justchlor®


0 25 50 75 100 %
Salt Ok
Output
Helpful hints for JustChlor®
Sparkling Clear Water
• Check pH regularly and maintain at 7.2, if need be, test and correct every 24 hrs until stable at pH 7.2
• Test salt content every week - Low salt will affect chlorine production and can result in premature electrode failure.
• Clean your filter and suction baskets regularly.
• Maintain stabiliser at 60 PPM.
• To assist pH control and prevent stains from occuring, correct your T.A. regularly to that recommended for your type of pool.
• During summer extend timer setting to 12 hrs.
• Your pool shop may need pool volume for further advice.
OFF
1
2
3
4
SALT TEST
Output Control and Salt Test
CE
MAINS ON INDICATOR
J100SC
justchlor®
FUSE 1.25A
FUSE
IN CASE OF OVERLOAD PRESS TO RESET

JUSTCHLOR® OWNERS MANUAL

PREAMBLE

Congratulations of selecting JustChlor as you Salt Water chlorinator of choice. You have made a wise *Leisure Time Investment*. We trust that you will have years of hassle-free pleasure in and around your swimming pool.

For us to ensure that you maximize your investment, we suggest that you, the Pool Owner take special note of the following. This is ***very important*** and applies to the Installer, albeit the Pool Builder/Pool Serviceman or the DIY person and is of equal importance to you as the Pool Owner.

RULE # 1:

A chlorinator is an Appliance like any other Appliance within your household. It has to be treated and cared for as you would you washing machine, tumble drier, fridge, etc, they all have a specific function and run off electricity, *JUST* like ours!.

Constant care for the unit and its surrounding environment must be maintained at all times. Spiders, frogs, lizards, ants, cockroaches, etc don't enter you household appliances, ... *why should ours*?

Your washing machine operates with water, but it don't operate under water! ..... *neither does ours.*

Ventilation and care for the ambient environment is a prerequisite for your other appliances effective operation... *so does ours*.

You wouldn't install or leave one of these appliances out in the open exposed to the elements without some form of protection..... *we're no different*.

Physical abuse or neglect to household Appliances, in any way or form, voids the manufacturers Warranty.... *so does ours*.

Infringement of any of these operating conditions violates the manufactures Warranty..... *so does ours*.

Now that ***Rule # 1*** is out of the way, let's look at the following:

1. Installation Instructions

If you do not maintain your water chemistry from the outset, you could experience difficulties with water clarity and blame the salt water chlorinator.

FACT:

- Your salt water chlorinator will only produce "Chlorine" and this "Chlorine" will only work if all the basic chemical balance and mechanical systems are in check.
- pH, Total Alkalinity (TA), Stabiliser (Cyanuric Acid) and Salt content (TDS) will determine how well the chlorine produced will sanitises your pool water.

2. Mounting of Power Pack

The Power Pack is an electrical device, which must be treated like any other electrical devise/appliance and must be mounted above ground level under some form of element protection (Lean-To, under the eave of roof, in a pool pump/filter box/housing, etc)

2.1. A universal mounting bracket has been supplied however due to the many varied situations out there we cannot supply all means of mounting supports.
2.2. The Power Pack must be located so that the Cell Power lead will not be "stretched" in between the cell and the power pack.

2.3. Mount the Power Pack so that it will be accessible and visible for easy maintenance and ensure that the meter is in the vertical position. Should it be necessary to mount the Power Pack outside the Pump/filter box, then, it must be protected from the elements especially R*ain and the Garden Irrigation System*. Your warrantee will lapse in the event of water damage.

2.4. The power pack generates heat and must be afforded the opportunity to breathe. The underside of the unit is well ventilated and must not be obstructed, neither should the side vents.

3. Installing the Electrolytic Cell

3.1. The Element Assembly (Electrode and Housing), must be the last item in the water return line (after the pool heating system if so equipped) and must be installed vertically. Do not let anyone tell you otherwise. *Refer to Diagram 1 below*.

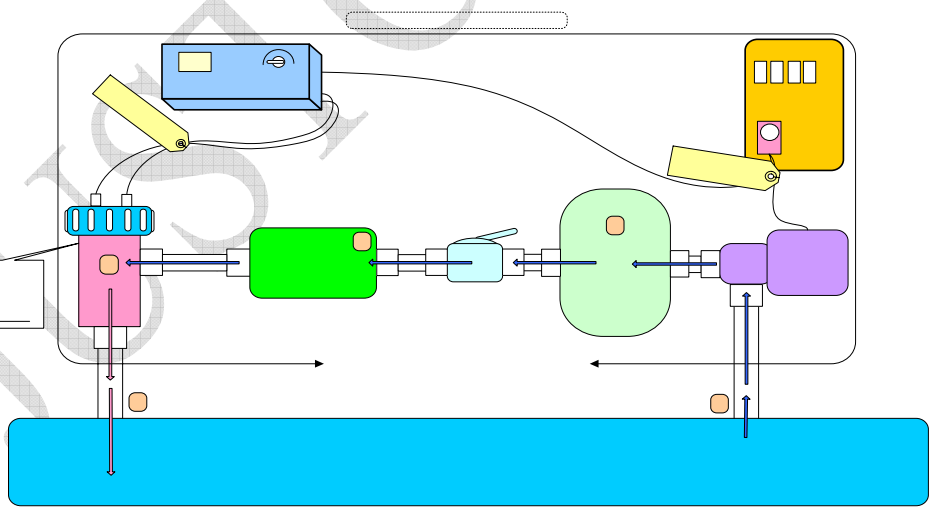
3.2. When selecting your position, bear in mind, accessibility and maintainability. (i.e. Ease of extraction of the cell for maintenance). In cases where the system is below water level - ensure that a non-return valve is installed between the cell housing and the return to the pool. If neglected - flooding of the cell/pump area and drainage of the pool will ensue once maintenance of the cell is attempted.

