



HOW TO:
INSTALL
AND
ENJOY
THE
BENEFITS OF
FILTERBALLS

BY KIRK MORRIS

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INSTALLING AND ENJOYING THE BENEFITS OF FILTERBALLS™ FOR POOL OWNERS



BY KIRK MORRIS
INVENTOR AND CEO
FILTERBALLS, INC.

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ABOUT THE AUTHOR

Kirk is the CEO and inventor of the FilterBalls™ product and manufacturing process. He is a leading filtration expert with over 30 years of system engineering, marketing, sales, distribution and customer support.

He built his career in the filtration industry designing systems for consumer goods; many are familiar with such as Miller/Coors “Cold Filter”, Ocean Spray “No pulp, More pulp etc.” And Gallo Wines.

Kirk is active on several NSF committees that set standards for public pool safety and filtration performance. He serves as Chairman for the ANSI/NSF 50 committee setting new standards for polymeric fiber media.

Kirk is devoted to supporting our veterans, wounded heroes, and gold star families through motivational speaking, fundraising, and support programs. He is an avid hunter and fisherman serving as Treasurer for Ducks Unlimited and President of the PFC Geoffrey Morris Memorial Fishing Tournament.



FilterBalls™ are a lightweight patented filtration media designed to be used in sand filter housings. The media solves many of the problems pool owners experience with sand and other granular media such as glass and Zeosand™.

FilterBalls™ bring many benefits starting with better filtration and clearer water, dramatic reduction in energy consumption, healthier water, less wasted water from a reduction in backwashing, and less chemical usage. All of which make the product not only environmentally conscious, but also good for the pocketbook.

This tutorial is designed to help pool service techs and Do It Yourself pool owners properly install, operate, and maximize the benefits of FilterBalls™. We will also share solutions for many pool problems we encounter in the field.

We hope you find this useful informative so you, your family and friends enjoy years of great activity and memories with your pool.

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1.

THE PROBLEMS WITH SAND



Sand is the most popular filter media used in pools, industrial and commercial media. It has been used in water filtration for literally thousands of years. It is much lower cost compared to cartridges and D.E. filter systems and offers acceptable filtration characteristics filtering particles down to 20 microns in size or something smaller than the diameter of a human hair. When sand needs cleaning, you simply backwash (run the water flow backwards and to waste) and this partially re-generates the media.

Filter sand is not beach sand. Filter sand has angular edges that capture dirt and other particulate matter. Both are limited natural resources but pool sand is mined in quarries depleting natural resources and wildlife habitat.

Sand has many problems:

1. Sand is heavy and cumbersome to transport.
2. Replacing sand is tedious and time consuming.
3. Sand is an energy hog generating expensive monthly energy bills for the pool owner.
4. Sand requires frequent backwashing wasting water



Blü™



Sanž™



Minis™



2.

WHAT ARE FILTERBALLS?

FilterBalls media is designed for pool and industrial water treatment applications. The media is an alternative to sand in sand filter housings. The product is made of a patented combination of thermally bonded polyester fibers to enable tight filtration, backwashing and prevention of fibers escaping from the filter into the pool. FilterBalls are made entirely in the USA and are certified to commercial pool and drinking water ANSI/NSF standards by Underwriters Laboratories, (UL). Three products are available.

FilterBalls Products:

1. **Blü™** – Our most popular residential pool product rated to 15 microns at 95% removal first pass, designed to improve filtration and reduce energy consumption. NSF/ANSI50 certified for quality & reliability.
2. **Sanž™** – for commercial pools rated to 5 microns, where tight filtration is required. NSF/ANSI 42, 50, 61 and 372. Highest standards in the pool industry for health/safety.
3. **Minis™** – Typically used in above-ground pools with smaller filter housings. Rated to 15 microns.

Sample Benchmark: FilterBalls Blü vs #20 filter sand with a two speed pump. FilterBalls reduced energy use by 74 percent, saving the average residential pool owner \$110 per month

Residential Pool Media Benchmark:
 29,000 gallon Pool, Carvin L250; 350 pound sand filter.
 2 speed / 1.5HP pump
 Quantity (3) ~1-pound bags of FilterBalls replaced
 Qty (6) 50-pound bags of sand

Media	Setting (rpm)	Pressure (psi)	Flow (gpm)	Turns per day	Kilowatts (kw)	Costs per turn	Monthly power cost
#20 Filter Sand	High: 3450	12	42	2.1	0.966	\$2.37	\$149
FilterBalls	Low: 1750	1	47	2.4	0.256	\$0.53	\$38.50

FilterBalls combined with a 2 speed pump will save pool owners \$110/month with less than 10% pressure on the pump. Total Monthly savings = \$110.00



Vs.



