

HEALTHY LIVING IN HOT WATER – A HOW TO GUIDE

8 CRITICAL QUESTIONS TO ASK

CHOOSING THE RIGHT HOT TUB



Nothing feels better than ending a stressful day in your own hot tub. There are many benefits to owning a hot tub, and recent research shows that hot water immersion can be beneficial for ailments ranging from fibromyalgia to arthritis. Many of our customers find that their initial expectations of owning a spa are fulfilled in ways that they didn't even know about when they started. At Ultra Modern, we realize you don't want to add more stress to your life during the hot tub shopping experience. Since you are looking for a hot tub, you probably have some of the "basics" covered:

- Where do you want to feel better?
- How many people will be using the tub?
- Do you like to entertain?
- Is the sound of running water from a waterfall or stream relaxing?
- What does your outdoor living space look like? And
- How will my spa integrate into my outdoor living space in the future?



The goal of this **Buying Guide** is to answer these questions and many others. We

want to help make your experience easy and convenient and ultimately help you become an avid "Hot Tubber".

A word about price.

Today more than ever, we are concerned about how we spend our money. All hot tubs are built and designed differently with different options, features and warranties. These ultimately affect both the price as well as your long-term satisfaction. Some areas to consider are ease of use, energy costs, safety, comfort, therapy level, performance, reliability and the most important overall - the total cost of ownership. You may have heard the saying "you get what you pay for." At Ultra Modern, we promise to help you get what you need.

The Basics

There are a few things we suggest you take into consideration prior to starting your search. Some of these are:

- Where do I hurt? How will this make my life better? What are the wellness benefits?
- What do I anticipate needing 5-10 years from now in terms of wellness?
- Ease of maintenance
- Warranty of product
- Integration into your backyard living space
- Budget – total cost of ownership
- Will your hot tub be used for entertainment?
- A relaxing sanctuary for you and your family
- How many people will be using your hot tub?
- Will the tub be used primarily by adults or a combination of adults and children (don't forget their friends)
- An emphasis on being "Green"



Let's clarify some of the common descriptions people use when talking about hot tubs. While it is confusing when you hear terms like hot tub, spa, hot tub spa, and portable hot tub, all of these terms mean basically the same thing. What

makes one hot tub different from another is not whether it is called a hot tub or a spa, but the inherent design of jets, pumps, sanitizing systems and efficiency of the product. We use the terms spa and hot tub interchangeably.

A common question is how long will my hot tub last. We have customers with 20 - 25 year old hot tubs that are still being used and loved. The most important decision you can make that effects the longevity of your hot tub is buying from a trusted and experienced dealer. No matter the level of relaxation and wellness benefits you desire, finding a dealer that listens, offers advice, makes delivery/orientation easy and provides the service that you need is important. The happiest customers are those who bring up their needs and concerns prior to selecting a hot tub. Doing this enables your salesperson to guide you to the perfect tub. At Ultra Modern, we have many programs and guarantees ranging from a "3-Day Risk Free Guarantee" to "Try It Before you Buy It" to ensure that your decision was the right one. This helps you not only feel better today but helps you enjoy many years of increased wellness, happiness and family time.

Benefits of Hot Tub Ownership

Below are just a few of the benefits you experience from owning your very own spa.

- Relief from stress and improved mood
- Relieve symptoms of arthritis
- Reduced pain and soreness
- Increased circulation
- More efficient breathing
- Reduced swelling in ankles and feet
- Increased range of motion, flexibility and decreased pain with therapeutic exercise in your tub
- Increase of joint mobility
- Warm water immersion allows us to cope with the challenges of daily life
- Social interaction and a way to bring the family together that promotes sharing and happiness

Not only does a hot tub have many wonderful health and wellness benefits, it is a way to promote time with family and friends. It is the perfect way to spend time with and entertain those close to you while soothing your senses in warm water. Many customers choose to surround their hot tubs with landscaping, gazebos, BBQ Islands, fire pits, and comfortable patio furniture transforming the backyard into a lush retreat.

What Next?

Due to the number of brands, products, features and options available, choosing the right hot tub can be an overwhelming process. To help make the shopping process less stressful, below are several key tips on how to buy a hot tub and important questions to ask along the way.

