



# Vortex Fluid Systems Inc.

Serving our Customers Worldwide...

## ORBITAL 3000 DUAL

### COMPANY GOALS

Since Vortex Fluid Systems founding, our goals have been simple. Serve our customers by creating the best performing and most durable shaker, with the best screen life of any shaker in the industry. With a loyal satisfied customer base, we have accomplished these goals, and are excited about what the future holds for our customers.



### SCREEN SEALS

Our newly designed, patent pending screen seals snap into place and can be replaced as easily as replacing a set of screens.

### RECOMMENDATION

*Justiss Oil Company has been using Vortex Fluid Systems, Inc. shale shakers for several years. We liked the performance so well we now run these shakers on all our rigs. We typically spud and complete wells with 210 mesh screens in all geographic areas where we work. The simple yet rugged design of this shaker is what the oilfield needs.*

*Product service from this privately owned company is excellent. The company owner is the designer of the shaker, and is available to discuss any aspect of the product, and has the authority to resolve any problem.*

Sincerely,  
J.F. "Jim" Justiss III  
V.P. of Operations

**Integrity**  
**Reliability**  
**Performance**

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Vortex Fluid Systems Inc. (VFSI) is committed to using the highest quality components and materials in building its Orbital 3000 shakers. When welding each Orbital 3000, precise tolerances have been maintained, producing one of the most durable and quietest shakers in the world today. As a result, the Orbital 3000 Dual is a field tested design marked by outstanding performance, durability, and unmatched screen life. All this, coupled with competitive pricing, makes the Orbital 3000 Dual unique in the market place today.

## Orbital 3000 Dual

### PERFORMANCE:

The Orbital 3000 Dual uses elliptical motion for extended screen life and excellent conveyance. The large screen area of 60 ft<sup>2</sup> and high g forces of 6.9 g's standard (7.5 g's optional) result in exceptional performance. Shaker performance can be characterized by the product of screening area and g's. This unit, run at 6.9 g's (7.5 g's optional), provides 414 ft<sup>2</sup>-g's (450 ft<sup>2</sup>-g's for the 7.5 g configuration). This is one of the largest performance ratings in the industry.

### DIMENSIONS:

The Orbital 3000 Dual shaker is 10' 6" long and 13' wide. The vibrators extend another seven inches on each side. The 30-1/2" weir height is one of the lowest in the industry for dual shakers, allowing placement on rigs with limited bell nipple-to-pit drop.



### ORBITAL 3000 DUAL BENEFITS

- 60 ft<sup>2</sup> of screening area
- high performance
- competitively priced
- dependable and durable
- low maintenance
- convenient cement bypass
- minimal operational costs
- simplification of rig move
- low weir height
- vibration isolation
- minimal noise
- simple screen adjustment





# Orbital 3000 Dual

## PERFORMANCE

The Orbital 3000 Dual has 60 ft<sup>2</sup> of screening area, 6.9 g's standard (7.5 g's optional), making it one of the highest performance duals in the industry.

## DURABILITY

All baskets are fully *seal welded and stress relieved*. Seal welding reduces corrosion, adding years to machine life. The Orbital 3000 pretension screening machine requires minimal maintenance, even in oil based muds.

## CORROSION PROTECTION

*Two layers of powder coat*. Baked on zinc-rich epoxy first coat provides corrosion resistance. Final coat provides abrasion resistance. Most fasteners are stainless steel, providing excellent corrosion resistance.

## VIBRATION ISOLATION

*The Orbital 3000 is exceptionally quiet*, due to efficient isolation, orbital motion and a sturdy base. With the machine running, it is possible to stand a nickel on edge at each corner of the machine.

## Simplified Rig Move

An Orbital 3000 Dual simplifies rig moves by allowing the user to simply disconnect the flowline and pick up the shaker by four lift eyes located between the baskets. Due to proper weight distribution, the Orbital 3000 Dual remains level when hoisted.



## Isolators

Stainless steel spring isolators provide superior isolation and corrosion resistance. An Orbital 3000 Dual resting on flat concrete will not "walk".



## Flow Distributor

By adjusting a short pipe within the flow distributor, flow is spread evenly across the basket.



## Electrical Box

The explosion proof electrical box is powder coated, has an "O" ring seal on the door and rubber boots on the switches. Customer wiring consists of hooking power to the terminal strip.



## Wedge Block Installation Tool

The wedge block installation tool simplifies wedge block installation and removal. This tool reduces the chance of screen damage.



## Screen Adjustment

The angle of the screen basket can be adjusted from 1 to 5 degrees from either side using a hand crank.



## Martin/Italvebras Vibrator

The vibrators are exceptionally durable. The vibrators are capable of delivering 6.9 g's (7.5 g's optional) of vibration to the Orbital 3000 Dual.



## Wedge Block

- Durable polyurethane wedge blocks hold screens securely in place.
- Manufactured with a steel insert for increased rigidity.





# Orbital 3000 Dual Drilling Fluids Management

The VFSI Orbital 3000 Dual shaker is conveniently arranged to simplify drilling fluids/cement bypass management.

## NORMAL OPERATION

In normal drilling operations, the door through the floor pan between the Orbital 3000 baskets returns flow to the sand trap.

