with HLF cover off as this could cause clogging of tubing or valves

A chlorine bed should always be visible in the HLF™ for proper chlorination of the pool/spa. When the yellow chlorine bed is not visible—or is within 2" of the bottom of the site glass—it is time to add more liquid pool chlorine. When replenishing the unit with new liquid pool chlorine, never add more than the recommended amount.

After adding the liquid pool chlorine to the HLF™, close the fill lid on top (Figure 3). Make sure lid is always closed to prevent dirt and debris from entering the unit. Adding liquid pool chlorine in excess of the recommended maximum will only decrease the operating efficiency of the unit and possibly result in scaling of the valves and tubing.

Inert mineral salts may fall out of the solution into the bottom of the HLF™ and slowly build up, as liquid pool chlorine is dispensed by the unit. By keeping this inert material out of your pool, the water will be sparkling clear, and the filter will require less cleaning.

PERIODIC MAINTENANCE OF THE HASA LIQUID FEEDER™ (HLF™)

In areas with hard water, calcium scale may periodically build up on the float assemblies, valves, or tubing. Periodic cleaning of parts with a very mild acid solution of 20 parts water to 1 part muriatic acid is recommended. In hard water high calcium areas, regular maintenance use of a metal stain and scale prevention additive is recommended. The scale prevention additive should be added to the pool only and not directly into the feeder. These are available at your local pool and spa dealership or distributor.

Congratulations on your purchase of the simple, but efficient daily liquid chlorine dispenser, the HASA LIQUID FEEDER™ (HLF™).

Visit us on the web at: **www.Hasa.com.**

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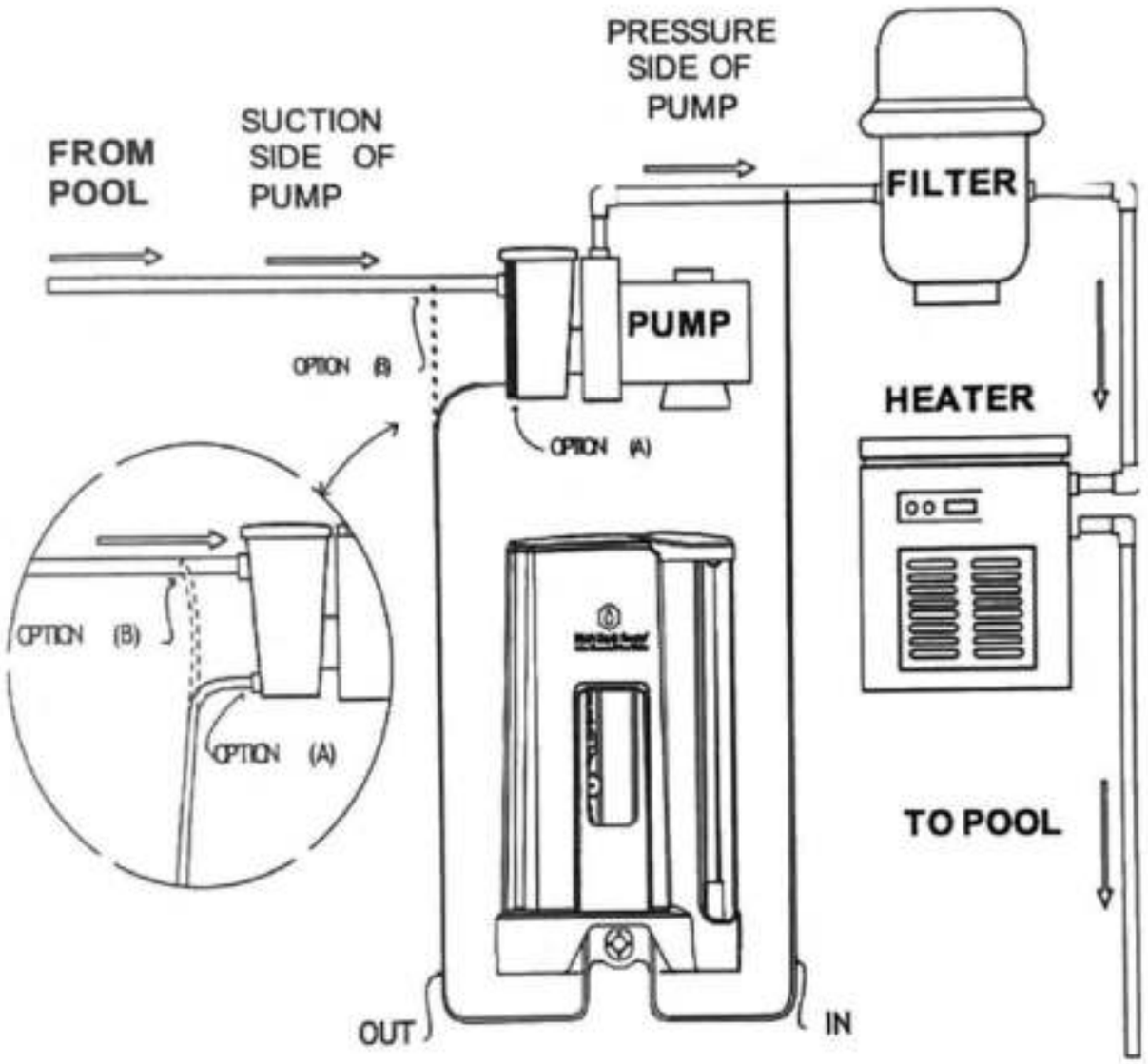
FIGURE 1: HASA LIQUID FEEDER™ HLF™ INSTALLATION



