



# Morgan Family Pools

## SWIMMING POOL MAINTENANCE

The purpose of this section is to guide the pool owner, step-by-step through the complete pool maintenance process. Upon completion of your pool, Morgan Family Pools will continue to provide assistance with technical support by timely answering any and all questions regarding your pool; whether your pool is six weeks old or six years old!

Ideally, pool owners should dedicate 10-15 minutes per week to upkeep your swimming pool and protect your investment. We make sure you understand both the water chemistry and the mechanical maintenance of your pool. The following information is provided to guide you through the process.

### **Weekly Maintenance:**

- Brush the entire surface area of the pool, including the tiles.
- Manually vacuum up any left over dirt and debris and/or brush toward the main drains.
- Net debris off the surface of the water.
- Clean all debris out of the skimmer & pump baskets.
- Test pool water chemistry: Chlorine, pH and alkalinity levels – see below.
- Check to make sure there is a proper level of chlorine in receptacle if pool has a chlorinator.

### **Filter Care:**

- Most cartridge filters installed by Morgan Family Pools should be cleaned out 2-3 times per year.
- DE and sand filter maintenance will depend on the make/model.

### **Additional Maintenance:**

- Once a month, clean all ceramic tile and grout with a tile brush using a tile cleaning solution.
- Once a month, check the salt content level of the water if pool has a saltwater generator.
- Once a year, have a complete pool water analysis done by a nearby pool store.
- When necessary, “*super chlorinate*” or “*shock*” the pool water after heavy usage or a heavy rainstorm.

## **Plaster Surfaces:**

For a newly plastered interior surface, it is very important to brush the plaster surface 3 times per day for the first three days, twice a day for the next 4 days and then at least once a day for the next week for a total of two weeks. During this time, we recommend running the filter continuously until the water is clear of plaster dust.

It can actually take 2-3 months before plaster can be considered "cured". During this time, dirt can cement itself to the plastered surface. Frequent brushing will prevent this from happening. In addition, the brushing will further smooth and "polish" the surface and help to clear the plaster dust out of the pool.

Begin brushing with the brush at the tile line and then forcefully drive the brush downward along the pool walls and across the bottom, in the direction of the main drain. To help clear out the "dust", it is more effective to have the main drain open and the skimmer closed down while brushing. This can be done as follows:

Slide plate over opening in the float valve assembly, located in the skimmer.

**IMPORTANT NOTE:** *Do not close skimmer off completely. This causes an insufficient intake of water into the pump, creating a situation known as cavitation.*

## **Water Chemistry**

### **Testing the Chlorine:**

Test kits measure the chlorine levels in your pool. There are three aspects that can be measured:

1. *Free available chlorine (or residual chlorine)* - is the amount of chlorine in the pool that can sanitize or disinfect the water.
2. *Combined chlorine* - consists of undesirable, foul-smelling, irritating compounds that form when there is not enough free available chlorine.
3. *Total chlorine* - is the total amount of chlorine in the water. It includes both free available and combined chlorine.

It is important to know how much available chlorine there is in the water that can act on foreign substances to keep the pool disinfected and safe for the swimmers.

Low chlorine levels result in algae and bacterial growth, causing the water to appear cloudy due to insufficient sanitation of the water.

High concentrations of chlorine can result in eye, nose and skin irritations. The chlorine in the pool is a carcinogen and levels should be kept at the minimum required for complete disinfection.

Take the water sample from at least 20-30 cm below the surface and at least that far from the wall of the pool. Test the water according to the test kit's instructions.

The desirable level of available chlorine in the pool is 1.0-3.0 ppm with 2.0 ppm being the recommended ideal. Add chlorine according to the test results.

### **pH of Pool Water:**

The pH is one of the most important factors in balancing pool water and should be tested and maintained every week. pH is the measure of how acid/alkaline the swimming pool water is. A pH of 7.0 is neutral - below 7.0 is acidic, above 7.0 is alkaline. The pH of our eyes is 7.2 . The ideal pH for your pool is 7.2, and should be kept within the range of 7.0-7.6 .