1. Care: Will I use my Hot Tub?

Answer: YES; Provided that you make a commitment to incorporate a soak into your daily routine. Many hot tubbers love their early morning sunrise and late evening stargazing soaks!!

One concern many hot tub buyers need to address is how often they will actually use the product. Here are just a few ways that soaking in your hot tub can increase the quality of your life from day to day:

- A transition between your workday and the evening with family
- A backyard retreat to lessen stress and anxiety
- The perfect attitude adjustment
- The go to entertainment center, right in your own backyard
- The healthy way to break bad habits
- The place for rehabilitation, healing and relaxation



Everyone has good and bad days, and your body is no exception. When shopping for a tub, don't make the mistake of seeking therapy just for how you feel today. Make certain you buy a hot tub that performs to your expectations and delivers a wide range of hydromassage options.

- Does the spa offer a variety of hydromassage jets for all muscle groups?
- Can you divert water to different combinations of jets?
- Can you control the jet air flow – more for stronger performance, less for a softer touch?

Many hot tub owners find that even though they purchased their tub for entertaining or relaxing two - three nights a week, they use it more frequently in ways that they never imagined. Hot tubs perform dual functions: in the morning they are a tranquil retreat with soothing water sounds, relaxing stiff joints, promoting increased blood flow and preparing you to start your day. Later in the day, they become the meeting place for your children's friends delivering laughter and fun AND allowing you to better know your children's friends. In the evening, they are a source of reconnection as conversation and stargazing prepare you for a great night's rest. There is more to a tub than hot water:

- Is the spa build entertainment-ready so you can add a music system or TV at any time, even after you've purchased the spa?
- Can you customize the hot tub with a faux stone cabinet or surround the spa with whatever material you desire?
- Does the spa have additional lighting besides just an underwater light?



Don't make a mistake; a hot tub should be given the same level of consideration as any other important purchase. Would you buy a vehicle without taking a test drive? Of course not! It is important to find the right hot tub for you and the best way to determine this is to experience it. Established hot tub dealers offer the opportunity to schedule a free in-store private test soak for you and your family. Taking advantage of this opportunity ensures you are making the most informed decision possible.

2. Care and Maintenance – How much time and effort will it take?

There is good news! The chemicals needed to maintain a hot tub are no more harmful than the chemicals you use to keep a swimming pool fresh and clean. Consistency is the key, and with new technology in built-in sanitizing systems, your participation can be a little as once a week. We recommend you see your Pool and Spa Care Professional periodically to answer questions and make sure you're following the most up-to-date program. Hot water is one of the



reasons you want to buy a hot tub, however bacteria love warm and wet environments. Finding a dealer that helps recommend the best sanitizing system for your tub is crucial. Look for dealers who utilize computerized water testing and employ trained water care experts as opposed to dealers who use dip strips and notepads.

Another aspect of hot tub ownership that is often overlooked is the ease of use. You will enjoy your hot tub and use it more often if you don't have to fuss with it and put up with noisy operation. Here are some questions you can ask:

- Is there an automated water care system?
- Does the spa have 100% No-Bypass Filtration?
- Is the spa water continuously filtered 24 hours a day?
- How loud are the hot tub pumps? Does the spa have a quiet circulation pump, or does it run the loud jet pump to clean the spa?
- What are your options to keep the water soft and clean?

While water chemistry hasn't changed in recent years, the way to maintain water chemistry has made significant changes. Today, sanitization has become integrated with the hot tub, allowing a near effortless ownership experience. Some sanitization systems to consider are:



- Salt water system designed and install ready by the manufacturer – be careful of add on salt systems that are not approved by the manufacturer, integration ensures that the system and your tub work together to provide safe, clean water and that your warranty is not compromised.
- Ultra Violet light sanitization
- Cell or chip corona discharge ozone generators, cells have a longer life.
- Mineral cartridges such as silver ions.
- Chlorine and non-chlorine based three step programs
- Bromine – floating and granular (floaters are not recommended)



What we recommend for safe, clean water:

- A combination of two of the above usually gives you the simplest and safest water care plan.
- A dealer with certified expert water care technicians can assist you with a program that fits your lifestyle

How Much Time?