3.3. It is advised that you use universal unions to couple the electrode housing into the pipe work and multi-port valve, This allows you to, to repair or replace the multi-port valve, with ease and without the need to "cut" into the plumbing, should the need arise.

3.4. The element itself is then screwed into positioned within the casing, requiring approximately 1.7 turns to seal it in position.

3.5. The cables that connect the element to the power pack should not need to be disconnected for any reason whatsoever, there is a high current passing through these connections and interference with the connections fitment can result in the system malfunctioning.

Diagram 1



4. Electrical Connection

4.1. Ensure the Pool pump and JustChlor® Power Pack is connected to the same power source i.e. The Pool Pump Timer (especially the self cleaning models).

4.2. Should you not have a fully operational timer with multiple setting options, then you will experience difficulties. We recommend that you upgrade to a newer generation timer.
4.3. Ensure that the current carrying capacity of the circuit breaker feeding the pump, and now the chlorinator system, is sufficient to carry the additional load.

NOTE: The J200 models require that you upgrade the main circuit breaker which controls the pump to a 15 amp unit if not so already done. This model has a higher inrush current than its smaller brother the J100 model.

5. Handing Over to Your Customer

5.1. It is ***essential*** that the customer be handed the **Owners Manual**. It is recommended that the Customer should sign receipt thereof; this can come back and bite you at some time in the future if you don't.
5.2. Fill out the Warranty registration form at the back of the Owners Handbook,
  5.2.1. make a copy for customer retention and
  5.2.2. send the original off to the address provided on the Warranty registration form.
  5.2.3. Failure to do so will null-en-void the customers Warranty.
5.3. Instruct the Customer on how to operate and maintain the Chlorinator as well as the water chemistry, also explain the operation of the system, especially;
  5.3.1. Power Pack operation and the meter/selector switch relationship.
  5.3.2. Electrode maintenance - all models.
  5.3.3. Timer settings, especially on the low maintenance self cleaning (SC) models.
  5.3.4. Salt Test procedure, when and how to add salt.
  5.3.5. Bucket test procedure
  5.3.6. Procedures for fault resolution (who do they call if there is a problem)
5.4. Leave the Chlorinator switched off for 24 hours whilst the salt is dissolving. The pump may be left to run as normal, or until such time as all the salt has dissolved and has had sufficient time to mix properly with the pool water.
5.5. Ensure that the customer knows to switch it ON after this period has elapsed.
5.6. If you are the contracted installer, contact the customer as a courtesy call to ensure that the customer has complied with the instructions issued by you.

6. Water Chemistry

6.1. Ensure the Pool Filter is clean. Open inspection of the filter is advised.
6.2. The water must be free of metals and algae, especially, copper and iron. This must be tested for - Do not make assumptions!
6.3. Super-chlorinate the pool with liquid or granular chlorine too 3ppm free available chlorine (DPD test method only).
6.4. Ensure minimum salt level 0.6% (6000ppm) by adding minimum 60 kg IODENE FREE salt per 10 000 litres water. Too little salt will result in premature element failure and the voiding of the Warranty; ensure that your salt calculation versus pool size is correct - rather more salt than too little.
6.5. Explain the effects of Over Salt on operation and how to overcome this. Adjust output selector down, ensuring output meter is below 100% of output, or replenish with freshwater makeup.
6.6. Ensure Pool is stabilized with Stabiliser (ISO Cyanuric Acid) to 60ppm. Over-stabilization with Cyanuric Acid could cause sanitizer to become ineffective. Consult your local pool shop for remedy.
6.7. Calcium hardness is within tolerances. 80 – 140ppm (~ 110ppm)
6.8. COMPATIBLE CHEMICALS - With the chlorinator installed, you should not need supplementary other chemicals, other than granular chlorine to maintain your pools if you have complied with the above.

7. Adding Chemicals

After the initial dosing of salt and Stabiliser, top up quantities should only be required when the pool water is diluted with fresh water. This will only occur after rain, or additions of water by the pool owner. Test your pool water for salt and Stabiliser (ISO Cyanuric Acid) levels before adding these two chemicals.
Other chemicals should be added as indicated by pool chemical test. Pool chemical status should be checked at least once a week during summer months. All chemicals should be added in small quantities, checking the chemical change after each addition. Following this procedure saves using excess chemicals and the problems associated with correcting such errors.

