John Berends Implements Pty Ltd

AGRICULTURAL ENGINEERS

OPERATOR'S MANUAL

PARTS LIST

Grow-Master Aerator

PRODUCT NO.

0175	Grow-Master 2000 (6'7")
0176	Grow-Master 2400 (7'11")
0177	Grow-Master 2800 (9'3")
0178	Grow-Master 3200 (10'6")

130 FRANKSTON-DANDENONG RD, DANDENONG SOUTH, VIC. 3175 AUSTRALIA
(ABN 79 007 035 369)
PHONE (03) 9791 2494 FAX NO. (03) 9794 5568
berends@johnberendsimplements.com.au www.johnberendsimplements.com.au

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SAFETY

Farm machinery is dangerous if operated incorrectly so please read this manual in its entirety prior to operating the machine.

No operator, however experienced in farm machinery operation, should attempt to use any machine they have not been competently trained to use. Your local Department of Agriculture can help you with training, as can most Occupational Health and Safety offices, Agricultural schools and colleges and farm equipment dealerships.

All instructions relating to tractor safety as per the tractor operators manual should be followed. When making any machine adjustments, stop the tractor engine first and wait for all moving parts to stop. Maintain the tractor to ensure it remains safe to use. Do not operate faulty or damaged equipment.

Extreme caution should be taken when fitting equipment to the tractor's three point linkage. Avoid standing between the implement and the tractor when coupling machinery.

All machines should be mounted and retained correctly. All guards must be kept in place and correctly maintained. P.T.O. shafts must be correctly attached and secured to both the tractor and the machine. Decals must be visible and legible at all times. Keep well clear of all moving parts.

Keep all people and animals at a safe distance from all moving parts. Children must not be allowed to operate this equipment and all passengers must have the same level of protection as the operator.

Wear protective clothing where appropriate.

Never operate when tired (not alert) or in poorly lit areas and stay alert for humps and other hidden hazards. Remove all timber, rocks and foreign objects prior to operation.

Avoid operating the machine in wet conditions.

Exercise extreme caution when changing direction on hills. Avoid sudden movement, sudden breaking, high speeds, rough terrain and steep slopes.

 If machine starts to vibrate, stop tractor, turn off engine and investigate.

 After striking a foreign object or if there are doubts about the performance of the machine, stop the tractor as described and check if machine is making excessive noise.

 Extreme caution must be taken when working in public areas (roadsides etc). It is recommended that flaps and chains are fitted to slashers when operating in public areas. These are available as optional extras. Rear flaps are compulsory in public areas.

 Watch overhead clearance and beware of underground pipes and cables.

 Where fitted, hydraulic hoses and fittings must be maintained so as to prevent damage.

 Do not modify this equipment in anyway, or use it for any other purpose than it was designed to do.

 Never work under unsupported machines or adjust unsupported machines. Do not enter the danger zone where a load being carried by a machine could fall on you, for example a round bale from a bale fork, a log from a carryall or material from a rear end loader.

These instructions should be used in conjunction with any local regulations regarding safety ie OHS.

Maintenance is essential for safe operation. Ensure maintenance is carried out regularly by people qualified to do so. This is of particular importance on P.T.O. drive machines where driven parts can fly off at high speed if wearing parts are not properly maintained.

FAILURE TO FOLLOW THESE INSTRUCTIONS AND PROCEDURES MAY RESULT IN EQUIPMENT MALFUNCTION, OR DAMAGE, SERIOUS INJURY OR EVEN DEATH.

INTRODUCTION:

This manual was developed specifically for the machine you have purchased. The information within is to assist you in preparing, operating and maintaining your machine. Please read and understand the contents of the manual completely before attempting to operate your machine, paying special attention to all safety details. With our policy of continuous improvement, products and specifications may change without notice and without incurring the obligation to install such changes on any unit previously delivered.

Aerators

The Grow-Master Aerator is designed for reducing compaction in pasture, aerating the soil, cultivation of the top soil and generally rejuvenating tired pastures. The two rotors can be adjusted to give various degrees of cut by repositioning the two bolts at the outside end of each rotor.

