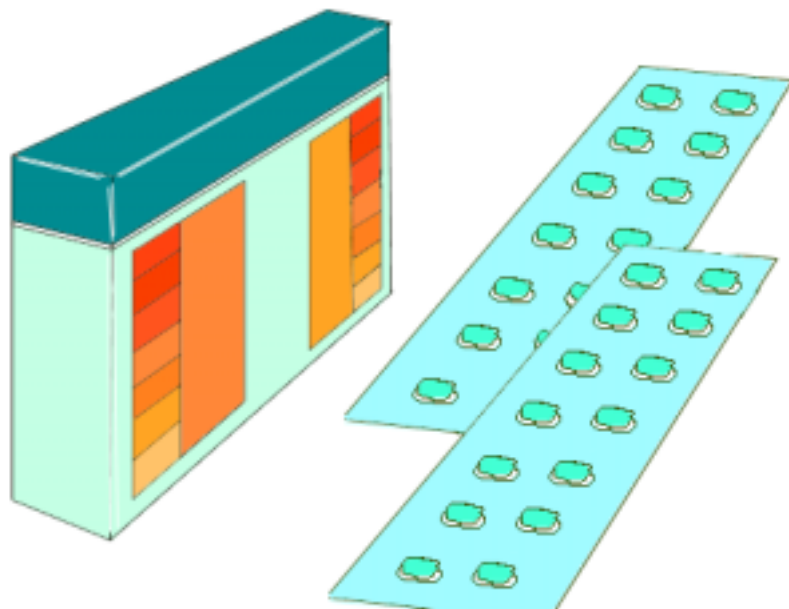




# **SPA CARE MANUAL**



**A GUIDE TO THE CHEMICAL TREATMENT OF  
SPAS AND HOT TUBS**

*It is essential that the water chemistry of your spa is maintained to a very high standard on a regular basis. Warmth and moisture offer an ideal breeding ground for bacteria, micro organisms, algae and fungi. A poorly maintained spa offers an ideal environment for the bacteria and micro-organisms which can multiply and in turn can spread disease and infection to human beings. Careful and thorough spa water testing and maintenance is essential and will reduce the risk of such problems.*

*A spa contains a small amount of water compared to a swimming pool, therefore two people in a 1800 litre spa is equivalent to 100 people in a 90000 litre pool.*

*Spa water can very quickly become dirty, this places a high demand on chemicals which will be very quickly depleted. Careful and regular management will prevent the spa from becoming dirty and unpleasant and will prevent the colonisation of bacteria and micro-organisms and actually reduce the overall time taken in routine maintenance.*

*The life of your spa and your enjoyment of it can be greatly reduced by chemically related problems such as staining, scaling, corrosion and clogged filters. Regular chemical and mechanical maintenance will protect your investment and add to your enjoyment.*

*This manual makes reference to POLLUTANTS which includes but is not limited to : Trapped soap, oil film, perspiration, organic body wastes, debris and dirt, bacteria, micro organisms, algae and fungi. These are referred to collectively as POLLUTANTS in this manual.*

*ONLY use chemicals and products that have been specifically designed and developed for spa use.*

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## For your safety and comfort you must follow these guidelines:

<i>PRINCIPLE CHEMICAL LEVELS</i>			
<i>Bromine</i>	<i>2 - 4 mg/litre</i>	<i>Chlorine</i>	<i>1 - 3 mg/litre</i>
<i>PH</i>	<i>7.4 - 7.6</i>	<i>Total alkalinity</i>	<i>80 - 160 mg/litre</i>
<i>Calcium hardness</i>	<i>100 - 500 mg/litre</i>		

- check the pH and total alkalinity (TA) daily and maintain a pH of 7.4 - 7.6 and alkalinity of 80 - 160mg/l.
- check the bromine or chlorine level daily maintaining bromine at 2 - 4 mg/l and chlorine at 1 - 3mg/l.
- clean the filter no less than once a month.
- sanitise the spa immediately whilst filling the spa using 55-72 grams of chlorine granules (wait until the level is below 3mg/l before use).
- shock dose the spa with chlorine granules once a week.
- empty the spa regularly (at least every 4-6 weeks).
- ensure the spa water circulation system is operated for at least 3 hours a day, preferably all day.
- drain the spa if it is to be left unused for 5 days or more.
- operate all the jets for at least one hour each day with the diverter valves in the mid position to ensure the system is thoroughly sanitised.

