



# THE LIQUIDATOR®

MODELS R-101 and C-201

U.S. PATENT NO. 4,879,027

**THE LIQUIDATOR®** is a non-electric automatic chlorinator that will maintain a steady free chlorine level in a pool or spa. It is designed to feed a controlled amount of LIQUID POOL CHLORINE (SODIUM HYPOCHLORITE) into the pool or spa by use of a patented process which allows mineral salts and other dissolved solids to fall out of solution and remain in the unit for disposal.

**ALWAYS THINK SAFETY FIRST!**

READ AND OBEY ALL WARNINGS AND SAFETY PRECAUTIONS WHEN USING POOL CHEMICALS. INTRODUCTION OF ANY CHEMICAL OTHER THAN SODIUM HYPOCHLORITE IN **THE LIQUIDATOR®** MAY RESULT IN DANGEROUS CHEMICAL REACTIONS.

FOR QUESTIONS REGARDING INSTALLATION OR OPERATION CALL 1-800-870-8779.

## **THE LIQUIDATOR® ASSEMBLY:**

- Step 1 – Remove the two *float valve assemblies* (Part numbers FA-501 and FA-502 from the parts list on page 10), the *flow adjustment valve* (MV-501), the *check valve* (CV-501), and the *flow indicator* (FM-500) from their package. Remove the *tubing nut* (FA-505) and the *wing nut* (FA-504) from the float valve assemblies. Install the *float valve assembly marked “IN”* (FA-501) into the hole labeled “IN” on the right side of **THE LIQUIDATOR® tank** (T-801 or T-802). The *black rubber washer* (FA-503) should be between the float assembly and the inside of the tank. Secure the float assembly to the tank with the threaded wing nut by hand tightening.
- Step 2 – Install the *float valve assembly marked “OUT”* (FA-502) into the hole labeled “OUT” on the left side of **THE LIQUIDATOR® tank**. The black rubber washer should be between the float assembly and the inside of **THE LIQUIDATOR® tank**. Secure the float assembly to the tank with the threaded wing nut by hand tightening.
- Step 3 – When viewed from the front of **THE LIQUIDATOR®**, the float assemblies should look like Figure 1. Unit assembly is now complete.

## THE LIQUIDATOR® INSTALLATION:

CAUTION: BEFORE YOU BEGIN INSTALLATION, MAKE SURE THE PUMP IS OFF AND ELECTRICAL POWER TO THE POOL EQUIPMENT IS DISCONNECTED AT THE CIRCUIT BREAKERS.

**Tools required for installation:**  
**Electric drill with a 3/8" drill bit**  
**Flat blade screwdriver**  
**Scissors or knife**

- Step 1 – Locate **THE LIQUIDATOR®** on a level surface close to the pool equipment. **THE LIQUIDATOR®** should be located out of direct sunlight if possible.
- Step 2 – Drill a 3/8" hole in the suction side of the pool piping before the strainer basket on the pump (see Figure 2). Secure the *black tubing insert* (CA-501) into the 3/8" hole with the *stainless steel hose clamp* (CA-502). Tighten the hose clamp with a flat blade screwdriver. The *black rubber washer* (CA-503) should be between the tubing insert and the pool pipe for proper sealing.
- Step 3 – Cut a length of *tubing* (VT-501), long enough to reach from the suction-side black tubing insert (from Step 2) to the side marked "OUT" on **THE LIQUIDATOR®**, and set aside the remaining length of hose. Attach one end of the cut length of tubing to the black tubing insert placed before the pump (in Step 2). Hand tighten the tubing nut to secure the tubing to the insert. Cut the hose to about 12" in length. Attach the loose end of this piece of tubing to the check valve (see Figure 3). Make sure the arrow on the check valve points away from **THE LIQUIDATOR®** and towards the pump.
- Step 4 – Cut another piece of tubing about 12" long. Attach one end of this tubing to the other end of the check valve, and the other end of this piece of tubing to the flow indicator (see Figure 4). Make sure the arrow on the flow indicator is pointing away from **THE LIQUIDATOR®** and towards the check valve.
- Step 5 – Cut another piece of tubing about 12" long. Attach one end of this tubing to the other end of the flow indicator, and the other end of this piece of tubing to the adjustable flow valve (see Figure 5). Make sure the arrow on the adjustable flow valve is pointing away from **THE LIQUIDATOR®** and towards the flow indicator.
- Step 6 – Take the remaining piece of the cut tubing and attach one end to the adjustable flow valve and the other end to the "OUT" float valve on **THE LIQUIDATOR®**.
- Step 7 – Drill a 3/8" hole in the return side of the pool piping after the filter, as close as possible (see Figure 2). Secure the black tubing insert into the 3/8" hole with the