MACHINE SPECIFICATIONS

MODEL	2000	2400	2800	3200
No. Tines	40	48	56	64
Working width	2000mm	2400mm	2800mm	3200mm
Overall width	2130mm	2530mm	2930mm	3330mm
Weight	458kg	516kg	574kg	626kg

WARRANTY

John Berends Implements P/L warrants each new product sold to be free from defects in material and workmanship, under normal use and service, as outlined in the operators manual, for a period of 12 months.

This warranty is void if any damage to the machine has been caused by misuse or non genuine parts have been used or any repairs have been made by any persons other than authorised dealer service personnel.

The manufacturer/dealer is not obligated to any transportation charges incurred in the repair or replacement of parts.

This warranty does not exclude any condition or warranty implied by the Trade Practices Act 1974 or any other legislation which implies any condition which cannot be excluded.

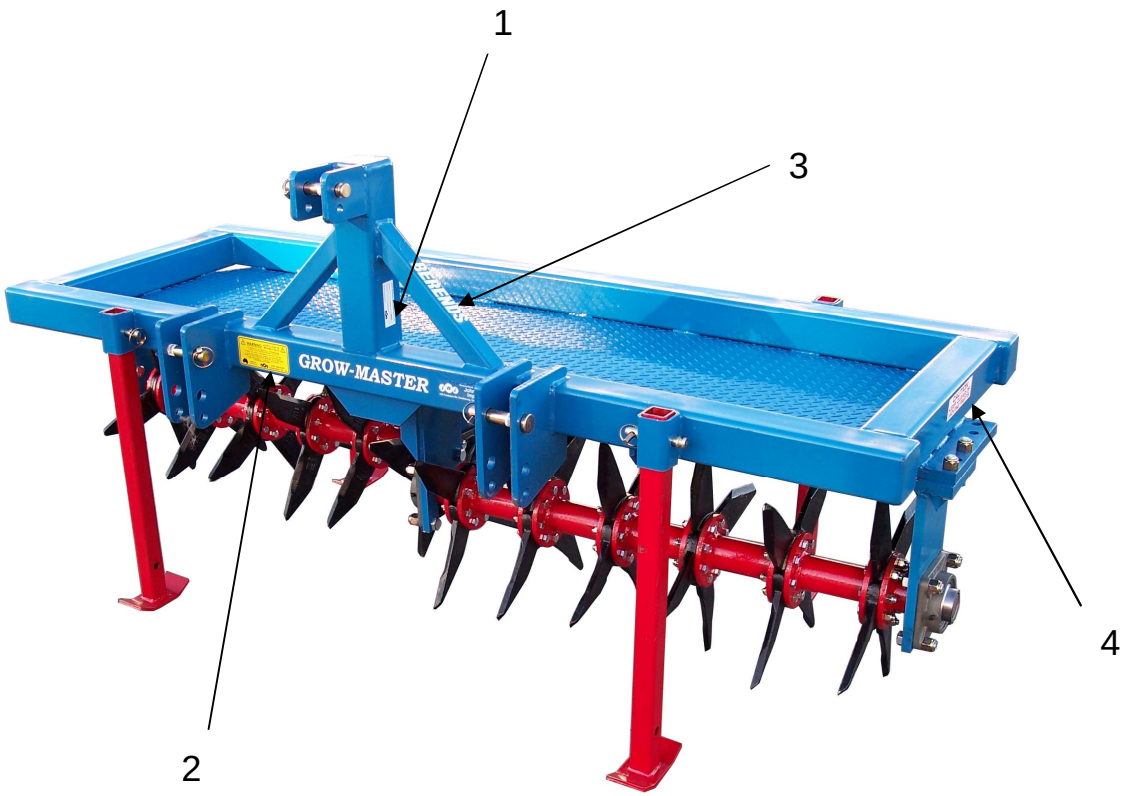
Safety Features

1. SERIAL NUMBER DECAL

2. WARNING DECAL

3. BERENDS DECAL

4. CAUTION DECAL



ASSEMBLY

The Grow-master aerators are completely assembled prior to delivery. When connecting to the tractor, the four support legs should be in place so that the machine is standing unaided on the ground. Always have the machine standing on flat and stable ground (preferably concrete) when not connected to the tractor.