A few minutes each week and plan on draining and cleaning three to four times a year. This takes about an hour. Make sure your tub drains.

3. Safety: Is it safe and secure for my family and friends?

Safety Covers

With any addition to your home, your first thoughts turn to safety. Most modern hot tubs utilize multiple levels of protection to help keep those you love safe. Hot tub covers vary greatly in price, construction, durability, energy efficiency and the amount of weight it can support. Less expensive Styrofoam cores will simply not provide the same levels of efficiency and durability as a dense foam safety cover. A good cover will have the following features:

- Full length heat seal gasket to avoid heat loss – this can dramatically increase the efficiency of your tub
- Lockable cover catches with keys
- Meet or exceed California Energy Commission (CEC) accreditation guidelines
- A cover entry system for easy access
- High wind straps to secure cover when needed
- ISO 9001:200008 compliance
- Marine grade vinyl construction with stress point reinforcement
- Longer cover flaps (skirts) which help keep heat in and dirt out
- Steel reinforcement which provide strength and extra support

Spa Controls

A feature that many customers appreciate is the ability to use the spa's control panel to lock heat settings, or completely lock the spa down. This feature provides comfort in knowing that "unauthorized users" won't be a problem.

To ensure satisfaction and peace of mind, it is always best to use licensed electricians and ask the following questions prior to your delivery.

- Ask your dealer for a pre-delivery guide from the manufacturer so you have all the brand specific information.
- Ask your dealer for assistance in determining your local municipal codes to make sure that you are safe and compliant.
- Never use old non-GFCI connection boxes.
- Make sure that your new electrical box located at a safe distance as municipal codes require.
- Ask if your dealer has licensed preferred partners that are familiar with the particular brand.

Asking the right questions can help your hot tub ownership experience be safe and fun! A reputable established dealer, who has been in the community for a long period of time, will help bring information and peace of mind.

Covers are one area that impacts virtually all areas of hot tub ownership. They can dramatically reduce energy consumption, keep your loved ones safe by keeping them out of the tub unsupervised, greatly aid in helping your tub stay clean and safe, they aesthetically impact your backyard living space and finally, they help you get into your tub and make closing up a snap, so you can relax and go about your day.

Location: Where should I place my Hot Tub



Hot tubs are a great investment due to their ease of installation. Not much preparation is required to place a hot tub in your backyard. The site you choose for your hot tub must be sturdy enough to support the weight of the spa filled with water and people. The site needs to be level and have access for your electrical requirements.

Portable spa pads, railroad ties, a concrete pad or even pea gravel provides the rainwater drainage you need and compact the soil beneath your tub, creating a flat surface. Your hot tub can be placed on or even within a deck, but care must be taken to ensure that the desk is constructed to bear the weight of your filled hot tub. You will also want to ensure that there is adequate space provided to access your tubs service compartment.

Consider the placement of trees and power lines overhead and make sure to check with your municipal codes to ensure that you are in compliance.

Placing a hot tub shouldn't be difficult and doesn't require a great deal of your time and worry. Look for a dealer that will visit your home, help you determine the best placement, identify any issues and then proceed to help arrange all the necessary contractors required to complete your backyard retreat.

Finally, take the time to consider the ambiance of your spa placement, both for the aesthetics in the look of your backyard as well the view you will enjoy from your tub.

Energy: What is the annual energy cost and is it guaranteed in writing?

Properly evaluating your needs in a hot tub will affect your monthly cost of operation. Buying a hot tub with a large number of jets and high horse power pumps might sound good initially, but wind up costing you a lot of money. Consult a dealer to determine the right blend of jets, pumps and efficiency.

Insulation is an important consideration involved in reducing operating costs. Traditionally, the more insulation a spa has, the lower it will cost to operate. There are various degrees of insulation from insulated panels (least efficient) to a fully foamed tub (most efficient) be sure you know what type of insulation your tub has. Most hot tubs use foam to insulate, the most common type is closed cell polyurethane layers. Recent improvements in insulation involve the use of recycled materials. The insulating values can range substantially. Look for branded insulators such as Fibercor™, if considering an alternative insulation method. As previously discussed, the composition of your hot tub cover can dramatically affect the efficiency of the tub.