stainless steel hose clamp. Tighten the hose clamp with a flat blade screwdriver. The black rubber washer should be between the tubing insert and the pool pipe for proper sealing.

Step 8 – Using the tubing that was set aside, cut off a 12" piece and set it aside. Attach one end of the main, longer piece of tubing to the black tubing insert placed after the filter (in Step 7). Attach the loose end of this piece of tubing to the second check valve (see Figure 3). Make sure the arrow on this check valve points toward the **THE LIQUIDATOR®**.

Step 9 – Attach one end of the last, 12" piece of tubing to the other end of the second check valve. Then attach the other end of this 12" piece to the "IN" float valve on **THE LIQUIDATOR®** (see Figure 2).

Step 10 – Secure the flow indicator to any horizontal section of pool piping with the two nylon zip ties that are enclosed. It must be in a upright position to work correctly.

**INSTALLATION IS NOW COMPLETE!**

## THE LIQUIDATOR® START UP PROCEDURE:

BEFORE OPERATING **THE LIQUIDATOR®** THE POOL WATER MUST BE BALANCED:

pH 7.2 to 7.6

Alkalinity 80 to 100 ppm

Stabilizer (also referred to as conditioner or cyanuric acid) 60 to 80 ppm maximum

CAUTION: NEVER PUT ANY CHEMICAL INTO **THE LIQUIDATOR®** EXCEPT LIQUID POOL CHLORINE (SODIUM HYPOCHLORITE).

- Step 1 – Turn on the electrical power to the pool equipment. Start the pool pump and open the flow control valve to the #3 position. **THE LIQUIDATOR®** will begin to fill with pool water.
- Step 2 – Once the pool water level is above the bottom of the *drop tube extension* (PE-501 or PE-502) (see Figure 6), slowly pour the liquid pool chlorine (sodium hypochlorite) into **THE LIQUIDATOR®** through the *black drop tube funnel* (DTL-101). Do not add more than four gallons of liquid pool chlorine to **THE LIQUIDATOR®** Model R-101 or eight gallons to the Model C-201 at one time. A yellow chlorine bed will be visible below the pool water inside the unit tank. Do not stir or agitate the chlorine bed. The height of the chlorine bed itself should not exceed the joint where the top of the white drop tube extension meets the bottom the the black drop tube funnel. Allow the water level to continue rising until it is above the opening of the "OUT" float.
- Step 3 – Run the pool pump for 12-24 hours. Test the chlorine level in the pool with a standard test kit or test strips. If the proper chlorine level is not achieved, adjust the flow control valve slightly and recheck in 12-24 hours. Settings above "4" on the flow indicator will generally dispense the chlorine too fast unless you have an excessive chlorine demand.
- Step 4 – A chlorine bed must always be visible in **THE LIQUIDATOR®** for proper chlorination of the pool or spa. When the yellow chlorine bed is not visible or is within 2" of the bottom of the tank floor, it is time to add more liquid pool chlorine. When recharging the unit with new liquid pool chlorine, never add more than the recommended maximum (i.e., the yellow liquid chlorine bed not higher than the top of the white extension on the drop tube, see Step 2 on this page). Immediately after adding the liquid pool chlorine to **THE LIQUIDATOR®** the water in the unit may become slightly cloudy. After the unit runs a short time, the water will clear up and the yellow chlorine bed will be distinct. 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 and contaminates will fall out of solution into the bottom of **THE LIQUIDATOR®** and slowly build up as liquid pool chlorine is dispensed by the unit. By keeping this inert material out of your pool, the pool water will be sparkling clear and the filter will require less cleaning. Whenever contaminates become 2" deep they should be cleaned out. See instructions for recommended cleaning methods.