3.

FILTERBALLS BENEFITS

FilterBalls provides benefits that sand, cartridges and D.E. filters simply cannot match. While many filtration products and systems can provide excellent filtration performance, when you also consider purchase cost, energy savings, and ease of maintenance, FilterBalls is the new gold standard for water filtration in residential and commercial pools.

FilterBalls improves performance by offering almost no back pressure to the system. Filter system pressure is reduced, increasing flow, and increasing the life of your pump. Using a pump that operates at lower speeds will save you money, improve turn-over, and ensure healthier, cleaner water. Choosing a variable speed pump or two speed pump will allow you to capture the savings while continuously running your filter at hygienic flow rates.

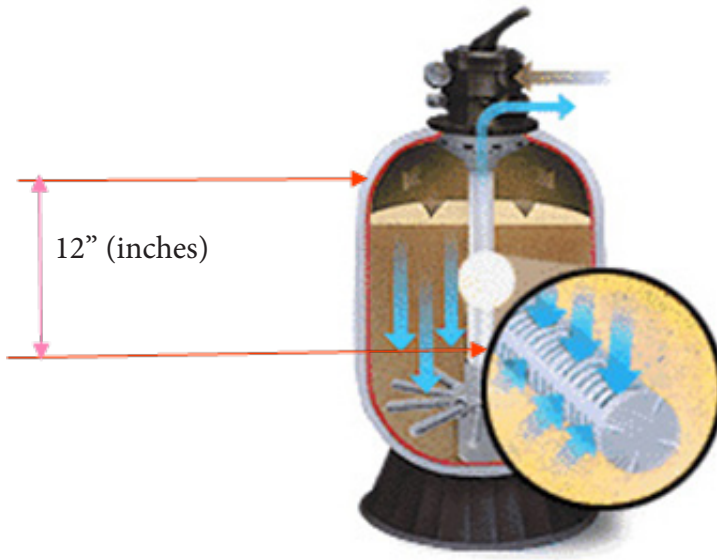
In the benchmark on the facing page, running FilterBalls on low-power provides more flow than sand on high-power saving the pool owner over \$100 per month!

FilterBalls benefits are all **GREEN!**:



1. Documented 33- 75 % energy savings
2. Superior Filtration: 15 micron vs 40 micron with sand
3. Less Backwashing: FilterBalls holds over 20 times the dirt compared to sand
4. Water Savings from reduced backwashing
5. Recyclable; simply recycle when it's time to replace

Top Mount - Sand Filter



Pre-Installation guidance:

One 1 cubic foot bag of Blü or Sanz replaces TWO fifty pound bags of sand.

One 1/2 cubic foot bag of Minis replaces ONE fifty pound bag of sand.

If you are changing out the sand, check to ensure your system components such as your pressure gage, laterals, gaskets, and valves are in good working condition. Replace any cracked or broken lateral arms or any other parts that should be replaced.

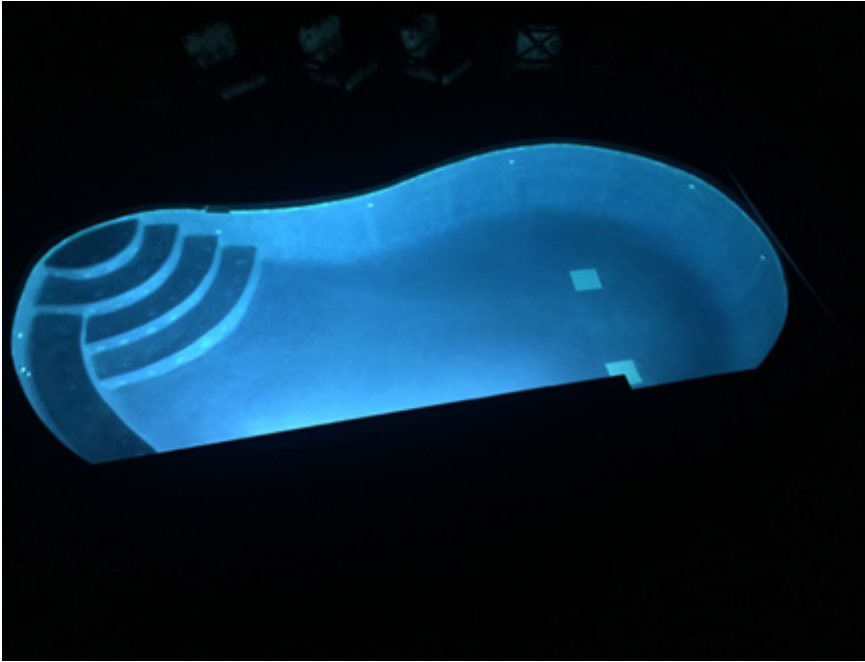
4.

