Queensland Customer Handover & Maintenance

2015

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pool maintenance specialists

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NOW YOU OWN A POOL?

Immediately following "Handover / taking ownership of a pool" and thereafter, the Customer (Owner/Occupier) must carefully monitor and follow the directions and instructions provided by the Contractor, Supplier or Manufacturer regarding maintenance.
To ensure that your investment is protected, and that your Warranty or Guarantees are preserved and maintained in accordance with the contract, and the protection provided under it – ensure these directions and instructions are strictly observed and followed.

> ***Important Notice:*** *You could jeopardize any claim you are entitled to under "Statutory" or other warranties if these guidelines are not followed, or the recommended chemical balances and procedures are not maintained.*
> *All warranty claims must be forwarded to your Contractor, in writing - as soon as you become aware or concerned.*

Please keep your completed Contract and other associated documents in a safe place, and familiarize yourself with the Statutory Warranty, Contract Warranty and Manufacturers' Warranty terms and conditions.

When the Pool/Spa is filled (in preparation for "Handover"), the town water supplied often contains impurities, chemicals and metals etc. and may not immediately have the correct calcium hardness or correct water chemistry balances suitable for the purpose of a Swimming Pool/Spa.

Just like a new car, a new or renovated Pool/Spa and its water requires "running in" while the materials used in construction "cure", and the water chemistry settles in and like a new car- it is completely in the operators hands.

If you follow the recommended "startu p & running in" procedures, followed by the recommended, regular maintenance schedules, your Pool/Spa and accessories will provide you with many years of trouble free enjoyment and the water will be clear, clean and healthy.

Your Contractor will have provided you with the manufacturer's warranty and instructional brochures on the use and maintenance of all the Pool/ Spa equipment accessories and other items supplied or used. If not ask for them or phone the equipment manufacturer. The maintenance methods you use should be in accordance with these instructions.

> ***Important Notice:*** *You must follow the instructions provided by the Contractor, and should now locate, read (and then keep in a safe place), all of the Contract and other documents provided, together with any "third party" instructions /warranties relating to equipment, supplies or accessories.*

If your Pool/Spa is ***Saltwater Chlorinated*** - your handover technician will advise you when the first lot of salt can be added which may vary from immediately up to 4 weeks, depending on the initial water supply and/or the curing requirements of the internal lining.

Concrete Pools (with a cement based internal finish)

Are "acid washed" prior to being filled with water
The internal finish can take from 4 to 6 weeks to "cure"
May require the addition of other chemicals or agents to counteract the effect of town or bore water, or may require the delaying of the normally required salt or other chemicals during the "curing" period

If your Pool/Spa becomes cloudy and you cannot see the bottom:

1. top up the water to operating level (3/4 up the skimmer box)
2. use a "flocculent" to treat the suspended solids and allow about 24hrs for the floc to settle,
3. brush & vacuum the sediment to waste, then top up the pool water to the operating level, again (if necessary)

If you can see the bottom of the pool:

1. use a clarifier to filter out the particles and run the filter overnight

As a General guide, you will need to:
add the recommended chemicals or agents as instructed (if not already done by the Contractor)
monitor and balance the water chemistry – weekly, and
(for the first 3 weeks):
manually brush and vacuum the entire surface finishes daily, checking and clearing the skimmer baskets and lint pots in the pumps/s for small particles brushed off the surfaces. The use of a "filter sock" in the skimmer basket, during this time will greatly assist in catching these small particles.

- run the filtration system for a minimum of 10 hours a day,
- check and adjust the pH of the Pool/Spa water every 2nd day
- maintain pH in the range of 7.2 to 7.6
- attend to "algae flashes" promptly

Newly finished pools (with a cement based internal finish} require at least 250 ppm calcium hardness in order to prevent the extraction of calcium from the cement products used in construction (i.e. prevents etching).

The concentration of calcium hardness may be increased by 10 ppm with the addition of either:

- 150g of calcium chloride; or
- 170g of calcium sulphate for each 10,000 litres of Pool/Spa water.

Removing calcium build up is no easy task. However, preventing calcium from adhering to pool surfaces can be as simple as following the contractor's recommended procedures for the first 4-6 weeks.

There are also a number of metal sequestering agents available that can counteract the effects of calcium scale, and which allow for the easy removal of unsightly solid particles by brushing and then vacuuming (weekly).

FRP and Vinyl Lined Pools

Under normal circumstances, these finishes & internal linings are already "cured" prior to installation and do not require an "acid wash" or the addition or delaying of chemicals or agents. However, the water chemistry and water balance will still need careful monitoring and attention, i.e.