Line the lower linkage arms between the lower linkage plates of the aerator, slide the linkage pins through the holes and secure with linch pins. Attach the top link to the machine. The lower linkage arms must be level with each other. The tractor top link may need to be adjusted to ensure the machine is parallel to the ground when working. It may be necessary to remove the tractor drawbar to prevent interference with the aerator.
Once the machine is securely connected to the tractor, lift it slowly off the ground. Ensure that all safety procedures are followed as per our safety instructions. Remove the pins from the stands and slide the legs up and out of the way. Secure the legs in the lowest hole position with the pin.

CAUTION:
At no stage should the machine be used to transport people. Never allow passenger to ride on the aerator.

OPERATION

Once all safety procedures have been followed, start the tractor and raise the aerator off the ground.
The best time to aerate is when the soil has some moisture in it yet is dry enough for normal tillage practices. Do not operate in water logged soils. It is best to aerate in a perpendicular direction to normal traffic. For example, if the tractor is usually operated in a north-south direction during other applications, then travel east-west with the aerator. Alternatively, you can operate in both directions in a criss-cross fashion.

Adding Ballast

Depending on the soil conditions, the job required and the horse power of the tractor, it may be necessary to add ballast (weight) on top of the machine. The frame has been designed to carry additional weight.
Always secure any additional ballast so that it can not fall off under any conditions. Allow for steep and undulating terrain.

CAUTION:
Do not over-load the frame with ballast. Always refer to the tractor specifications to determine the lifting capabilities of the tractor. Take into account the distance from the machine to the tractor, the speed of the operation and the nature of the terrain. Front counter weights may be required.

Rotor Angle

CAUTION:
Be careful when making rotor adjustments as the tines are sharp. If altering rotor whilst the stands are connected ensure that the rotor is adequately supported before making any

adjustments. If it is connected to the tractor, gently lower the aerator so that the tines are resting on the ground. Put the tractor in park and switch it off before doing any work.
It is advisable that the rotor angle be changed whilst connected to the tractor as the rotor is heavy and can be difficult to reposition whilst off the ground.
There are a number of different angle settings for the two rotors. The adjustments are made in the hanger bracket at the outer end of each machine. The lowest angle position (as supplied from the manufacturer) is when the hanger are positioned as far forward (towards the tractor) as possible. This will equate to approximately 2.5° angle on the tines and will result in the least aggressive setting. You would use this position where you want to minimise the cultivation effect of the tines and use them mainly as a aerator only. Every new hole position (away from this point) equates to approximately 2.5° of additional angle. The most aggressive angle is approximately 10° and is used where cultivation is required.

When making any alteration to the rotor angles, ensure the nyloc nuts are adequately tightened. If regular alterations are made, it may be necessary to replace the nylocs nuts with new ones or use a spring washer. Nyloc nuts lose their effectiveness at remaining tight when they are continually adjusted.

Speed

When travelling, ensure the ground speed is proportionate to the weight of the machine and the tractor used. The optimum operating speed is between 7-10kph. It is advised not to use it above 12kph as this can cause excessive wear to the tines. Ground speed may need to be lower on uneven ground to prevent the aerator bouncing around. When travelling, with the aerator raised off the ground, lift the machine as high as possible on the linkage. This will reduce the unit bouncing up and down excessively on the linkage. When doing this ensure any ballast attached to the machine is secure and can not come off.

Turning

Turning with the aerator engaged in the ground is not advisable unless the optional towing kit is fitted. This will place undue stress on the tines and may cause breakage. Be careful when turning on steep slopes, particularly with ballast added, as the machine may become unstable

Stopping

Lower the aerator, stop the tractor engine (removing the ignition key) and apply the park brake. If removing from the tractor, ensure that the four stands are in position and that it is sitting on flat and stable ground.

MAINTENANCE

When doing any type of maintenance on this machine, always follow the safety steps described in this manual. Use only authorised genuine parts for replacement.
The aerator must be adequately supported under its body (Make certain it cannot move/fall). Use the four stands supplied, to do this.

Bolts & Nuts
Keep all bolts tight, in particular rotor mounting bolts.

Rotors
When installing/removing rotors, it may be easier to have the aerator inverted and to use a hoist to position the rotor.