INSTALLATION INSTRUCTIONS

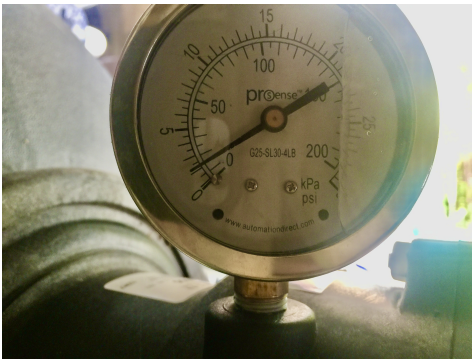
FilterBalls are easy to install. In general, follow the steps recommended by the filter housing manufacturer. *Always ensure twelve inches of media above the laterals.* You can mark this height on the stand pipe with a marker to ensure proper fill. If the manufacturer recommends pea gravel to support the laterals, please follow that guidance.

Direction for initial start-up with System Off:

1. Remove filter sand if current vessel has sand in it
2. Clean the sand and debris that might be lodged in the lower manifold and laterals
3. Cover the stand pipe with a plastic bag and add FilterBalls to the tank. Gently press the balls down to assure proper coverage over laterals (12inches)
4. Close the filter as according to manufacturer instructions
5. Set filter to backwash, start and run for 30sec to 1min
6. Turn off pump, set filter to rinse and run for 30sec to 1min.
7. Turn off pump, set to Filter Mode and start filter system
8. Check pressure and record, backwash when pressure increases by 5 PSI



FilterBalls operating with Variable Speed pump at 1,725RPM
2.2 PSI with 32 GPM on just 147 watts of electrical power
46,000 gallon/day, costs \$19/month, >5 turns per day



Friday 9:52AM
1725rpm 147 Watts

5.

OPTIMIZING PERFORMANCE

Proper flow is the most important factor in optimizing performance. Too high of flow may enable dirt and other particulates to by-pass the media and cloud your water. Not enough flow may not provide the turns you need to keep your water healthy and clean.

Most pools operate best with enough flow to operate heaters and chlorinators (usually 20-35 gpm) and 30% lower than the filter housings rated flow (ex: 40gpm on a 60gpm rated housing). The Center for Disease Control recommends 2-3 turns per day for residential pools.

FilterBalls will increase the flow compared to sand. Using a flow meter is the best way to measure. *Lower flow velocity through the filter media is always preferred for best filtration performance*

Some Performance Tips:

1. Know your pools size to calculate flow rate needed for proper, healthy water
2. Use a variable or two speed pump and flow meter to program your pool.
3. Vacuum to waste
4. Initiate backwash when system pressure increases 5 PSI
5. If you are using water clarifier, use 1/3 the recommended dosage as prescribed by chemical manufacturer

6.

TROUBLE SHOOTING

FilterBalls are installed successfully in tens of thousands of pools world-wide. We do occasionally speak with pool owners about troubles they are experiencing with their pools. The troubles we track fall into a few categories:

Trouble:

1. Pool is not clearing
2. FilterBalls are discharging to the pool or backwash

In most all cases, a pool not clearing can be sourced to four conditions:

1. Poor water chemistry
2. Not enough media
3. Not the right media
4. Too much flow from the pump through the filter media.

Additional technical information is available at
www.filterballs.com

TO SOLVE PROBLEMS WITH CLOUDY WATER/POOL NOT CLEARING:

1. First check your water chemistry and confirm that your pH and other factors are at recommended levels.
2. Make sure you have at least twelve inches of media above the laterals.
3. If you have a small filter housing rated for less than 200 pounds of sand, confirm you are using Minis for small housings. Check your flow to confirm the flow is within the recommended limits of the housing. The standards are found on the manufacturer's label. We often find pool owners installing and even some pool products retailers suggesting pumps with horse power ratings that are simply too big for the system. The thinking is often "Bigger is Better", which is a bad design criteria.