Check for third party confirmation such as the CEC (California Energy Commission) for any energy efficient claims made by the dealer and the manufacturer. You can also inquire about any independent awards given to the manufacturer for energy efficiency. Energy efficiency is not only good for your wallet, but it helps create a better environment. Look for manufacturers and dealers that are committed to "Green" business practices. A good manufacturer will offer a product that is energy saving while reducing long term operating costs, thus saving you money.

Cost

You will find that the cost to operate a hot tub is less than you would think, costs can range from less than fifty cents a day to over ninety dollars a month. There are many factors involved in the variance of cost per hot tubs and this makes it difficult to assign a specific cost of electricity for your tub. These factors include:

- The local cost of electricity
- What kind of hot tub you buy
- How often you use your hot tub
- Water temperature
- Ambient temperature
- Insulation and placement of the tub

Some manufacturer's feature energy cost calculators, while others give you a written guarantee. Ask your dealer what they offer.

Service: Where is the dealer located and how long have they been in business?

Today, most brands of hot tubs are designed to be trouble free and low maintenance, but at some point, you may need service on your tub. You will want to make sure that your tub is serviced by reliable, factory trained service technicians on a timely basis. Before you buy a hot tub, give careful thought to the services that your dealer and brand manufacturer provide. Some things to consider are:

- Timely service, does my dealer provide service during hours that will work with my schedule?
- Knowledgeable technicians - are the technicians working on my spa certified by the manufacturer, what level of knowledge do they have? How many years of spa service experience do they have?
- Maintenance, is regularly scheduled spa maintenance service available? Would this be a good choice for my busy family?
- Supplies, does the service team have easy access to parts and supplies?
- Moving your spa, if you decide to move and want to take your hot tub with you, can your service provider move the spa for you?
- Time for a new spa, does your dealer offer a Trade-in allowance if you decide it is time to upgrade your Hot Tub?

The old adage about doing business with someone you know is still alive today. Talk to your dealer and make sure that they are not only a part of the community, but will be in business years from now when you need them. Ask your dealer how long they have been selling the particular brand that they sell. The dealer is only as good as the relationship that they have with the manufacturer.

Warranty: Is there a partnership between dealer and manufacturer to stand behind their product?

Imagine this: You selected the perfect hot tub, your dealer has helped you prepare the outdoor space, the tub has arrived, and it has been hooked up and filled with water. You can't wait to end your stressful day by relaxing in your hot tub. Tonight, however, the tub does not turn on. You push the buttons, it still doesn't work. You read the manual, search the internet and it still won't work. What do you do?

Don't wait until you are frustrated about a performance issue before asking questions about your hot tub warranty. A warranty is the manufacturer's way of saying that they want to help you with their product if it fails. Warranties should be clear, simple and without a page of exclusions.

This is a crucial, yet often overlooked part of the buying process. You deserve to be able to relax and unwind without the stress of a failure from your dealer or manufacturer to respond to your issues. Below are some recommended questions to ask regarding warranty and service:

- Is the warranty in writing?
- Is it a full warranty or a partial warranty? (Do I have to pay for labor or parts?)
- What are the exclusions?
- If I have a non-covered repair, can the dealer still help me?
- Can I talk to the manufacturer to inquire about technical issues?
- Do you provide your own service technicians or is the work done through a warranty company?

- Once again, how long have you been in business and how long have you had a relationship with the manufacturer?

Some people avoid asking about warranties, because they are so excited about the prospect of a new purchase. Do yourself a favor and ask these questions before you buy to ensure a positive, stress free ownership experience.

Conclusion

Hopefully the information provided in the brochure is helpful in allowing you to be an informed consumer and make the best possible decisions about your hot tub purchase.

Choosing the right dealer will ensure that you are guided through the buying experience and allow you to learn everything you need to make an educated decision that will save you time, money and allow you peace of mind about your purchase.

About Us: Ultra Modern Pool and Patio

CELEBRATE 60 YEARS IN 2014!

Since 1954, Ultra Modern has been committed to providing great service, products and family fun! As a family owned business, we have spent the last 60 years providing the Wichita, Kansas and all of South Central Kansas with quality products. We have 3 convenient locations in the Wichita area, east, west and Derby. We are also glad to be offering our products and services on line through ultramodern.com.

