

Your Sand Filter and how it works

The pool industry uses three different types of filters to remove particulate from swimming pool water. Here I want to discuss the high rate sand filter.....this is the filter you use to keep your pool water sparkling and healthy.....

The sand filter, though not complicated, does require some knowledge to work it properly. Here are the basic facts.....

The first thing you should know about a sand filter is that it has a valve which commands certain jobs. For example, when the valve is in "filter mode," the water is directed to the top of the filter and then flows through the sand, trapping debris as it travels to the bottom of the filter and out through the laterals. I have provided a picture of the inside of a sand filter with this note.

So let's take a closer look at a typical multivalve. It has several positions and all have a part to play in the proper sanitation of your pool water.

Understanding your multivalve:

- Filter:

This is the position the filter will be set to most of the time. It's for filtering the water. In this mode, the valve directs the water to the top of the filter, where it compresses and flattens down the sand. Contaminants are removed as the water makes its way to the bottom laterals, out of the filter and back to the pool.

- Backwash:

This is the position you turn the valve handle to when cleaning the filter and its medium. You know it's time to backwash when the pressure gauge rises above 100Kpa. In this mode, the valve directs the water out the bottom laterals, reversing the flow through the tank. This causes the sand to separate and lift about 7 inches (18 cms) above its normal position while releasing the trapped debris into the water, allowing it to exit from the filter and go out the waste line.

- Rinse:

Water is directed by the valve to the top of the tank, just like the filter mode. The sand is resealed back in place while still sending water out of the waste line, thereby reducing the chance of particulate blow-back to the pool when the valve is moved back to the filter position after backwashing. As a general rule you should rinse for approximately half the time you backwash; so if you backwash for 30 seconds rinse for 15.

- Recirculate:

Water is directed through the valve only, not the filter. This is a position to use during certain pool cleanups and chemical treatments, when you don't want the water contaminating the sand or filtering out expensive chemical you have just added to the water.

- Waste:

This position bypasses the filter and sends all the water out the waste line--a great setting for vacuuming pools after an algae treatment, and new sand addition or filter start-ups.

- Winter:

This position we can ignore as it is designed so that the internal valve parts are separated and, in freezing conditions, do not freeze together. Very useful in the Northern hemisphere where pool, pumps and filters all get drained before the winter arrives.

Now it's time to look at some do's and don'ts to help keep your sand filter running smoothly:

Do be aware of the filter pressure when it is clean. Keep an eye on the pressure gauge. When the sand is clean the normal operating pressure is between 50 and 80Kpa. When the pressure rises above 100Kpa it is certainly time to backwash.

Do backwashes for long enough to get the job done properly. Wait until the water is clear coming out of the waste line or shows clear in the sight glass on the side of the valve. Backwashing can waste a lot of water, so pay attention to the colour of the water throughout the backwash process.

Don't move the valve handle when the pump is running and pushing water through, it will damage the valve and possibly other equipment as well. Fully depress the valve handle when turning it to prevent damaging the valve seat gasket.

Don't backwash excessively. One unknown feature of this filter is that it operates most efficiently during mid-cycle. As it collects particulates in the sand bed, the debris that is caught up in the sand actually helps the filter work more effectively. Too much backwashing will reduce the efficiency.

Do fill the tank with sand to about half-full and keep it level. Some models may vary, but the general rule is 12 inches from the top of the sand bed to the bottom of the valve or top diffuser.

Do start the filter in the rinse cycle for 1 to 3 minutes after starting a new filter or after replacing the sand in an existing one. Some small particles and impurities may still blow back to the pool. If this happens, always vacuum the debris to waste or you may keep sending it back to the pool.

If you follow these basic guidelines, you'll keep your sand filters in top-notch condition and your pool water sparkling clear.

Notes:

1. It is recommended that the sand should be changed every 5 to 7 years.
2. If you have sand being returned to your pool it will almost certainly mean that one or more of the laterals at the bottom of the filter has broken.

These notes are intended as a guide and to help you maintain your pool water and equipment. If you have any doubts or concerns you should contact Hills Sparkling Pools for guidance and advice.



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