When you switch from sand to FilterBalls, you should experience a noticeable increase in flow. Decreasing the flow to within the limits of the housing specification is the best solution, it also saves you money by using less energy, lowering the pump speed or horse power are a few options.

Determine the needed minimum flow requirements for your heaters and chlorinators "a" (in gpm). Then establish pool water turnover rate desired "b" (in gpm). The optimum system flow rate is the higher of the two numbers "a" or "b" plus 10%.

Size your filter housing at "the optimum flow rate" as determined above, with a efficiency factor of 1.6 ($b \times 1.6 = c$) where $b = 32$, ($32 \times 1.6 = 51\text{gpm}$) . Purchase a 51gpm housing or larger) and run it at 35gpm... ($32 \text{ plus } 10\% = 35\text{gpm}$)

For filtration, lower flow rates are more effective allowing the media to capture dirt without bypass. If you own a variable or two speed pump, simply lower the speed. Replacing your single speed pump with a variable speed, two speed, or smaller more efficient pump is your best option. Please consult your FilterBalls dealer or our customer service representatives for suggestions.

TO SOLVE PROBLEMS WITH FILTERBALLS DISCHARGING TO POOL OR BACKWASH:

Occasionally we hear of FilterBalls returning to the pool or ejecting in the backwash. Something is allowing the FilterBalls to escape.

It is likely that a lateral is broken, the stand pipe is misaligned, the diffuser plate is missing or another valve part is broken. Check the condition of filter components to ensure everything is in good working condition.

If you have questions
Give us a call
at 224.637.8900!
or
email at info@filterballs.com

7.

BEWARE OF FAKE MEDIA BUY AMERICAN!

FilterBalls' are completely made in the USA and produced by US Military Veterans. FilterBalls success has attracted several importers of inferior overseas filtration products looking to confuse consumers by adopting similar names or internet tags such as filter balls, filtraballs and others. The products are manufactured in China using a very different polyester product and they do not backwash. It is typically white in color but we are now also seeing them offered in blue.

While other foreign polyester filter media products capture dirt, they cannot claim effective backwashing or longevity. In fact, a simple search of the internet will find instructional cleaning videos for these products. These manufacturers actually suggest cleaning their media by removing them from your filter and washing them in your home washing machine or kitchen sink!

We find Chinese manufactured product sold primarily through Amazon or eBay and rarely sold in your local retail store. Brand names such as StarMatrix, Aqualoon, Rx Clear, FlowXtreme Cotton Tails, filtra balls, are a few examples.

Consumers call our support line with questions because there is rarely any contact information available on the Chinese product packaging. We do our best to help but please beware of the confusion these foreign manufacturers and distributors have made here in the US. FilterBalls Blü and Sanz has been independently tested and certified by NSF. Only FilterBalls carries the NSF50 certification for use in commercial pools.

Recommended Bag volume(s) for FilterBalls™ Media

Weight of #20 Filter Sand	Bags of minis	Bags of Blu or Sanz	Popular Filter Housing Models		
			Hayward	Pentair	Waterway
50	-	-			FS016
70	-	-			
80	-	-			
	-	-			
90	-	-			
100	-	-	S166T	SD35	FS01619
	-	-			FS019
125	3	-			
150	4	-	S180T	SD40	FS01922
					FS022
175	4	-		TR40	
200	4	-	S210T	SD60	FS026
225	5	-	S200	TR50	
250	6	3	S220T		FS02225
300	7	3	S244T	SD70	
325	8	4		TA60	
	10	5		TR60	
350	-	4	S27T2	SD80	
	-	5	S311SX		
400	-	5	S270T		FS02629
500	-	6	S310T2		
600	-	7		TA100	
	-	8		TR100	
700	-	8	S360SX S360T2		
925	-	10		TR140	
950	-	12	HCF234		
Over 1,000	Call	Call			

Always ensure at least 12 inches of
FilterBalls above the laterals.

Buy American! Buy the original FilterBalls!



If you have questions
Give us a call
at 224.637.8900!
or
email at
info@filterballs.com



CleanTech Water Filtration Has Arrived!