The Ultra Modern family team has been striving for decades to provide our customers with the most innovative and reliable products for their pool, spa or backyard. We are committed to delivering the highest level of customer satisfaction possible and it is our strong desire to make your shopping experience fun and easy with just the right amount of information you need to assist you in making your decision to purchase. We started out specializing in swimming pool and spa care products, equipment, toys and games. Adding outdoor kitchens, patio furniture, fire tables, fire pits, saunas, BBQ's and billiards as we grew as we wanted to continue to help our customers feel better, live better and have better health.

We also offer a large selection of maintenance equipment, repair parts (one of the largest parts inventory in Kansas), heaters, filters, automatic cleaners, filter cartridges, spa covers, pool covers including automatic, safety and water bag type covers.

WHO WE ARE:

*3 convenient locations. More than any other pool and spa company in South Central Kansas

*Over 15 friendly, certified water chemistry certified professionals

*Certified and factory trained pool and spa service technicians

*Trained and reliable maintenance & cleaning team

*Aqua 100 Hall of Fame

*Member of Better Business Bureau

*Executives who have served on the National Pool and Spa Association board (APSP), numerous industry advisory boards and councils.

*A good reputation and well known in the industry giving us access to all leading experts in our field

*A member of an industry buying group, giving us access to highest quality products at best prices.

Glossary of Hot Tub Terms:

A

- **Acid** – A liquid (muriatic acid) or dry granular (sodium bisulfate) substance used to balance water pH levels or to lower total alkalinity levels.
- **Acrylic** – A durable, non-porous synthetic material used to form hot tub shell surfaces.
- **Active Oxygen** – A powerful oxidizer derived from water, created when energy transferred into the water breaks apart water molecules. Active Oxygen completely breaks down waste and contaminants, leaving behind carbon dioxide and water. It does not leave behind chloramines or other byproducts that can cause hot tub water to be irritating to the skin and eyes, or to cause a strong odor.
- **Algaecide** – Any water treatment product designed to kill algae.
- **Alkalis/Alkaline/Alkalinity** – Alkalis are substances with a pH greater than 7 that dissolve in water. They are the opposite of acids. Alkalinity refers to the amount of carbonates and bicarbonates in water, measured in parts per million (ppm). Total alkalinity is one of the components of balanced water.
- **Ambient Temperature** – Temperature of the immediate surrounding area.

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- **Balanced Filtration** – In a Hot Spring spa, the effective filtration area of the filters is matched to the gallon per minute flow rate of jet pumps to ensure there is enough filtration area to filter all of the spa water, even when the jet pumps are on.
- **Balanced Water** – The desirable level of chemical composition in hot tub water. Key components of water balance are pH level, total alkalinity, calcium hardness and temperature.
- **Bartop** – the acrylic surface around the perimeter of the spa's interior space.
- **Base** – Alkaline chemicals that counteract acid to achieve a neutral pH level of 7.
- **Biguanides** – A non-halogen sanitizer used for spa water.
- **Bromine** – A non-metallic element that is liquid at room temperature and soluble in water. Bromine is a halogen that bonds easily with other elements, has a strong bleaching action and is resistant to hot water with rapid pH fluctuations. Like chlorine, it is often used in spa water maintenance.

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- **Cabinet** – The exterior surface of the spa.
- **Calcium** – An alkaline metallic element.
- **Calcium Carbonate** – Also known as scale, this is a crystalline deposit that can form on spa water surfaces, equipment or pipes if water is not properly balanced.
- **Calcium Hardness** – A measurement of the dissolved calcium content of the spa water. Can be tested by various methods and is reported as PPM of calcium carbonate. Higher levels can lead to scaling or cloudy water problems and may require chemical treatment.
- **Cartridge Filter** – Used to trap debris before it reaches spa water. Filters should be cleaned or replaced regularly.
- **Chelating Agent** – A chemical additive used to bind metals in water, prevent metal staining and water discoloration.
- **Chloramines**– Foul smelling compounds in spa water formed by the combination of chlorine molecules, nitrogen and ammonia. The water must be shocked to get rid of them.
- **Chlorine** - A member of the halogen family of sanitizers, used in spa water maintenance. When added to water, chlorine acts as an oxidizer, sanitizer, disinfectant, and all-around biocidal agent.
- **Circuit Breaker** – A switch that allows you to manually override an electrical circuit. This enhanced safety device automatically breaks the circuit when it detects harmful fluctuations in the electrical current.
- **Circulation Pump** – Separate from the jet pump, this low amp pump pulls water from the spa and pushes it through filters before returning it to the spa.

