

POOL OWNERS GUIDE

COMMISSION OF THE FILTRATION

Before commissioning the filter it is worth spending a few minutes familiarising yourself with the role of the multiport valve. Its basic purpose is to control the direction of the flow through the filter to perform the various functions as follows:-

IT IS IMPERATIVE THAT THE FILTRATION PUMP IS SWITCHED OFF PRIOR TO MOVING THE MULTIPOINT VALVE HANDLE. THE HANDLE SHOULD BE FULLY DEPRESSED WHEN MOVING IT TO ANOTHER POSITION.

MULTIPOINT VALVE POSITIONS

FILTER

This is the normal operating position for the filter when the pool water enters the top of the tank and filters through the sand (or other media) and out through collection tubes (laterals) back to the pool.

WASTE

This position is used to pump the pool water direct to waste without passing through the filter and is used to lower the pool level, when vacuuming (after "floccing" pool) or to empty the pool. Remember to close the skimmer valve when emptying the pool to avoid the pump losing prime by the entry of air into the skimmer. Similarly, ensure when emptying the pool that the discharge area or drain will accept the considerable gallonage of water without serious flooding problems. Emptying the pool should be carried out in one continual operation as it may be difficult to re-prime the pump if it is stopped during emptying. It is likely that the pump will lose prime when the level has dropped to the last few inches and this remaining water will have to be bailed out. It is recommended that liner pools should not be emptied without consulting your dealer first.

CLOSED - THE PUMP MUST NOT BE SWITCHED ON WHEN THE MULTIPOINT HANDLE IS IN THIS POSITION

This position can be selected to prevent water siphoning back from the filter tank through the pump whilst the pump lid is removed to clean the pump basket. It can also be used during winterisation.

BACKWASH

This position is selected to clean the filter media when the pressure gauge indicates an abnormally high pressure (usually 5lbs higher than normal, depending on specification) or once weekly (whichever is sooner). The flow through the filter is reversed during this operation, entering the bottom of the filter tank passing up through the media and discharging directly out through the waste pipe, washing entrapped debris with it. Backwashing takes approximately 2-3 minutes and a visual check of the sightglass will confirm when the water turns clear.

N.B. Water only flows through the sightglass when 'BACKWASH', 'RINSE' or 'WASTE' positions are selected.

RINSE

This position is selected after each backwashing. The pool water enters the top of the filter tank, passes down through the sand, but is then directed out through the waste pipe. This process resettles the sand and rinses out any debris that may have lodged in the collection tubes (laterals) and pipework during backwashing. When the rinsing is completed, which takes approximately 30 seconds, the reading on the pressure gauge should return to normal running pressure after reselecting the 'FILTER' position. The pool water level should be checked and 'topped' up to its correct level (half way up the skimmer 'mouth') following each 'BACKWASHING/RINSE' operation.

ROUTINE MAINTENANCE/VACUUMING THE POOL OUT

Vacuumping the pool works with the flow of water being drawn through the vacuum head, up the vacuum hose and into the filtration with the use of the pump.

VACUUMING PROCEDURE:

- 1) Back wash the filter and empty any debris present in the pump and skimmer baskets. This ensures maximum suction. Ensure multiport valve handle is returned to 'FILTER' when vacuuming is taking place
- 2) Attach the vacuum head to the telescopic handle and fit one end of the vacuum hose to the vacuum head.
- 3) Lower the vacuum head into the pool (if necessary, adjust the telescopic pole to the correct length), leaving the vacuum hose coiled up on the side. Feed the vacuum hose foot by foot, vertically below the surface of the water thus ensuring that most of the air is expelled out of the whole length of the hose.
- 4) Place vacuum plate (Kornea) over the skimmer basket (remove the collar weir from the skimmer basket, if fitted) ensuring a good seal and then fit the vacuum hose end cuff into hole in the vac. plate. If two skimmers are fitted, one skimmer will need to be blocked off (to maximise suction), usually by means of a 'slideround' blanking piece (please consult dealer if unsure). SWITCH OFF PUMP prior to blanking off skimmer in order to prevent injury.
- 5) Shut off the main drain line to maximise suction through the skimmer line and then start vacuuming. Always keep the vacuum head under water so as not to introduce air into the system (thus losing prime in the pump).
- 6) If the pool is very dirty, it may be necessary to backwash the filter (as described earlier). In which case the vacuum hose must be disconnected from the skimmer end. SWITCH OFF PUMP before removing the vacuum plate.
- 7) When vacuuming is completed, open the main drain line, SWITCH OFF PUMP prior to removing the vacuuming kit. Store equipment away from direct sunlight.
- 8) Backwash and rinse the filter to restore clean and normal running pressure.