**If you have any enquiries concerning this please do not hesitate to contact your local dealer or Spaform Limited +44 (0)2392 313131.**

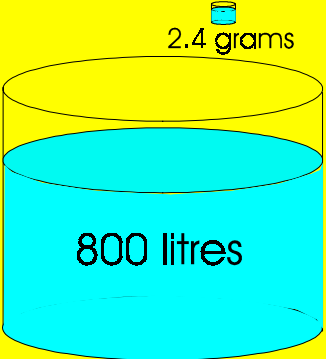
## INTRODUCTION

This guide will assist in making your spa experience a pleasure for years to come. The information contained in this manual will enable you to maintain a clean, clear and trouble free spa.

The practice of bathing in warm spa water stretches back through centuries. The Romans and Greeks in particular realised the benefits to body and mind. Today medical research has proven that real therapeutic value can be gained by regular use. The transference of heat from water to body, water turbulence and weightlessness combine to initiate physiological changes within the body leaving the bather feeling relaxed and revitalised.

A hot soak relaxes tired muscles, promotes circulation and can help relieve mental stress. Like any item of sophisticated modern technology though, your spa needs regular careful attention in order to maintain peak operating efficiency and ensure bather comfort.

Chemical levels are measured in mg/l (Milligrams per Litre) or ppm (Parts Per Million) both terms represent the same scale and can be described as the quantity of chemical in a given quantity of water.



**Take a spa with 800 litres of water,  
Assume that sanitiser is to be at 3mg/l this means that every litre  
of water, should contain 3mg of sanitiser.  
Therefore multiply 800 by 3 = 2400mg of chemical.  
1000mg = 1gram therefore 2400 / 1000 = 2.4 grams.**

**So to achieve a level of 3mg/l (ppm) in the spa add 2.4 grams of  
chlorine.**

Spaform recommend the use of **CHLORINE** or **BROMINE** as the sanitising agent for our range of Spas. There are alternative methods of spa water treatment, for advice and use consult your chemical supplier and get assurances that the treatment is suitable for spa bathing.

This guide will only make reference to Chlorine or Bromine sanitisers and the methods by which they are used and dosed. Some models are supplied with **OZONE GENERATORS**. These units will assist the removal of organic matter by oxidation and will reduce the demand on the sanitiser.

All spas have pipe circuits which may have water which is not circulated on a regular basis. To ensure water is circulated in these circuits operate the booster pump and the air blower (where fitted), every day to ensure that sanitiser is fed to all areas of the spa. If the spa is fitted with diverter valves they should be placed in the centre position prior to operating the booster pump. Some models are also fitted with a variboost control, this should also be placed in the mid position and the blower operated for 2 - 3 minutes each day.

Certain models of our portable spas are equipped with automatic booster pump and blower operation to ensure water movement is achieved on a regular basis.

### Prefill Treatment

It is advisable to check your water source before filling your spa (soft water can be corrosive and cause damage to the spa equipment, whilst well water may contain materials that cause stains or deposits).

## Filling Your Spa - Commisioning

**NB. If you are using a garden hose to fill the spa, allow the water in the hose to flush out for several minutes. (Stagnant water in hoses can contain bacteria which can cause skin irritation and infection to some bathers).**

Fill the spa with fresh water until the level is midway up the skimmer opening. When filling the spa from new or after being unused for extended periods there is a need to ensure that the spa is thoroughly sanitised which will be accomplished by **SUPERCHLORINATING (SHOCK DOSING)** the spa. **SPA NO-SCALE** can be added to the water to prevent staining resulting from trace metals such as copper or iron in source water. When adding any chemical to your spa, always run the pumps and blower (where fitted) for a few moments to aid mixing.

## Spa Water Testing

Your spa water **MUST** be tested when filling and regularly all the time the spa is filled with water. The tests will determine the chemical condition of the water and provide information on the types and quantity of corrective chemicals to add.

<b>Bromine</b>	<b>2 -- 4mg/litre</b>	<b>Chlorine</b>	<b>1 - 3mg/litre</b>
<b>PH</b>	<b>7.4 - 7.6</b>	<b>Total alkalinity</b>	<b>80 - 150 mg/litre</b>
<b>Calcium hardness</b>	<b>100 - 500 gm/litre</b>		

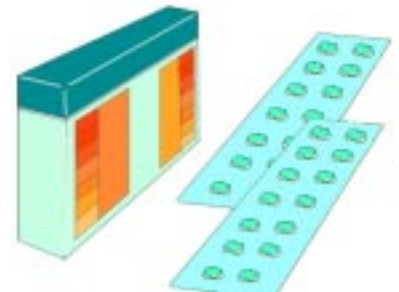
## ROUTINE MAINTENANCE AND CLEANING

Once a week, remove, check and clean all foreign matter and debris from the skimmer basket and self priming pump pre-strainers (if fitted) in fresh water. Check the filter element and discard if damaged or unable to be cleaned. Hose the element with water, allow to dry and brush clean.