If you suspect JustChlor® chlorinator is not making chlorine, this can easily be checked:-

- Whilst the pump is running and the chlorinator is turned on, using your pool test kit,
- Take a water sample close to the water return nozzle/aimflow.
- The sample should be taken by placing your thumb over the sample tube, placing the sample tube in the return stream, and removing your thumb to ensure that you are testing water coming from the chlorinator.
- Take a chlorine reading, the reading should be >1.5ppm. If the reading is too high (~ 3ppm) adjust the Output Selector Switch down to the next level.
- Take another chlorine reading the following day, approximately the same time of day, adjust the Output Selector Switch either up or down to accommodate the new reading
- Recommended levels should be between 1.0ppm – 3ppm, depending on your pools specific chlorine demand.

8. *Stabiliser (Cyanuric Acid 40 - 60ppm*)

The chlorine gas produced by the chlorinator needs protection from the ultra violet rays of the sun. In the absence of Stabiliser, the chlorine produced will be rapidly dissipated into the atmosphere, giving the impression of zero chlorine reading in the water. Adding the right amount of stabiliser will enhance the effectiveness of your pool sanitizer.
Stabiliser effectively prolongs the active life of the produced chlorine, allowing sanitization to take place.

9. pH

The pH is an important part of water chemistry. The effectiveness of the Sanitiser you are using depends largely on the pH of your swimming pool water. However, the TOTAL ALKALINTY of your pool plays a large part in how stable the pH will be. It is a known industry fact that Total Alkalinity keeps the pH from fluctuating high or low; commonly know as “bounce”. We advise that this be researched on the internet as this is YOUR LEISURE TIME INVESTMENT?

To maintain the pH of your pool water,

- Use the standard pool test kit described earlier.
- Read the instructions on how to perform this test, it is simple and should not be rushed, rather if need be perform a second test to verify the first tests results.
- After completing the test follow up with the “Acid demand test”.
- Referring to the tables supplied with the test kit you will be guided to the **approximate** amount of hydrochloric acid needed to correct the pH of the water.
- Repeat this test every 24 hours until the desired pH has been reached.
- Should the pH be too low for the type of pool you have, use “Soda ash” to raise pH reading in Marbleize pools and “alkalinity increase” in Fiberglass pools?
- Note: that when filling the pool for the first time and the salt is being added, salt is an alkaline and will raise the pH level of the water, therefore a fair amount of acid may be added initially to bring the pH down in the 7,2 – 7,4 window.

TIP: When adding acid to your pool, it is imperative to dilute the acid in a bucket half filled with pool water then you pour the diluted mixture into the pool.

10. Water Chemistry Summary

Summary of Water Chemistry Parameters

10.1. The table below is a concise set of readings that should be maintained during the course of the year. If these parameters are met you will be assured of a Sparkling Clear Pool all year round. Remember, your pools appearance is directly proportional to your interest and effort you afford it.

10.2. There are a number of excellent websites that will enlighten you in "Swimming Pool Water Chemistry" should you wish to further your knowledge on water chemistry. Alternatively make use of our own website: www.justchlor.co.za.

10.3. Here are the Parameters that should be noted and adhered to:

- Chlorine level - 1.5 to 3.0ppm
- Salt level - 0.6% - 6000ppm non iodised salt
- pH 7.2 (Marbelite pools), pH 7.0 to 7.2 (Fiberglass & painted pools)
- Total alkalinity 80 to 140 (Marbelite pools), 120 to 150 (Fiberglass & painted pools)
- Stabiliser 40ppm to 60ppm (have tested before adjusting)
- Metals and copper - Zero
- Calcium less than 200ppm

10.4. It is recommended that you invest in a 4-in-1 water test kit from your local pool dealer, or retail outlet for easy pool water testing.

- Never add stabiliser to your pool without first having the water tested for stabiliser by a reputable pool shop.
- Over stabilizing effectively "locks" the chlorine rendering it ineffective as a sanitizer. Never stabilise a green pool. Fix it first.
- In the case of over-stabilisation one would have to "dump water" and add fresh water, this effectively dilutes the Stabiliser allowing the chlorine to sanitise.

11. Metal and Copper

- Any metals present in the pool water spells doom for the chlorinators electrode. These metals, due to the salt water electrolysis process, will impact on the electrode causing premature failure.
- Not only will the electrode fail prematurely, but staining of the pool surface may occur.
- There are a number of Pool Service companies that are able to remedy this situation; this entails the draining of the pool water and the acid washing of the pool surface. This tends to be a costly exercise for the pool owner.
- It is therefore recommended that prevention is better than the cure in this instance. It is highly recommended, that you as the pool owner, apply a well known brand of "Metal Remover" to remove any waterborne metals from your pool water.

Remember, when adding any chemical, especially Metal Remover, the chlorinator must be TURNED OFF. Only once the metals residue has been vacuumed too waste, can the chlorinator be switched back ON.

NOTE: Copper (Cu) can only enter the pool by the hand of the owner, beware that same hand may smack you later. Always ask the supplier if the product you are buying contains Copper (Cu) if it does.... don't buy it!

12. Calcium

Most pool shops can test for calcium levels.

12.1. The higher the calcium level in your water, the more frequently you will need to clean the chlorinators' electrode.

