



ChemStar

CH100 CHLORINE/BROMINE INLINE CHLORINATOR

FEATURES:

- For permanent installation in return line on pressure side of pump, downstream of all equipment, in new or existing pools or spas
- Completely enclosed system – no escaping gases so no special venting required
- Standard with 2" slip PVC fittings and adapters for 1½"
- 50 PSI maximum operating pressure
- Includes an external, fine, no-clog control valve that lets you adjust the feed rate to meet specific pool or spa needs
- All parts are replaceable.
- Top-load large or small Trichlor or Bromine slow-dissolving tablets enable an effective, trouble-free way to sanitize your pool or spa
- When used with time, chlorinator is designed to automatically lower the water level so tablets are not soaking during off period of pump. This allows more efficient use of tablets.
- No equipment damage because sanitizer is fed directly to pool or spa.
- To prevent over-chlorination during use, completely close the control valve and the built-in check valve will stop chemicals from being fed into pool or spa.

Your ChemStar™ chlorinator is the most efficient and trouble-free automatic chlorinator you can buy, but it can also be dangerous to you and your equipment. Please follow instructions exactly and heed all cautions.

READ AND FOLLOW ALL INSTRUCTIONS

It is important to read all information **BEFORE** proceeding with the installation. The information will guide you in installing your chlorinator properly and help you avoid problems due to improper installation.

⚠ WARNING IF YOUR POOL OR SPA HAS COPPER PLUMBING . . . STOP!!

Never install the chlorinator into copper plumbing, as pipe damage will occur. (See *Equipment Safety CAUTION sheet enclosed*).

NOTE: If heaters are used, a fireman's switch or equivalent must be installed to prevent possible damage and improper operation of check valve and other equipment subject to heat damage.

INSTALLATION INSTRUCTIONS

⚠ WARNING MAKE SURE ALL PUMPS AND TIMER SWITCHES ARE IN THE OFF POSITION.

WHERE TO INSTALL YOUR CHLORINATOR

The CH100 chlorinator is designed for permanent installation in the return line of your new pool or spa and must always be installed after the heater, pool cleaner, valves, etc. If your pool does not have a heater, then it must be installed after the filter or any other piece of equipment.

⚠ WARNING Damage to the heater and other equipment could result if highly chlorinated water flows through it. Your chlorinator may be installed in existing PVC plumbing but will require a union and/or other fittings. The chlorinator comes complete for installation with 2" or 1½" PVC plumbing. Choose a site in the return line where chlorinator can be installed in a vertical position. Always install as far from any metal equipment as practical since fumes, etc. can corrode them.

BASIC PLUMBING INSTALLATION INSTRUCTIONS

2" or 1½" PVC pipe: If chlorinator is being installed on a pool, spa or pool/spa combination, correct plumbing procedures must be followed to ensure proper flow through chlorinator. If pool or spa is plumbed with 2" PVC pipe, be certain the pump, filter and heater all have 2" inlet and outlet fittings. If any part of the equipment has less than 2" fittings or pipe, then a minimum of 6" x 1½" reducer bushings must be installed directly into the inlet side of the chlorinator using the 2" x 1½" reducer bushings supplied. This will build pressure directly into the chlorinator insuring proper operation. Continue with 2" PVC pipe on the outlet side of the chlorinator.

Pool/spa combination: If plumbing and equipment is a full 2" and the chlorinator is being installed on the pool return line after the diverter valve, with a portion of the water diverted to the spa, install a minimum section of 6" x 1½" PVC pipe directly into the inlet side of the chlorinator using the 2" x 1½" reducer bushing supplied. Continue with 2" PVC pipe on the outlet side of the chlorinator. This will compensate for that portion of water being diverted to the spa.

90° elbows: Plumbing a 90° elbow directly into the inlet side of the chlorinator may cause turbulence inside the elbow. This will prevent water from being scooped into the chlorinator. A minimum of a 6" length of PVC pipe should be installed between the 90° elbow and the inlet side of the chlorinator.

2" PVC: Simply glue chlorinator to the return line using PVC solvent cement. Be sure arrows on chlorinator point in the direction of water flow returning to the pool or spa.

1½" PVC: Remove two 2" x 1½" slip reducer bushings packed inside the chlorinator and glue into 2" slip tee on bottom of chlorinator. Complete installation by gluing into 1½" return line, making sure the arrows on chlorinator point in the direction of water flow returning to the pool or spa. Use only PVC solvent cement. Follow directions on solvent cement label. Allow to dry. Installation is now complete.

