

# Keenan ORBITAL SPREADER



Versatility - High Work Rate - Trouble-free Operation

# Keenan ORBITAL SPREADER

The Keenan Orbital Spreader is a heavy-duty versatile spreader. It is capable of very high work rates, trouble free operation with a wide range of farm and commercial wastes, and delivers a remarkably uniform spread pattern.

### *Simple Design and Operation*

The basic design of the Orbital is as simple as it is innovative; consisting of a semi-cylindrical tank, rear pushing door and large flywheel at the front.

A heavy-duty hydraulic ram attached to the sliding rear door (Fig.1) pushes the material from the back of the machine towards the rapidly spinning flywheel. Forward speed of the rear door is adjusted by a hydraulic valve (Fig.2), thus allowing application rates to be easily altered. Once set at the desired level, material is fed at a constant rate to the flywheel, ensuring a smooth, consistent spread of material.



Fig.1

The flywheel consists of a solid steel disk with 6 paddles (Fig.3), 1.8m in diameter, rotating at 170 rpm and a central counter-rotating spinner. The action of the flywheel first shreds the material before propelling it through the side opening, where further pulverisation is provided by adjusting the breaker tines (Fig.4) at the exit.

Unloading takes no longer than 1.5 to 5 minutes (depending on material) with the tank being left completely clean and ready for the next load. During loading and transporting, a slurry door (Fig.5) separates the main chamber from the flywheel so that liquids can be easily handled and starting torque is kept low.



Fig.2

Power to the machine is applied through a heavy-duty T80 PTO shaft, featuring shearbolt and over-run protection.

### *Low Power Requirement*

For a machine with such high work rates and large capacity, the power requirement is relatively low at 120Hp. Liquid materials require slightly less power.

### *Excellent Weight Transfer*

Unique to the orbital is the fact that weight transfer of the material is from the rear axle to the drawbar, as opposed to more traditional spreader designs that move the load onto the rear axle. This design coupled with low ground pressure 16 ply flotation tyres and wide spread width (20m) ensures minimum soil compaction and maximum traction at all times.

### *Flexibility to Spread all Types of Waste*

The Orbital accurately spreads a wide range of materials including; lagoon slurry, strawy muck, industrial sludge and poultry manure. The sealed nature of the body ensures that sloppy material is transported and spread without leakage.

Long strawy or fibrous material such as fresh yard muck is easily handled by the Orbital. Centrally mounted on the flywheel is a spinner that is driven in the opposite direction. This shreds material before the flywheel propels it outwards. For very high dry matter material extra bolt on knives can be added.

# Versatility - High Work Rate – Trouble-free Operation

## Robust Spreading Mechanism

The robust flywheel design easily handles small blocks and stones often found in muck and has been engineered not to gather twines or plastics, so as not to impair performance.

## Reliability and Ease of Maintenance Built-in

With only four main moving parts and legendary Keenan build quality, there is little to go wrong with the Orbital. The heavy-duty single drive chain is easily accessible from the front of the machine (Fig.6) and is not in contact with the material being spread. All bearings are situated outside the chamber to prevent damage by twine, muck etc.

The hardened wear plates on the flywheel paddles are easily reversed or replaced. The heavy-duty rubber seals on the slurry door are maintenance free and the seals on the pushing door can be easily adjusted or replaced when necessary.



Fig.3

## Multipurpose Machine - No Need for Optional Extras

The Orbital features an impressive list of standard features including slurry door, hydraulic brakes and lights, low ground pressure tyres and an electronic boost for faster compaction of the load. Giving the Orbital the versatility to spread most types of material without the need for costly extras.

## Award Winning Design

The innovative and proven design of the Orbital has been recognised by the Royal Agricultural Society of England (RASE) who have awarded the Orbital a Silver Medal.



The judges found the Orbital to have a massive work output, each one replacing three or even four earlier spreaders. Spread pattern was described as superb with no blockages or bridging, low soil damage and outstanding reliability. Individual working machines inspected were handling tens of thousands of tonnes a year without breakdown.