12.2. Calcium is identified as the white accumulation on electrode plates. Very high calcium levels will impact on the production of chlorine.
12.3. Calcium hardness, as it is known, should be in the range of 100 to 200ppm.
12.4. To lower calcium levels in your pool, you will have to replace the high "calcium rich" water, with fresh water, low in calcium.
12.5. Metal removers will not remove calcium,
12.6. Water softening products are available in the market place, just ask your local reputable pool shop owner, these products only aid the cleaning of the chlorination system electrode, and not remove the calcium from the pool water.

For those pool owners who use borehole water to fill their pool - *beware*, it may be rich in "calcium", other chemicals and/or metals. Some of the effects of high calcium content are, scale formation on the pools walls and floors and resulting in discolouration of the plaster, not to mention premature failure of the Electrode.

13. Checking Salt Level

The salt/chlorine indicator on your JustChlor® Chlorinator can be used to check the pool salt level, albeit that this is not a exact reading, it does give you a fair indication what the salt levels are:-

13.1. Turn the chlorine output knob to the "Salt Test" position.
13.2. Turn the pump on.
13.3. Before performing this test your electrode must be clean.(See "Cleaning Instructions")
13.4. Note the position of the salt /chlorine indicator.
13.5. Salt can be added until the salt /chlorine indicator needle is well into the Salt O.K. window (extreme right hand side marking).
13.6. Add only one bag at a time. Allow 24 hours for salt to dissolve before adding more salt. Do not add the salt into the weir or the area around the weir. (Remove the pool cleaner when doing this, as the cleaner will suck up concentrated amounts of undesolved salt and deposit it on the electrode causing the Power Pack Overload to trip)
13.7. Return the selector to the original setting after each test.
13.8. Do not leave the unit to run in "Salt Test" position for any length of time as this may result in damage to the chlorinator.
13.9. Set the chlorine output control to position 4 upon start up.
13.10. Test the chlorine level in the pool water after 24 - 48 hours.
13.11. Adjust chlorine output to the desired level depending upon your own pool's requirements.
13.12. It is recommended the gauge is set to generate a free chlorine level of 1.5ppm to 2.0ppm to ensure clean, safe pool water.

Over Salt Condition: Should too much salt be added, the chlorinator will trip the Overload Button and render the unit inoperable, don't despair, the unit can be run by turning the chlorine Output Control Selector Switch "down" to a lower setting.

- Reset the Overload Button by depressing the black button on the right hand side of the unit.
- Remember 100% on the Output Meter in position 2 or 3 is still the same as having the Output Meter reading 100% on setting 4 at the correct salt level.
- Continual resetting of the Overload Button without turning the Output Selector Switch "down" will damage the overload irreparably.
- **The Overload device is not a Warranty item,** as it is an **unsafe condition** re-settable fuse, installed to protect the unit from damage. This is thermal device and has limited life operation, generally, if the Overload has been reset more than 5 - 6 times the Overload switch may start to lose efficiency and require replacement.

Under Salt Condition: In the event of Low Salt concentrations, or readings under the 100% mark on the Output Meter in Salt Test Mode, it is advisable to turn the Chlorinator OFF until the salt levels have been increased. Failure to rectify the low salt levels will result in the unit underperforming and prematurely destroying the electrode.
An analogy can be drawn to a motor vehicle operating on low oil levels. Failure is imminent if not resolved immediately.
NOTE:
Too little salt will result in premature element failure - this is a Non-Warranty issue.

14. Shock Treatment

NOTE: It is safe to supplement the chlorinator with granular chlorine. No harm will be done to the chlorinator, or its electrode, as long as the chlorine is dissolved in a bucket of water before application.
Before turning the chlorinator ON, (after all the salt has be dissolved), the level of free available chlorine of the pool water must be no less than 1.5ppm at the onset, the chlorinator *will not* raise the chlorine reading from 0ppm to 1.5ppm in the time period that is required before the pool turns a shade of green. The chlorinators' purpose is to produce chlorine on a consistent daily basis, thus eliminating the need for you as the individual to perform this tedious task.
If needed, one should add dissolved granular chlorine into the pool to achieve the desire start point. Utilise the Standard Pool Test Kit (4-in-1), to test for chlorine levels. Shock treatment with granular chlorine can be carried out after heavy rain showers, or excessively high temperatures, or high bather loads. This should be utilized as a last resort if the chlorinator is unable to cope with these varying demands.

15. Mechanical Equipment

Your pump and filter are an integral part of your waters clarity and chlorinators operation. Without an effective clean filter you will encounter many difficulties with your water. Like wise, if the pump is defective you too will have difficulties.
Most pools have some form of "automatic" pool cleaner. These units are very cleverly designed pieces of "plastic" and they all work well. They require energy to drive them and this energy is derived from the pool pump whose suctioning ability is determined largely by the condition of the filter, cleanliness of the weir basket and pump suction basket cleanliness.

NOTE: Garden debris entering the pool system generally passes through the filtration system, all of which affects the overall performance of the pool, including the water chemistry. Remember, all the water passes through the filter at a rate of ~ 15 000 litres per hour, for 7 days, 12 hours a day.

15.1. Backwashing

To minimise salt and chemical loss during backwashing, insert a garden hose into the skimmer box and leave the hose turned "on" whilst backwashing. This predominately allows the fresh tap water to backwash the filter, as opposed to the chemical containing pool water.

When backwashing, it is advisable to turn the chlorinator - OFF. Remember to turn in ON again when you have finished.