Once a month use **SPA CARTRIDGE CLEANER** to remove pollutants from the filter element. Place the cartridge element in the cleaner solution, soak for a minimum of 3 to 6 hours, or preferably overnight, lightly brush and hose off and allow to dry before returning the cartridge to its housing. It is useful to keep spare cartridges so that the use of the spa is not interrupted during the element cleaning process.

## Test Kits

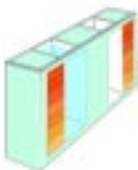
Test kits should be of a good quality and stored in a cool, dry, secure place away from other chemicals and out of reach of children. Rinse test chambers after each use. Always use fresh reagents and replace regularly - they are supplied with use by dates which must be observed for accurate readings. Aquacheck test strips are a quick and easy way to check the chemical levels.



## Using the Test Kits

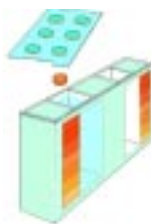
There are various types of test kits available but the reagent types are broadly similar. Rinse the chambers in clean water before and after each test and always check and adjust the pH before attempting to test the sanitiser. Each kit will be supplied with detailed instructions which should be followed exactly. Test kits are either 2 or 3 way, 2 way kits will test pH and DPD (Br. Bromine or Cl. Chlorine) while 3 way will test pH, DPD and TA (Total Alkalinity).

1



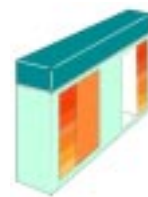
Remove stopper from kit & fill the test kit chamber with water from the spa

2



Push a tablet from the blister pack into the water filled test chamber

3



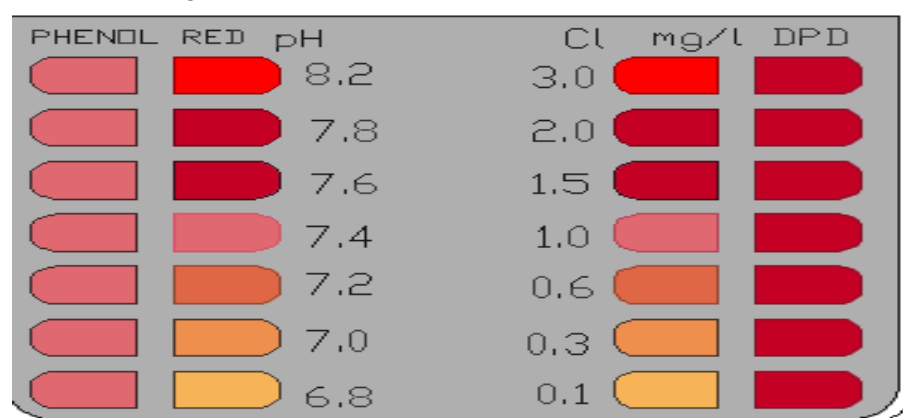
Replace the stopper and agitate the kit until the tablet dissolves. Check colour against reference.

## Using the Test Kits

Spa water testing is ideally achieved with a standard DPD test kit. A quick but less accurate method is to use test strips. The test kit consists of a test chamber unit with colour bands preprinted to reference the actual levels of chemicals present in the spa water. Foil packed reagent tablets and a detailed instruction sheet is also included. These test kits rely on the test tablets reacting with the spa water and a colour change taking place in the sample water. People who are colour blind may experience problems in identifying the colour changes taking place. Electronic comparators are available which provide a digital readout of the actual chemical levels - consult your local dealer for details.

The units are available as 2 way - Chlorine or Bromine and pH, normally supplied with the chemical starter kit. Or 3 way - Chlorine or Bromine, pH and Total Alkalinity, available from good pool shops or your local chemical supplier.

