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- Getting familiar with all the parts of a pool
- Following the flow of water through your pool system
- Taking care of your pool and its chemicals
- Doing the pool work yourself or hiring someone to help

Chapter 1

Welcome! You Now Work for a Pool!

Owning a pool can be so fun — and a bit terrifying when you're first starting out. Either way, I have you covered! I know pools like the back of my hand, and I'm here to help you be a confident pool owner. Getting to know your pool, and its wants and needs, is a winding road. And sometimes, you'll make mistakes. My goal is to guide you and give you the tools and knowledge that you need to navigate this road. Use this first chapter as a guide for where you need to go in the book to get answers for any problems you may be dealing with and for any topics you may want to learn more about. We're in this together.

Pool 101: Basic Anatomy

When you were a kid, you probably thought that a pool was made up of two things: walls and water. That's because those are the only parts that matter for the people who aren't taking care of the pool Now, you get to see that a pool is much more

than just a body of water. It's a whole network of machines and chemicals that work together to create the perfect shimmering luxury oasis that you always wanted.

The following sections cover all the parts of the pool and how they work together.

The pool itself

This is the part you're probably most familiar with, the structure of the pool.

If you have an above ground pool, here are its parts:

- **Inside:** Made up of a vinyl liner
- **Outside:** Made of either steel or aluminum walls

If you have an inground pool, there are several different types of construction. Some popular options include

- Liner on a steel wall
- Liner on a concrete wall
- Fiberglass
- Plaster
- Pebble tech

Knowing what type of pool you have is important because chemical ranges and pool cleaning equipment vary depending on the surface. Turn to Chapter 2 for more details on the components that make up a pool.

REMEMBER

If you don't have a pool yet, figuring out what kind of pool is best for you really comes down to where you are and what you're looking to get out of your pool experience. You need to do some research and talk to a pool professional to discover what will work best for your budget, your location, and your lifestyle.

The plumbing

Your pool's *plumbing* consists of the pipes that connect your pool to the pump and filter equipment. Your plumbing plays a part in how many hours you need to run your pump and how big a pump you can fit. This is because your water flow can go only as fast as the pipe it's moving in. Realistically the average running time is

8 to 12 hours a day. The plumbing leads to the skimmers that catch all your surface debris, and it leads to the returns that help circulate the water and kick up anything settled on the bottom.

For inground pools, the plumbing is located underground. For above ground pools, it's located on the outside in less permanent and easily removable hoses. Unless it was plumbed with hard PVC plumbing, but that is not standardly their setup.

The pump and filter

As far as bodies of water go, one of the main things that separates a pond from a pool, besides the ecosystem, is the circulation and filtration of the water:

- **Pump:** The pump is like the heart of your pool. It's made up of the front housing with the basket, the internal parts (most importantly the impeller) and the motor. It's what brings the water from your pool into the filtration system, sends that water through all the necessary machinery, and then forces the water back to the pool. It's the part of your pool that does all the circulation, which prevents the water from becoming stagnant and, well, swampy.

  There are different pumps for above ground pools and inground pools, and they come in different strengths and sizes. They can be single speed, two speed, or variable speed, which all have their own special characteristics.

- **Filter:** Your pump wouldn't be anything without your filter. Your filter is made up of a tank that holds the actual filtering component (sand, cartridge, DE element) and, in some cases a multiport valve. It is the part that pulls out the not-clean stuff that ends up in your pool water. If you had only a pump, the water would be moving, the chemicals would be circulated, but nothing would ever clear up.

  If you have algae in your pool, all the chemicals and water circulation in the world wouldn't get your pool to clear because the algae (even if it's dead) would continue to float around in the water. The filter is there to help grab all the physical contaminants and prevent them from going back into the pool.

  There are three main kinds of pool filter: sand, diatomaceous earth (DE), and cartridge. All three have their benefits and their flaws, but all of them work to keep your pool clear.

Check out Chapters 3 and 4 for a lot of information about how these important pool parts work and how to take care of them.

The suction and pressure parts

On all pools, you will have an enter and exit port(s) for your pool's circulation. On the suction side, which is going to be where the water is being pulled in and drawn to the filter system, you have three common kinds:

- **Skimmer:** This looks like a rectangular or square opening on the side of the pool that leads to a cylindrical housing containing a basket. The access to that basket is from the top, which may be in your surrounding pool deck, and it will be covered with a lid.
- **Main drain:** This will be where water can be pulled into the pump from the floor of the pool. It will be covered by a circular grate(s) to prevent large items from getting sucked into the pump.
- **Side suction:** A side suction is going to be an inch and a half-sized hole in the side of the pool covered by a grate. This can be used as a manual vacuum line or just an alternative suction for the pump.

On the pressure side, your return pipes can lead to the pool through a few different avenues. The most common way you will have the water come back into the pool is through the wall returns. They are holes in the wall that have directional eyeballs in them to guide the returning water in the right direction for proper circulation. The other options are through floor returns, which typically have pop-up heads that raise with water pressure. Those allow good circulation while also disturbing the pool floor and helping kick up and filter settled debris.