## PERIODIC MAINTENANCE OF THE LIQUIDATOR®

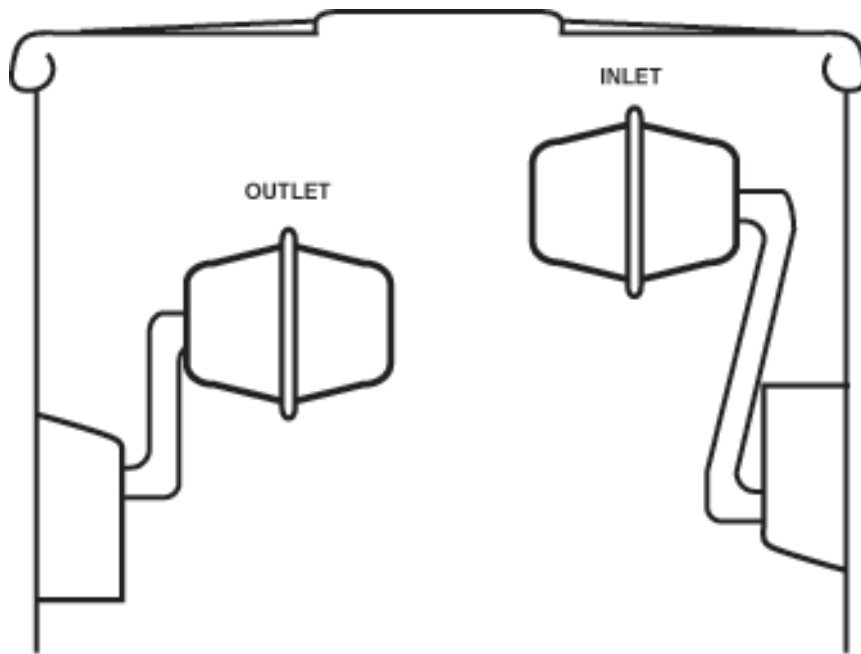
In areas with hard water, calcium scale may periodically build up on the float assemblies, particularly the “OUT” float. This could cause the float valves to not close off properly. It is important that you keep the pool pH in the lower end of the normal range (i.e., towards 7.2) as well as keeping the alkalinity below 100 ppm to help prevent scaling in the unit. Should this buildup occur, remove the floats from the tank and clean them in a diluted solution of muriatic acid. Observe all warning information associated with the acid. Use of plastic gloves and eye protection is recommended. Mix one part acid to five parts water in a plastic bucket (always adding acid to water, not water to acid...) and let the floats soak in this solution for approximately five minutes. While cleaning the float valves, check the flow adjustment valve, the flow indicator, and the check valve for possible scale buildup. They may be soaked in the dilute acid solution with the float valves if necessary.

Solids that accumulate in the bottom of **THE LIQUIDATOR®** do not affect the performance of the unit. They should be cleaned out and disposed of every four to six months as a regular maintenance procedure. Periodic cleaning with a mild acid solution is all that is required to keep your unit functioning.