- **Circulation System** – The plumbing circuit that continuously moves water out of the spa and through pumps and filters before returning it to the spa. Circulation is a critical component in maintaining spa water balance.
- **Coagulant** – A chemical used to bind suspended particles that cloud spa water. Similar to a flocculent.
- **Control Panel** – Accessible from the inside or outside of the spa, the control panel allows you to adjust your spa's settings such as temperature, jets and lighting.
- **Control System** – The technology that determines how your spa operates.
- **Copper** – A metallic element used in spa water treatment products as an algaecide.
- **Copper Sulfate** – Similar to aluminum sulfate, used to bind and coagulate particles in spa water.
- **Corrosion** – The effects of an overly acidic water environment where alkalinity is too low. Corrosion can etch, pit or erode surfaces.
- **Cover Lifter** – A cover removal system eliminates the need to drag off and pull on the spa cover before and after using your spa. It makes entry to your spa simple and helps prevent unnecessary damage to your spa's cover.
- **Co-laminated** – Process in which acrylic sheet is bonded to an impact resistant ABS backing, ensuring consistent strength throughout the shell.
- **Custom Cabinet** – An exterior spa surface that can be customized with any material to blend with your outdoor environment.
- **Cyanuric Acid** – Also called CYA, this is a stabilizing chemical used as a water conditioner to extend the efficacy of chlorine additives.

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- **Disinfectant** – Any chemical or process that helps destroy harmful micro-organisms and other contaminants. Chlorine, bromine and silver algaecides are examples of disinfectants.
- **Diverter Valve** – A valve that can be adjusted to control the flow of water from the spa jets.

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- **Effective Filtration Area** – the total area, usually defined in square footage, of the filter cartridge(s) capable of filtering water.
- **Electrolysis** – A process that separates chemically bonded elements and compounds by running an electric current through them.
- **Enzymes** – Natural compounds used in spa water treatments to break down and digest oily substances, such as sunscreen, that can enter the water.
- **Ergonomic** – Scientifically designed for greater user efficiency, comfort and safety.

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- **Filter** – A device used to remove solid particles from spa water by pumping it through a porous medium such as polyester fiber.
- **Filtration Area** – (see Effective Filtration Area)
- **Filtration Cycle** – In spas that do not utilize an independent circulation pump to ensure continuous filtration, this is a regularly occurring interval in which the jet pump automatically turns on to circulate the spa water.[KC2]
- **Filtration Rate** – The rate at which spa water is pumped through a filter, typically measured in gallons per minute (GPM).
- **Flocculent** – Chemical such as alum used to combine suspended alkaline material into a heavy gel that sinks to the spa floor where it can be vacuumed. Similar to a coagulant.
- **Flow Rate** – The amount of water that flows past a specific point during a specific period of time, typically measured in gallons per minute (gpm).
- **Foaming** – A term used to describe surface foam on your spa, it is caused by high levels of total dissolved solids (TDS) in the water combined with soft water and oils. Enzymes are typically used to control foam.
- **Foam Insulation** – See also Polyurethane Foam or Urethane Foam. A polymer-based material that is typically sprayed to the underside of a hot tub shell to help retard the loss of heat escaping through the shell.

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- **GFCI** – Grounded Fault Circuit Interrupters are required by the National Electrical Code in home electrical wiring for receptacle outlets installed for use with hot tubs, etc.