- test the water twice a week
- pH to be maintained between 6.8 and 7.2
- TA to be maintained between 60 and 200ppm
- Cl not to exceed
- 4ppm brush and vacuum weekly
- check that filters and skimmers have an unrestricted flow of water, and check that the "stand pipe" is free of water, and not covered

If it all sounds too hard – consult your local Accredited Specialist and keep the written reports they provide.

In any event: the written instructions given by the contractor for the daily monitoring and adjusting of water chemistry, filtration, brushing, vacuuming, or other maintenance instructions or requirements given at "Handover", must be strictly followed.

The Statutory Warranty provided by your Contractor and the Statutory Warranty period thereafter (under Queensland Legislation), is conditional upon:

- the Consumer following the Contractor's instructions for initial and on-going maintenance, and
- that any concerns with the Warranty of the Contracted Works, or the general operation of the Swimming Pool/spa being directed to the Contractor in writing within specific time frames.

Some *quick* DO's *and DON'TS*

DO - Check and Clean the filters – as per manufacturer's handbook

DO - Check and Clean salt water chlorinator cells – as per manufacturer's handbook

Note *- if your chlorinator is not making adequate chlorine and the needle indicator in not moving, DO NOT automatically add salt, as if the cell is inactive, more salt will not help.* Excess *salt is detrimental to the pool surrounds, paving, and grout and waterline tiles. If it doesn't seem to be working- get an Accredited Specialist to check it.*

DO - Check and Adjust the water chemistry at least weekly and *enter readings in your pool log *(*this is important for future warranty purposes)*

DO - Hose down around the pool with fresh water ONCE a WEEK, the walkway, pool surrounds (pavers) and fences to prevent salt build up and corrosion.

DO - Lubricate all **"O"** rings once a year.

DO - Ensure your swimming pool fence and gates are maintained and are working correctly to provide an effective safety barrier in accordance with the Legislative requirements

DO - Ensure that children are supervised by a responsible adult when in or around the pool and that a CPR chart is displayed in the pool area.

DO NOT - Overheat your pool, as excessive heat may affect the wellbeing of the users, and may also affect your warranty.

Note *- 28C is the Maximum recommended temperature level for swimming in a Domestic Pool.*

DO NOT - Empty your pool, or allow the water level to drop below the bottom of the skimmer box.

Note *- This is an on-going engineering requirement and will void your warranty. In the unlikely event that you need to reduce the level of the water below the skimmer box – contact the Contractor for emptying instructions.*

Warning: *If you ever empty the pool below the skimmer box you are liable to void your warranty, and if you do so in wet times, the pool is liable to pop, bow or crack.*

All pools regardless of their construction are liable to float like a boat if the pool is empty.

DO NOT - Work with metal products near the pool. Metal filings will stain the pool surface, and may need removal with acid or special chemical treatments

DO NOT - Dive or construct diving boards. Domestic Pools in Australia are not normally designed for diving.

The importance of safety: The first requirement for pool owners and users is to be "Safety Aware".

Swimming Pool Fencing *(Check- www.qbcc.qld.gov.au)*

The fencing of outdoor swimming/spa pools is a mandatory requirement in Queensland – prior to the pool being filled with water and a building certifier is required (under the Building Act) to approve swimming pool fencing, as part of the approval for the construction (or installation) of any swimming/spa pool.

Swimming pool/spa fencing is intended to be child resistant but not childproof. Fencing is required to restrict access by young children (1-7 years) to swimming pools/spas, and must have an effective height of 1.2m at any point along its length. For the fence to remain "effective" there must be a minimum clear space of 1200mm to:

- finished ground level
- any substantially horizontal surface, projections or indents in the outside surface of the fence with a depth of more than 1OOmm
- any mesh with opening more than 12mm

Gates must be self-closing and self-latching and must open out from the pool/spa enclosure, with the latch operation mechanism at least 1.5m above the ground (or shielded) as required.

Do aboveground pools/spas require fencing?

Where an aboveground pool/spa has walls that have a minimum effective height above the ground of 1.2m or more, the wall is considered a suitable barrier to restrict access. However, features or accessories such as decking, wall bracing, filters, pumps, ladders etc and their location (partly in the ground or on sloping ground) may reduce the effectiveness of the wall as a barrier, and in such cases, a complying fence will be required around such items, to ensure direct access to the pool/spa is denied.

Who is responsible for the erection and maintenance of a swimming pool/spa fence?
The owner of the residential land (including the owner of rented residential land) is responsible for the erection and continuing maintenance of the swimming pool/spa fence and gate/s.