Other stuff that your pool may have

Outside of moving and filtering your water, there may be other components to your filter system that have jobs, as well:

- **Heaters:** There are various ways to heat your pool, such as using gas-fired heaters or electric heat pumps.
- **Sanitizers:** You can sanitize your water with a salt-to-chlorine generator or an in-line chlorinator.

Did you know that a saltwater pool is still a chlorine pool? Now you do!

All these parts will be in the same area as your pump and filter (ideally).

Going with the Flow: How It All Works

Understanding how all the parts work together as a whole will make you more comfortable with your pool. To start, you have the area where all of your plumbing begins — at your suctions. On all pools, you'll have at least a skimmer. Some other pools will have suctions at the bottom of the pool where water can be pulled in from the deepest points. These bottom suctions are excellent in improving proper circulation in your pool.

Here's the progression of water through your pool system:

1. The skimmer and suctions have the water drawn into them through the suction of the pump's motor, where it passes through the skimmer basket

   Technically *pump* and *motor* are two different terms, but commonly it is called the same thing. The pump is the entire assembly, which is the housing with the basket, the impeller, and all plastic pieces along with the pump motor. The motor is just the electrical part of the pump.

2. After the water enters the pump, it goes through one more basket that catches large debris in the front of the pump.

3. After that basket, the water is under pressure, being pushed through things instead of being sucked into things.

4. Directly after the pump, the water is forced into your filter.

   All filters work in a similar fashion in regards to water flow. The water is forced through some sort of element such as sand, fabric, or powdered diatomaceous earth (DE).

5. If you have a heater, the water is sent on to that piece of equipment.

   The water passes through and heats up at the same time so that it's nice and warm for its return to the pool.

6. If you have an additional sanitizing system, such as an inline chlorinator or salt-to-chlorine generator, the water goes through that system last before returning to the pool.

   Those two systems infuse small amounts of chlorine into the water while it passes through, and then that chlorine will get mixed into all the pool water, effectively sanitizing it.

7. The water is pushed back into the pool.

   The flow of the water coming back into the pool is strategically angled so that you get optimal circulation, no matter what kind of pool you have.

8. The cycle repeats for as long as you have your pump running.

Being a Responsible Pool Owner

If you're going to be responsible for an expensive investment into your staycation wonderland, you're going to want to know how to not only keep it clean, but to keep it safe and protected.

A pool isn't a self-sustaining environment with an ecosystem and natural water chemistry to keep it in check. It takes a bit of work to keep it nice and clean, and to make sure it's safe to swim in.

Safety first

You want your pool to be fun and safe. When it comes to pools, safety comes in two forms:

- Using caution when dealing with chemicals
- Providing a safe swimming environment

Practicing chemical safety

A pool and pool chemicals probably seem different to you than a science lab filled with beakers and chemicals, but they're both equally as dangerous. Chemical handling is the most overlooked part of owning a pool because it's assumed that if you can buy the chemical at your local discount supply store, it must be perfectly safe to handle. Unfortunately, that really isn't the case.

WARNING

Getting chemicals on your skin or in your eyes can cause irritation and even injury. And mixing chemicals incorrectly can result in fires, explosions, and death. These chemicals are no joke: Always handle your pool chemicals with care and never put them in the hands of a child.

Keeping your pool area safe

Keep the people and pets who will be using your pool safe. Pools have hazards that require having safety procedures in place. Here are a few points to keep in mind:

- Create a list of safety rules for guests to follow and post them near the pool.
- Be sure to have a secure fence either around your yard or around the pool itself.
- Make sure safety equipment, such as a life ring, is easy to access.
- Install equipment such as drain covers and safety covers to prevent injuries.

By taking preventative safety measures, you can guard against accidents. See Chapter 5 for details on ways to keep your pool area safe.

Proper maintenance

Pool problem prevention is always less expensive and more effective than correction. Keeping your pool well balanced and well maintained will prolong the life of every part of your pool. If you clean often, you filter will last longer. If you balance your water, literally every piece of equipment in your pool, whether rubber or metal, will last longer. If you keep up on algaecides and shocks (which I talk about in Chapter 11), you can prevent a costly algae bloom from forming. The list goes on and on — proper maintenance will save you money in the long run.


REMEMBER

Putting off weekly maintenance might mean having to spend extra time and money cleaning up a cloudy pool. When you have limited days in which to enjoy your pool, you want to be able to use the pool whenever you want. You don't want to risk using up good pool days cleaning because you let the upkeep slip. Create a good maintenance schedule and stick to it. Look to Chapter 7 and the chapters in Part 3 for information on cleaning and chemicals.

Discovering Your Inner Chemist

Pool chemistry is my favorite subject! Your pool chemistry is what will keep you and your pool safe from long-term damage. There's a little bit that goes into the balancing of all those chemicals, and figuring out how all the parts relate to each other will be the biggest hurdle. For pool chemistry to make sense, you must be familiar with the concepts related to what each chemical is supposed to do and how they react with one. Don't look at the long chemical names and become overwhelmed. Look at what that chemical does to your water to make it a safer and more comfortable environment for bathers.

