



John Berends Implements Pty Ltd

AGRICULTURAL ENGINEERS

OPERATOR'S MANUAL PARTS LIST



Extra Heavy and Hydraulic Grader Blades

PRODUCT NO.

0039	7' Grader Blade - Extra Heavy Model
0040	8' Grader Blade - Extra Heavy Model
0041	Extra Heavy Hydraulic tilt option - in lieu of ratchet
0042	Extra Heavy Hydraulic tilt option - as spare part
0016	Grader Blade Wheel Kit, suit EH Model, Holden Type
0013	8' Hydraulic Grader Blade complete with 3 Rams & Hoses
0014	8' Hydraulic Grader Blade complete with 2 Rams & Hoses
0028	10' Hydraulic Grader Blade complete with 2 Rams & Hoses
0017	10' Hydraulic Grader Blade complete with 3 Rams & Hoses (Tilt and angle hydraulic, offset manual)
0026	Wheel Kit suit Hyd G/Blade, new type, manual, ratchet link
0027	Wheel Kit suit Hyd G/Blade, new type, hydraulic, c/w rams and hoses

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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 braking, high speeds, rough terrain and steep slopes.

 If machine starts to vibrate, stop tractor using method as described in the operation section

 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 in these areas. These are available as optional extras. Rear flaps are compulsory in public areas.

 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.

Extra Heavy and Hydraulic Grader Blades

The Extra Heavy (EH) grader blade is available in 7' and 8' models. It has an easy to adjust tilt system with the option of either manual or hydraulic option. All models are fitted with hardened reversible cutting edges and the blade is able to be rotated 360 degrees for forwards and backwards operation. There are 24 different angle positions which can be adjusted from the tractor seat and four offset positions to both the left and right. All models are available with an optional wheelkit for depth control which is adjustable from the tractor seat. The Hydraulic grader blade comes as standard in 8' with options of 7' and 10'. The two ram and three ram models are exactly the same but for the exchanging of one ram for a manual link. The hardened cutting edge is fully reversible and the blade can be run forwards or backwards with full hydraulic control. The hydraulic grader can be angled up to 45 degrees both ways and can be offset up to 600mm left or right. The tilt option is in excess of 30 degrees left or right. All models are available with an optional 14" Holden wheelkit for depth control which can be operated manually or hydraulically.

MACHINE SPECIFICATIONS

MODEL	EH Model	Hydraulic
Cutting Edge Width	7' & 8'	7', 8' & 10'
Mouldboard Thickness	10mm	10mm
Mouldboard Height	500mm	500mm
Tractor H.P.	60-120 H.P.	75-200 H.P.
Tractor CAT connection	Cat 2	Cat 2
Nett Weight (kg)	460-490	555
No. offset positions	8	Ram operated
No. angle positions	24	Ram operated

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

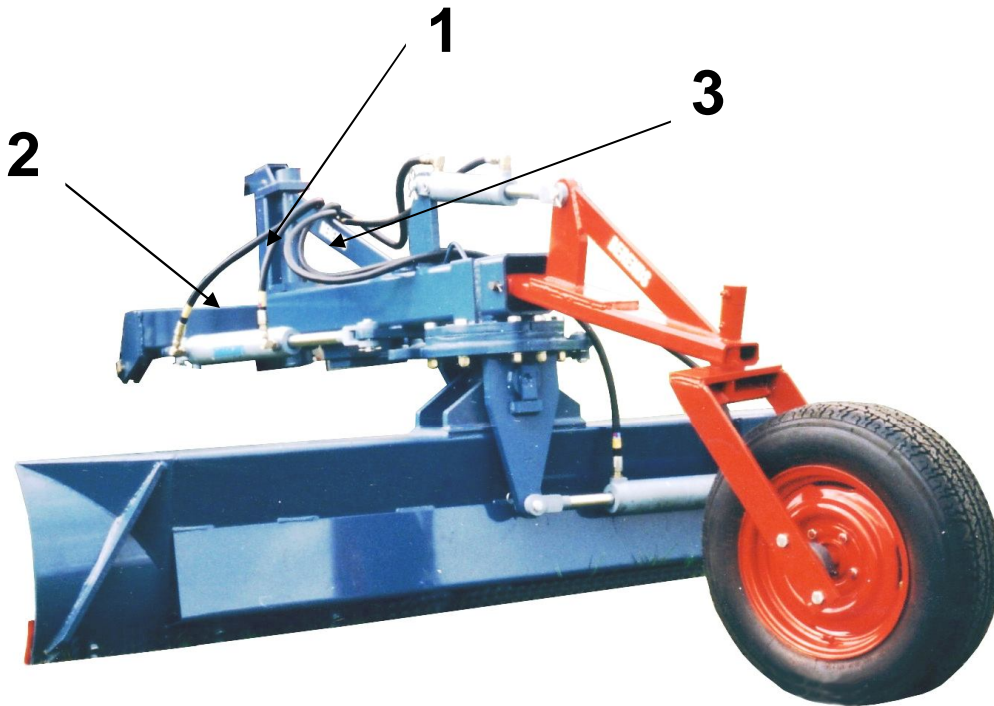
1. SERIAL NUMBER DECAL



2. WARNING DECAL



3. BERENDS DECAL



ASSEMBLY

Line the lower linkage arms between the lower linkage plates of the grader, slide the linkage pins through the holes and secure with lynch pins. Attach the top link to the grader. The machine should then be levelled looking both fore and aft and across. As the blade features a separate tilt arrangement the levelling should be done in relation to the headstock and beam rather than the mouldboard of the blade. Sway chains or bars should be used to prevent the machine swinging around in use.