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- **Halogen** - Any of the four elements fluorine, chlorine, bromine and iodine that are often used in spa water care.
- **Hard Water** – Water that is high in dissolved minerals, specifically calcium, magnesium, or other salts that can corrode hot tub components and feel harsh to the skin.
- **Heater** – The opposite of an air conditioner, a heat pump removes heat from the surrounding air through the use of cooling coils, then runs the air through condenser coils and transfers it as heat to the spa water.
- **Heater Elements** – The components inside the heater housing that create and transfer heat to the water.
- **Heater Housing** – Watertight unit that facilitates movement of water through and by the heater elements.
- **HP** – Short for horsepower, a non-metric measurement unit of power, typically associated with a mechanical device or engine. 1 unit of horsepower is equal to 745.7 watts.
- **Horsepower, Continuous Duty** – The maximum horsepower a motor can produce continuously.
- **Horsepower, Breakdown Torque** – The maximum torque a motor can produce without abruptly losing motor speed.
- **Humidity** – Warm, moist air that can cause mold and mildew when present in excess amounts and combined with a lack of air circulation.
- **Hydrogen Peroxide** – A non-chloride oxidizer and sanitizer used in biguanide systems. Can be used to shock spa water
- **Hydromassage** – Massage using pressurized water.
- **Hypochlorite** – A family of liquid and granular chlorine compounds which release hypochlorous acid, a sanitizing agent, when they come in contact with water.

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- **ISO 9001** – A quality management system designed to help organizations ensure they meet the needs of their customers and other stakeholders. It is considered the highest international standard for design and manufacturing excellence.
- **Ion** – An atom or molecule that possesses an electrical charge.
- **Ionizer** – A device that generates copper, zinc and/or silver ions to kill bacteria and algae.
- **Iron** – A metallic element that can be introduced to spa water through plumbing or well water. It can stain surfaces or turn water a clear green.

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- **Jet** – An outlet, such as a nozzle, used for emitting a high velocity stream of water. Jets affect the direction, volume and velocity of water flow.
- **Jet Pump** – Used to provide thrust to spa jets.

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- **Laminating** – A process for layering and bonding different materials together to achieve greater strength, lower heat transfer and better sound absorption.
- **Langelier Index** – A system for determining water balance by assigning values to pH levels, total alkalinity, calcium hardness and water temperature. When all values are balanced, water will not be corrosive or scaling. Also known as the Saturation Index.

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- **Magnesium** – A metallic element which can cause spa staining and scaling when present in high non-chelated concentrations.
- **Minerals** – Natural substances such as calcium, copper, silver, iron and aluminum which can cause spa staining and scaling when present in high non-chelated concentrations.
- **Micro-organisms** – Microscopic animal life that can be harmless, beneficial or harmful. Harmful micro-organisms can be removed from spa water with disinfectants such as chlorine, bromine and silver algacides.
- **Muriatic Acid** – A diluted, liquid form of hydrochloric acid used to lower pH and alkalinity and to remove mineral stains and scale. Extremely caustic and corrosive.

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- **Nitrogen** – When combined with chlorine, nitrogen creates undesirable chloramines in spa water, and is often introduced from sunscreen and perspiration.
- **No-Bypass Filtration** – A balanced filtration system that ensures all spa water passes through the filter before it re-enters your spa even when jets are on.
- **Non-Chlorine Shock** – A granular form of potassium monopersulfate used to oxidize micro-organisms, chloramines and other contaminants.
- **NSF International** – A leader in public health safety, they have been helping people Swim Safer™ by meeting the needs of public health inspectors, product manufacturers, aquatic facility managers, facility users, and homeowners through a vast array of testing and certification services.

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- **Oxidizer** – A shocking compound that removes or destroys built-up contaminants, chloramines and organic waste in spa water.
- **Ozone** – A colorless gas (O₃) soluble in alkalis and cold water. Its strong oxidizing capabilities make it a powerful organic oxidizer. It can be produced with UV radiation, corona discharge (an electric discharge caused by the ionization of water surrounding a conductor, which occurs when the strength of an electrical field exceeds a certain value but is not great enough to cause a complete electrical breakdown), or by a chemical reaction.
- **Ozone System** – A water care system that continuously injects millions of tiny, highly concentrated ozone bubbles into the water – neutralizing contaminants on contact.