STARTING UP YOUR CHLORINATOR

1. SELF CLEANING (SC) SYSTEMS. (J100 SC or J200 SC models)

Like all other chlorinators in the industry, are not 100% maintenance free, they are generally referred to as Low Maintenance units, requiring a certain degree of customer intervention or maintenance.

As one customer's water chemistry differs from another, it is imperative that water chemistry testing be conducted prior to the activation of the newly installed chlorinator, this allows the customer to determine what they are dealing with from the beginning.

In cases of calcium rich water supply, one may be required to clean the short water flow sensor of the element assembly more regularly.

2. SC SET UP PROCEDURE.

Self Cleaners operate on a reverse polarity process (bidirectional) utilising the main pump timer to facilitate this switching process, namely; every time the timer switches OFF the pump and chlorinator, the chlorinator internally changes its polarity and on renergisation for the next cycle, operates in reverse cycle. This process facilitates the self cleaning process. During this cycle, one will observe that the calcium built up (white chalky deposit) on the one set of electrode plates, will be shed and seemingly transposed onto the opposing set of plates.

As a rule of thumb, it is recommended that timers be set up to cycle as follows:

- Average water conditions (low calcium content):
  2 ON cycles of 6 hours = 12 hours total duty cycle during summer.
- Operating the chlorinator for periods longer than 6 hours, on one cycle, will prohibit the discard of calcium built up during that cycle, thereby rendering the Self Cleaning process ineffective.
- In extreme cases (high calcium content), it is recommended that the timer be set to:
  - 4 ON cycles of 3 hours cycle, with breaks in-between of + - 5 minutes - 1 hour.
- OFF cycles do not have impact on the operation of the chlorinator, but do impact on the chlorine production. It is therefore recommended that the OFF cycles be kept to a bare minimum, especially in cases of Solar Heating.

NOTE: Every alternate ON cycle should be the same time period as the previous ON cycle, this allows the self cleaning process to effectively deliver optimal chlorination with minimal calcium build up.

3. SC MAINTENANCE PROCESS

- Turn OFF the Pump power supply which feeds the chlorinator.
- Unscrew the electrode from the housing - cables intact.
- With your fingers, remove the calcium deposit (stalactite formation) from the short round pin adjacent to the electrode plates.
- Once this process is completed re-install the element assembly into the housing and
- Restart the pump.
- Check the Output meter reading for needle position.
- Remember to test the salt content of the water as described earlier.

We, the manufacturer, cannot be liable for a chlorinator's poor performance as a result of the pool water condition, or the environment that the unit is left to operate in.

NOTE: It has been necessary in extreme cases to clean, not only the short round pin, but also the main element assembly, this can be done by following the STANDARD CLEANING METHOD as described herein.

4. STANDARD (STD) SYSTEMS (J100 STD or J200 STD models)

As this unit is designed to operate in one direction (unidirectional), the electrode will have to be cleaned on a regular basis. Once again the impact of the water hardness of the pool will determine the calcium build up (white chalky deposit) on the electrode.

If left without cleaning, the chlorinator will not produce sufficient chlorine to sanitise your pool, simply because the calcium covered electrode prevents electrolysis taking place.

As one customer's water chemistry differs from another, it is imperative that water chemistry testing be conducted prior to the activation of the newly installed chlorinator this allows the customer to determine what they are dealing with from the beginning.

5. STD SET UP PROCEDURE.

Standard systems operate utilising the main pump timer to facilitate its switching ON and OFF process.

We recommend that pool timers be set up as follows:

- Standard conditions (Non heated pools):
  2 ON cycles every 6 hours = 12 hours total duty cycle during summer. In extreme prolonged temperature conditions the chlorinator may be required to run longer hours per day say 18 hours per day.
- Non Standard conditions (Heated pools):
  As above, with the option to increase the running time as and when the chlorine demand determines. Operating the chlorinator in conjunction with a Solar or Heat Pump condition may require longer operating hours, as high water temperatures have adverse effects on chlorine efficiency. However, if the chlorinator is correctly specified for the size pool and the inclusion of heating device, sufficient chlorine will be produced to meet the sanitization demands.

6. STD MAINTENANCE PROCESS

- Turn off the Pump power supply which feeds the chlorinator.
- Unscrew the electrode from the housing - cables intact.
- Place the electrode in a pool acid/Water solution of 1:10, this being 1 part Acid and 10 parts Water. Do not submerse the entire electrode with electrical wire connections into the solution, as this will damage the connections and void the Warranty. Only the electrode plates containing the calcium deposits must be submersed.
- Any stronger solution will damage the coating on the electrode and void the Warranty.
- Do not leave the electrode in the acid solution for prolonged period of time as the same effect will be realized.
- Once this process is completed re-install the element assembly into the housing, ensuring the lid seal is in place and the lid is tightened but not over tightened
- Restart the pump.
- Check the Output meter reading for needle position.
- Remember to test the salt content of the water as described earlier.

We, the manufacturer, cannot be liable for a chlorinator's poor performance as a result of the pool water condition of the environment that the unit is left to run in.