OPERATING INSTRUCTIONS

⚠ WARNING Before chlorinator start-up, your pool should be properly conditioned and the residual should be 1.0 to 1.5 ppm. The water in a newly filled pool should be properly conditioned to ensure maximum effectiveness of the chlorinator. Consult your local dealer for water conditioning information for your area.

1. Remove cap of chlorinator and fill with proper size tablets. For pools: 1" or 3" diameter tablets. For spas: 1" diameter tablets in optional spa chamber.
2. Making sure O-ring is clean, lubricated with silicone and is in place, replace cap. Hand-tighten only.
3. Turn on pump and timer switches for a minimum of six to eight hours.
4. Adjust control valve according to your pool/spa size. Use a test kit to determine the chemical residual. It is recommended that the chemical residual be checked daily for the first five days. Remember . . . hot days, higher water temperature or increased pool/spa activity will cause your pool/spa to use more sanitizer. When possible, increase the feed rate a day or two in advance. Because the chlorine demand in your pool/spa varies and is dependent on many factors (sunlight, bather load, water temperature, etc.) your valve setting may have to be changed from time to time to adjust to these conditions. For example, the winter setting may be #2 while the summer setting is #3. Check the chlorine residual daily to find the ideal setting.

⚠ WARNING Higher numbers dispense more chemicals. Small, gradual changes are imperative for control.

HOW TO RECHARGE CHLORINATOR

1. Turn control valve to the closed position. Shut off pump.
2. Wait one minute. This will allow water and fumes to drain from chlorinator.
3. Leave control valve closed and turn on pump. The check valve will prevent water from entering the chlorinator.
4. Remove cap and fill with proper size tablets or sticks. (See Operating Instructions #1)
5. Making sure O-ring is clean, lubricated with silicone and is in place, replace cap. Hand-tighten only.
6. Open control valve to original setting. Inspect inlet line below control valve each time chlorinator is recharged. Replace lines yearly if necessary.

READ CAREFULLY

⚠ DANGER This chlorinator is designed to use only CLEAN Trichlor-s-trizinetriene OR CLEAN Bromine tablets – slow-dissolving type. Never use dirty tablets. **Under no circumstances mix** Trichlor or Bromine with Calcium Hypochlorite with other forms of concentrated chlorine or with other chemicals. Keep inside of chlorinator clean of dirt and debris at all times. **Fire and/or explosion may result.**

⚠ DANGER **NEVER** use oils or grease to lubricate O-ring. Oil in contact with Trichlor OR Bromine may result in **FIRE**. Lubricate O-ring with silicone O-ring lubricant ONLY, available at your dealers. If shock treatments or algacides containing chemicals other than sanitizer tablets in chlorinator must be used, turn off chlorinator OR remove tablets until the shock or algae treatment is complete and all granules have dissolved. Failure to do so may result in granules mixing in chlorinator, causing **FIRE AND/OR EXPLOSION**. The shock or algae treatment dissolved in water is safe with tablets. If you are not the original owner of this chlorinator, not sure which chemicals were used, or if dirt and/or debris inside chlorinator, be **SAFE** and flush thoroughly with fresh water. **Caution should be used when removing cap. Do not inhale fumes.**

⚠ DANGER Calcium hypochlorite is not to be used in any form. Use of chemicals other than listed by manufacturer may be hazardous.

SPECIAL FEATURES AND INSTRUCTIONS

If while using 3" diameter tablets the CH100 chlorinator does not provide enough chlorine residual, switch to 1" tablets. The smaller tablet will erode faster producing more chlorine residual. If this does not correct the situation, the CH100 has been fitted with an optional opening at the top of the chlorinator (*which is plugged*). To accommodate attachment of the valve and tubing assembly for top entry of water into the chlorinator, an additional length of tubing has been included. The following procedure should only be used if the suggested change has not solved the situation. Top entry in normal situations can cause over chlorination.