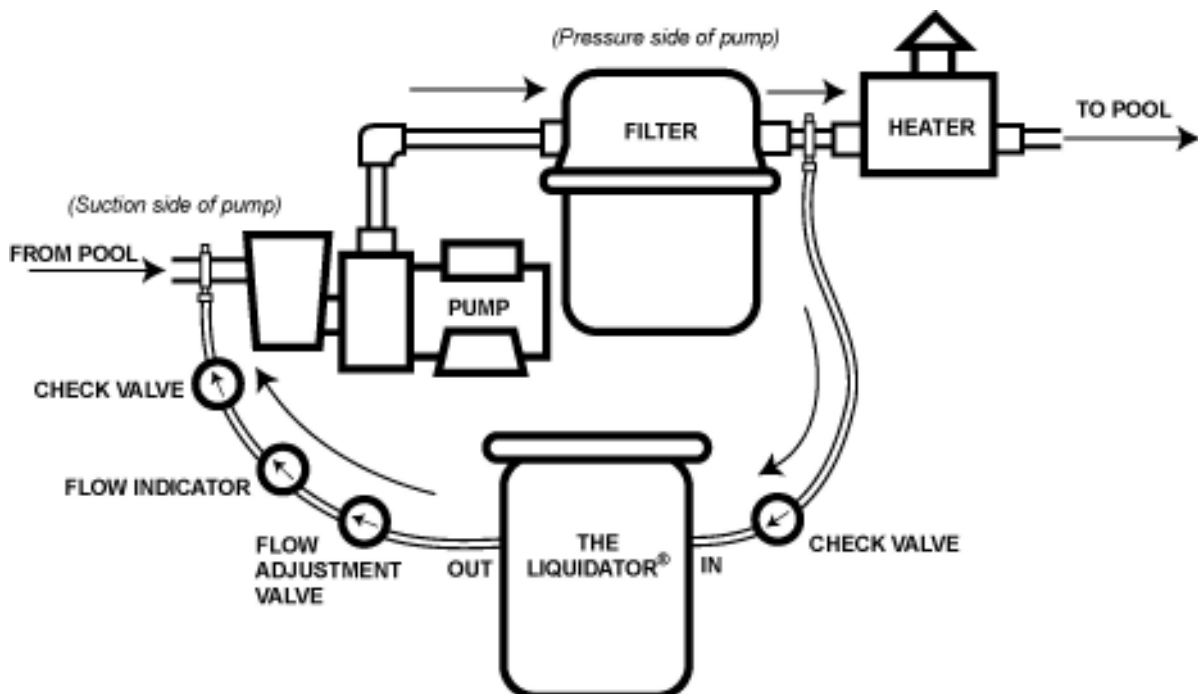
Congratulations on your purchase of the simple but efficient liquid pool chlorine dispensing unit, **THE LIQUIDATOR®**. Here is what you should expect:

- Sparkling clear pool water every day – not just every once-in-a-while
- No more need for floating chlorinators in your pool (safer for children)
- Rarely will you need to shock your pool
- Acid demand for pH control will decrease by 30% or more
- No need for those expensive specialty chemicals
- More time to enjoy your pool – less time working on your pool
- Softens and cleans the pool water by precipitating calcium scale and contaminants

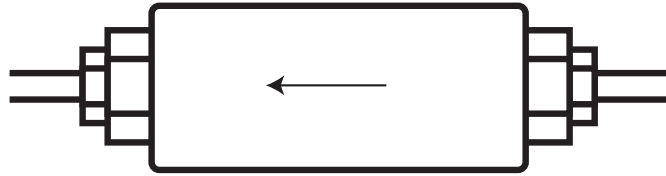
Visit us on the web at [www.hasapool.com](http://www.hasapool.com)



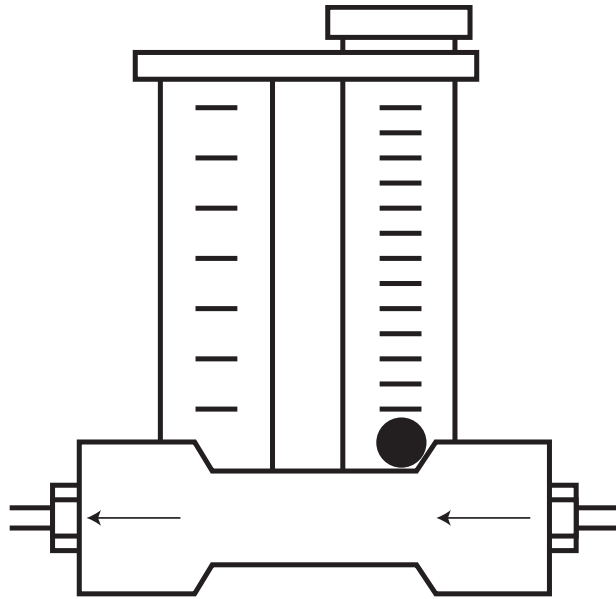
**Figure 1**  
**Float valves viewed from front of unit**