## CEMENTING OPERATION

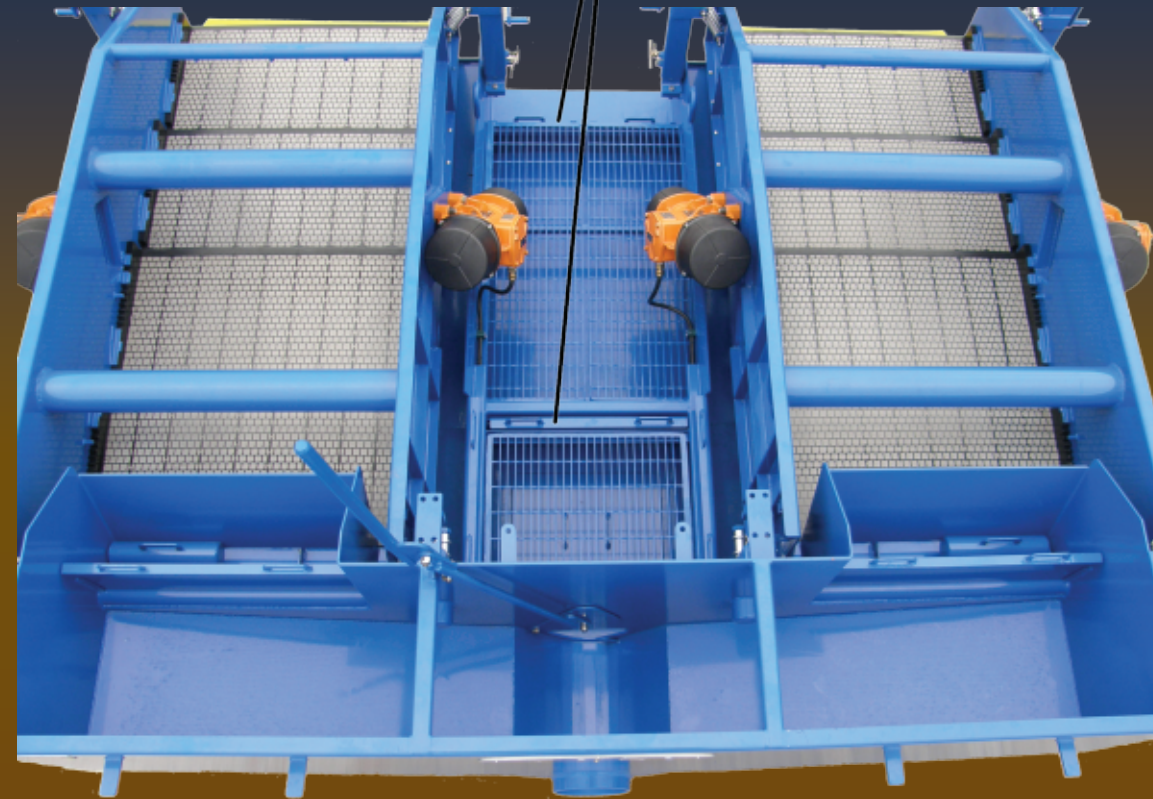
Cement is diverted to bypass the Orbital 3000 baskets by installing the floor pan door and the two inner shaker doors. Removing the two cement bypass doors and opening the bypass gate discharges cement to the reserve pit.

## Grated Walkway

The grated area between the baskets provides a clean walkway to service the shaker.



## Cement Bypass Doors



## Floor-pan Door

The door through the floor pan between the baskets returns flow to the sand trap. This door is large enough to provide access by personnel.



## Bypass Gate

Single-motion linkage allows the bypass gate to be opened easily and quickly; the handle is visible to flag the operator about gate condition.



## Gate Door Hangers

Movement of flow is provided by sliding gates on both sides of each basket. Gate hangers are conveniently provided between the two baskets.



## Possumbelly Gates

Possumbelly gates are provided to divert flow from each basket. These gates during cementing operations can also be used to keep cement out of the baskets.



## Possumbelly Gate Hangers



# HIGH PERFORMANCE

The combination of screen surface area, high g's and screen motion makes the Orbital 3000 one of the best performing machines in the industry.

## SCREEN SURFACE AREA

Screen Surface area to a great extent establishes the fluid throughput of the machine. The Orbital 3000 has 30 ft<sup>2</sup> of screening area. This makes the Orbital 3000 among the largest in the drilling industry. At the same time, the footprint of the machine is approximately 10 ft by 5 ft so that the machine fits on 10 ft wide tanks.

## G-FORCES

Increasing g's increases liquid throughput. Increasing g's also increases solids conveyance. By conveying solids out of the way, liquid throughput is increased. The Orbital 3000 is capable of over 6.9 g's (7.5 g's optional).

## SCREEN MOTION

The Orbital 3000 uses progressive elliptical motion. The machine produces narrow ellipses at the feed end with broader ellipses at the discharge. This elliptical motion produces a high rate of conveyance of solids from the feed to the discharge. The result is maximum throughput. Orbital motion also provides improved maximum screen life.

## MINIMAL SCREEN COST

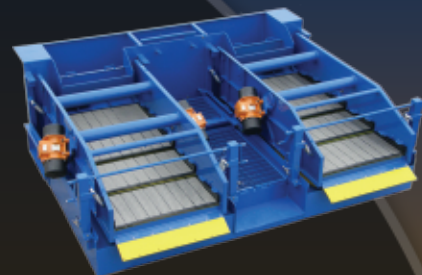
The Vortex Fluid Systems Orbital 3000 shale shaker has been proven to excel, not only performance, but screen life.

## WHEEL ANGLE CHANGE MECHANISM

Shown below is the wheel type angle change mechanism.



**VORTEX**  
FLUID SYSTEMS INC.



## ORBITAL 3000 DUAL

- 60 ft<sup>2</sup> of screening area
- high performance
- dependable and durable
- low maintenance
- competitively priced
- minimal operational costs
- simplification of rig move
- low weir height
- vibration isolation
- minimal noise
- simple to adjust screen angle
- convenient cement bypass

## TOOL KIT

The Orbital 3000 Dual comes with a tool box containing equipment for maintenance.



**Integrity**  
**Reliability**  
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