Chemicals are used to sanitize and balance your pool's water. The following sections introduce you to how chemistry will work for your pool.

Keeping your pool clean and clear

Sanitation is what you do to keep your pool water clean. You add chemicals to your water to kill bacteria and other contaminants and to help keep the water nice and

clear — and safe for people to swim in. When you're picking a way to keep your pool clean, you have three major types of products to choose from (which you can read about in detail in Chapter 10):

- **Chlorine:** This is the most common and usually least expensive way to sanitize a pool. It is highly efficient because of its aggression on bacteria and other contaminates, but that also makes it known for being slightly more aggressive on surfaces of the pool and on skin and eyes. It is used as a maintenance sanitizer through tablets or powder and also can be found in a liquid form which is more for shocking (oxidizing).

  
  REMEMBER

  Saltwater pools are becoming very popular. Some people don't realize that saltwater pools still require chlorine. These pools use a salt-to-chlorine generator to create chlorine gas by splitting the sodium chloride (salt) molecules.

- **Bromine:** Most commonly used in hot tubs, this chemical is very similar to chlorine in a lot of ways because it's also a halogen-based sanitizer (chlorine and bromine are grouped together on the Periodic Table). But it has two major flaws to it in the pool world:

  - *Breaks down in sunlight:* Bromine doesn't hold up well in the sun. UV light destabilizes it and breaks it down, so the numbers drop quickly in a pool sitting in direct sunlight.
  - *Costs a pretty penny:* Over the past few years, bromine has become extremely expensive, costing almost double as much as chlorine does.

  If you are using bromine in your pool, it is most commonly found in a tablet form and used in a similar way to chlorine tablets as a maintenance sanitizer. It can be found in a powder form but that is most commonly seen in use for spas.

- **Biguanide:** This bromine- and chlorine-free sanitizer was originally created to be a less aggressive hand sanitizer for scrubbing in as a surgeon. Biguanide has become a popular choice for people who want a pool that's completely halogen free. It tends to be on the more expensive side, and it certainly has a learning curve to it. But if you have money, and dedication required to use this system, you'll never want a different one because it is so soft on your skin and your pool will be looking brand new for decades.

All the products come in a liquid form with very simple dosing. You use the same amount every week of the same chemicals for maintenance. If you run into a problem, like algae or water mold, just use higher doses of the products you use weekly. See Chapters 10 and 11 for all the clean-pool requirements.

Chemicals and the importance of balancing them

Balancing your pool chemical levels is more important than almost any other thing when it comes to pool maintenance. Your pool water balance is made up of your total alkalinity, pH, calcium hardness, temperature, total dissolved solids (TDS), and cyanuric acid (CYA). All those pieces fit together like a puzzle to keep your pool from basically eating itself from the inside out.

When I say "balance your water," I'm referring to the process of getting your water to not be scale-forming or corrosive. Those two water states can quickly lead to a disaster in your system, on your surface, and on the surrounding pieces of equipment. Essentially, your goal is to make sure that the water in your pool craves no extra minerals that it doesn't have or need. Water will always try to reach some sort of equilibrium, and to get there, it requires a certain amount of minerals in its balance. If it's lacking them, it will take those minerals from anything it touches. And if it has too much, it will deposit them on all those same things.

Another important part about water balancing involves making sure the sanitizer that's killing bacteria and preventing illness remains efficient. Your pool chemistry's cause and effect will change the way the water wants to go. For example, if your acidity level is very high, the water lands on the scaling side and could create actual physical scale on the inside of things that are in your pool system. It also directly affects the speed and efficiency with which your sanitizer reacts, especially chlorine. If you have a bunch of chlorine in the pool, but it's only 8 percent efficient because of the poor balance of the other chemical components of the water, then the chlorine in the water isn't doing you much good.

Head to Chapter 9 for everything you need to know to keep your pool in perfect balance.

Practicing DIY versus Hiring a Pro

One question will always flick around in pool owners' minds, especially in the summertime: Do you hire a professional to do regular cleaning and maintenance, or do you do it yourself?

I think this is really a question based on personal preference. For instance, in my line of work, pool season is non-stop. You may be like me and have very limited time off. And when you do have it, you probably want to enjoy it. I don't currently

have my own pool, but if I did, I would likely want someone to do my weekly service and even my openings and closings. It would be nice to come home and use your pool whenever you want and know it's balanced and clean without having to do anything. I would totally do that.

On the flip side, there are a lot of people who enjoy cleaning their pools. I like cleaning pools, obviously, because I do it for a living. So I understand someone wanting to do it themselves. If you have the available time to spend and you don't mind doing the work, I think everyone can do maintenance on their own pool.

TIP

Where I do recommend hiring a professional is when it comes to winterizing your pool, especially if you have a pool that has underground lines. If you're in an environment where your water is going to freeze, unless you are 100 percent confident in what you're doing, I don't recommend winterizing your pipes on your own. I've seen too many simple mistakes made because the person trying to winterize the pool was inexperienced but didn't want to pay someone (which I really do understand). But their little mistake led to a cracked pipe underneath the concrete deck. It quickly turned into a very expensive fix.