IF LOSS OF SUCTION OCCURS : TROUBLESHOOTING GUIDE

PROBLEM	SOLUTION
- Does filter need backwashing?	- Backwash
- Does the skimmer basket need emptying?	- SWITCH OFF PUMP and empty basket
- Does the pump basket need emptying?	- SWITCH OFF PUMP and empty basket
- Is the vacuum plate fitted with a rubber seal and/or seated properly over skimmer basket?	- SWITCH OFF PUMP before checking
- Is the vacuum head or hose blocked up?	- SWITCH OFF PUMP, check, restart if necessary
- Has the system lost prime (air being introduced somewhere)?	- restart vacuuming procedure
- Is the vacuum hose damaged?	- replace vacuum hose

PLEASE NOTE – VACUUMING IS PERFORMED TO REMOVE ONLY SMALL PARTICLES OF DIRT AND DEBRIS FROM THE POOL FLOOR. LARGE LEAF DEBRIS AND STONES, ETC MUST BE REMOVED WITH A DEEP NET BEFORE VACUUMING TAKES PLACE.

SURFACE SKIMMER

Maintain the water level halfway up the skimmer 'mouth' by topping up with fresh water when necessary. Keep a regular check on the skimmer basket, especially during Autumn or after high winds. Make sure the floating collar weir assembly (if present) is seated correctly. A greasy deposit will probably develop at water level around the inner walls of the skimmer (and the rim of the floating collar). This can be removed by cleaning with tile and liner cleaner/paste, available from your dealer.

WATER LINE

Clean the water line around the pool weekly with tile and liner cleaner to remove the tidemark or scum line. Doing this will not only help maintain a hygienic pool but also prevents the build up of an unsightly mark which would detract from your pool's appearance.

FILTRATION SYSTEM

Refer to the earlier sections on the multiport valve and commissioning of pool. Check and clean the pump basket regularly, ensuring that the lid 'o' ring is clean and lightly greased with petroleum jelly. Make sure that the pump lid is firmly tightened down by hand. Check the reading on the pressure gauge and backwash the filter whenever it is reading approximately 5lbs PSI higher than normal clean running pressure or once a week, whichever is sooner.

BACK WASHING PROCEDURE:

- 1) Switch off pump.
- 2) Move multiport valve handle to the 'BACKWASH' position.
- 3) Switch the pump on and run for 2 minutes until the sight glass becomes clear. Bear in mind that when you start to backwash it takes a few seconds for the sightglass to turn murky.
- 4) Switch off the pump.
- 5) Move the multiport valve handle to the 'RINSE' position.
- 6) Switch on the pump and run for about 30 seconds.
- 7) Switch off the pump.
- 8) Move the multiport handle to the 'FILTER' position.
- 9) Switch on the pump and check that the pressure gauge reading has fallen to normal clean running pressure.

During backwashing, approximately 50-100 gallons of water is discharged to waste, so check water level and top up if necessary.

The filtration (average domestic pool) should be running for approximately 8 hours a day to provide adequate turn over and filtration of the water. This running time should be extended for larger pools.

Many pool owners use timeclocks to set the main running time on Economy 7 which is of a great benefit.

LINER CARE - (LINER POOLS ONLY)

Pool liners are extremely tough and will last many years, providing the following guidelines are adhered to:-

- 1) Keep the pool full at ALL times. If the pool is left empty for any prolonged period the liner may shrink and become brittle, after which time a replacement may be required. If it is necessary to drain the pool for repairs or if the water quality is significantly stagnant (due to neglect) it should be refilled immediately to minimise shrinkage and damage.
- 2) If the liner becomes damaged somehow, small punctures can be repaired by temporary patches which can be applied underwater. Large repairs may need to be carried out when the water level is dropped. However such repairs are only possible depending on the age of the liner as the material becomes less receptive to the repair adhesive with age.
- 3) Any equipment you may later purchase to clean your pool must be of a type specifically for liner pools. Keep a regular check on your equipment and look for any damage or trapped debris which may puncture the liner.
- 4) Do not allow the pH level of the pool water to fall below 7.2, otherwise the life of the liner will be considerably reduced.
- 5) Always make sure that all dry chemicals are fully dissolved in a bucket of warm water before adding to the pool water. If not, undissolved chemicals may attack the liner material on contact. This will have the effect of bleaching the liner, which is not only unsightly but will significantly reduce its life.
- 6) It is recommended that chemicals are added to the pool above the inlets, which will aid in the faster dispersion of the chemicals.

CHEMICAL TREATMENT

WHY USE POOL CHEMICALS?