7. WINTER REQUIREMENTS (ALL MODELS)

During winter months, the Chlorinator should be turned down to accommodate for lower water temperatures and lower chlorine demands.
The impact of prolonged colder water temperatures (below 18ºC), impacts on the efficiency of the chlorination process and may result in damage to the electrode. It is therefore advisable to adhere to our recommendation

The following is recommended. The Output Selector Switch can be turned to Position 1, or in some cases, where the use or Solar Blankets are utilized, to Position 0 (OFF), as there is very little or no chlorine demand.

There are two methods of adjusting the chlorine output:

- Either the swimming pool Timer running cycle can be reduced, or
- The Output Selector Switch turned OFF.

Each individual pool/owner will have his/her own specific requirement, depending on pool location, size and water temperature.

Chlorine readings should be taken at least once a month during the colder winter months, to determine what the chlorine levels are.

If the chlorine is too high, adjustment should be made to reduce the output of the Chlorinator. This saves the life of the electrode as well as minimising the impact on the Solar Blanket (if utilised).

8. SYSTEMS CHECKS

Once the chlorinator is operational and all water chemistry is within specification, the following checks should be conducted:

- Electrical connections on the electrode are securely fitted at all times.
- Power Light on the Power Pack is ON
- Sufficient water flow through the electrode housing. No air bubbles, Water flow sensor is submersed under water.
- Output meter is registering according to Output Switch selection and Salt Test is over 100%.
- Whilst unit is operational observe for a milky white clarity to water in Electrode Housing, indicating evidence of electrolysis/chemical reaction.

In the event that all of the above are positive then the system is deemed to be operational.

9. TROUBLESHOOTING

Q: My chlorinator isn't working and it is under Warranty, someone must come out and fix it at no charge.
A: As the Manufacturer of this Appliance, we do not offer free Warranty Call outs to rectify issues (see Term and Conditions of Warranty herein). JustChlors' Warranty is strictly a Carry-In Warranty. The same rules apply for any other electrical appliance within your household.

- If you have not negotiated a *Chlorinator Care Plan* (CCP) with you installer, then you will not be entitled to a free Call out to rectify the fault. You will have to remove the unit and take it too your local agent, or to the Manufacturers premises, for repair.
- You may make use of the manufactures local Field Service Technicians at a nominal fee. This fee includes the collection of the faulty unit and reinstallation of the item once repair has been affected.
- Items deemed not to be within the Warranty provision, will be charged at the ruling rates, these costs will be for the customers account.

Q: My chlorinator Salt Test reading is low, but the salt levels have been checked at the local pool shop and are correct @ 6000ppm, what do I do?
A: Check the following:

- Is the electrode surface free of calcium build up, if not clean the electrode in a 1:10 pool acid/ water solution and conduct the test again.
- The electrode may be faulty or starting to deteriorate, consult your nearest dealer or contact us on: www.justchlor.co.za.

Q: I'm getting a reading on my chlorinator Output Meter but there is no chlorine reading in the pool water. The chlorinator isn't working, what do I do?
A: If you are registering an output of anything from 25% - 100% on any given Selector Switch setting, then the chlorinator **is** operational; there must be something else wrong, such as; insufficient Chlorine Stabiliser, Low/High pH, or incorrect Total Alkalinity.

- Lets explain: If there is a reading on the Output Meter then by simple science, there must be chlorine being produced. The one cannot exist without the other in chlorination systems. The rational behind this is; The Output Meter is an Ampere Meter that registers current flow, for current to flow, there has to be a circuit, the salt water (NaCl electrolyte) completes the circuit between the Positive (+) plates and Negative (-) plates of the Electrode thus registering a reading on the Output/Ampere Meter. If current flows, then electrolysis has to be taking place and chlorine must be present, albeit that it's not being an effective sanitiser due to other factors, (other than the Chlorinator). Have your water analysed and adjust water chemistry accordingly.

Q: My Overload Switch/Button keeps tripping, what do I do?
A: The Overload Button will trip out as a result of some abnormal condition - Take heed and check the following:

- Ensure the electrode is free of any calcium (white chalky substance). Over calcified electrodes will cause the Overload Button to trip. If this is the case, clean and replace electrode and restart the chlorinator.
- Ensure no foreign objects are causing the electrode plates to touch each other, or bridge out. Remove if necessary.
- Not withstanding the above, the Overload Button will trip in cases where there is an Over Salt Condition. If this is suspected:
    - Turn down the Selector Switch down 1 position until the Overload ceases to trip.
    - Observe the Output Meter needle reading at the point where the Overload ceases to trip.
    - An indication of ~100% on the Output meter is the maximum current that the unit is able to produce, albeit on Selector Switch Position 1/2/3.
- If the Overloaded Button is reset numerous times, without rectifying the fault, the Overload device will become damaged and it functionality diminished. The result thereof will be the replacement of the device by a qualified agent. This device is non Warranty item.

Q: My chlorinator fuse keeps blowing, what do I do?
A: The fuse provided on our systems are there to protect the incoming Power, this will have blown as a result of either;

- A power surge or lightning strike in close proximity to the unit.
- A short in the unit caused by some ingress of either water or vermin (ants, lizards, cockroaches, etc).
- Excessive corrosion of the internal parts of the chlorinator due to storage of corrosive chemicals (pool acid, chlorine and/or other open chemicals within the pool box/housing), or water/moisture damage, due to leaking pumps, filters, pipes, rain/flooding, etc)
- Either one of these conditions should be addressed by a professional/agent.
- Do not attempt to replace the fuse with a larger current carrying capacity doing so will result in severe damage to the unit and/or an electrical shock to the person attempting this, not to mention the voiding of the Warranty.