The following picture shows the results from a test taken using a 2 way test kit, The tablets have dissolved and the water has changed colour in both test unit chambers. It is easy to see that by comparing the colours of the water to the reference colour printed on the kit the actual levels of chemicals can be ascertained. Therefore by performing this test and comparing the colour change the water from this test had a pH value of 7.4 and a Chlorine level of 2.0 mg/l.



pH

The colour of the water on the left hand side of the comparator corresponds to the colour shown as 7.4

Chlorine

The colour of the water on the right hand side of the comparator corresponds to the colour shown as 2.0 mg/l

### Test Kit Reagents

Always use DPD test reagents for pH and sanitiser testing. If the reagent tablets have become discoloured or speckled, they will not provide an accurate reading. **Always keep tablets in a cool dry place away from children. Do not use tablets that are over 6 months old or out of date.**

### Quick Test Strips

These strips are available for testing Bromine or Chlorine treated spas and consist of a thin card strip having three felt pads, each pad will react test for a separate condition. One pad reacts for chlorine/Bromine, one for pH and the third for total alkalinity. Follow the instructions which are clearly printed on the container exactly as detailed, failure to do so can give inaccurate readings. Compare the resultant colour change on each pad with the reference colour chart also printed on the pack. The packs of strips will have an expiry date, ensure that they are within the date period specified.

## CHEMICAL TREATMENT

The maintenance requirements in this section are designed to protect your investment and to make its operation and use as trouble free, sanitary and cost effective as possible. Allowing just a few minutes each day can save time, money and irritation in the long term. Following these requirements will also make spa water treatment that much easier.

If the spa is being filled for the first time or it is being refilled after draining, the water must be **SHOCK DOSED**

*Note - always add chemicals to water, do not add water to the chemicals, use the air blower (if fitted) and the pump to aid mixing chemicals in the spa. Keep all chemicals out of the reach of children and in a secure, cool, dry and ventilated area.*

to 10 mg/l and then balanced as set out in the following sections prior to the spa being used. The sanitiser will need to be added until the **BREAKPOINT** level is reached, this is when a free level of sanitiser remains in the water after the sanitiser has neutralised any organics present in the water.

There are two basic reasons for chemical treatment of spa water: Water Balance and Sanitisation.

### Water Balance

The water must be **BALANCED** so that it is neither corrosive or scale forming. **WATER BALANCE** is the term used to describe the interaction of pH, total alkalinity and calcium hardness. When the levels are adjusted to those stated on page 7 the water is in balance. Unbalanced water can have detrimental effects on the spa equipment, water quality and spa shell finish if left unaddressed.

### Sanitisation

The water must be **SANITISED** so that it is free from pollutants which can cause infections, free from un-sightly algae (which can also harbour bacteria) and free from bather wastes.

*The active pH range for Spa water is between 7.4 and 7.6*

In order to check water balance and sanitisation levels, it is necessary to **TEST** the water regularly. The purpose of water testing is to provide information about the condition of the spa water and the remedial actions necessary to bring the water back into the required condition.

### pH

**pH** is the measure of acidity and alkalinity in the water and is measured on a scale from 0 to 14. Values below 7 are acidic and above 7 are alkaline. Between 7.4 - 7.6 is a comfortable level for the human body and ideal for sanitisers to be effective.

Levels above 7.6 will cause sanitisers such as **Chlorine** or **Bromine** to be less effective and will produce scaling on the surface of the equipment. The Spa water can appear cloudy and shorter filter runs will occur.

Levels below 7.4 will cause sanitisers to dissipate more rapidly, increase corrosion of surfaces and equipment and may cause eye and skin irritation.

*TOTAL ALKALINITY (TA) - range 80 mg/l - 160 mg/l*

To raise pH, add the appropriate alkaline chemical (**pH+**) and to lower pH add the appropriate acid chemical (**pH-**) per instructions. Chemicals which should be in solution should be introduced by dispersing around the perimeter of the spa. Retest after 30 minutes and adjust as necessary. Always test and adjust pH prior to testing and adjusting sanitiser levels.

### Total Alkalinity

**TOTAL ALKALINITY** refers to the mineral content of the water and is made up of carbonates, bicarbonates and hydroxides in spa water.

**Water with a low TA (less than 80 mg/l)** can cause the pH to drift quite rapidly from one level to another (pH bounce) leading to scale formation, corrosion of surfaces, eye irritation and discolouration of spa water.

**To Raise TA** add **SODIUM BICARBONATE** to spa water by mixing the appropriate quantity with clean water,

see information on pack for details. The water may be cloudy for a short period therefore always adjust at the

**CALCIUM HARDNESS ( range 100 - 400 mg/litre)**

start of a filtration cycle.

**Water with High TA, (above 160 mg/l)** although not as serious may cause cloudy water and other associated pH problems.

