

# *SAND STORM*

## *Specifications and ordering guide for 2007/2008*



***ZScreen LLC.***

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## Specifications

### Double Decker Sand Storm (Model 2)

#### Manufactured in Phoenix, AZ

**Motor**..... Vibco – Model DC-300, 12 & 24 Volt DC operation which delivers 350 lbs. of force @ 4000 rpm and pulls 16 amps. It is rated as a continuous duty motor and is water resistant with a 1 year manufacturer's warranty. (The unit is pre-wired with a remote on & off switch).

**Motor (option2)**..... Bosch- Model DC0300X1, 12 volt DC operation delivering 300 ft.lbs. of force @ 3,700 rpm and pulls 12.6 amps. This is also a continuous duty cycle rated motor, water resistant, with a 1 year manufacturers warranty. This unit is qualified for sale in EU certification required regions. This option carries an additional charge, due to import fees. Call for current pricing.

**Tires** .....(2) Golf cart tires & wheels, Hole in One K389, 18x8.50-8 4PR. (Brand Name may vary, but not size)

**Main Frame** ..... All welded steel construction tube frame.

**Hitch** ..... Heavy Duty 3"x 3" x 3/8" Quick Pin Tow Bar.

**Top Deck Wire Mesh** ..... TCA High Carbon Wire, 5/16" opening, 11 ga. Wire. (approx. 57" x 52.5")

**Bottom Deck Wire Mesh** ..... TCA High Carbon Wire, 5/32" x 1" slotted 14 ga. Wire. (approx. 57" x 57")

**Removable Spoils Bin** ..... 16 ga steel welded steel construction with steel handles and dual end safety tie downs.

**Axles/Hubs/Spindles/Bearings** ..... 2"x 2" x .250" axle housing, 4 lug hubs, 1-1/2" spindles, sealed bearings. Rated @ 2000 lb.

**Adjustable Deck Jack** ..... 14" of travel, sidewind, 8000 lb rated.

**Tongue Jack** ..... Topwind, 2000 lb rated.

**Dimensions** ..... Overall length 9'- 8" (fully assembled)  
Overall width 6'- 3"  
Overall height 3'- 6" to 4'- 8" (adjustable)

**Weight** ..... 1000 lbs.

**Current Price**..... \$7895.00 U.S

### Double Decker Sand Storm (Model 3) - 3 Point Hitch Mount

**Weight** ..... 810 lbs.

**Current Price**..... \$7895.00 U.S



**\$7,895.00**



**BEFORE**

These photos show actual results after only one use with the SAND STORM. Not a single shovel full of new sand had to be used to restore this bunker to "like new" condition. SEEING IS BELIEVING!

A bunker free of debris is a bunker that plays and functions the way it was designed to!



**AFTER**

### **SANDTRAPS AND BUNKERS ARE MORE THAN JUST A HAZARD TO THE PLAYER**

As you well know, the sandtraps and bunkers on your course serve a much bigger purpose than just a hazard to an unlucky player. These features also play an important role in the welfare of your course as a whole. **DRAINAGE.** Whether by rain, or daily irrigation, contaminants such as rocks, organics, silts, and clays work their way into your bunkers. Over time, the sand in your bunker will slowly accrue a build-up that will eventually restrict it's ability to do it's job. Thus, the entire area dependant on the bunkers ability to eliminate water run-off is affected.

Until now, the only way to solve this problem was to remove and replace your sand. Well we at ZScreen would like to introduce you to a cost effective and efficient alternative, the SAND STORM. Designed based on input from actual superintendents, the SAND STORM gives you the ability to "clean" the sand in your bunkers rather than replacing it. Not only saving you money (as much as 60% to 80%), but also eliminating the hassle and course damage that occurs when removing and replacing your sand.



This picture shows the Sand Storm's ability to collect the clay deposits in your sand. Notice how the clay rolls up into little balls. This allows them to roll off the deck into the spoils bin rather than passing through and getting back into your sand.