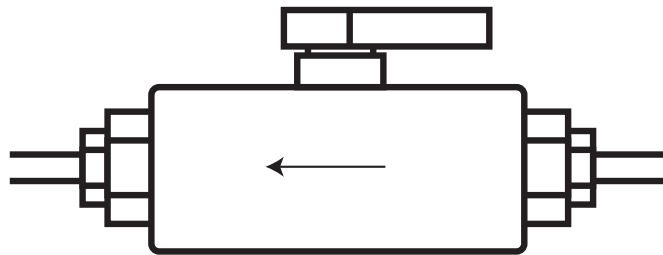
**Figure 2**  
**Typical installation**



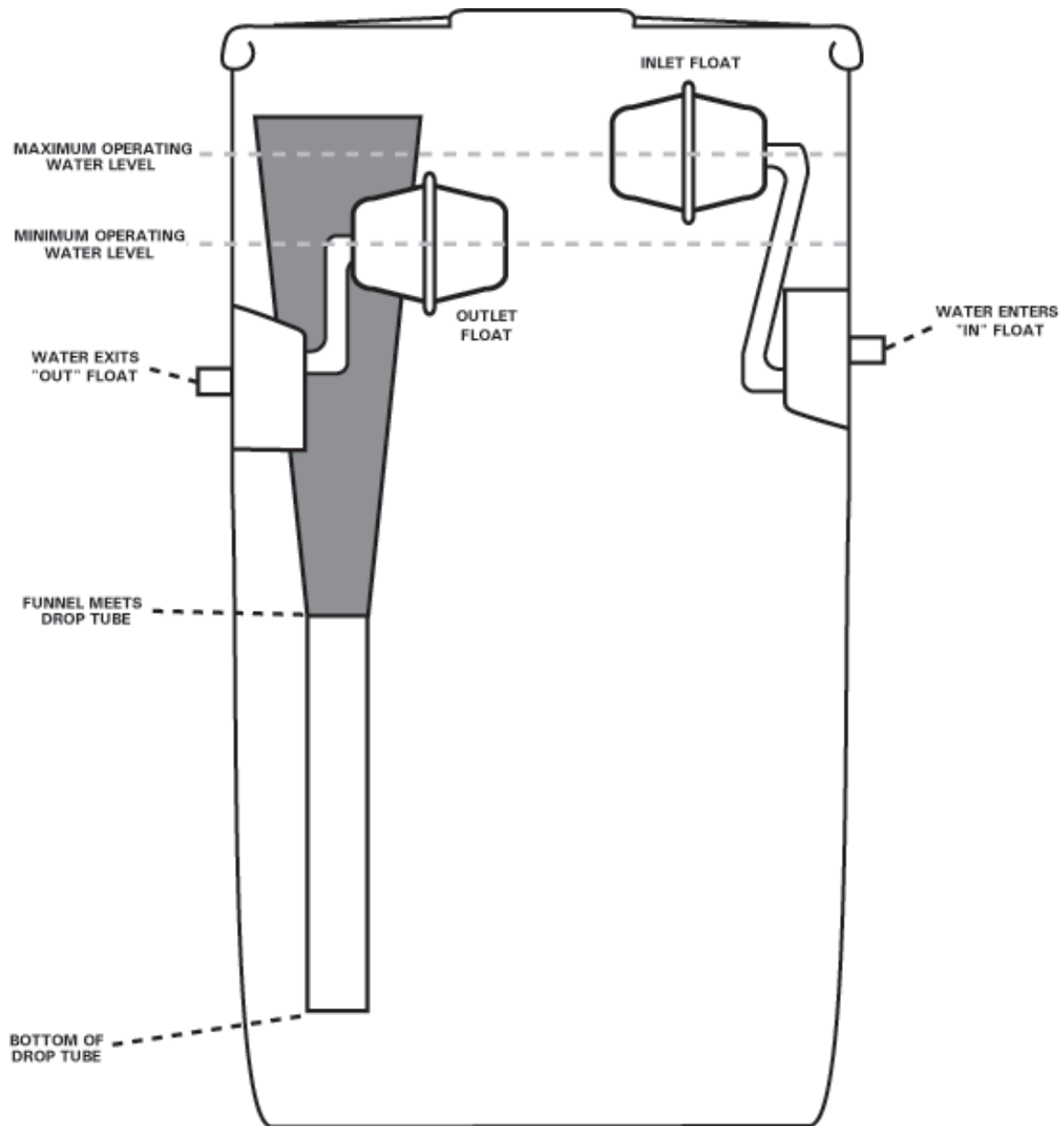
**Figure 3  
Check Valve**



**Figure 4  
Flow indicating device**



**Figure 5 – Adjustable Flow Control Valve**



**Figure 6 – Front cut-away view**



# The Liquidator® Troubleshooting Guide

Problem	Possible Causes	Recommended Solution
Pump loses prime	Bad tubing connection. Float valves not seating.	Inspect and tighten all tubing connections. Improper water chemistry. Check for any scaling on the float valve assemblies and in the tubing. Clean the floats as needed by soaking 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 return side circulation system.	Re-prime pump. Make sure inlet tube is as close to the filter as possible and is clear of obstructions. Make sure check valves are installed and operational on both sides of tank. If insufficient pressure because no heater in system, OK to connect input line between pump and filter.
Low or no chlorine residual	Flow control valve not open enough. Outlet line clogged. Increase in water temperature or bather load. Insufficient suction from circulation system. Stabilizer level too low. No chlorine in the unit.	Adjust to a higher setting on the control valve. Disassemble and clean out tubing and floats. Adjust the control valve to a higher setting. Increase conditioner level to between 60 – 80 ppm. Add recommended amount of liquid pool chlorine. Make sure arrows on check valve, flow indicator and flow control are all toward the pump on the outlet line.
Minerals collecting in upper 12" of tank	Improper pool chemical balance: pH too high, alkalinity too high.	Adjust pH to 7.2–7.6 and alkalinity to 80–100. Maintain these levels at all times. TDS should be below 1500 ppm. Stabilizer (conditioner) level should be between 60 and 80 ppm. Check source water.
Scaling inside chlorinator	Chlorine level too high in THE LIQUIDATOR®.	Reduce the level of the liquid pool chlorine bed to no higher than the top of the white extension on the drop tube funnel. Adjust water chemistry as shown above.

Questions – call 800-870-8779 or email from our web site at [www.hasapool.com](http://www.hasapool.com)