The filtration plant will remove most of the suspended debris in the water. What it is unable to do is remove harmful micro-organisms and algae which if left untreated will not only make the water look and smell unpleasant, but would prove a serious threat to the health of bathers. An untreated pool may become a hazard if neglected for too long and the water is so murky that the pool floor is obscured.

The chemical treatment must also be able to break down nitrogenous and organic contaminants brought into the water by bathers in the many different forms as well as natural pollutants such as grass cuttings, leaves and bird droppings.

CHLORINE TREATMENT

Chlorine, in its many different forms, has long been recognized for its excellent performance in disinfecting swimming pool water. It is ruthlessly efficient in killing bacteria and other micro-organisms as well as controlling the growth of algae. It is also a strong oxidizing agent which is effective in breaking down the organic impurities listed above.

Chlorine is available in four main forms:-

- liquid - sodium hypochlorite (upto 15% available chlorine).
- granular - sodium dichloroisocyanurate(stabilized - 55% available chlorine).
- granular - calcium hypochlorite (shock chlorine – 65% available chlorine).
- tablet - sodium trichloroisocyanurate (approx. 90% available chlorine).

Pool water conditions vary considerably from pool to pool and this will dictate the amount of chlorine required.

The most important variables are as follows:-

- The temperature of the water and ambient temperature.
- Intensity of the sunlight.
- Number of bathers in the water.
- Level of rainfall which may dilute the levels chlorine.
- Chemical content of fill and topping up of water.
- Proximity of pool to trees and vegetation.

As a rule of thumb, the warmer the water and the higher the bathing load the greater the chlorine demand. A free chlorine level of not less than 2 parts per million (ppm), sometimes expressed as milligrammes per litre (mg/l), must be obtained at all times for a clear healthy pool.

WATER TEST KIT

Testing the pool water to ascertain chlorine and pH levels is a simple but essential task that only takes a few minutes and should be carried out on a daily basis during the swimming season. A test once a month is recommended during the Winter months.

The best time to test your pool and then add chemicals, if necessary, is during the evening after bathers have vacated the pool. The filtration system then has the opportunity to thoroughly disperse and circulate any added chemicals in readiness for the following days bathing.

The test kit works by a very simple process. A sample of the pool water is collected in the two vials of the test kit and into each vial a tablet is added. A chemical reaction takes place and the samples change colour. By comparing the colours to the chart on the test kit, you can easily determine the chlorine and pH levels in the pool.

TESTING POOL WATER

- 1) Remove top and rinse out the test kit with pool water.
- 2) Fill the vial(s) of the test kit with pool water, a few inches below the pool surface.
- 3) Place a DPD No.1 tablet in the chlorine vial (usually on the right) and a Phenol Red tablet in the pH vial.
- 4) Secure the top on the test kit and shake well until the tablets are clearly dissolved.
- 5) Hold up the test kit to daylight and compare the colours of the water to that on the two charts, find the nearest colour match.
- 6) Read the corresponding pH value (on the left) and the free chlorine content (Cl - on the right).

NB - The colour matching must be carried out immediately once the tablets have dissolved.

Maintain at all times a free chlorine level not less than 2ppm (mg/l) and a pH level between 7.4 and 7.6.

ANNUAL TESTING

We strongly recommend that an annual comprehensive chemical analysis is carried out to determine the water quality and the concentrations of various dissolved minerals which will have a bearing on the appearance of the pool and the effectiveness of the disinfectant. This test may be carried out by an analyst who will require a 1 litre sample of your pool water in a sterilised bottle (please consult your dealer). This test will determine any abnormalities in the pool water and will recommend any solutions (if necessary).

CHEMICAL TERMINOLOGY

The chemical terms you may encounter when owning swimming pool together with their meaning and what steps you may need to take in order to achieve ideal bathing conditions are as follows:-

TOTAL DISSOLVED SOLIDS

Total Dissolved Solids (TDS) is the term used to describe the total amount of all the dissolved minerals in the pool water and is measured in parts per million (ppm). It increases the longer the pool water is retained (and not replenished). High TDS levels promote scale formation, the water looks dull and lifeless, eye irritation is likely and the water quality becomes more difficult to control.

Generally, the water should be changed when the TDS level exceeds 1500 ppm. The continuing replenishing of the pool water through topping up following backwashing, displacement and evaporation, as well as rainfall normally allows the water to be retained for three to five years.

CALCIUM HARDNESS

Calcium Hardness is a measure of the total quantity of calcium salts dissolved in the pool water. A calcium hardness level of between 100 and 500 ppm is considered ideal. Too low and corrosion of metal fittings could start, too high and pipework choking scale could form. Calcium chloride must be added to the water to increase the calcium hardness level. Reduction of the Calcium Hardness level is achieved by lowering the pool water level and topping up with fresh water.