The occupier of residential land on which there is a swimming pool/spa must ensure that self-closing, self-latching gates (which provide access to the pool/spa) are kept securely closed at all times when the gates are not in actual use.

A person who fails to comply with the swimming pool/spa fencing requirements is committing an offence, and, is liable to a penalty of up to $4,980 and a subsequent penalty of up to $480 per day for a continuing offence.

The owner of the residential land on which a swimming pool/spa pool is installed must erect a complying swimming pool/spa fence prior to the pool/spa being filled with water, and continue to maintain that fence.

Further information on swimming pool/spa fencing and the requirements of the Queensland legislation can be obtained from the Department of Local Government and Planning website http://www.dip.qld.gov.au/poolfencing or, your local Council Office.

Take the time to LEARN CPR, and keep your skills up to date.
A resuscitation instruction notice must be displayed near the pool/spa.

The Queensland Govt and the Royal Life Saving Society (Qld) aim to ensure that the community understands the importance of water safety, and with this in mind, the following four key factors are suggested:

- **Adult supervision** - ensure that any child in a pool is being watched at all times by a responsible adult
- **Pool Fencing** - prevent your child from entering the pool surroundings
- **Pool Familiarization** - enable your child to be familiar and confident in water with simple tasks that can help keep them afloat
- **Resuscitation -** provide yourself with the skills to enable a greater chance of survival for an unconscious victim

Pool & Spa Covers

Most aboveground pools and portable spas have pre-manufactured covers as standard accessories, but covers are also a cost effective way of keeping your in-ground/outdoor swimming pool/spa free of leaves and debris, as well as increasing your water temperature (up to 8 degrees C).

The two most common types of pool/spa covers are the Solar Pool Blanket, and, the Leaf & Debris Cover, and the type of cover you choose is normally based on whether you need to increase/maintain the temperature of the water, or simply keep the leaves and debris out of the water, or a combination of both.

A **Solar Blanket;** floats on top of the water and allows the solar energy to pass through, then traps it as retained heat in the pool. It is also ideal as a thermal blanket for heated pools/spas. This type of cover is best used in conjunction with a "Solar Reel" for easy storage and handling.
The main benefits of a Solar Blanket are:

- Can increase water temperature up to 8 degrees C'
- Will retain heat in your pool/spa water
- Will reduce evaporation & heating costs
- Can save on chemical usage, and
- Prevents leaves & debris entering the pool/spa.

A **Leaf & debris cover;** is custom made to suit the size and shape of each swimming pool/spa, and are usually attach to the coping with low profile, individual rope tie-down fittings (approx. 1m apart). The fittings are non-corrosive and remain with the cover when it is removed, so that there is nothing left protruding on the surround or walkway.

The **mesh style cover** is the most popular, due to its ease of handling, and for keeping leaves and debris out of the pool/spa. The main benefits of a mesh style cover are:
Lightweight and easy to handle

- 1 person operation to fit and remove
- Can save on chemical usage
- Will reduce evaporation
- Compatible with most auto-cleaners, and
- Cuts cleaning time dramatically.

Made from a high strength mesh, this type of cover is extremely lightweight and easy to handle. One person can fit a Mesh Style Cover, and it folds away in its own storage bag. The Mesh (which is finer than most pool hand skimmers) allows the cover to stop leaves and debris from entering the water, and this debris can then be easily brushed or hosed off the cover while it is still on, before removing it for swimming.
Mesh Style Covers also allow any rainwater to pass through them, which eliminates the need for a cover syphoning device during rainy periods.

Cover* Safety *Points

- When the swimming pool/spa is being used, the cover should always be fully removed.
- Always supervise children in the pool/spa area, even when the water is covered.
- Do not walk on a pool/spa cover (even when it is off the pool/spa), as it may be slippery.
- Educate children NOT to walk on a pool/spa cover
- Covers should never be considered a substitute for a fence or proper supervision.

Use of the Pool/Spa

Domestic pools/spas in Australia are not designed for diving, and unless your pool/spa has been specifically built for this purpose, do not allow users to dive. Also, ensure that obstacles, which may be used as diving platforms, are not placed near the pool/spa.

Severe injuries can result from users hitting the side or bottom of a pool/spa, or even another person. You are protecting your family and friends from possible injury by adopting a NO DIVING policy.

The same applies for "rough-house" play around, or in, your pool/spa.

We would recommend that you display a "NO DIVING" sign in your pool/spa area, and affix depth markers.

Diving boards, slippery dips, slides and trampolines can be dangerous, and should only be used if your pool/spa has been specifically designed for their safe use. Even then constant adult supervision is important to prevent accidents.