Q: I can hear my Self Cleaning chlorinator operating inside (clicking) when I switch the Selector Switch backward and forwards, but there is no output on the Output Meter, the meter stays stationary, what do I do?
A: There may be a number of reasons, or combinations of reasons for this situation, let us explain:

- The Water flow sensor may be clogged up with calcium, remove the Electrode from its Housing and clear the calcium off the Water flow sensor with your finger.

The calcium build up causes an insulator around the Water flow sensor and fools the system into believing there is no water flow, thereby causing the unit to go into protection/safe mode. Replace the Electrode after cleaning and operate the system normally.

- Make sure all cables are connected to the Electrode and that no wires have come adrift. Ensure the Green and Yellow striped wire, with the small clip, is connected to the Electrode lid small pin.
- Ensure that the Overload Button has not tripped. Check the system first before depressing the Overload Button. Repeat normal operation.
- Failing the above contact your local agent or contact us on: www.justchlor.co.za.

Q: I want to lengthen the output cable from the Power Pack to the Electrode. Can I do this without damaging the unit?
A: Under no circumstances should the Output Cable to the Electrode be lengthened.

- Altering the length voids the Manufacturers Warranty.
- Lengthening the Output Cable reduces the efficiency of the chlorinator dramatically as this is a low voltage system and is designed and manufactured at a specific length to function optimally.

Q: On my Self Cleaning (SC) chlorinator, every now and again my chlorinator reading seems to be low or zero. If I turn it OFF and ON again, the reading comes up.
A: There is a distinct possibility that the electrode may be faulty as the SC chlorinator operates on a reverse polarity operation. Consult your nearest dealer for assistance or contact us on www.justchlor.co.za.

Q: My terminals on top of the Electrode are corroded badly and become extremely hot to touch.
A: The corrosion comes from immersing the entire Electrode in an Acid solution whilst cleaning; this causes the acid to react with the brass fittings and copper wire causing a barrier between the respective contact points. This ultimately results in a resistance being formed and the high current passing through these corroded fittings now start to become hot.

- It is recommended that these be addressed as soon as possible, as prolonged heat will melt the lid in the localized area of Electrode and ultimately destroy the electrode.
- Excessive corrosion will also impair the efficiency of the chlorinator resulting in lower outputs on the Output Meter and lower chlorine readings.
- Once again this is a Non-Warranty issue, but an Owners responsibility.

Q: The meter on my chlorinator keeps flickering up and down, I think it's faulty. What do I do?

A: The fault may lie with elsewhere. It is advisable to check the following:

NOTE: The Electrode Housing is the last thing in the return to the pool and that the Electrode Housing is manufactured to a specific size much larger than that of the surrounding/feeding pipe work. The Electrode Housing does not offer ANY back pressure on the pump system whatsoever, it may however be as a result of the installers pipe work route that he/she chooses to take that may have an impact on the backpressures on the pump system. So if anyone says to you that the chlorinator is the problem, you should look for a more reputable service provider who knows what he/she is talking about.

The following actions are recommended;

- Whilst the pump is running, take note if there is an air bubble in the top portion of the Electrode Housing and/or the water flow sensor is partially submersed. This will cause the chlorinator to seemingly flicker ON/OFF repeatedly, or remain OFF, as the water level within the Electrode Housing fluctuates up and down. This causes the Power Pack to switch ON/OFF as the Water Flow sensor is the item that switches the chlorinator Power Pack ON & OFF.
    - If so, then this may be as a result of the lack of water flow through the system. This normally occurs when one of the following is causing the problem:
        - The filter is dirty causing the water flow to be restricted through the electrode housing. It is recommended that a thorough backwash be administered. Check the water flow through the Electrode Housing after the backwash.
        - A quick test is to gently loosen the Electrode whilst the pump is running, allowing the water pressure to push the air bubble out through, commonly known as "bleeding" the air out of the system. This is a temporary solution, allowing one to determine weather this is a chlorinator problem, or a suction leak problem. Be careful not to twist the Electrode more than 90º as the water will gush out, retighten the Electrode stemming the overflow water once the air bubble has disappeared.
    - The Automatic Pool Cleaner (APC) (Kreepy, Barracuda, etc) may have a problem with air being sucked through tiny pinholes caused by scuffing against the side of the pool over time. These little holes collectively culminate in significant amounts of air being sucked into the pump, filter and Electrode Housing. A clear indication of this is the expulsion of air bubbles at the aim flow, or return to the pool.
        - A quick means for checking this is to remove the APC from the system and let the system run normally, without the APC. One should see a significant flow of water via the filtration system and the disappearance of the air bubble in the electrode housing.
        - If this is the case, one should replace the APC hoses as soon as possible.
- If the above actions do not resolve the air bubble issue, you most probably have a suction leak problem. Remember that this section of pipe work is subject to suction and will suck air in at the same time as the water is being sucked form the weir. This can be as a result of:
    - Ground movement/subsidisation over time, or
    - Sometimes the glue binding the fittings too the pipe work separates and results in an air leak/suction leak, this due to the age of the pipe work or insufficient glue being applied during installation.
- In cases where a Solar Heater is fitted, there may be a blockage in the Solar panels or insufficient pump pressure to push water through all of the Solar panels.