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- **Polymer** – A naturally occurring or synthetic compound consisting of large molecules made up of a linked series of repeated simple monomers. The type of polymer plastic material used in Hot Spring Spas Polymer Steps and ABS plastic substructure is durable, weatherable, and long lasting.
- **pH** – The relative acidity or alkalinity of water, expressed in a numeric scale from 0-14, with low pH ranging from 0-6 (acidic), high pH ranging from 8-14 (alkaline), and 7 representing a neutral and desirable pH.
- **Polyurethane Foam** – See also Foam Insulation or Urethane Foam. An insulating plastic material used to reinforce the shell of a spa for added support and to retard heat loss.
- **PPM** – Short for Parts Per Million, this unit of measurement is used to express the concentration of chemicals in water.
- **PVC** – Short for polyvinylchloride, PVC is a plastic used for plumbing pipes.
- **Precipitate** – To cause a solid substance to be separated from a solution, as the result of a chemical action. Precipitates forced out of water will settle, stain, scale or remain suspended in water.
- **Pump** – Part of the spa's circulation system, a pump is a mechanical device, powered by an electric motor, which makes water flow under pressure.

- **Pump Shroud** – Patented by Hot Spring, a pump shroud vents heat from the equipment compartment and transfers the heat back into the water, decreasing energy consumption. This also creates a cooler working environment for the motors and electronic components, contributing to a longer life for your Hot Spring Spa.
- **Pump Strainer Basket** – A removal basket on the suction side of a pump used to trap large debris such as leaves and prevent them from restricting water flow to the pump.

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- **Reagents** – Chemical indicator used to test water balance.
- **Residuals** – The free available chlorine level that remain in a spa after initial treatment for contaminants.

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- **Sanitizer** – A product used to kill bacteria or other micro-organisms in spa water. EPA recognized sanitizers approved for spas are chlorine, bromine, and biguanide.
- **Scale** – A hard deposit of calcium carbonate that can attach to spa surfaces and equipment. Scale can damage heater effectiveness. Usually whitish in color, scale is the result of out of balance pH or alkalinity levels.
- **Sequestering Agent** – A chemical that bonds with metals to deter staining or discoloration. Similar to chelators.
- **Shell** – The interior surface of the spa that holds both the water and the bathers.
- **Shock** - The act of bringing spa sanitizer level up high enough to reach breakpoint chlorination, eliminate chloramines and achieve water purification.
- **Silver Ions** –Silver ion technology can be used to sanitize water, allowing the use of less chlorine. Silver ions disinfect water so that micro-organisms like bacteria cannot cause disease.
- **Seating Capacity** – The total number of designated seats.
- **Skimmer** – Part of the suction side of a spa's circulation system. A surface skimmer can help remove debris from the water's surface.
- **Soft Water** – Water that has a naturally or chemically-generated low calcium and/or magnesium content. Soft water can leave skin feeling silky.
- **Stainless Steel** – A material that resists staining caused by minerals and is impervious to rust.

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- **Titanium** - a strong, lustrous, corrosion-resistant metal with a silver color.
- **TDS** – Short for Total Dissolved Solids, TDS is a unit of measurement for anything that can dissolve in water and be present in solution. High levels of TDS can over-saturate spa water and cause undesirable reactions and can ultimately result in the need to drain and refill the hot tub.
- **Test Kit** – A range of products used to periodically test spa water for balance and sanitizing levels.
- **Test Strips** – Paper strips used to measure spa water pH and other chemical balances.
- **Tetra Borate Compounds** –Borate can be used in combination with sanitizers (chlorine, bromine and biguanide) to inhibit algae development. The combination of chlorine and borate may reduce chlorine consumption. In addition to suppressing algae growth, borate improves water clarity, reduces eye and skin irritation, and makes the water feel softer.
- **Trichloro-S-Triazinetrione** – A chemical compound used as an industrial disinfectant and bleaching agent, usually sold in tablets or granular form and responsible for the strong chlorine odor often found in spas.

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- **Urethane Foam** – See also Polyurethane Foam and Foam Insulation. An insulating plastic material used to reinforce the shell of a spa for added support and to retard heat loss.

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- **Valves** – Devices placed on plumbing lines to direct, restrict or obstruct water flow such as the diverter valves used with spa jets.

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- **Water Capacity** – The total number of gallons of water your spa can contain.
- **Weir** – A pivoting flap, door or dam in a skimmer that prevents debris from re-entering spa water while allowing water to recycle through the filtration system.

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