Remember - there is no substitute for Adult Supervision

Ensure that your pool/spa area is clearly visible from the house.

Major Points:

- the fencing requirements of the Pool Safety Council must be met
- fencing and gates should be checked and maintained regularly, to ensure that they continue to satisfy the regulations
- don't leave furniture or other items that children can climb, near the pool fence, spa or above ground pool
- a cover is not a substitute for a fence or proper supervision
- supervise pool/spa users at all times
- a little thought can prevent accidents from happening
- place "NO DIVING" signs near your pool/spa (unless it has been specifically designed to allow for safe diving)
- place a CPR sign on the pool fence
- drinking and swimming don't mix- don't allow alcohol to be consumed by pool/spa users
- keep glass and other breakables items away from the pool/spa area- using plastic items can prevent injury
- consider the safety benefits of having an adult family members trained in resuscitation and other water safety procedures

Regular Pool/Spa Water Maintenance

Why Sanitise?

Pool/Spa water is easily contaminated with algae and bacteria from a variety of sources, including wind, top-up water, pets and users.

Untreated or improperly treated pool/spa water can be a health threat. Properly chemically balanced and sanitised water, on the other hand, will provide a healthy and visually appealing environment for you, your family and friends.

Controlling these influences is an ongoing requirement and involves chemically balancing the water to ensure it is neutral to the users, the pool/spa itself and the pool/spa equipment.

Regular testing and balancing of your water, sanitising the water to oxidise contaminants and filtering the water to remove the oxidised contaminants takes little time, and ensures that all is well with the pool/spa water.

Water Balance

Your swimming pool/spa is a water container and the water it contains must be suitable for the health of both the users and the container. Balanced water means that the chemical demands of the water are being met.

If the chemical levels are **too low,** the water will aggressively seek the chemicals and minerals it needs by attacking the pool/spa surface and equipment and may lead to severe corrosion problems.

At the other end of the scale, if the chemical levels are **too high** it will cause precipitation from the water and scale will form on the pool/spa surface and associated equipment and fittings.

Out of balance water can cause expensive damage to the pool/spa and may also inhibit the sanitising process.

In simple terms, a scientific water balance program suggests that the pool/spa owner should balance the following variables:

- pH - weekly
- Total Alkalinity - monthly
- Calcium Hardness - monthly

pH

Is the measure of how acidic or alkaline the pool water is? The pH scale ranges from 0 to 14 (with 7 being neutral). Values below 7 are acidic, and, values above 7 are alkaline.
pH is the most important aspect of your pool/spa maintenance program.

With pool water, we are seeking a pH balance suitable for the safe and healthy human use of the pool/spa, together with the effective use of the sanitiser.

Note: *topping up your pool/spa, rain, heavy bathing loads, and, chemical additions can all change the pH level of your pool/spa water.*

pH must be kept within the Recommended Ranges, as if it is too high or too low, it may:

- Create swimmer discomfort (itchy skin, red eyes etc.) and/or
- Interfere with the sterilising action of your water sanitiser.

The effect of pH on Chlorine

Effective sanitising relies on pH values,
therefore sanitiser and pH levels should be the measurements you check and adjust most often (at least once a week).

Regardless of the chlorine type or chlorination process you use, any pH drift above the "Recommended Range" 7.2 to 7.6 (or 6.8 to 7.2 for Composite Fibreglass pools) will inhibit the sanitising effect of your chlorine.

For example, *a pH level of 8.2 would mean only about 16% of your chlorine would be available to sanitise the water which means that you would have to add more than 5 x times as much chlorine to achieve the same sanitising effect.*

When the pH is lower than 7.0, the chlorine becomes extremely active and is rapidly consumed.

Total Alkalinity (TA)

Is the measure of alkaline salts in your pool/spa water? The operation range is 60 to 200 ppm (parts per million). Your Contractor or Accredited Specialist will advise you of the recommended levels to suit your pool/spa environment and usage.

Low levels of TA will:

- Lead to erosion of the inner surface in concrete pebble / painted pools/spas as the water takes the chemicals it needs from these surfaces
- Will also cause the pH levels to be very unstable with small additions of chemicals resulting in major shifts in the pH values.
- This is sometimes known as "pH bounce".

Your Total Alkalinity (TA) can be changed in the following ways:

- Adding "buffer" (i.e. Bicarbonate of soda), which is used to RAISE the TA
- Adding "acid" to the water to lower pH, will also LOWER the TA

Note: *the addition of "Top-up" or rain water may also change the TA (depending on the quantity and the TA of the introduced water itself).*

The Interconnection between pH and Total Alkalinity

From the last section, it can be seen that acids will lower both the pH and TA, as there is an interconnection between these two chemical components and because of this they need to be always adjusted together.

