



D I M E N S I O N O N E S P A S[®]

The Hot Tub Specialists™

“Coughing Off-Gas”: THE CURE

The following procedures may cure the occurrence of “Coughing Off-Gas” caused by improperly balanced spa water:

1. “Coughing Off-Gas” is a rare condition that is caused by inefficient oxidation of bacteria. There are several causes for inefficient oxidation. In one case a consumer may not be adding enough nonchlorine shock. Another condition exists where enough shock is added but a low chloride level in the spa water causes a reduced effectiveness of the non-chlorine shock (potassium monopersulfate). TDS (Total Dissolved Solids) below 300 ppm, may be indicative of low chloride levels. Approximately 70% of TDS is comprised of sodium chloride commonly known as “salt”. To increase the TDS level by approximately 500 ppm, add 1/2 lb. of common table salt (sodium chloride) per 100 gallons of water. Calcium hardness should also be at least 225 ppm.
2. Overfill your spa to 1” above the top grout line on your tile, disconnect the filter skimmer and turn it upside down. This will allow the “Super-chlorination” procedure in step #3 to clean the air pocket of the skimmer basket and the spa’s water line areas (i.e. spa shell, tile, water lines & air lines).
3. With all jets turned on add 1oz of **Concentrated Chlorine Granules** per 100 gallons of water. After the first 24 hours, test the spa for chlorine by using **Spa Test Strips**. Your spa should still have a free chlorine residual of at least 1-3 ppm. If the chlorine residual is below 1 ppm you will need to repeat the chlorine treatment to finish the “Super-chlorination” process.
4. Let the spa run normally for 5 days. Do not use spa unless chlorine is between 1- 3 ppm. You may need to do the “Super-chlorination” treatment 2 or 3 times because the spa’s plumbing may be coated with "biofilm" (an opaque mucous-like substance sometimes found on the filters of spas where insufficient sanitation has persisted). After completing the above procedures drain your spa, refill and refer to the guidelines below for properly balancing spa water.

Coughing “Off-Gas”: THE PREVENTION

Procedures for properly balancing spa water:

- 1) If using the **PureVision** system, refer to the “PureVision: Start-up and Installation Procedures” included with your PureVision cartridge (call your local Factory Authorized Dimension One Spa Dealer regarding any updates to these procedures). If using Chlorine or Bromine as a sanitizer, follow these start-up instructions:
- 2) Test water for Total Dissolved Solids (TDS), metals (i.e. Iron, Copper, Manganese) and Calcium (Hardness). Consult with an authorized Dimension One Spas Dealer if you need assistance testing your source water. Knowing these water conditions is critical to properly balancing your spa water. Properly balanced water can greatly prolong the longevity of your spa’s equipment and make it easier to maintain healthy clean clear water. The following three water conditions typically only need to be tested once, however, you should retest if you move or your source water changes.
 - a) TDS should be above 300 ppm. If it is not you may add 1 lb. of Sodium Chloride (common table salt) per 100 gallons of spa water. This will raise TDS by approximately 1000 ppm. (Ideal range is 1000 – 2000 ppm)
 - b) If metals are present add recommended dosage of Dimension One Spas -- **Sequestrant**, while water is being added to the spa.
 - c) Calcium level should be between 200 and 400 ppm (parts per million). If it is not, use Dimension One Spas -- **Liquid Hardness Increaser** (Calcium Chloride) to raise the Calcium level accordingly. (Ideal Range is 200 – 400 ppm)
- 3) Test Total Alkalinity (TA) and pH using the Dimension One Spas – **Spa Test Strips** (available in the Dimension One Spas -- **Starter Kits**). With the jets turned off, dip the Dimension One Spas – **Spa Test Strips** 12-18 inches into the water and swirl three times for an accurate reading (if you are using a different brand of test strips be sure to follow the procedures as detailed on their container). TA should read between 80 – 150 ppm, and pH should read between 7.2 – 7.8. Please use the following guidelines should you need to make adjustments:
 - a) Water Condition: **Total Alkalinity above 150 ppm**
Add 1 ounce of Dimension One Spas -- **pH/Alkalinity Decreaser** (Sodium Bisulfate), with the jets turned off, into the center of the spa. Wait 1 minute, and then turn jets on high speed for at least 5 minutes. Turn jets off, retest and repeat procedure until the TA reads close to 80 ppm.

TIP: When Total Alkalinity is above 150 ppm the pH will change slower than the Total Alkalinity.

- b) Water Condition: **Total Alkalinity below 80 ppm**
Add 1 ounce of Dimension One Spas -- **pH/Alkalinity Increaser** (Sodium Hydrogen Carbonate) with the jets turned on high speed. Continue running jets on high speed for at least 5 minutes. Turn jets off, retest and repeat procedure until the TA reads close to 80 ppm.

TIP: When Total Alkalinity is below 80 ppm the pH will change faster than the Total Alkalinity.

c) Water Condition: **pH above 7.8**

First, test and adjust Total Alkalinity per the above instructions then test and balance the pH. Add 1 ounce of Dimension One Spas -- **pH/Alkalinity Decreaser** with the jets turned to high speed. Continue running jets on high for at least 5 minutes. Turn jets off, retest and repeat procedure until the pH reads between 7.2 – 7.8.

d) Water Condition: **pH below 7.2**

First, test and adjust Total Alkalinity per the above instructions then test and balance the pH. Add 1 ounce of Dimension One Spas -- **pH/Alkalinity Increaser** with the jets turned to high speed. Continue running jets on high for at least 5 minutes. Turn jets off, retest and repeat procedure until the pH reads between 7.2 – 7.8.

TIP: Two tablespoons are approximately equal to one ounce and three teaspoons are approximately equal to one tablespoon.

4) Add Sanitizer.

a) If using Chlorine, add the 2oz. packet of Chlorine included with the spa's owner's kit. Run jets on high for at least 5 minutes. Monitor Chlorine level with Dimension One Spas -- **Spa Test Strips** (available in Dimension One Spas -- **Chlorine Spa Starter Kit**) and maintain a residual of 1 – 3 ppm.

5) After day one, shock the water with 2oz. of Dimension One Spas -- **Shock Treatment** (Potassium Monopersulfate) with jets running on high speed. Continue running jets on high speed for at least 5 minutes.

6) After day two, add Dimension One Spas -- **Enzyme Formula** to reduce water line build-up normally associated with body oils. Run jets on high speed for at least 5 minutes.