Revised 4/05

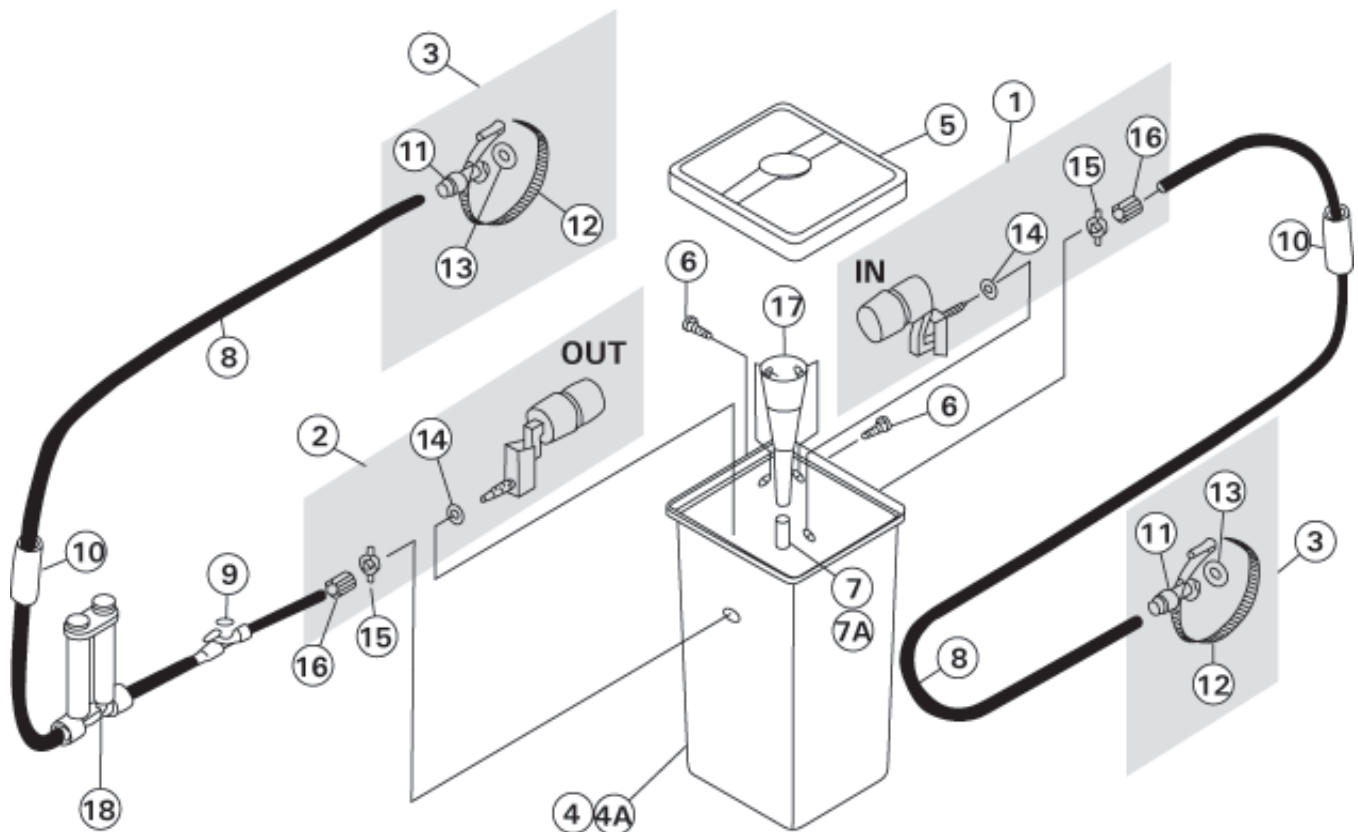


# THE LIQUIDATOR<sup>®</sup>

MODELS R-101 and C-201

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Ref. No.	Qty.	Part. No.	Description
1	1	FA-501	In float assembly complete
2	1	FA-502	Out float assembly complete
3	2	CA-500	Clamp assembly complete
4	1	T-801	R-101 residential tank
4A	1	T-802	C-201 commercial tank
5	1	T-803	Tank lid (specify model no)
6	2	TC-501	Clips
7	1	PE-501	Drop tube extension for R-101
7A	1	PE-502	Drop tube extension for C-201
8	10 ft.	VT-501	Vinyl tubing
9	1	MV-501	Flow adjustment valve
10	2	CV-501	Check valve
11	2	CA-501	Tubing adapter
12	2	CA-502	Stainless steel pipe clamp
13	2	CA-503	Tube adapter seal washer
14	2	FA-503	Float valve seal washer
15	2	FA-504	Wing nut for float valve
16	2	FA-505	Tubing nut for float valve
17	1	DTL-101	Drop tube funnel
18	1	FM-500	Flow indicator with tubing adapters



# Limited Warranty

Liquidator    Granulator    pHAdjuster    Tabulator

HASA Inc. chlorination systems are warranted against manufacturing defects in material and workmanship for a period of one year and subject to the following conditions:

1. HASA Inc. will repair or replace (at our option) any parts found to be defective. Purchaser is responsible for freight to return the unit to the manufacturer for repair.
2. Each warranty period commences on the date of purchase by the original user. Proof of purchase date is required.
