



# START-UP PROCEDURES



The first thirty days of a freshly finished pool are very critical to ensure the lasting beauty of CrystalWorX. Closely following these step-by-step directions and recording the results will preserve the quality of the product and to protect the warranty.

## **1. FILL THE POOL**

*\*FILL THE POOL AS SOON AS POSSIBLE*

After the pool has been finished, the contractor should leave a hose in the pool to fill it with water. This hose should have a soft cloth tied on the end of it. This will diffuse the water so that it does not create a pressure spot and protects the pool surface from being marred by the end of the hose. It also acts to catch what little debris may be in the water system. Do not add anything but fresh water, making sure that the fill line is not connected to a water softener.

- Do not walk on the freshly finished surface
- The more hoses the better; be sure soft cloths protect the ends
- It is okay to leave the soft cloth-protected end of the hose resting on the bottom of the pool as long as it remains in the pool of water that is forming
- Put all the hoses in the deep end
- Do not let the hoses whip or flail around in the pool
- Do not let the hose itself rest on the finish, particularly across the length or width of the pool, as they will leave a mark
- Do not add anything to the pool water until it has finished filling
- Do not stop the water until the pool has completely filled to the middle of the skimmer opening
- Turning off the water while filling the pool will cause a bathtub-type ring at the level where the water was shut off
- If it appears as if the pool is going to finish filling in your absence, slow down the water flow rate
- If you splash water, spill, wash or cause anything to fall into the water while filling the finish will mar

## **2. START THE EQUIPMENT**

*\*PLEASE WAIT 30 DAYS BEFORE STARTING A SALT-CHLORINE GENERATING SYSTEM!*

The next step is to get the filter system operating so that the water and finish can be treated.

- Always start with a clean filter
- Operate the filtration system for a minimum of 72 hours
- Prime the pump with water and start it
  - there will be air in the plumbing
  - forcing water into the pipes with a hose will help force the air through the system





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A proper balance of the following chemical factors is necessary:

- Total Alkalinity – ideal range = 80-120 ppm
  - ❑ Too low- can cause corrosion, stains, pH bounce
    - ◆ Use TropiClear Alkalinity or Bicarbonate of Soda
  - ❑ Too high – can cause constant acid demand
    - ◆ Add muriatic in small doses
  
- pH – Ideal range = 7.2-7.8
  - ❑ Too low- can cause corrosion of pool finish a, pipes & equipment
    - ◆ Use TropiClear pH Plus or Bicarbonate of Soda
  - ❑ Too high – can cause cloudy water, scale, inhibit chlorine effectiveness
    - ◆ Use TropiClear pH Plus or add muriatic in small doses
  
- Calcium Hardness – ideal range = 200-400 ppm
  - ❑ Too low- can cause corrosion, etches finish
    - ◆ Use TropiClear Calcium Hardness Treatment or Calcium Chloride
  - ❑ Too high – can cause scale, discolor and roughen finish
    - ◆ Use Lo-Chlor Metal Gone or drain and refill pool
  
- Total Dissolved Solids – ideal range = 1,000-2,000 ppm (after all else is balanced)
  - ❑ Too high can support algae growth, cloud water, irritate eyes & skin
    - ◆ Partially drain and add fresh water or consult pool professional
  
- Free Chlorine – ideal range = 1-3 ppm
  - ❑ Too low- allows algae and bacteria growth resulting in unsafe water
    - ◆ Add liquid or tablet chlorine to proper level
  - ❑ Too high – can irritate eyes and skin and discolor hair and swimwear
    - ◆ Partially drain and add fresh water or consult pool professional
  
- After the water has been balanced, add cyanuric acid, also known as conditioner
- Each of these factors affects the others and a correct balance is achieved only by balancing all factors together
- Run filter for at least four hours after adding any chemical to allow them to mix

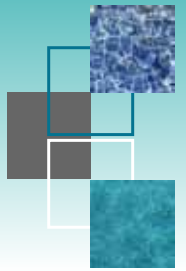
Once all chemical components are properly balanced, it is imperative to maintain that balance. The proper method is through the use of an equation called the Langelier Saturation Index (LSI).

Use calculations on following page or go to [www.CrystalWorx.biz](http://www.CrystalWorx.biz) for an automatic calculator.

**ENJOY YOUR BEAUTIFUL NEW CrystalWorX POOL FOR YEARS TO COME!**



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## A Perfect Balance Made Easy Langelier Saturation Index

$$\text{pH} + \text{TF} + \text{CF} + \text{AF} - 12.1 = 0$$

$$\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} - 12.1 = \text{ANSWER}$$

Fill in the blanks of the equation as follows:

### **pH = potential of Hydrogen**

Take the actual pH reading from your Test Kit or Test Strip and fill in the pH blank

### **TF = Temperature Factor**

Take the thermometer reading of your pool water and find the TEMPERATURE FACTOR on the chart. Use the number next to the CLOSEST temperature reading and fill in the TF blank

### **CF = Calcium Hardness Factor**

Take the Calcium Hardness reading from your Test Kit or Test Strip and find the CALCIUM FACTOR on the chart. Use the number next to the CLOSEST temperature reading and fill in the CF blank

### **AF = Alkalinity Factor**

Take the Total Alkalinity reading from your Test Kit or Test Strip and find the ALKALINITY FACTOR on the chart. Use the number next to the CLOSEST temperature reading and fill in the AF blank

### **12.1 = Constant Factor**

Used to balance the equation, always subtract it from the sum of your other factors

The **ANSWER** to your equation would be 0 on a perfectly balanced pool

The IDEAL RANGE is -0.5 to +0.5

**ANSWERS HIGHER** than +0.5 (i.e., +0.6) are indicative of SCALE -FORMING tendencies and steps should be taken to adjust the pH, total alkalinity or calcium hardness, in order to avoid scale formation and cloudiness

**ANSWERS MORE NEGATIVE** than -0.5 (i.e., -0.6) are considered CORROSIVE and steps should be taken to adjust the pH, total alkalinity or calcium hardness, in order to avoid corrosion

| TF                         |     | CF         |     | AF     |     |
|----------------------------|-----|------------|-----|--------|-----|
| ACTUAL Temperature °F / °C | TF  | CH Reading | CF  | TA PPM | AF  |
| 32°F / 0°C                 | 0.0 | 5          | 0.3 | 5      | 0.7 |
| 37°F / 3°C                 | 0.1 | 25         | 1.0 | 25     | 1.4 |
| 46°F / 8°C                 | 0.2 | 50         | 1.3 | 50     | 1.7 |
| 53°F / 12°C                | 0.3 | 75         | 1.5 | 75     | 1.9 |
| 60°F / 16°C                | 0.4 | 100        | 1.6 | 100    | 2.0 |
| 66°F / 19°C                | 0.5 | 150        | 1.8 | 150    | 2.2 |
| 76°F / 24°C                | 0.6 | 200        | 1.9 | 200    | 2.3 |
| 84°F / 29°C                | 0.7 | 300        | 2.1 | 300    | 2.5 |
| 94°F / 34°C                | 0.8 | 400        | 2.2 | 400    | 2.6 |
| 105°F / 41°C               | 0.9 | 800        | 2.5 | 800    | 2.9 |
| 128°F / 53°C               | 1.  |            |     |        |     |