TOTAL ALKALINITY

Total Alkalinity is a measure of the total amount of alkaline substances dissolved in the water. Ideal total alkalinity levels are between 100 and 200 ppm. If the total alkalinity level is too low then corrosion is likely, accompanied by wide fluctuations in the pH levels. If the total alkalinity level is too high then scale will form and adjustments to the pH will become difficult. To increase total alkalinity, add sodium bicarbonate. To reduce total alkalinity, add pH minus until the total alkalinity reaches the desired level. It is then likely that the pH will be too low so adjust by adding pH plus until the pH is between 7.4 and 7.6.

pH LEVELS

pH is the term chemists use to describe the balance between acid and alkali substances. pH is measured on a two-way scale centred on the number 7. A substance is totally neutral, i.e. neither acidic or alkaline, if the pH is 7.0. If the pH level is less than seven, then the substance is said to be acidic. If the pH level is more than seven, then the substance is said to be alkaline.

In swimming pool water the pH must be maintained between 7.4 and 7.6. If the pH falls below 7.4 (too acidic), eye irritation will occur, metal components and fittings will corrode and the life of the liner (if present) will be reduced due to acid attack on the PVC material. If the pH rises above 7.6 (too alkaline), the disinfectant will become less effective in killing bacteria and controlling algae and the water will become cloudy and scale formation will occur, clogging pipework and fittings.

Check the pH of the water immediately after filling the pool. If the pH is below 7.2, increase it by adding pH plus (soda ash) at the rate of 50g per 1,000 gallons. If the pH is above 7.8, reduce it by adding pH minus (sodium bicarbonate) at the rate of 50g per 1,000 gallons. Always pre-dissolve the chemicals in a bucket of warm water and then add evenly around the pool with the filtration running. Test the water again after 24 hours and if necessary, repeat the dose on a daily basis until the pH is within the correct range of 7.4 to 7.6.

CHLORINE LOSS TO SUNLIGHT

Chlorine compounds in swimming pool water are susceptible to dissipation by the ultra violet radiation in sunlight and on very hot, sunny days it can become difficult to maintain an acceptable chlorine residual in the water. Stabilized chlorine granules contain a stabilizing agent which helps protect the chlorine residual against this loss.

INITIAL SUPERCHLORINATION / SHOCK DOSING

When the pool is first filled it will require an initial high dose of stabilised chlorine granules to deal with any organic pollutants, especially if the pool has been filled from a source other than the mains supply. Pre-dissolve the granules in warm water and dose at the rate of 50g per 1,000 gallons and add the solution evenly around the pool with the filtration running. Test the water 24 hours later and repeat the treatment, if necessary until the initial chlorine demand has been satisfied and a free chlorine level of not less than 2 ppm is obtained.

ALL YEAR ROUND ROUTINE

COMMENCING THE SEASON

- 1) Remove winter debris cover.
- 2) Top up pool to correct level.
- 3) Prime the pump and switch on filtration plant
- 4) (If plant has been winterised, consult your dealer to commission pool)
- 5) Net any large debris out of the pool.
- 6) Brush the walls of the pool.
- 7) Vacuum the pool out.
- 8) Check and adjust the pH level.
- 9) Superchlorinate with stabilised chlorine.
- 10) Add an initial dose of liquid algaecide (or long life concentrated algaecide for the whole season).

DAILY TREATMENT

- 1) Test the water (twice a day, in hot sunny weather).
- 2) Maintain a free chlorine level not less than 2 ppm.
- 3) Maintain the pH level between 7.4 and 7.6.
- 4) Remove any debris with the leaf net.

WEEKLY TREATMENT

- 1) Brush the walls of the pool.
- 2) Vacuum the floor of the pool.
- 3) Check the pump and skimmer basket is clear and clean.
- 4) Backwash the filter.
- 5) Top up the pool water to the correct level.
- 6) Superchlorinate with chlorine granules.
- 7) Check chlorine tablets (if using them), add if necessary.
- 8) Add liquid algaecide.
- 9) Clean water line with tile and liner cleaner/paste.

HOLIDAY CARE

If you intend going away for a period of time, you should ideally arrange with your dealer or, failing that, a friend/neighbour to maintain the pool, during your absence. If this is not possible then follow this procedure:-

- 1) Vacuum the floor of the pool.
- 2) Backwash filter.
- 3) Lower water level (to allow for rainfall) - ensure skimmer(s) does not draw in air.
- 4) Superchlorinate with stabilised chlorine granules.
- 5) Add liquid algaecide.
- 6) Add holiday tablet.
- 7) Leave filtration on permanently or on timeclock.