FEEDER FIGURE 2: INSTALL HLF™ FEET

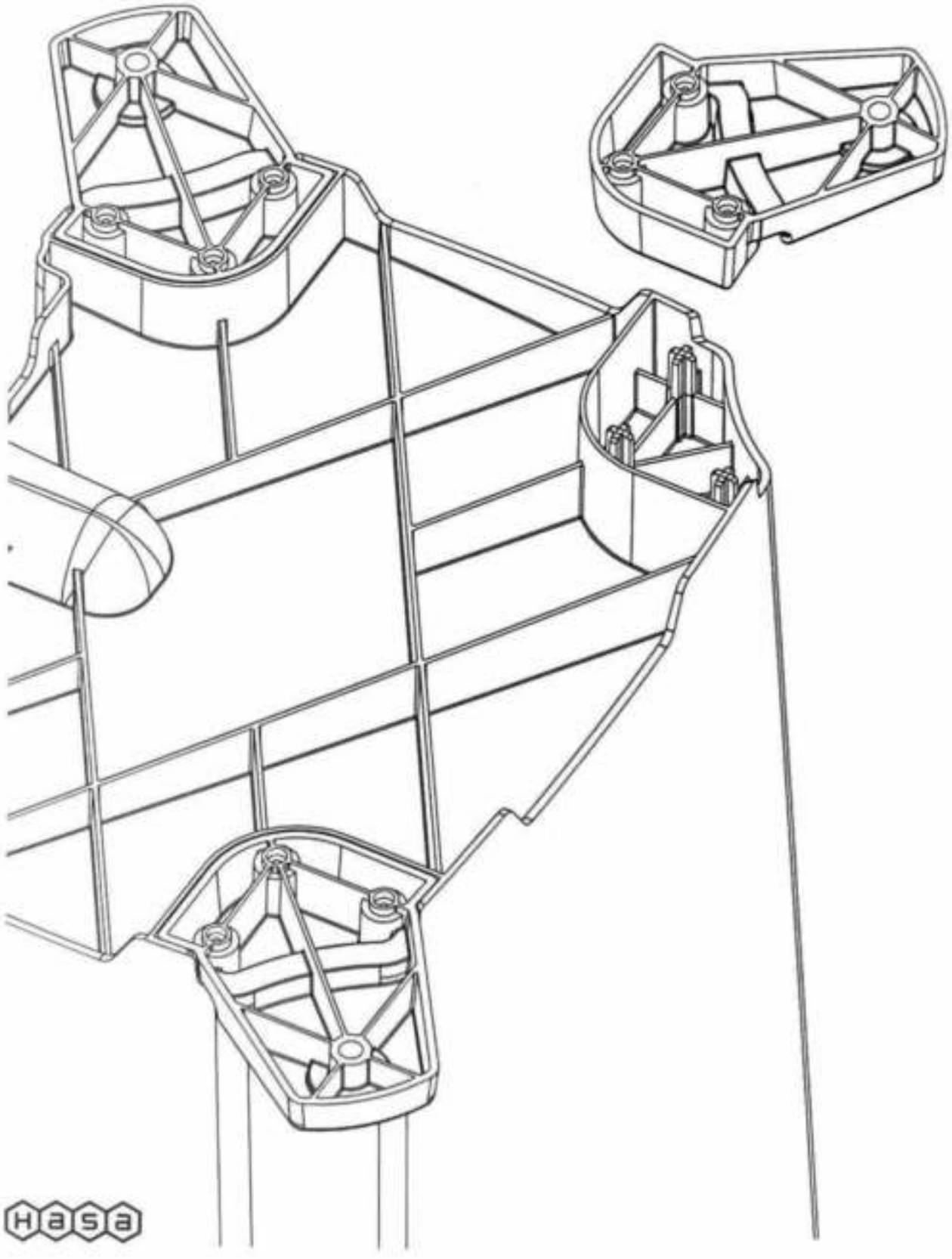


FIGURE 3: HLF™ FEEDER RESERVOIR AND COVER

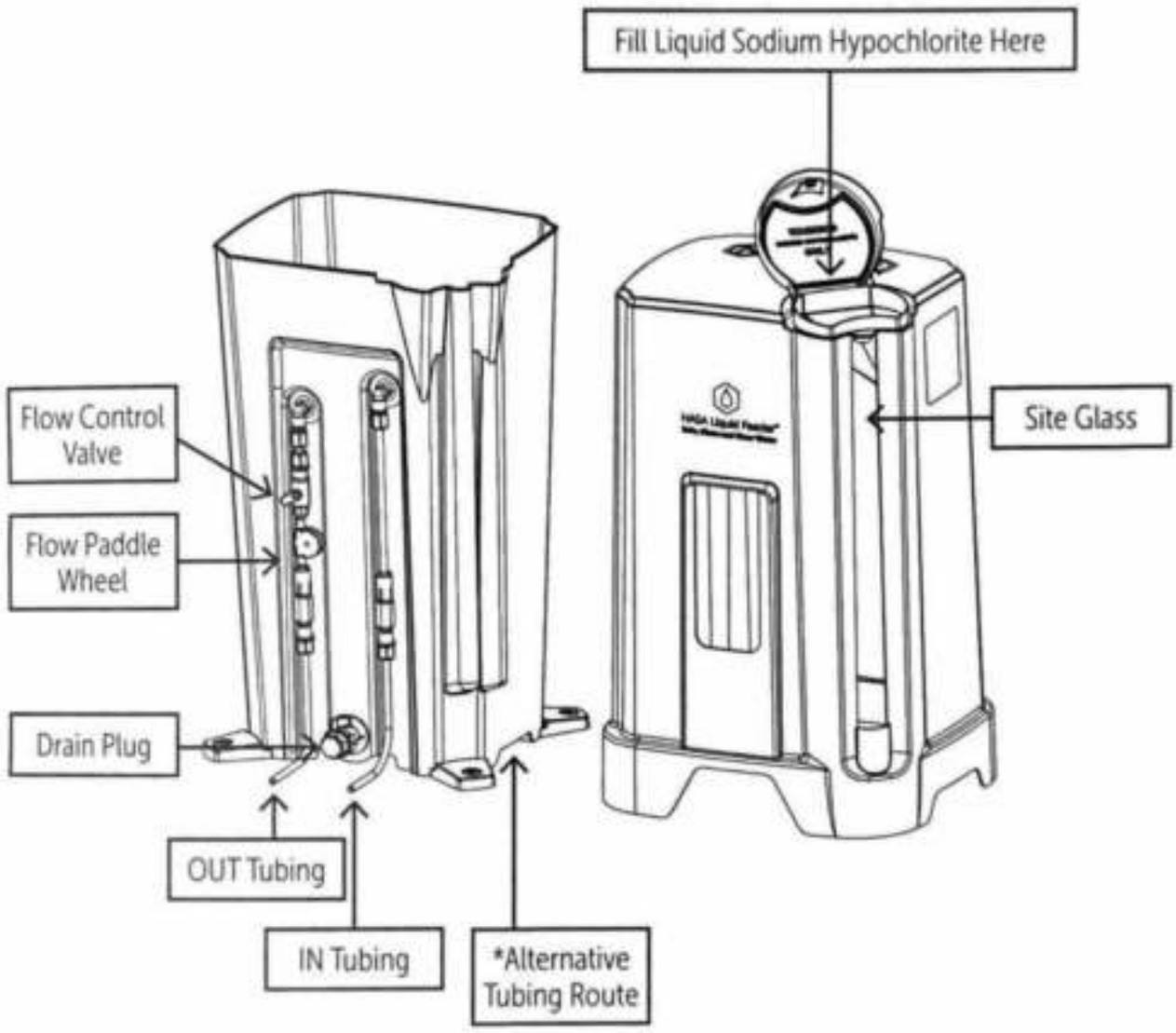


FIGURE 4: FLOAT ARM INSTALLATION TOP VIEW