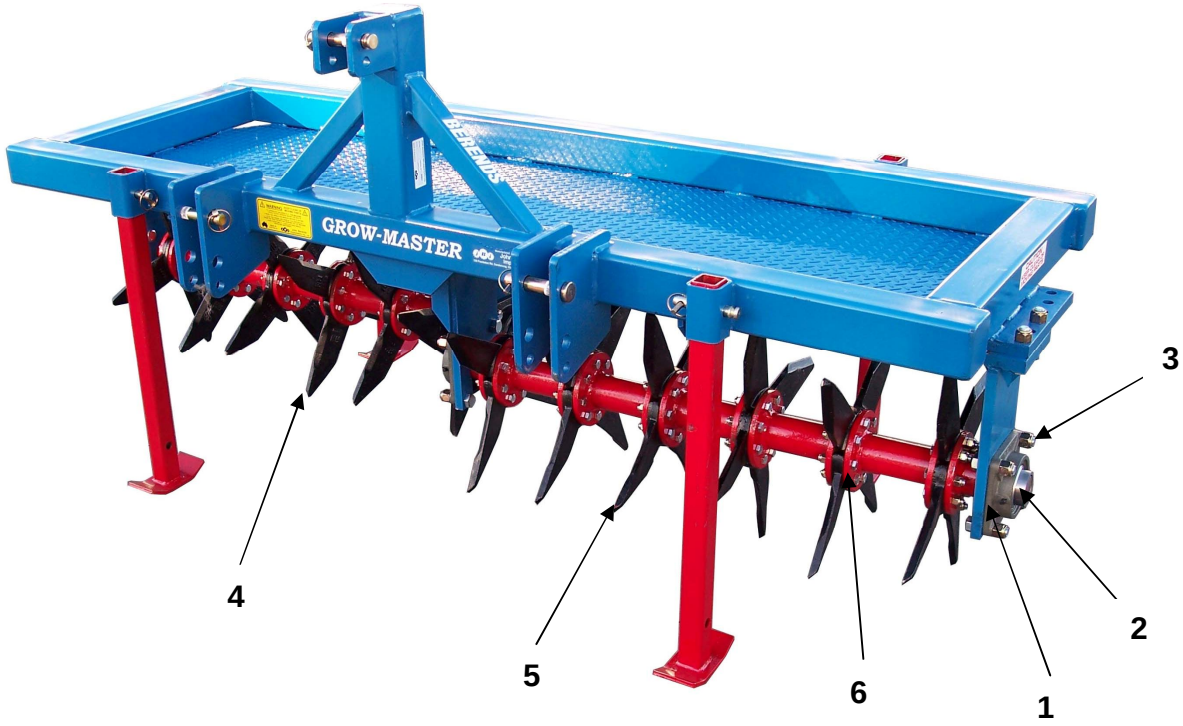
Rotor Bearings
These are a greasable bearing with a grease nipple situated on each housing. The bearings are best greased when in the 2.5° settings (first position). The other three more aggressive settings are unlikely to take the grease effectively due to the location of the grease inlets when angled. It is suggested that if the rotors are mostly left in either of these two positions, that they be moved back to 2.5° for greasing purposes.
Bearings are easily replaced by twisting them into the bearing housing with the grub screw end of the bearing facing the outside of the machine.
Do not over grease the bearings as this will push the seals out. A couple of pumps with a grease gun every 50 hours should be sufficient.
Place some grease on the stub axles prior to fitting the bearings to ensure they come off easily at a later date.

Tines
Ensure tines are not excessively worn and keep all bolts/nuts tight. Check them after the first days use as they may initially loosen as the tines are first engaged in the ground.

SPARE PARTS

ORDER SPARE PARTS THROUGH YOUR ORIGINAL SUPPLIER OR YOUR LOCAL JOHN BERENDS IMPLEMENTS DEALER.

Always quote the machine serial number or product number, spare part number and its part name as stated in the operator's manual.



Grow-master Aerator

Key No.	Part No.	Quantity	Description
1	1930	4	Rotor housing
2	1628	4	Rotor bearing
3	3938	16	Rotor mounting bolts/nuts
4	3939	ar	8" Aerator tine – right hand (RH)
5	3940	ar	8" Aerator tine – left hand (LH)
6	3941	ar	Tine mounting bolts/nut assembly