The levels you are seeking to maintain are:

- a pH of 7.2 to 7.6 (or 6.8 to 7.2 in a composite fibreglass pool) and
- a Total Alkalinity of about 100 ppm (or as directed by your Contractor or Accredited Specialist).

Let's have a look at the interconnection, and assume that the pH is OK but the TA is low.

- To raise the level of the TA you must add, "Buffer" (Sodium Bicarbonate) at the required rate.
- However, "Buffer" is an alkali and will also raise the pH and "Acid" (used to lower pH) also lowers TA.

The idea is to raise the TA artificially high, so that when the "acid" is added (to lower the pH to the recommended range) the TA is also reduced.

Remember- *do not try to do it all in one go -allow 6 to 8 hours between adjustments, testing each time.*

Two "acid" types are used to lower pH. One is Hydrochloric Acid (Spirits of Salts), and the other is Sodium Bisulphate. Both of which will effectively lower the pH and TA.

Note *- Check with your Contractor or NSPI Accredited Specialist as to which type is most suitable for you and your pool/spa.*

If using Hydrochloric Acid to lower the pH, it is vital that it be diluted (one part of acid to ten parts of water) prior to adding to the water.

Note *- the filter should be running during these additions and for about one hour afterwards to ensure adequate mixing and swimmers should not be allowed in the pool for 2 hours after any acid additions. No other type of "acid" should ever be used for pH or TA adjustments.*

Calcium Hardness

Is a measurement of the amount of dissolved calcium in your poo/spa water. The desired range is 80 to 500 ppm however, you should consult with your Contractor or Accredited Specialist for the specific requirements of your particular poo/spa finish, water supply, environment and equipment.

Both Total Alkalinity and Calcium Hardness need to be brought into balance, if not:

- Low levels will mean that the water is corrosive to the pool and or equipment and
- High levels will lead to scale formation on the pool and equipment

A normal water test kit cannot perform measurement of Calcium Hardness and a water sample should be taken each month to an Accredited Specialist for Calcium testing. A rough rule of thumb in areas where calcium levels are not naturally high is that testing annually will suffice after the initial adjustment.

The only exception to this is; if you use Calcium Hypochlorite (65% Chlorine) to sanitise your water and depending upon the method used- this chemical can quickly raise Calcium Hardness levels and may require more frequent testing and adjustment.

Sanitiser

Chlorine is the most commonly used water sanitiser in the world and there are many forms of this highly effective product including:

- Granular Chlorine (calcium hypochlorite- 65% active)
- Liquid Chlorine (sodium hypochlorite- 10/15% active) Stabilised Chlorine (in two forms):
- "Dichlor" granular chlorine (approx. 60% active) and
- "Trichlor" slow dissolving tablets (approx. 90% active) and
- Salt Water Chlorinators (electronic units which produce chlorine by the electrolysis of salt in the pool water)

Whatever form of chlorination you use for it to work efficiently, the pH must be within the Recommended Range and maintained at:

- At least one (1) part per million of Free Available Chlorine in an un-stabilised pool/spa or
- At least two (2) parts per million of Free Available Chlorine in a stabilised poo/spa or
- 3ppm if the water temperature is over 26 degrees Celsius

Free Available Chlorine can be tested with a test *it.*

MagnaPool / Mineral Salt Additives

Are advanced alternative sanitation systems based on electrolysing technology MagnaPool minerals are added to the pool water and the MagnaPool Hydroxinator generates the sanitizing agent in the pool water. This system uses DiamonKieen filter media in a high flow rate media filter.

Note: *After start-up refer to the MagnaPool documents provided with the MagnaPool* system *for information on operation and maintenance of your MagnaPool.*

Stabiliser (sun screen)

Ultra-violet light destroys chlorine, and for health and financial reasons it is important to overcome this effect as much as possible.
Stabilising the water is strongly recommended, as up to 5 parts per million of free available chlorine can be destroyed in three hours of strong sunlight.
Stabilising the water means adding the chemical Cyanuric Acid to the water to reduce the amount of chlorine destroyed by sunlight.

For the initial stabilising of a new pool/spa, Cyanuric Acid should be added to achieve the recommended level of 30 to 50 parts per million. Stabiliser is lost through splash-outs and by backwashing the filter and will need to be replaced regularly, especially during the summer season.

To do this, it is necessary to first test for the residual levels in the water.