### **Low pH (water is too acidic):**

- Plaster pool interior surfaces - the pool water will begin to dissolve the surface, creating a roughness that is ideal for pool algae growth. A similar result occurs in the grout of tiled swimming pools.
- Corrosion of metals - this includes swimming pool equipment, pipe fittings, pump connections, etc.
- Sulphates are formed and will result in swimming pool walls and metal parts to corrode. When these sulphates are released from the water onto the walls and floor of the swimming pool, they cause brown and black stains.
- When pH is too low, the water is unable to activate the chlorine to disinfect the pool.
- Low pH causes a burning sensation in eyes and noses, skin becomes dry and itchy and can cause color fading in bathing suits.

### **High pH (water is too alkaline):**

- Calcium in the swimming pool water combines with carbonates and forms scale. This calcification is seen most at the waterline, where it traps dust and dirt, turning black with time.
- Swimming pool water starts to become cloudy or murky and it loses its clarity.
- As the pH rises, the effectiveness of the chlorine to act on foreign particles is lost. At a pH of 8.0, the pool can only use 20% of the chlorine put in the water. Hence, 80% of the chlorine goes to waste.
- High alkaline swimming pool water causes swimmers to experience a burning sensation in their eyes and nose and skin tends to get dry and itchy.

### **Total Alkalinity (TA):**

Total alkalinity (TA) is a measure of how much alkaline substance there is in the water. The level of bicarbonate alkalinity in swimming pool water should be between 80 ppm and 120 ppm. When the total alkalinity (TA) is within this range, it prevents rapid pH changes and stabilizes the pH level.

When TA is too low, plaster walls will become etched, metals corrode, the pool's walls and floor can stain, the water can turn green, eyes and noses burn and causes pH spikes (pH rapidly going up and down, seemingly at random).

When TA is too high, the pH becomes difficult to adjust resulting in the water becoming cloudy, the pool constantly needing acid and the chlorine losing its efficiency as a disinfectant.

It is recommended that TA levels be tested regularly, but should change very little in a well-maintained pool.

### **Stabilizer (cyanuric acid/conditioner):**

Chlorine is an unstable chemical and the effects of the sun's UV rays and high temperatures reduce its effectiveness and breaks it down into inactive components.

Stabilizer (cyanuric acid/conditioner) is a compound that protects the chlorine from the negative effects of UV and heat. It ensures that the pool remains clean and safe for swimmers and also reduces the amount of chlorine needed in order to maintain proper levels of disinfection.

Stabilizer should be maintained at a level of about 50 ppm with the acceptable limits being between 40-80 ppm. If you use a stabilized chlorine product (chlorine tablets) you will need to add very little, if any, stabilizer. To find out how much cyanuric acid your pool requires to raise the level of stabilizer, have your pool water tested at a nearby pool store.

If the stabilizer level is too high, try using a non-stabilized chlorine product until the level falls within the recommended limits.

### **Total Dissolved Solids (TDS):**

Total dissolved solids (TDS) measure the total amount of dissolved material in the water. The level of TDS in the pool is influenced by many factors; the chemicals we add to adjust the pH, chlorine, water hardness, alkalinity, dust, dirt and human waste increase its level.

The maximum acceptable level of TDS for swimming pools is 1,500 ppm. Values above this will cause stains to start forming on the walls of the pool. It will also reduce the activity of any chemicals added, preventing them from doing what they are supposed to do. The water may also become cloudy.

If the TDS level is too high, the only practical solution is to drain some or all of the water from the pool (depending on how high the TDS is), and replace it with fresh water (with a low TDS). A regular backwashing routine will help to prevent the TDS from rising too much.

### **Calcium hardness:**

Total hardness of pool water refers to the total mineral content. This is made up of calcium, magnesium, iron, manganese and other elements. These elements are present in the water used to fill the pool and the levels can increase through the use of regular

pool chemicals (e.g. chlorine composed of calcium hypochlorite). The ideal range for calcium hardness is 250-350 ppm.

If calcium hardness is too low, the water becomes corrosive and results in the etching of the pool's surfaces. Metals corrode - and this includes pool equipment, pipe fittings and pump connections. As a result, the pool's walls and floor can stain.

If calcium hardness is too high, the result will be scale formation on all pool surfaces. The filter and pipes become clogged, reducing water flow and filtration efficiency. The water becomes cloudy and can cause swimming to experience eye and nose irritations.