Fig.5

## Machinery Service

All technical service for the Orbital is handled directly by the company through a series of service points throughout our markets. As with the renowned Keenan mixer wagon, rapid response to any technical query and immediate help with any mechanical problem is assured at all times.



Fig.4



Fig.6

## KEENAN ORBITAL

### ■ Massive Output

Large capacity, wide spread width and variable emptying time from 1.5 to 5 minutes, spread up to 1,000t/day

### ■ Spreads All Types of Waste

Lagoon slurry, strawy muck, industrial sludge, poultry manure

### ■ Precision Spreading

Even distribution of spread over entire 20m spread width

### ■ Accurate Control

Variable speed of rear door gives full control and consistent application rates

### ■ Excellent Weight Transfer

Weight transfer of material from back axle to drawbar minimises soil compaction & maximised traction

### ■ Simple Reliable Design

4 moving parts, no chains, belts, or beaters in contact with material minimises down time and maintenance

### ■ High Specification

Multipurpose spreading without need for costly extras



# Keenan ORBITAL SPREADER

## NEW FEATURES

VERSATILITY - HIGH WORK RATE - TROUBLE-FREE OPERATION

Due to our policy of continually developing and upgrading our products, we are delighted to introduce a range of new features to the Orbital.

- **Upgraded Rear Pushing Door** - adjustment of pivot points and introduction of second hydraulic ram increases pushing power as spreading commences
- **New Slurry Door Design** - simpler and faster operation with this maintenance free door that pivots upwards, using two hydraulic rams, allowing material to pass underneath
- **New Wear Plates** - flywheel now features bolt on hardened wear plates and hammer tips that are easily reversed or replaced
- **Revised Spinner Design** - incorporating upgraded bearings and seals, this flush fitting disk with 3 paddles has been designed not to collect twines or plastic when shredding material
- **Greater Spreading Control** - new hydraulic flow valve provides even finer spreading control, with 40 incremental settings
- **Simplified Hydraulic Control** - using new sequence valve and manifold block to operate the side door, slurry door and rear pushing door, only 1 spool valve and 2 couplings are required on the tractor
- **Faster Road Speed** - new heavy-duty axle, increased breaking efficiency and tyre specification allows the Orbital to travel at 40KM/h on the road
- **New Drive Train Oil Bath** - new sprocket design and oil bath gives increased chain life and eliminates routine maintenance of the drive system



**Slurry Door** in spreading position, when lowered seals ensure material is kept off the flywheel for easy start-up and to prevent leakage

**Counter-rotating Spinner** with 3 paddles for shredding material

**Flywheel** with reversible, bolt on, hardened wear plates for breaking up and propelling material

**Rear Sliding Door** ensures consistent feed of material on to flywheel

**Semi-Cylindrical Tank** capable of holding solids, sludges and slurries

**Adjustable Breaker Tines** give further control over spread pattern

**Heavy-duty Swivel Hitch** reduces wear on tractor coupling

**Adjustable Hydraulic Flow Valve** controls rate of movement of rear door and thus application rates

**Hydraulically controlled Side Door** ensures no leakage of material during transport

**Low Ground Pressure Tyres** combined with unique weight transfer forward ensure maximum traction and minimum ground compaction

**Keenan** **ORBITAL SPREADER**

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# Keenan ORBITAL SPREADER

## Keenan ORBITAL SPREADER Specifications

<b>Model</b>	12T
<b>Overall length</b>	6.87m
<b>Overall height</b>	3.63m
<b>Overall width</b>	2.56m
<b>Loading height</b>	2.22m
<b>Unladen weight</b>	4790kg
<b>Unladen weight distribution:</b>	
<b>Axle</b>	75%
<b>Hitch</b>	25%
<b>Wheels</b>	16" x 22.5"
<b>Tyres</b>	Alliance 550/60 R 22.5, 16 ply
<b>Axle</b>	2.0m x 0.1m <sup>2</sup> x 0.1m, 8 stud
<b>PTO requirements</b>	1000 rpm
<b>Power requirements</b>	120HP-minimum
<b>Hydraulic requirements</b>	Working Pressure of 2500psi <sup>1</sup>