**To lower TA** is more difficult. The simple solution is to add **DRY ACID (pH-)** a little at a time but often! Test regularly and do not try to accomplish your goal with large amounts of dry acid all at once.

**Calcium Hardness**

Low **CALCIUM HARDNESS** can lead to corrosion of equipment and staining of surfaces.

High levels of calcium cause scaling of equipment thus reducing its efficiency and may lead to cloudy water. Scaling can also provide a suitable environment to assist algal growth and hence encourage colonisation by bacteria and micro-organisms.

The ideal range for calcium hardness is 120 - 250 mg/litre. You should test for calcium hardness on first filling your spa and once every 3 months. If your test kit does not provide for a calcium hardness test, either obtain a suitable kit or take a sample to your local dealer for analysis. **To raise calcium hardness**, add calcium chloride in accordance with instructions. **Lowering calcium hardness** is not as easy as raising it, particularly if your tap water has a high calcium hardness level. Partially filling with softened water or obtaining water from another area may be the only solution to the problem of over hard water. Naturally hard water can be artificially softened by using a water softener.

As water evaporates from your spa, the minerals stay behind and become more and more concentrated. This will lead to cloudy water, scale formation and eye irritation. In most cases, make up water has the effect of diluting this concentration to a point where it is of little concern. If you live in a hard water area, it will be necessary to use a binding agent such as **NO SCALE** to prevent precipitation of solids.

***Do not use softened water only in your spa.***

In certain geographical areas water is naturally soft, in contrast to hard water, water with low calcium hardness, **SOFT WATER**, can be very corrosive and can cause serious damage to the spa equipment and plumbing. Soft water must be hardened to at least the minimum calcium hardness as soon as possible to prevent damage to the spa and equipment.

**SPA WATER SANITATION**

Spa water sanitation must satisfy three basic requirements individually and as a whole in order to provide a suitable bathing environment;

- I Continuous disinfection and maintenance of a residual;
- II Removal of excess organics;
- III Prevention of algae growth.

There are two chemicals commonly used in sanitation of spa water.

A. **CHLORINE**

**CHLORINE (range 1 - 3 mg/l)**

B. **BROMINE.**

Both act to kill bacteria, micro-organisms and algae leaving the water clean and ready for use. It is recommended that bathers shower prior to using the spa as this will reduce the drain on the sanitiser and reduce foaming. Check and adjust the sanitiser **ONLY** after correcting the pH.

**Chlorine**

**CHLORINE** is available in liquid, granular and tablet form. Due to the concentrate residual required in spa

water, liquid chlorine is unsuitable for most spa bath applications. Granular and tableted chlorine offer a much safer method of introducing chlorine to spa water and offer greater long-term protection and destruction of organisms.

When chlorine is introduced to water, a portion becomes consumed as it reacts with any pollutants present. Some also reacts with the nitrogenous ammonia impurities to form **CHLORAMINES (COMBINED CHLORINE)**, and some remains freely available for disinfection and algae control **FREE CHLORINE**. Combined chlorine is that chemical agent which has reacted with material in the water and is no longer useful to deal with further pollution. **FREE CHLORINE** is the most important agent of spa disinfection and a free chlorine residual of at least **1 mg/l** should be maintained at all times.

### *BROMINE (range 2 - 4 mg/l)*

If granular chlorine is to be used, we recommend the use of calcium hypochlorite. For spas used outdoors a stabiliser (isocyanurates) may be required to protect the chlorine from depletion by sunlight. Care must be taken to prevent cyanuric acid build up in the water. Chlorine tablets need to be introduced to spa water by way of an erosion feeder.

#### **Bromine**

**BROMINE** has a very similar reaction to chlorine. It is available in **TABLET** form and is introduced to the water in the same manner as a tablet chlorine. Bromine has tended to be the preferred method of sanitation for spas. It has the advantages of being less irritating to the eyes, has very little effect on the pH and is effective over a wider pH band than chlorine and is odourless in water. Unlike chlorine, bromine also remains active in its combined form. It is therefore not thought necessary to differentiate between combined and free bromine.

#### **Overdosing**

High bromine or chlorine levels in the spa, ie above 10 mg/l (ppm), can bleach colour out of reagents making it appear that no sanitiser is present, when there is actually an excess. If in doubt, watch the tablet as it dissolves. If colour can be seen issuing from the tablet initially which then disappears, suspect over dosage. To prove overdosing, dilute the test sample water by 50% with tap water, retest and continue diluting until a reading is achieved. Multiply the reading by the dilution factor to achieve a true reading. Where serious overdosing has occurred **DO NOT ALLOW** the spa to be used, action is needed to reduce the sanitiser level, This can be achieved by doing **one** of the following:

1. Leave the spa for a period of time - the sanitiser level will decay naturally.
2. Drain a portion of the spa water and refill with tap water.
3. Add **SODIUM THIOSULFATE**, (Chlorine Neutraliser).