1. Turn off pump and timer switches.
2. Remove tubing by unscrewing compression nut at each end of tubing.
3. Remove plug at top of chlorinator directly above control valve.
4. Remove control valve. If nipple stays in valve, carefully remove by using pliers at the center of nipple. There is no need to remove the 90° tube fittings.
5. Wrap plug with two or three wraps of threaded tape in the opposite direction of tightening. Screw into opening where control valve was attached. Hand-tighten plus two or three turns. Do not over-tighten.
6. Wrap threads of nipple with threaded tape. Thread nipple into top opening. Finger-tighten only. Thread valve onto nipple. After nipple starts to turn from tightening valve, two to three more turns is enough. The nipple or valve can be broken by over-tightening.
7. Slide compression nut over long section of tube. Slide tube over tapered part of 90° tube fitting and tighten. Hand-tighten only. Repeat for other end of tubing.
8. Set control valve to #1. Turn on pump and timers. Check residual daily to determine proper setting. Small gradual changes are imperative for control.

BELOW WATER LEVEL INSTALLATION

Chlorinator should be installed above water level whenever practical. If installed below water level, a drain valve must be installed to prevent spillage and dangerous splash back of highly chlorinated water during recharging. Drill and tap a 1/4" MPT hole at the same level the control valve is located. Make sure there is no water or tablets inside the chlorinator before drilling. Install optional drain valve or suitable chemical resistant drain valve.

BELOW WATER LEVEL RECHARGING INSTRUCTIONS

1. Shut off pump and timer switches.
2. Shut off control valve.
3. Place a clean container under drain and open drain valve.
4. Exercise extreme caution when opening or servicing chlorinator. Do not inhale fumes. Wear protective gear. Remove cap. Water will now drain from chlorinator. Empty container back into pool or spa.
5. Close drain valve. Fill with proper size tablets or sticks.
6. Making sure O-ring is clean, lubricated with silicone and is in place, replace cap.
7. Turn on pump and timer switches.
8. Reset control valve to original setting. Inspect inlet and outlet line each time chlorinator is recharged. Replace lines yearly if necessary.

EQUIPMENT SAFETY

PLEASE READ CAREFULLY

WARNING! Since most pool plumbing is not airtight, and a mixture of air and chlorine is highly corrosive to metals, it is important to protect these items from corrosion in the **OFF** period when no circulation is taking place. (There is no chance for chlorine corrosion when the circulating system is in operation.)

Of course, corrosion or erosion of metal components can still occur independently of any chlorinator installation for the following reasons:

1. Water velocity too high.
2. Water pH less than 7.2.
3. Total alkalinity less than 100 PPM.

If your pool or spa has any of the following equipment, special plumbing procedures must be followed for safe operation:

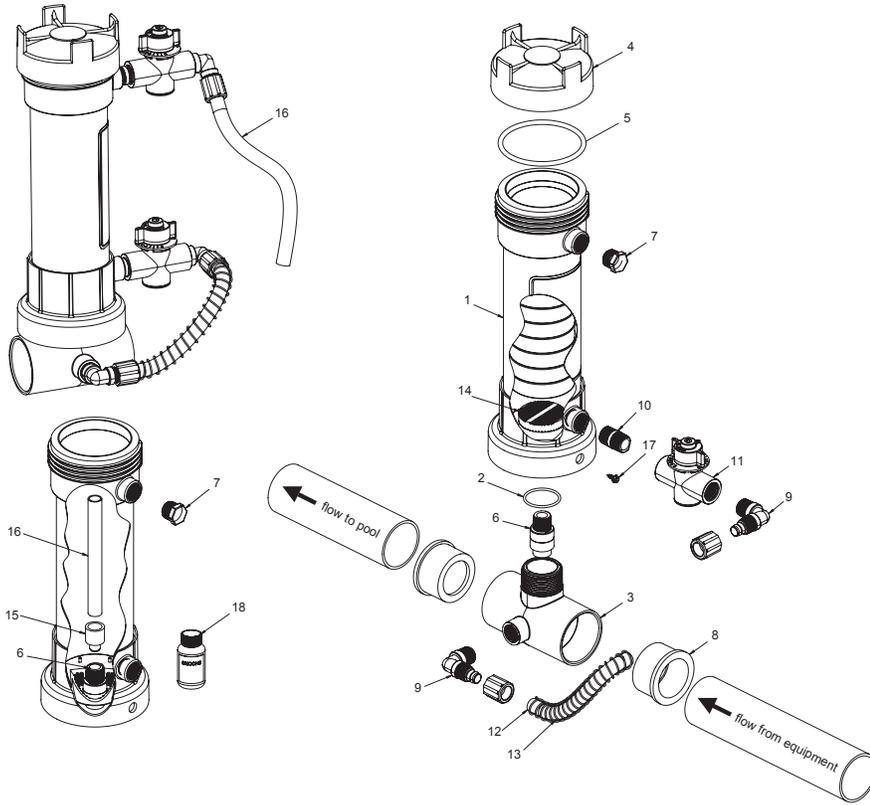
1. Brass or bronze gate, rotary or backwash valves.
2. The preceding valves constructed of PVC or other plastic material with metallic shafts.
3. Filters, heaters, heat exchanges or other items with metallic tanks, shafts, coils or tubes.
4. Not for use in copper plumbing.