- Accredited Specialists can test from a water sample and based on your pool/spa volume can recommend how much stabiliser to add.

As you only need stabiliser occasionally, fix the correct level at the beginning of the summer season and then check it every few months during the year.
Naturally, if you have to pump out water or lose a lot through splash-outs or backwashing, more frequent testing and adjustments may be required.

Any Chemical Additions

As a general rule, you are far better off adding small amounts of chemicals whilst running the filter, and then testing the effects after several hours.
Attempting large chemical changes by adding large amounts of chemicals can result in big problems.

The Filtration Process

Filtration is the physical removal of neutralised contaminants (chemical and human wastes) together with the insoluble particles from the water.

Daily filtration cycles should be in the order of 4 to 6 hours (depending on the size of the system installed) to ensure that at least (1) one "turnover" is achieved (that is, as a minimum, the equivalent litreage of the pool/spa is filtered each 8 hours).
Winter 1hr in the am – 1hr in the pm, Spring/Autumn 2hrs in the am – 2hrs in the pm, Summer 3hrs in the am – 3hrs in the pm.

The filter should always be running during periods of bather use (and for a short time after) to skim body oil from the water and to add some chlorine (if an automatic chlorinator is fitted}. When the Pool/Spa is being used, there is a high chlorine demand, due to the user contamination of the water.

The Filtration System

While filtration systems may differ in regard to their type, they will all have the following basic features:

- a Skimmer into which the inflow carries surface debris (leaves, oil, dust etc.) into the start of the filtration system,
- an initial Leaf Basket in the skimmer to trap leaves and large debris, before the water is sucked through to the pump,
- a Secondary Basket in the hair and lint pot in front of the pump,
- a circulating Pump,
- a Filter which physically removes solids from the water and pipework through which the clean water is returned to the pool.

Note *- To prevent rubbish inhibiting the water flow (and causing pump starvation) these items need to checked and cleaned regularly.*

Types of Filters

All filtration relies on removing solid matter from the water as it is pumped through the filtration system. There are three popular types of filtration systems currently in use in Queensland:

- Media Filter (sand, zeolite or glass)
- Cartridge Filter
- Diatomaceous Earth (or DE Filter)

All three types have high flow characteristics, and are highly efficient. However, they all require cleaning to remove the entrapped solids and failure to clean filters (as required} will result in reduced filtration flow, because of the accumulated debris blocking the filter medium.

Regular cleaning (as indicated by the pressure gauge) is essential.
Failure to clean filters can also cause an increase in pressure within the filter tank which will reduce the life expectancy of the unit and a complete filter clean using a propriety brand filter cleaner should be undertaken yearly.

Cleaning methods will depend upon the filter type. Both DE & Sand Filters can be "backwashed" (which is to reverse the flow of water through the filter tank and flush the rubbish to waste). Cartridge Filters require hosing down and soaking in the correct cartridge cleaning fluid.

Regular cleaning of a filter will provide benefits in terms of better water flows for filtration & vacuuming, better chlorination and better circulation within the pool, due to the increased flow rate.

In addition to this **REGULAR** cleaning, periodic service of the filter is recommended to remove any buildup of grease and scale. This can be arranged through your Accredited Specialist.

Automatic Chlorination Systems

The cleaning and maintenance of these automatic systems is most important, to ensure that they continue to function up to their designed standards of performance. In its normal use a Salt Water Chlorinator (due to the electrolytic action which converts salt to chlorine within the cell) attracts calcium (and other contaminants in the water) which adheres to the cell mesh and which will interfere with the chlorine production of the unit and eventually reduce the expected life of the unit. ***Note*** *- Check and clean the cell, only in accordance with the manufacturer's recommendations.*

Safety Rules

NEVER MIX CHEMICALS- this could lead to an extremely violent reaction (explosion!) and/or the production of Toxic Fumes. Do not even use the same bucket for diluting different chemicals, as even different chlorines can react violently when mixed together.

Chemical Transporting

When transporting chemicals in your car, do so in a manner that prevents them mixing in the event of spillage or an accident and secure all containers firmly.

Chemical Storage

Store chemicals so any accidental breakage, leakage cannot cause a mixing of pool chemicals or a mixing of a pool chemical with any other stored substance. Keep in a safe place away from children and pets.

Chemical Handling

Some pool chemicals are poisonous and can cause nasty burns. You should always store them securely away from where children or pets can get at them, and you should also use protective gloves, clothing and eyeglasses when handling. Always add the chemical to water in a bucket- not the other way around. Adding water to a chemical is potentially dangerous. Dilute all pool chemicals with water by at least 1:8 prior to adding to the pool.