So much fun, even the superintendents can't resist! No shovels on the screen face please. Plastic bunker rakes are the tool of choice for this application.



Talk about pass through! With low moisture content, the Sand Storm is capable of processing material as fast as you care to shovel it on. When this photo was taken, the Sand Storm was more than keeping up with 3 guys all feeding it at the same time.



Notice the amount of contaminates in the spoils bin. This is all debris that is in your sand causing compaction and playability issues.

After just one treatment with the Sand Storm, you will see dramatic improvements in your bunkers condition. Better drainage, improved playability, cleaner appearance, not to mention, no rocks being hit up onto your greens and fairways lying in wait for the next mower blade to pass by. Not only does the Sand Storm produce USGA spec sand in your bunkers, with an overlay screen, you can also produce Greensmix to specification. This allows you to re-use sand that was once considered waste, saving you even more of those precious budget dollars.





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## ***“LET’S DO THE MATH”***

Exporting existing sand out of your course, and Importing in new sand can cost you a fortune, not to mention the damage to your course, and the loss of revenue due to down time.

### ***DO I HAVE YOUR ATTENTION?***

**“Here is an example of recycling your sand.”**

A bunker 120’ long x 30’ wide x 8” deep = 112 tons of sand. Now, sand can run from \$22.00 a ton to \$100.00 a ton delivered to your course. Now I know that is a pretty big spread, so lets take a low average of \$30.00 per ton delivered. 112 tons of sand x \$30.00 per ton = \$3360.00 for the sand product.

An average day of equipment costs for digging out the sand and trucking it off is approx. \$2570.00. ( Equipment travel in & out small front end loader, ganon tractor, 2 laborers, 2-10 wheeler trucks, and supervision, day one)

The equipment costs for placing the new sand that is imported in is approx. \$1690.00. (day two)

**At this point you have spent approx. \$7620.00.(Two days)**

**ARE WE HAVING FUN YET??** We haven’t even figured in the costs of the “course damage” yet, due to the heavy equipment, or the “lost revenue” for that area being shut down!

### ***NOW, IN CONTRAST***

Let’s say that you own a “Sand Storm”. We will figure the sand storm costs at \$50.00 per day x 5 days = \$250.00. 4 golf course laborer’s at \$12.00 per hour = \$48.00 per hour x 5 days (40hours) = \$1920.00. We are now at a grand total of \$2170.00, plus the costs of the shovels and the tow vehicle with a dump bed, that you already own. So, for arguments sake, let’s say it costs you a Grand Total of \$2420.00 to “Recycle” your Existing Sand Bunker vs. \$7620.00, for taking out the old sand and bringing in new sand, plus the course damage and down time. That is approximately a 68% savings, (or a \$5200.00 savings for the same job).

**A Wooden Duck with a glass eye can see the difference!!!**

**“SAND STORM”**



# How is your bunker hygiene?



Following a major weather event such as a 2-inch rain, erosion within the bunker cavity is inevitable. In young bunkers, after the water has evacuated there is usually an accumulation of fines in the form of a thin layer (bathtub ring) above the sand/silica in the lowest point of that bunker. This "debris circle" consists of clay, silt and/or organic matter fines.

If these layers are not excavated and removed the bunkers will almost certainly fail in a short period of time. This is especially so in traditionally constructed bunkers with old drain tile and gravel trenches with no floor stabilization. After it rains, bunker crews in the process of re-establishing the bunker faces take the sands mixed with the fines with their shovels and incorporate them back into the sand profile of the bunker.

Raking bunkers daily with a mechanical rake will only enhance the problem. It will not take long if this practice is continued for the bunkers to completely fail. This is primarily because the bunker sand becomes impermeable to the point that water cannot find its way into the drain tile.