### **SUPERCHLORINATE (SHOCK DOSE)**

As the spa is used, non filterable wastes along with the more resistant strains of bacteria can accumulate. In some cases, this can lead to the water becoming dull, irritating and harmful to health. To overcome this, the

***Bromine cannot be used for shock dosing - Use Granular Chlorine***

Spa should be **SUPERCHLORINATED (SHOCK DOSED)**. Test and adjust the pH of the spa water to 7.4 - 7.6 and then check the sanitiser level. Add Chlorine to achieve 10 mg/l once a week and on refilling. Choose

*It is essential that the Spa is maintained to satisfactory hygiene standards which will be achieved by following the guidelines in this manual. The testing and dosing of appropriate chemicals MUST be carried out on a regular basis to prevent the growth of bacteria and micro-organisms which can be a serious risk to health.*

a time when the spa is not in use and add the chlorine to the spa in solution. The chlorine level must then be allowed to drop below 5 mg/l before the spa is used again.

When adding chemicals to your spa, leave the filter pump operating for at least 1 hour and use the air blower for a few minutes (if fitted) to mix the chemicals.

## **CHEMICAL TREATMENT PROGRAMME**

*(Weekly procedure)*

### **Daily**

Check the pH and Sanitiser levels using a DPD test kit; always adjust the pH first using pH+ or pH- to attain a pH of between 7.4 - 7.6 (See page 6). Add sanitiser either by placing Bromine tablets into the skimmer or using an adjusta-flo in the spa water or adding chlorine granules in solution to the spa water. A residual of 1-2 mg/l. Chlorine or 2- 4 mg/l Bromine must be achieved. NOTE: If the spa is heavily used or if the sanitiser level is consistently low correct the levels more often even every day if necessary. Spa Fragrances or essential oils will place a high demand on the sanitiser, under these circumstances monitor and adjust the sanitiser level more often (See page 8).

### **Monday, Wednesday, Friday**

TOTAL ALKALINITY: check the spa's TA level by using a DPD test kit, (See page 6) for details of adjusting.

### **Monday, Friday**

Use SPA SPARKLE to keep spa water polished and sparkling clean, at the rate of 25 ml per 450 litres.

### **Wednesday**

Eliminate unsightly scum around the edge of the spa with spa cleaning fluid/paste. Use SPA NO SCALE as required to prevent the formation of scale on spa walls, tiles and equipment. Note: do not add SPA SPARKLE and SPA NO SCALE on the same day.

### **Friday**

**SUPERCHLORINATE (SHOCK DOSE)** your spa weekly with chlorine granules (see page 8). This is essential to maintain perfectly sanitised and attractive spa water. Use chlorine granules to achieve a sanitiser level of 10mg/l. Always check and adjust the pH prior to testing and adjusting the sanitiser level.

*(A Monthly Procedure)*

**Equipment protection:** If low calcium hardness is a problem in your area, treat the water with calcium chloride. To prevent equipment corrosion and foaming raise the spa's water hardness level to an acceptable level of 180 mg/l. (See page 7).

**Filter cleaning:** To keep your filter free of grease, grime and oil, clean the filter by soaking in **CARTRIDGE CLEANER**. (See page 4).

*(As Needed)*

**Surface protection:** To protect and seal the spa surface, use non abrasive silicone polish every time you drain and clean the spa.

**Water balance:** After filling the spa, adjust the pH, TA and calcium hardness immediately. (See page 6).

**Sanitising:** When filling or refilling the spa, use 57 - 70 Gram of concentrated chlorine granules to achieve 10mg/l (Do not use until spa is below 5mg/l). The initial dose will be used quickly as organic compounds are neutralised. Dose sanitiser to achieve satisfactory free sanitiser levels (See page 8).

**Mineral Protection:** Use **SPA NO SCALE** to prevent staining of spa surface and discoloured water caused by metals in the source water.

**Foam control:** Use **SPA NO FOAM** to control foaming, use as needed to remove excess foam on water surface.

**Aromatic control:** To make your spa even more relaxing and enjoyable, add essential oils & fragrance as desired. Fragrances and oils place a high demand on the sanitiser so check the levels before and after use and adjust to correct the levels. Note: the cartridge element may require more frequent cleaning.