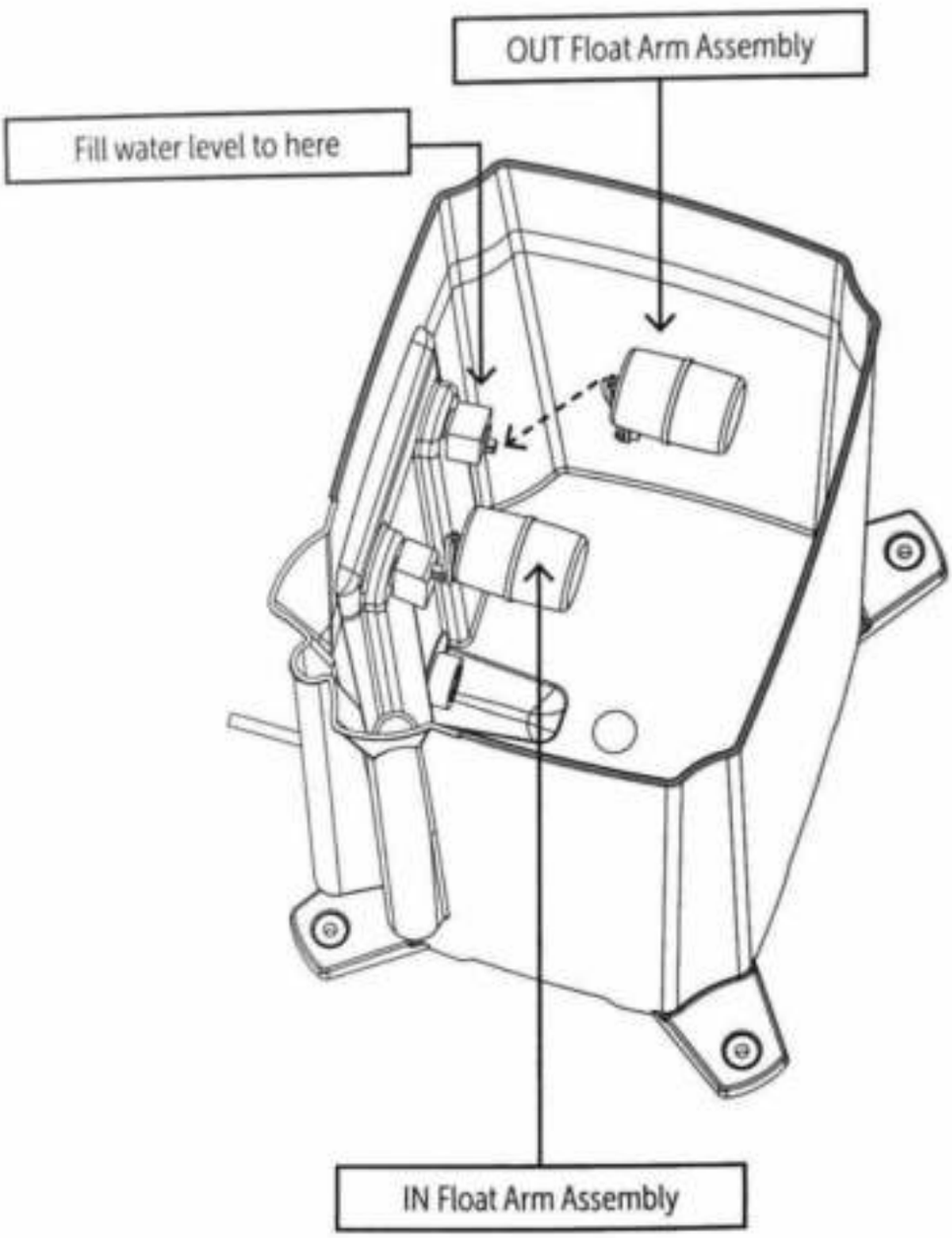
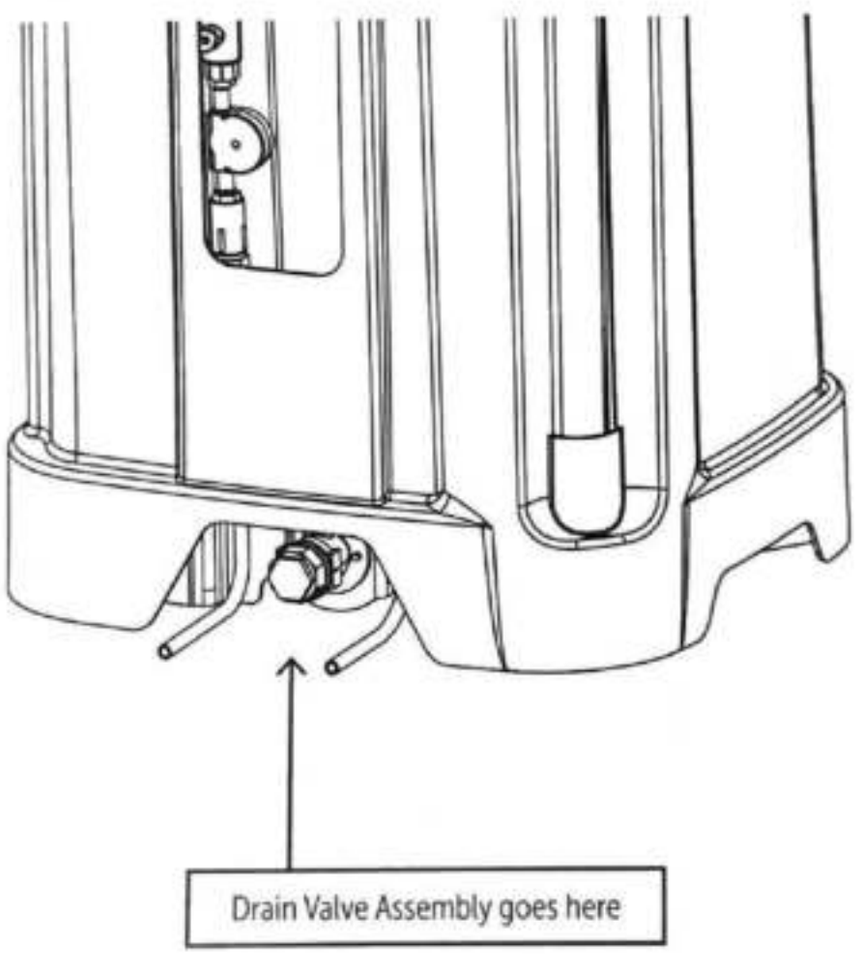