To quantify what happens after a single rainfall we decided to send in a sample to an accredited lab, Tifton Physical Soil Testing Laboratory Inc., for analysis. Following the testing of a gallon of material, which was the 1/4-inch layer of contaminate, we received some interesting results:

- \* The sand had a low permeability rate of 4.5 inches per hour.
- \* There was .55 percent organic matter by weight that indicated significant contamination.
- \* Clay and silt fines composed 6.6 percent of the sample, almost double the original material.
- \* The laboratory recommended that we completely replace the bunker sand.

In essence, after one rain the bunkers were seen as having failed. These results were double what the original sands tested. That is why it is so critical for superintendents to practice proper hygiene on their bunkers, including the following procedures:

- \* Skim off and remove all fines, discolored material and organic matter (about 1/4 inch).
- \* Use this material to top dress fairways to recycle the contaminant.
- \* Following this replace the sand on the faces of your bunkers.
- \* Repack the sand to eliminate fried egg lies and plugging.
- \* Re-rake the bunker to its proper playing condition.
- \* Add new sand on a regular basis -- at least twice a year -- using small loads.

By practicing proper bunker hygiene, superintendents will see the integrity of their bunkers last much longer. Owners and players alike will notice, adding to their playing enjoyment, protecting their investment and ultimately making your job much easier.

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**Alan D. Hess is CGCS at Augusta Pines Golf Club in Spring, Texas, and a 23-year member of GCSAA. He presented this information as part of the Innovative Superintendent Sessions at the conference and show in Atlanta.**



# ZScreen

## SAND STORM

IDENTIFYING

Ph. 623-581-0307

Volume I Issue II

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GCSAA SAND STORM UPDATES Cactus & Pines

## BUILDING THE BEST, FOR THE BEST

Getting the most for your money has got to be the most important factor in spending considerations these days. Most budgets just don't allow for the financial headaches of an unwise purchase. From fertilizers, to sand, to maintenance equipment, you have to get the most bang for your buck. There are many manufacturers out there for almost every product your course uses in its daily maintenance regimen. So, how did you come to choose the products you use? Most likely through personal experience, referrals from other trusted colleagues, or from researching test results published in worthy periodicals.

So how do you put your trust in a one-of-a-kind product with nothing to compare it to? That is a hurdle that we at Zscreen have to overcome as the new kids in the industry. We can't claim we are better than our competitors, because really, we are in a category of our own. There are other machines on the market designed to function in bunker maintenance, but none of them are designed to clean the sand like the Sand Storm. Therefore, comparing us to other sand related equipment is like comparing apples to oranges.

We have issued multiple periodicals over the last couple of years that show how the Sand Storm works. But, we haven't taken the time to focus on the specifics behind the quality of our product. So, let's take a look.

The Sand Storm is an all steel constructed machine. Is there a less expensive alternative? Of course there is. We could use plastic-type materials in multiple components, but we don't. Why not? Being from Arizona, we learned quickly that combining direct sunlight, heat, and vibration, plastic just wouldn't hold up to the test of time. Sure we could save a few bucks on plastic parts, but try to justify to a customer why his machine is falling apart after only a few months.

We also use all Grade 8 hardware in the assembly process. Could we use a lower grade bolt that is less expensive? Sure, but we don't. Grade 8 bolts provide us with the peace of mind that our hardware will not break-off or strip when subjected to the rigors of vibratory action during use. We also use receiver hitch rated steel tubing in our quick-attach tow hitches. Thinner tubing, though lighter and less expensive, had a tendency to bend too easily when the Sand Storm was being hauled in and out of the bunkers/sand traps. That was just not acceptable.

Each and every Sand Storm is hand-built from the ground up. We drill every hole, cut every joint, and weld every seam one at a time. This helps us to ensure that your machine is built right the first time. There are no recalls for parts, mass produced with an error, that require replacement down the road. We also utilize miter joints in our square frame construction. They require more time and material, but they are much stronger than butt-end joints and better resist being knocked out of square when subjected to impact. Is this the cheapest way for us to manufacture? No, but it is the most reliable way to ensure quality.