Hydraulic Grader Assembly

- Support the bottom (blade section) of the grader blade so that it is standing upright in a position similar to when it is being used
- Remove all circular locking plates (and bolts) from the turntable before assembly.
- Using a forklift or crane, lift the top (linkage section) of the grader blade making sure it remains horizontal to the ground. Position the round turntable section of the top over the swivel section of the bottom.

Make sure all contact points of the top and bottom are sufficiently greased.

- Lower the turntable until it fits neatly into position into the bottom swivel assembly.
- Insert the section of metal packing strap provided into the small gap between the round turntable plate and the swivel section. This acts as a wear plate so it will be a tight fit. If it is too tight, shorten the strap accordingly.
- Place the semi-circular gaskets into position on the swivel head assembly. There are two thick and two thin gaskets so make sure that they are matched up. Use both gaskets to start with and if the blade feels too sloppy during use then remove appropriate gasket(s)
- Place the two circular locking plates onto the swivel assembly and secure with bolts, spring washers and nyloc nuts supplied. Tighten with a spanner until all spring washers are flattened. Check that the grader blade can still be angled by hand. It should not be too loose but just enough to move. Tighten accordingly.

Note: There are two different size bolts. The four shorter bolts must be used at both the front and the back of the turntable (where the tilt pin interfaces). It may be necessary to tighten the side bolts first then turn the top slightly to access the other bolt holes.

On the 8' models the angle and offset positions both use 3"x12" rams (code 255330-305) with the extended clevis ends facing the rear of the machine. The 10' model uses 3 ½" x 12" rams (code 255335-305) for these two functions. The tilt position uses the 3"x10" ram (code 155330-254) with the extended clevis facing the turntable.

Berends Hydraulic Grader Blade- Fitting of Hoses.

TILT	1 – 3750mm - Long Outside Tilt
	1 – 3500mm - Long Inside Tilt
ANGLE	1 – 2040mm - Long Tractor End
	1 – 2370mm - Long Far End
OFFSET	2 – 2280mm - Both Ends

OPERATION

Once all safety procedures have been followed, start the tractor and raise the grader off the ground.

Extra Heavy Model

On the Extra Heavy Model there are four positions of offset on either side of the blade. The offset adjusting arm has to be mounted on the side on which the blade is required to be offset, left for left and right for right. It is adjusted by fitting the pin at the mouldboard end of the adjusting arm in one of the four alternative holes in the beam. To do this level the machine so it will not swing around under its own weight, then remove the pin, move the blade beam across until the hole in the offset arms lines up with a hole in the beam at the desired offset.

The second adjustment is the angle. The blade is locked in position by a locking lug under the beam. To change the angle of the blade this locking lug is released by pulling on the lever situated on top of the blade beam near the main pivot for the blade angle. This lever has a hole at the top so a rope can be fitted to allow the lever to be operated from the tractor seat if required. The blade is not supplied with a rope. With the lever pulled down the blade can be swung around 360 degrees, the blade simply needs to be moved to the required angle and the lever released. The locking plate will locate in the nearest locking tooth as it is spring loaded.

The third adjustment is tilt. The blade can be tilted to the right or left in order to facilitate either levelling when the tractor is working at an angle (ie cutting a level track in the side of a hill) or forming a type of contour on a level surface (ie crowning up a road or cutting a drain). The blade is simply tilted to the required angle by lifting it up and turning the ratchet arm. Do not attempt to adjust the ratchet while the blade is in work. Alternatively, the tilt can be operated using the optional hydraulic ram and hoses.

Hydraulic model

On the Hydraulic model ensure the angle adjustment circular plate is secure. The circular plate bolts must be secured tightly and the blade must be able to be swivelled by hand when the rams are disconnected. However the angle adjustment must not be able to move too freely as this may cause wear of the plate. Angle is controlled through the remotes on the tractor.

Offset is controlled by either hydraulics (3 ram model) or via the manual adjustment arm (2 ram model). The manual adjustment arm consists of tractor top link with screw type adjustment. To adjust this, level the machine so it will not swing around under its own weight. Tilt is controlled through the remotes on the tractor

Wheel kit

The wheel is adjusted by taking the weight off the wheel (by resting it on a bank or the like by use of the three point linkage) and adjusting the ratchet or hydraulic cylinder. The wheel should not be adjusted while the blade is in use, as considerable force can be exerted on the wheel when the blade is digging into the ground. The wheel kit is for use on fine finishing work on tracks and makes the blade semi-mounted. The wheel is not designed to carry the weight of the tractor, so the wheel should be removed prior to rough work being carried out in the paddock. When transporting the machine over rough ground be careful that the wheel does not try to carry the back of the tractor, ie when crossing a ditch, as this will result in damage. Ensure the wheel is facing backwards before adjusting the blade angle or offset. When it is facing forward it may interfere with the blade do not reverse the blade on the ground with the wheelkit mounted as this will cause it to swivel around and possibly interfere with the mouldboard.