FIGURE 5: BOTTOM DRAIN



PARTS PHOTOS

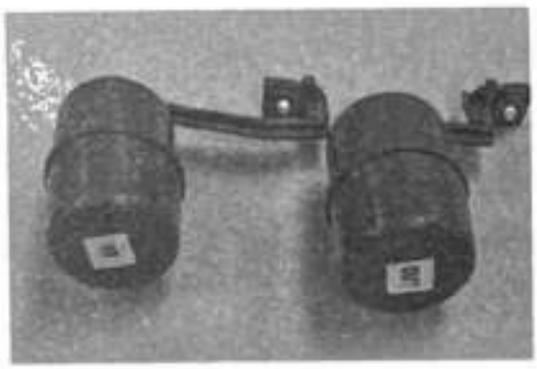


PHOTO #1 - "IN" and "OUT" FLOAT ARM ASSEMBLY Part # 96211/96212

PHOTO #2 - DRAIN VALVE ASSEMBLY Part # 96222

PHOTO #3 - OD TUBING BUNDLE Part # 96223

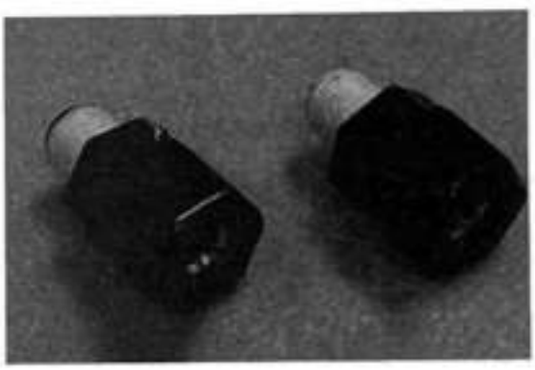


PHOTO #4 - ¼"NPT X ⅜" SUPPLY ADADPTERS Part # 96155

PHOTO #5 - ¼" NPT TAP Part # 96224

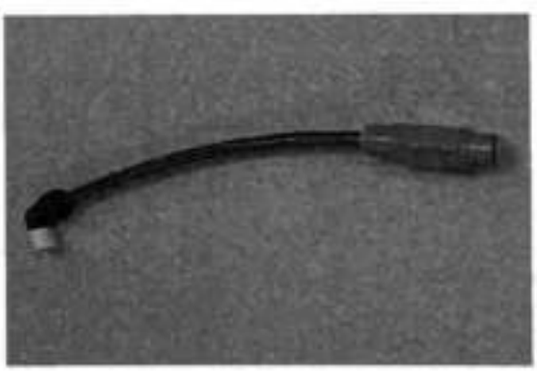


PHOTO #6 - SUPPLY "IN" TUBING WITH QUICK CONNECT CHECK VALVE part # 96157 (comes pre-attached to reservoir)

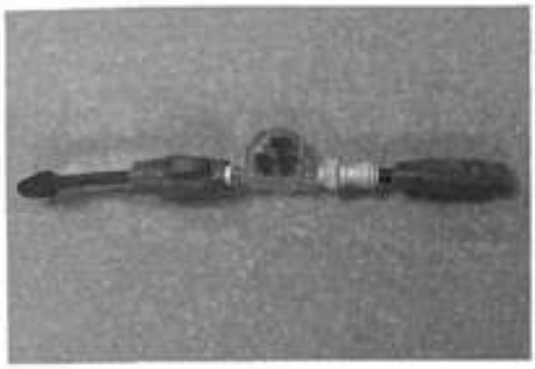


PHOTO #7 - "OUT" Return Tubing part# 96223 with Control Valve part# 96225, Flow Valve part# 96210, Union and Quick Connect Check Valve part# 96157 (comes pre-attached to reservoir)

PHOTO #8 - OPTIONAL STRAINER part # 96230 (for removal of debris prior to the HLF installed on "IN" line tubing)