We have been accused of overbuilding the Sand Storm. This may be true. But, outside of the occasional high tensile strength screen mesh worn down from several years of use, we have yet to experience a single breakdown on any of our units worldwide. That is a track record that we are quite proud of.

So, if you are considering purchasing a Sand Storm, know that you are buying a long term investment built to last a lifetime.

**For a complete catalog, including reference sheet, please contact  
CRAIG or BARRY at:**

Zscreen LLC. P.O. Box 41967 Phoenix, AZ 85024 Phone: 623-581-0307 e-mail: [info@zscreen.com](mailto:info@zscreen.com)



45 degree miter joints insure the strongest possible joints on our box frame screen decks.



No sub-grade hardware here! We use only the highest quality Grade 8 fasteners on all of our products.



The Sand Storm is an all steel product. The only plastic you'll find here is on the bunker rake.

## Tournament Preparation

Peak season is here! Time for tournaments and tee times booked days in advance! Your members have waited out the winter, and now they're ready to play. The pressure is on. Is your course ready to meet their expectations?

How did your bunkers fair the abuse of winter? As you well know, moisture run-off will often bring debris into your bunkers. Not to mention the compression factor caused by being buried under snow and ice for weeks on end. The result is compaction and contamination that keep your bunkers from playing or functioning they way they were designed to.

Until now, the only solution to this problem was to remove and replace the contaminated sand. For anyone who's ever done this, you are aware of the cost as well as the downtime and course damage involved. Well, now you have a choice.

The Sand Storm by ZScreen LLC is a portable, 12-volt DC powered screening system designed to eliminate compaction issues by remixing sieve sizes while removing contaminants from your bunker sand. The Sand Storm's design makes it convenient and easy to clean your sand right where it belongs, **IN THE BUNKER !!**

The days of spending precious dollars replacing contaminated sand are gone. You can now "clean" and "recycle" your sand, saving your course precious time and money.





## Confide in your peers

"Leading up to this year's (2004) PGA Championship, we tried many different types of screeners and found the Sand Storm to be the best"

*David Swift, Whistling Straits*

"With the Sand Storm, our operation has been able to take 10 year old bunkers that are contaminated with small rock, silts, and clays and start turning back the hands of time. It's the best thing on the market. You have a lot of flexibility for multiple applications by changing screen sizes."

*Ernie Pock, Grayhawk Golf Club*

"I recently bought a Sand Storm and it has reduced my necessary sand budget by \$4000.00 a year. With the Sand Storm I'm able to quickly recondition problem bunkers."

*Randy Bobbitt, One and Only Palmilla Resort*



# Z-Screen

PATENT PENDING

## SAND STORM

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# SAND STORM

by **ZScreen LLC**



GCSAA SAND STORM UPDATES CACTUS & PINES

**COSTA RICA !! OH YEAH !**

The Beautiful Four Seasons Costa Rica Golf Course at Peninsula Papagayo



Man Oh Man ! Do They Have BIG WATER HAZARDS. or What ??

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Superintendent, Xavier Urbina, couldn't be more pleased. When I called back to check in with him, Xavier said that it was working just fine, and that it was a nice "innovative product".

Xavier has been using the Sand Storm for about a month now. He purchased a "Double Decker" Sand Storm, but as you can see in the picture, they removed the "top deck" assembly for screening their greensmix sand. I called Xavier and recommended that they leave the "top deck" on for several reasons. First, the "bottom deck" wire mesh is a special 5/32" slotted and crimped wire on the "Double Decker" Models. The slotted and crimped style wire enhances vibration more effectively for approximately 25% more production over the square mesh style wire. Second, it does not plug up or "blind over" as easily as the square mesh wire does. BUT, it is a more "fragile" wire than the square mesh wire.