***Empty the spa every 4 - 6 weeks or at least dilute with fresh water every 2 - 4 weeks to remove excess build ups. Prior to discharging the water, ensure that all active levels of chemicals are reduced so that there is no risk to aquatic organisms or sewage works via the drainage system. If in doubt, contact your local water authority. DO NOT EMPTY INTO A SEPTIC TANK***

**Algae Control:** Spas can become colonised with algae. The use of chlorine granules as a shock treatment is effective. Further algae growth can be prevented by use of a long term algicide.

**Winterising:** If the spa is to be decommissioned for the winter or for extended periods the water will need to be drained. Shock dose to 10mg/l, run the blower (if fitted) for 5 mins, run all the pumps for a minimum of 1 hour, turn off drain and bail the spa water to waste and wipe dry. Remove the pumps and cover the spa.

*(Periodically)*

## **WATER PROBLEM GUIDE**

This section is intended to assist in the identification and correction of problems that may arise. If in doubt, take a sample of spa water to your dealer for analysis.

### **Poor Filtration**

Check to see if your filter is in good working order and has been operating for at least three hours per day. If the filter is dirty, or the flow is restricted, take the filter/s out and clean. Replace filters before using the spa. Spas fitted with ozone generators are extremely efficient at dealing with organic materials and will tend to cause filters to become blocked quickly on initial startup. Clean filters regularly during the first few days of operation.

### **Wastes**

A build up of water-soluble wastes, can be controlled with **SUPERCHLORINATION (SHOCK DOSING)**. (see page 8).

### **High & Low pH**

pH in excess of 7.6 can cause water to cloud. Below 7.4 can cause corrosion. Adjust the pH to the range of 7.4 - 7.6 with the appropriate chemical.

### **Dissolved Solids**

Solids accumulate in spa water due to heavy use or chemical dosing over a period of time and become part

of the general water make up. When the water becomes saturated, clarity is greatly reduced. The best solution is to drain and refill the spa with clean water. Remember to follow the procedure for spa start-up.

### **Metals**

The source or make up water used to fill your spa may contain metals such as iron, copper or manganese, which could show up as green or greenish blue in the water. To prevent these from depositing onto the spa's surfaces, use **NO SCALE** which will help prevent precipitation.

### **Scale**

Scale is a result of excess dissolved calcium in the water and occurs when it precipitates out as calcium carbonate. The deposits can coat the spa surface, clog circulation and filtration systems and block heaters. Maintain the water balance to prevent excess scaling.

### **Eye or Skin Irritation**

pH that is too low is uncomfortable to human skin and irritating to sensitive areas such as the eyes. Correct pH immediately to maintain pH level 7.4 - 7.6.

### **Chlorine odour/eye irritation**

Chlorine combined with nitrogen from body wastes form chloramines or accumulate as combined chlorine. These in turn are the main cause of chlorine odour and eye irritation. These compounds can be dealt with through **SUPERCHLORINATING (SHOCK DOSING)**.

### **Foaming**

Foaming is a common problem in spas and is brought about through agitation of the water and the presence of lotions, cosmetics and other substances. Use **NO FOAM** for immediate control or drain and refill under extreme circumstances.

### **Surface Discolouration**

When the spa is drained, some whiteness or discolouration may be apparent. To remove, use waterline cleaning paste and polish the spa with non abrasive silicone polish **SPA FAST GLOSS** to return shine and colour to acrylic surfaces.

### **Over-use of Chemicals**

Spas may contain typically less than 2300 litres. Failing to know the actual volume of water in your spa may result in the use of too much or too little chemicals for treatment. In addition, failure to measure chemicals precisely can lead to overuse and waste. Inappropriate chemical treatment can create excessive cloudiness or result in damage to the spa or its equipment. Know your spa's water volume and record it in the back of this guide. Measure all chemicals accurately and apply according to the instructions.

### **Algae**

Though not usually a problem in indoor spas, algae spores can come into contact with outdoor spas from the surrounding environment. If algae is present, follow instructions for superchlorination.

### **Soft Water**

A spa filled primarily from a home water softener system can rapidly stain from the corrosion of metal parts. Water has a natural demand for minerals (hardness) and will attempt to satisfy this demand from the most accessible sources - pumps, heaters etc. **DO NOT USE SOFT WATER ONLY IN THE SPA.**

### **Failure to get a Chlorine / Bromine reading**

There are many potential causes for this, the prime reasons are:-

**Contaminants** are brought into the water due to heavy spa usage. These contaminants create a Chlorine/Bromine demand and until that demand is satisfied, the sanitiser will be unable to establish a residual. Continue adding sanitiser or consider shock dosing to establish a residual.