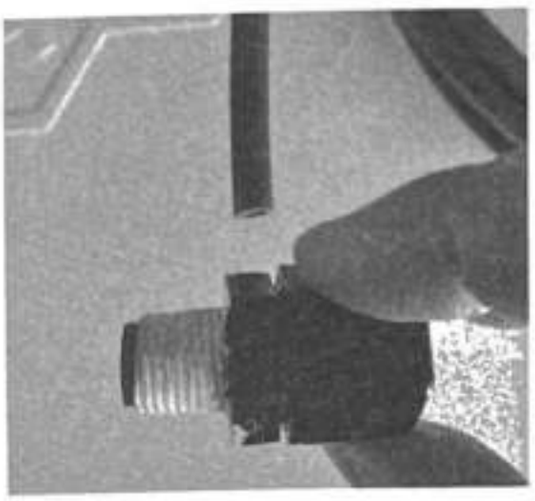
PHOTO #9 - OPTIONAL STRAINER INSTALLED ON "IN" TUBING

PHOTO #10 - OPTION 'A' INSTALLATION OF "OUT" TUBING AND SUPPLY ADAPTER

PHOTO #11 - OPTION 'B' INSTALLATION OF "OUT" TUBING AND SUPPLY ADAPTER

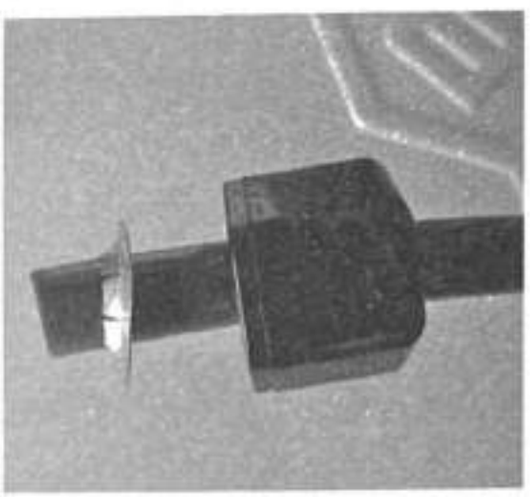
SUPPLY ADAPTER INSTALL TO TUBING STEPS 1 THROUGH COMPLETE

STEP 1

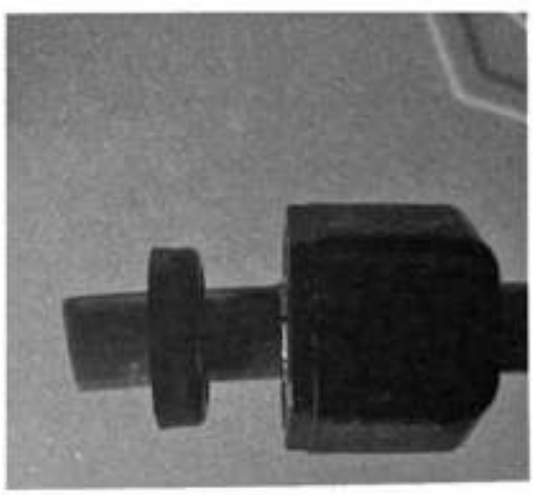


STEP 2

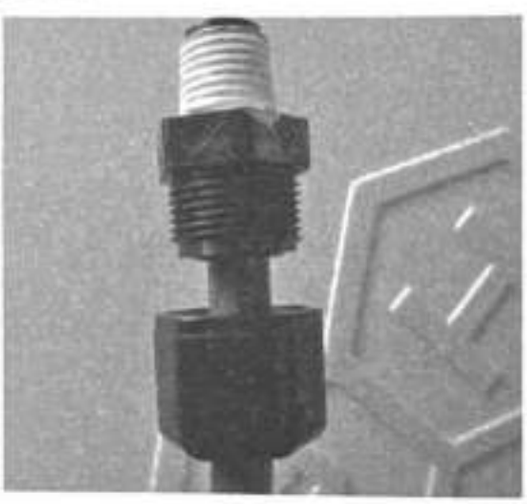
STEP 3



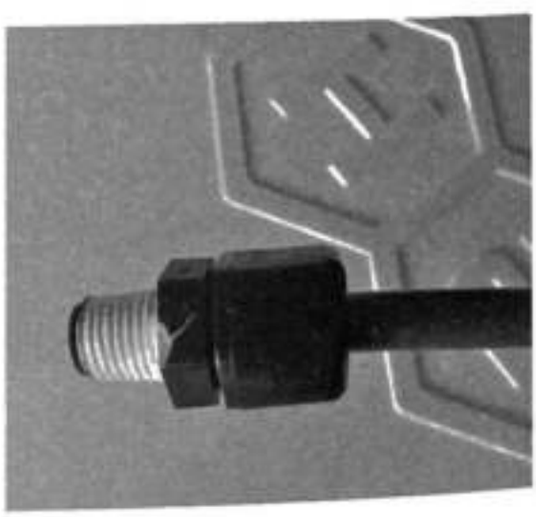
STEP 4



STEP 5



COMPLETE



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TROUBLESHOOTING GUIDE

Problem	Possible Causes	Recommended Solution
Pump loses prime	• Bad tubing connection • Check valves not seating • Improper water chemistry (scaling of tubes or parts)	Inspect and tighten all tubing connections. Check for any scaling on the float valve assemblies or tubing. Clean parts as needed in a diluted solution of muriatic acid and rinse with water. Always use care when using any pool chemical.
Chlorinator not filling or over-filling with water	• Pump has lost prime • Input line blocked • Insufficient pressure from the return side of circulation system • Insufficient pressure from the feeder "IN" supply side	Reprime pump. Make sure "IN" float is seated properly and clear of debris. Ensure check valves are installed, operational and free of debris or scale.
Low or no chlorine residual	• Flow control valve not open enough • Outlet line clogged • Increase in water temperature or bather load • Insufficient suction • VSP pump setting too low • No chlorine in unit	Adjust flow control valve to a higher setting. Open flow control valve more. Disassemble and clean out tubing and floats. Check pool filter pressure to ensure filter is clean and there is proper flow. Increase setting of VSP pump. Add recommended amount of liquid pool chlorine. Observe paddle wheel flow indicator to ensure that the unit has proper flow.
Excess clogging and mineral deposits on fittings and tubing	• Improper pool chemical balance • High calcium hardness, high pH and total dissolved solids TDS	Adjust pH to 7.2-7.6 and alkalinity to 80-100ppm. Maintain these levels at all times. TDS should be below 1500ppm. Check source water hardness– if over 300ppm, a calcium metal sequestering product is recommended

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