NOW, the reason for the "top deck". The "top deck" protects the "bottom deck". The top deck wire is 5/16", heavy gauge, "square mesh" wire. Confused? The "top deck" is very tough, and breaks up lumps and wet heavy material 2 to 3 times quicker than the single deck application. It also collects silts and salts in it's mesh, which are contaminants, that cause compaction. In other words, it's "Doing it's Job." Each deck has their respective jobs to do. **(No metal implements on wire mesh decks! We recommend plastic bunker rakes)** The results are higher production standards, and less contaminate pass thru.

**"New School"**

**Vs.**

**"Old School"**

The Sand Storm opened up a can of whoop ass on the old style wooden "A" Frame screening device. I know, that's not fair ! But, for production purposes, it's like comparing the Star Ship Enterprise to Orville and Wilbur's first flying machine.



## Sand Storm Reference List

Desert Mountain Golf Courses, Scottsdale AZ  
Joe Traficano, Shawn Emerson, Roger Brashea

One & Only Palmillas Resort, Los Cabos, Mexico  
Randy Bobbitt

Arrowhead Country Club, Glendale AZ  
Todd Allen, Ben Bishop

Estrella Mountain Ranch Golf Club, Goodyear AZ  
Mick Twito

Forest Creek Golf Club, Pinehurst NC  
John Mims

Grayhawk Golf Club, Scottsdale, AZ  
Ernie Pock

City of Tucson (Golf Dept.), Tucson, AZ  
Brent Newcomb

Olde Scotland Links, Bridgewater, MA  
Jim Small

Paradise Valley Country Club, Paradise Valley, AZ  
Rob Collins

Bella Vista Village Golf Course, Bella Vista AR  
Cliff Wages

Rockford Country Club, Sparkill NY  
Matt Ceplo

Troon North Golf Course, Scottsdale AZ  
Travis Blamires, Cody Swirczynski

Stoneridge Golf Club, Stillwater, MN  
Hugh Lynch

The Club at Mediterra, Naples, FL  
Matthew Jenne

Pacific Golf Management, Tokyo, Japan  
Mike Heacock

Nantucket Golf Club, Siasconset MA  
Mark Lucas

Hamilton Farm Golf Club, Gladstone NJ  
Paul Ramina

Pittsburgh Field Club, Pittsburgh PA  
Mike Zedreck

TPC at Snoqualmie, Snoqualmie, WA  
Rick Hathaway

Cabo Del Sol, Cabo San Lucas, Mexico  
Gerardo Padilla/Adolfo Garcia

Punta Cana Beach & Golf Club, Dominican Republic  
Julio Diaz

Guavaberry Golf & Country Club, Dominican Republic  
Russell Mollberg

Whistling Straits, Sheboygan, WI  
David Swift

LaHontan Country Club, Truckee CA  
Kevin Breem

Maxwell Air Force Base, Montgomery, AL  
Ed Starkie

La Jolla Country Club, La Jolla CA  
Bruce Duenow

Boulders Golf Resort, Carefree, AZ  
Dean Hunter

Four Seasons Costa Rica Golf  
Course @ Peninsula Papagayo, Costa Rica  
Xavier Urbina

Garland Resort, Lewiston, MI  
Bill Van Buskert

Catamount Ranch Golf Club, Steamboat Springs CO  
Lenny Kline

Caye Chapel Golf Resort, Belize  
Philip

Golf Club at Hawk's Prairie, Lacey, Washington  
Bob Pearsaw

Lake Waraumug Country Club, New Preston, CT  
Steve Smith

Omni Tucson National Golf Resort, Tucson, AZ  
Mike Petty

Coyote Hills Golf Course, Fullerton CA  
Elliot Weber

The Powder Horn, Sheridan, WY  
Mike Saffel

Erin Hills Golf Club, Hartford WI  
Jeff Rottier

Bear's Best Las Vegas, Las Vegas NV  
Johnathan Dodds

Forest Highlands Golf Course, Flagstaff AZ  
Andrew Annan

Applebrook Golf Course, Malvern, PA  
Jared Viarengo