WARNING! If your pool is equipped with a permanent built in pool-cleaning system, damage could occur to that system if materials are not compatible with low pH Tri-Chloro chlorinators. Check with manufacturer for compatibility.

BROMINE STANDPIPE INSTALLATION

To increase erosion of small bromine tablets, install Bromine Standpipe as follows:

Remove screen from bottom of chamber exposing check valve (6). Insert adapter (15) into check valve opening.
Cut supplied 5/8" black tube (16) to 6" length and push tube into adapter opening.



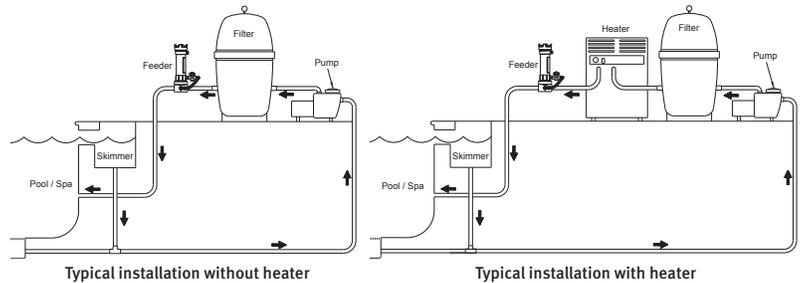
- 1 CH1007 Body
- 2 CH1008 O-ring, #128, viton
- 3 CH1005 Diverter tee
- 4 CH1004 3" threaded cap
- 5 CH1009 O-ring, #343, viton
- 6 CH1010 Check valve
- 7 CH1015 1/2" MPT PVC plug
- 8 CH1016 2" x 1 1/2" S x S bushing, qty 2*
- 9 CH1017 1/2" NPT x tube fitting w/nut, qty 2
- 10 CH1018 1/2" x short MPT nipple
- 11 CH1019 1/2" chlorine control valve
- 12 CH1026 5/8" OD chlorinator tube
- 13 CH1027 Tube support spring
- 14 CH1029 Screen**
- 15 CH1030 Standpipe adapter
- 16 CH1031 5/8" OD 18" tube (optional top feed)
- 17 CH1036 #8 x 1/2" lg slotted hex head screw
- 18 CH1059 Silicone lubricant

*Not used with 2" PVC, for 1 1/2" PVC only.
**Be sure screen has not come loose in shipment. If loose, snap over four posts in bottom of chlorinator to replace.

NOTE: To service check valve (6), remove screw (17), unscrew (counter-clockwise) chlorinator body (1) from diverter tee (3).

| MODEL CH100 | Bottom Feed | Top Feed |
|---|--------------------------|--------------------------|
| Chamber Capacity - 1" Tablet | | |
| Quantity | 98 | 98 |
| Weight | 3.5 lbs | 3.5 lbs |
| Chamber Capacity - 3" Tablet | | |
| Quantity | 11 | 11 |
| Weight | 4.8 lbs | 4.8 lbs |
| Maximum Erosion in 24 Hours | 0.67 lbs | 1.75 lbs |
| Treat Pool/Spa Size in Gallons per 24 Hours* | | |
| @ 10 ppm | 6,700 | 17,500 |
| @ 5 ppm | 13,400 | 35,000 |
| @ 2 1/2 ppm | 26,800 | 70,000 |
| Dimension | 17 3/4" H x 5" W x 10" D | 17 3/4" H x 5" W x 10" D |
| Service Clearance for Lid Removal | 19" | 19" |

*using 1" Trichlor tabs



WARNING Do not install chlorinator into copper plumbing. Pipe damage could occur. Never install chlorinator before heater. Heater damage could occur.

You may substitute bromine tablets or sticks for trichlor in this chlorinator. Do not mix. Calcium hypochlorite is not to be used in any form.

Technical Support: (877) 768-2717

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