Make sure you have the filter running when you are adding chemicals to the pool water to ensure proper mixing and distribution. Always read the instructions on the labels of pool chemicals and other products- and, follow them carefully.

General tips

Pool Water Samples

When you take a pool water sample for testing to your Accredited Specialist, make sure that the container being used does not contaminate the sample. Use a well-washed glass jar, fill it to the top and cover it with 2 or 3 layers of plastic wrap before screwing on the lid. Under no circumstances should plastic fruit juice or cordial bottles be used. ***Note*** - Some *Accredited Specialists will provide special sample container designed for this use.*

Transport the sample to the test point promptly and do not allow the sample to heat up, as this may change the chemical levels and give a misleading result.

Test Kits

Test kits should perform at least 3 functions:

- Sanitiser (Chlorine, Bromine or Other)
- pH, and
- Total Alkalinity

Test kits may either be the colour drop type or, the 3 way "dip stick" type.

In areas where access to a water testing facility is impractical, other supplementary test kits are available to test calcium hardness, Cyanuric acid and salt. All Test Kits should be stored in cool conditions, not exposed to sunlight, with the Liquid reagents being replaced at the beginning of each swimming season.

Future work around the Pool

All work around the Pool/Spa structure must be separated from the structural shell by a flexible compression barrier, with adequate drainage in surrounding gardens, landscaping and walkways within 3m of the water's edge being provided to ensure ground water runs away from the pool so that the pool structure remains dry.

Landscaping & Sub-Soil Drainage

Australian Standard 1839 contains recommendations regarding sub-soil drainage for Composite Fibreglass and other Swimming Pools, except in areas with highly permeable soils.

Where drainage systems are to be installed and/or additional site works are planned, it is recommended that you first contact the pool Contractor to ensure that the drainage system will not adversely affect the existing pool. ***Note*** - *hydrostatic pressure from ground water can affect all pools regardless of their type.*

Use of Standpipe

Composite Fibreglass pools will have a standpipe installed as part of the sub-soil drainage system which allows for the measurement and extraction of any ground water pooling underneath the pool shell. Check the standpipe regularly (particularly after heavy rains) and pump out any water to ensure the underneath of the shell remains free of water.

Should I empty my Pool?

Swimming Spas and Pools should not be emptied without taking specific precautions to protect the structure shell. If you think your pool or spa needs to be emptied for whatever reason, check with the Contractor first as emptying it without consultation with the Builder may also void that builder's statutory warranties.

Most problems can be treated without the need to empty a pool/spa as exposure to the sun and other elements may lead to additional remedial work being required. If you live in an area with a high water table you should take particular care of the drainage under and around the pool and not simply rely on the hydrostatic relief valve.

What Happens In Winter?

It is important to note that whilst the maintenance requirements may lessen during the non-swimming months, some basic maintenance will always be needed to your pool/spa and the water. Earlier sections in this booklet deal with specific water maintenance.

Do not allow your pool/spa to deteriorate into a "swamp" during the winter months by thinking that you can save a dollar on the small amounts of chemicals and electricity required as the damage done to a pool/spa and the resultant cost required to restore it back to a safe usable condition, will seriously outweigh any savings made.

Keep the pool/spa and associated equipment in good working order during winter, the system running time can be reduced and the addition of a "Winteriser" (Algaecides) may also be considered when the water temperature reduces to 20 degrees C or less.

Check the skimmer basket and pump lint pot regularly and keep them clean & clear (as any reduced water flow may cause "cavitation" and damage the pump).

Continue to periodically check water balances.

Glossary of terms

Bromine – a form of sanitiser most commonly used in spas because of its tolerance to hot water.
Buffer – an alternative name for Sodium Bicarbonate which is used to raise Total Alkalinity. Acid should be used to lower pH, but will also lower Total Alkalinity to some degreed the only acids to be used are Hydrochloric Acid and Sodium Bisulphate.
Algaecides – available in many forms and types. These products are a supplement to your sanitiser, and are specifically intended to kill all forms of algae.

Note: *check with your Accredited Specialist prior to purchase for compatibility with your pool maintenance* systems.