**Algae** which may be present in the water consume large amounts of Chlorine/Bromine which can quickly deplete the available free Chlorine/Bromine residual to a point where it is nonexistent. Shock dose to remove algae.

**Spa fragrances** and essential oils create a heavy drain on the sanitiser and will quickly reduce the residual. Check the sanitiser before and after using fragrances and oils and adjust to the correct levels.

**Overdosing** of sanitiser to levels above 10mg/l (ppm) can bleach the colour from tablets and give the impression of an absence of sanitiser when in fact there is too much.

*Chemical safety and storage. When using chemicals, read the labels carefully and follow the directions precisely. Though chemicals protect you and your spa when used correctly, they may be hazardous in concentrated form. Please observe all safety and handling instructions.*

## Humidity Control

Spas generate a large amount of vapour through evaporation from the water surface. When used indoors suitable ventilation and humidity control should be used. Dehumidifiers, electric fans or draft free venting systems are commonly used to control the excess vapour. Excess humidity can corrode or deteriorate the surrounding finishes and cause serious damage to the building structure. As the vapour condenses it may draw unwanted organic material into the spa water. Condensing water can also magnify the risks associated with electrical fittings. When the air temperature is lower than the spa, water evaporation increases and the humidity levels rise. Controlling the ambient air temperature will also reduce the heat losses from the Spa and reduce the overall cost of heating the spa water.

## SPA SAFETY TIPS DO's and DONT'S

- DO Pay attention to the information on any documents or warnings provided with your spa.
- DO Read and follow these instructions carefully - if in doubt seek advice from your dealer or Spaform Ltd.
- DO Ensure that all bathers know the safety requirements of the spa.
- DO Read and follow all chemical instructions.
- DO Ensure that all users of the spa read and observe these instructions.
- DO Add chemicals to water, not the other way round, and add separately.
- DO Supervise all children using the spa and do not allow pets into the spa.
- DO Use a suitable spa safety cover on the spa to protect children & pets when the spa is not in use.
- DO Wash with copious quantities of water if chemicals come in contact with the skin. If symptoms persist or if chemicals are ingested or come in contact the eyes seek immediate medical attention.

- DO Measure and use the exact quantities of chemicals specified. **Do not overdose.**
- DO Store chemicals in a cool, dry, secure and well-ventilated place.
- DO Keep chemical containers closed when not in use and always replace caps.
- DO Ensure a responsible person handles spa chemicals and keep out of children's reach.
- DO Check and maintain all chemical levels stated in this guide.
- DO **SUPERCHLORINATE (SHOCK DOSE)** to 10mg/l (ppm) every week.
- DO Shower before using the spa, this will reduce the drain on the sanitiser.
- DON'T Mix chemicals together unless stated. Reaction may occur between some chemicals which can be very dangerous.
- DON'T Inhale fumes or allow chemicals to contact the eyes, nose or mouth. In case of contact or in the event of swallowing, follow the emergency advice on the product label, and seek immediate medical advice.
- DON'T Use vacuum cleaners for chemical spills. Never smoke whilst handling chemicals. Some fumes can be highly flammable. Wash hands and any food preparation areas immediately after handling or preparing chemicals.
- DON'T Allow chemicals to spill onto surrounding surfaces. Clean up any spillages carefully and dispose of in a safe manner.
- DON'T Allow the free sanitiser level to drop below that specified in this guide.

A complete range of chemicals is available from many Pool Shops. We recommend **Spaform Sunspot** branded products which include:

Bromine Tablets, Granular Chlorine (Shock), Chlorine Granules  
No - Scale, No Foam, Spa Sparkle, T.L.C. Tile and Liner Cleaner  
Cartridge Cleaner, Spa Fast Gloss, Dry acid (pH-), Alkali (pH+)  
Sodium Bicarbonate, Calcium Chloride, Sodium Thiosulphate

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## Spa Profile

**Spa Name (Model, No.)** .....

**Colour** .....

**Capacity** .....

**Date Purchased** .....

**Supplier** .....

**Installer (If Different)** .....

**Telephone No.** .....

Make Up Water

**pH Reading** .....

**TA Reading** .....

**Calcium Hardness** .....

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