3. This warranty does not apply to replacement necessitated by any cause beyond the control of HASA Inc., including but not limited to; any malfunction, defects or failure caused by or resulting from unauthorized service, improper maintenance (including improper water chemistry), modification or repair by the user, abuse, misuse, neglect or accident.
4. The foregoing is in lieu of all other expressed warranties and does not authorize any other party to assume for it any other obligation or liability.
5. In no event shall HASA Inc. be liable for special or consequential damages arising from the use of this product or for any delay in the performance of this warranty due to causes beyond our control.
6. This warranty gives you specific legal rights. You may have other rights which vary from state to state.

**HASA Inc. 1-800-870-8779**

## Warranty Registration

Please fill out and mail this card to certify your purchase date and enable us to notify you of future product modifications or new products.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Approximate pool size \_\_\_\_\_

Date of purchase \_\_\_\_\_

Where purchased \_\_\_\_\_

Mail to:        HASA Inc.  
                  23119 Drayton St.  
                  Saugus, California 91350  
                  1-800-870-8779

Equipment purchased:

Liquidator	<input type="checkbox"/>
Granulator	<input type="checkbox"/>
Tabulator	<input type="checkbox"/>
phAdjuster	<input type="checkbox"/>
Residential or Commercial	<input type="checkbox"/>

Or fax to:     1-661-259-1538