    - A quick water to test if this is the case; isolate/bypass the Solar panels to see if there is a change in the water flow through the Electrode Housing and that the meter stops flickering.
        - If this is the case then you should have your Solar Heater installer check the system for any air leaks, or have the pump checked for wear-and-tare.
- In some extreme cases you may have a combination of all of the above. It is recommended that this be resolved by a pool professional as soon as possible.
- Remember a fluctuating power supply will resulting in:
    - No chlorination taking place at all.
    - Damage to the power pack and electrode due to repeated ON/OFF cycling.

Q: Ever since I had the Solar Panels/Heat Pump fitted my chlorinator is not working properly, what do I do?

A: There may be a number of reasons that may cause this;

- Water temperatures play a significant role in Salt Water chlorination. Water temperatures within the Solar Panels/Heat Pumps are much higher than that of the pool waters temperature. This Hot water is passed into the Electrode Housing directly after the Solar Panels/Heat Pump and it is this Hot water that affects the chlorination process. Hot water diminishes the effectiveness of chlorine and its ability to sanitise properly. It is important to know that one may have to increase the output of the chlorinator (turn up the output or increase running times). In extreme cases, even upgrade to a higher output chlorinator to compensate for the increase in water temperature.
- Incorrect information. Ensure you make use of a reputable Solar Heater/Heat Pump manufacturer/installer when considering one of these options, as the professional will have taken these issues into consideration before advising you on what route to take. Chlorinators are specified according to:
    - The size of swimming pool (size vs. output),
    - The heating system already in place,
    - The expected bather loads during the year (worst case)
    - Pool surface (fiberglass, Marbelite, etc)

  Anything added to the original specification (i.e. after-the-fact) may impact on the effectiveness of the chlorination system.
- These issues are not the result of an inadequate chlorination system, but of insufficient insight into cause and effect.

Q: Is a chlorinator cost effective and what are the monetary savings I can make?

A: A chlorinators cost savings are to numerous to mention, they range from:

- Savings on chlorine purchases every month.
- Savings on recovery of water balance (all other chemicals) in the event of forgetting to purchase chlorine and water chemistry goes out of balance.
- Saving on time. How costly is your time? What could you be doing other than having to sanitise and recovery your waters clarity once out of balance.
- Convenience, also measured in monetary values.
- Adding value to your home, as potential new buyers see this as an added feature and sellers use this as an added selling feature.
- In conjunction with JustChlors' extended *Chlorinator Care Plan* (*CCP*) will ensure that you literally have a chlorinator for life.

As one can see, it is not just one aspect that determines the cost effectiveness of the chlorination system, but many. Only you can determine what it means to you as an individual.

JUSTCHLOR CHLORINATOR WARRANTY CONDITIONS:

Jasco Trading (Pty) Ltd manufactures of the product herein after referred to as "the Supplier". Warrants to the original purchaser of this product ("the Customer"), that this product will be free of defects in material and workmanship, which under normal, domestic purpose, manifest themselves within:

- 12 months of purchase on Chlorinator Power Packs and Electrode - Unlimited
- Prorated 12 month warranty extension in the 2nd year from date of purchase.

Any claim in terms of the warranty must be supported by proof of purchase. No exceptions will be granted.

If such proof is not available, then notwithstanding anything to the contrary herein, the Supplier's normal charge for service and/or spares will be payable by the Customer upon collection or delivery of the repaired product. If a claim is made in terms of the aforesaid warranty within thirty days from the date of purchase, the faulty product will be exchanged (provided that the product is in its original packaging with all accessories). Failing return of the product within thirty days, the Supplier's liability shall be limited on return to the Supplier of the product or parts thereof, to be replacement or repaired (in the sole discretion of the Supplier, or its duly appointed distributor) of the product to eliminate any defect in workmanship, or materials found to be due exclusively to any acts or omissions on the part of the Supplier, of which defects the Supplier shall have been notified in writing by the Customer within the aforesaid warranty period.

The warranty provided herein and the obligations of the Supplier as aforesaid are in lieu of, and of the Customers waives, all other warranties, guarantees, conditions or liabilities, expressed or implied, arising by law or otherwise, including without limitation, any obligations of the Supplier in respect of any injury, loss or damage (direct, indirect or consequential) arising out of the use of, or inability to use, this product and weather or not occasioned by the Supplier's negligence (gross or otherwise) or any act of omission on its part.

The warranty does not include and will not be construed to cover products damaged as a result of disaster, Acts of God, abuse or any non authorised modifications to the product.

The warranty does not include any miscellaneous expendables, such as cables, connectors, thermal overloads, fuses, plastic fittings or likes.

During the warranty period the product should be taken to a designated approved service centre of the Supplier, or one of its duly approved service agents. The Supplier does not accept any additional liability pursuant to this warranty for the cost of traveling or transportation of the product or parts too and from the designated service centre of the Supplier, which costs are not included in this warranty.

The supplier neither assumes nor authorizes any other person to assume for it, any additional liability in connection with the sale or servicing of its products.