Alkali – a chemical with a pH above 7 (e.g. Soda Ash and Sodium Bicarbonate). Note that Soda Ash will mostly affect the pH, while Sodium Bicarbonate will have a major influence on raising the Total Alkalinity.
Alkalinity- a minimum level of 60 parts per million is recommended as this "buffers" the pH against undue sensitivity to other chemical additions.
Backwashing – the process used to clean Sand & DE filters by reversing the water flow to flush out accumulated dirt.
Calcium Hardness- the amount of dissolved calcium in the pool water.
Chemical Balances- a composite term covering those aspects of water which should be adjusted to achieve water suitable for swimmers, the sanitisers in use, the pool surface and the associated equipment. Pool water is chemically balanced when the pH, Total Alkalinity and Calcium Hardness levels are all within the recommended ranges.
Chlorinator – normally in one of three forms:

Salt Water Chlorinator – a unit that manufactures chlorine through the electrolytic conversion of salt. Chlorine levels will depend upon several variables, including running time of the unit

Liquid Chlorine Feeder – a device that feeds liquid chlorine into the pool water. Normally integrated with the filtration cycles these devices have electronic control on chlorine or

Erosion Feeder- a device containing solid Trichlor tablets which controls the rate of chlorine addition through a manual valve that varies the water flow over the tablets.

Chlorine – a pool sanitiser that oxidises contaminants in swimming pool water. It is pH dependent. There are many different types of Chlorine available – check with an Accredited Specialist for the most suitable for your pool.

Note: *the use of Liquid Chlorine in aboveground pools may affect the Manufacturer's warranty.*

Combined Chlorine – chlorine that has combined with nitrogen based compounds to form Chloramines. Associated with a strong chlorine like smell, this compound is a poor sanitiser and indicates the need for more chlorine (see super chlorination).
Filter- a device to remove oxidized material and debris from the pool water. The main types of filters used in Queensland are Media Filter (sand, zeolite or glass), Cartridge Filter and Diatomaceous Earth (or DE Filter)
Flow Rate – the rate at which your water is pumped through the filtration system (Litres per hour).
Free Available chlorine – that portion of chlorine in the pool water available to oxidise contaminants as opposed to "Combined Chlorine" or "Total Chlorine"
Hair & Lint Pot – that section of the circulating pump that contains the secondary strainer basket for the filtration system. It requires regular cleaning.
MagnaPool- uses a unique blend of Magnesium & Potassium chlorides (instead of traditional pool salts). These minerals are electrolysed through a hydroxinator to produce chlorine as required.
Accredited Specialist- a swimming pool and spa industry expert who has under taken training and successfully completed a National Swimming Pool Institute Course.
pH- a measure of the alkalinity (above 7.0) or acidity (below 7.0) of pool water. The only acids which should be used to lower pH are Hydrochloric Acid or Sodium Bisulphate.
Pump- the device that circulates the water through the filtration, heating/cooling, chlorination systems and within the pool itself.
Saltwater Chlorinator – is a type of chlorinator that produces chlorine from saltwater by means of electrolysis.
Sanitiser – a range of chemicals used to control bacteria in pool water.
Skimmer Box - suction point in the side of the pool where water is drawn into the filtration system. An important part of this fixture is the floating weir flap which serves *two* function; the First is to take advantage of the surface tension and cause the top layer of water to flow into the skimmer, removing debris floating on the water surface and Secondly, the flap closes when the pump is not running preventing the debris from floating back into the pool. Cleaning the skimmer basket is an important part of pool maintenance.
SPASA Queensland – means the Swimming Pool & Spa Association of Queensland Inc.
Stabiliser (sun screen) – Cyanuric Acid is used to screen the pool water from the sun's UV radiation that attacks the chlorine. The use of this product is recommended for all chlorinated outdoor pools. Regular checking and maintenance during the swimming season is recommended. Stabiliser should not be used in indoor pools.
Super Chlorination –the addition of chlorine, usually calcium hypochlorite at the rate of 100 grams per 10,000 litres of pool water. It performs three functions:

- The destruction of compounds such as chloramines,
- The destruction of harmful bacteria, and
- The destruction of algae spores resistant to normal chlorine levels.

Test Kit- the kit normally supplied with the pool to enable home testing of the water. Normal levels tested are pH, Acid Demand, Total Alkalinity and Free Available chlorine. Your Accredited Specialist can test other functions, such as Salt and Stabiliser levels, Calcium Hardness, total Dissolved Solids and Metals in Solution.
Total Alkalinity – is the measure of bicarbonates, carbonates and hydroxide in the pool water. It is raised through adding Sodium Bicarbonate also known as "buffer".
Note - as the chemicals used to adjust pH may also affect Total Alkalinity, the two should be measured together. The chemical interaction between pH and TA may require that they also be adjusted together. Both pH and TA levels should be tested frequently.
Total Chlorine- the combination of 'Free Available Chlorine' and 'Combined Chlorine' in the pool water.