STOPPING

Lower the grader blade, stop the tractor engine (removing the ignition key) and apply the park brake. Ensure that the grader blade is well supported when not in use.

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 grader blade must be adequately supported under its body (Make certain it cannot fall).

Wheel kit

Check tyre pressure. Wheel must run freely on axle and yoke must be lubricated. Note: Bearings are replaceable if necessary. Ensure the wheelkit turns freely on the yoke.

Hydraulic Fittings and Hoses

Before doing any maintenance on the hydraulic system, release the oil pressure. Be careful when searching for oil leaks as oil escaping under pressure can be invisible and may penetrate the skin.

If leaving the grader blade outside for an extended time it is advisable that the chrome cylinder rods be lubricated with an appropriate lubricant to prevent corrosion.

Clean all dirt and foreign matter away from the rods prior to using so that seals do not become contaminated.

Lubrication

Both the EH and the Hydraulic graders have greasable points. It is essential that the machine is greased daily whilst working.

Any parts not kept lubricated can seize up over time particularly if they are not regularly used. A good example is the pins which secure the offset arms. It is advised that they are lubricated well before positioning them. This will aid in removing them later on.

The Hydraulic grader blade angle adjustment assembly must be kept lubricated. Underneath the turntable is a grease nipple. If the machine is not kept lubricated, it may be possible that the swivel bearing assembly may bind to the circular plate. You can not over-lubricate this area.

SPARE PARTS

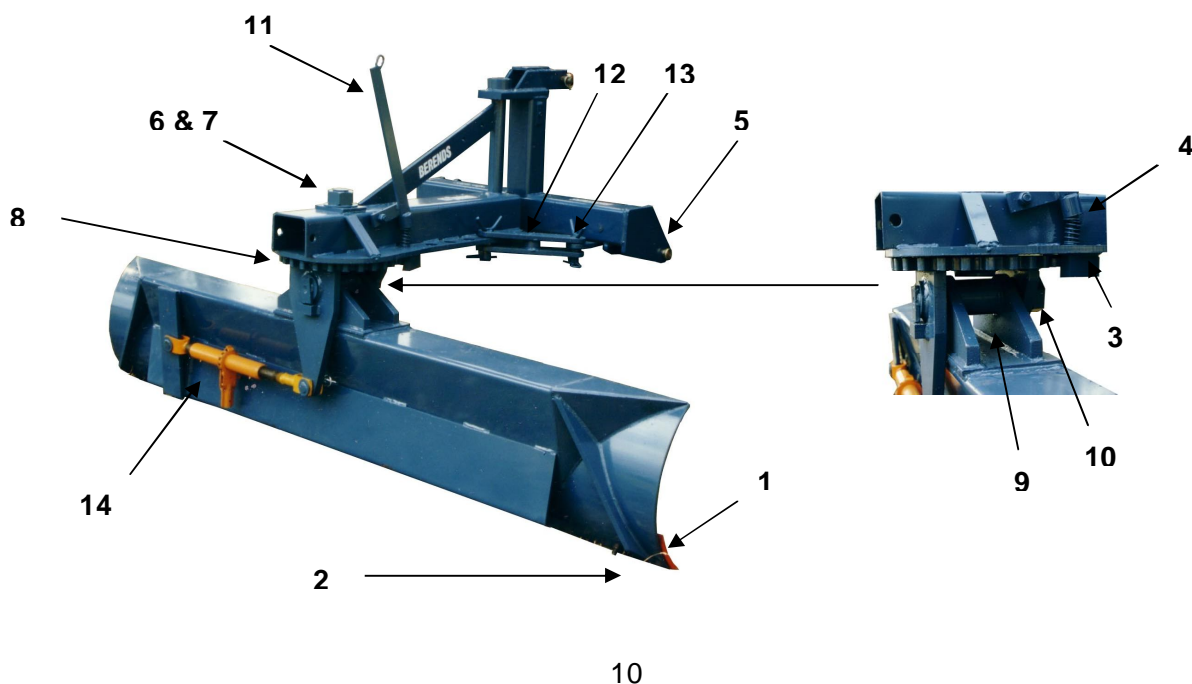
ORDER SPARE PARTS THROUGH YOUR ORIGINAL SUPPLIER OR YOUR LOCAL JOHN BERENDS IMPLEMENTS DEALER.

Always quote the machine serial No. or product No., spare part number and its part name as stated in the operator's manual.

7' Extra Heavy Grader Blade 0039

8' Extra Heavy Grader Blade 0040

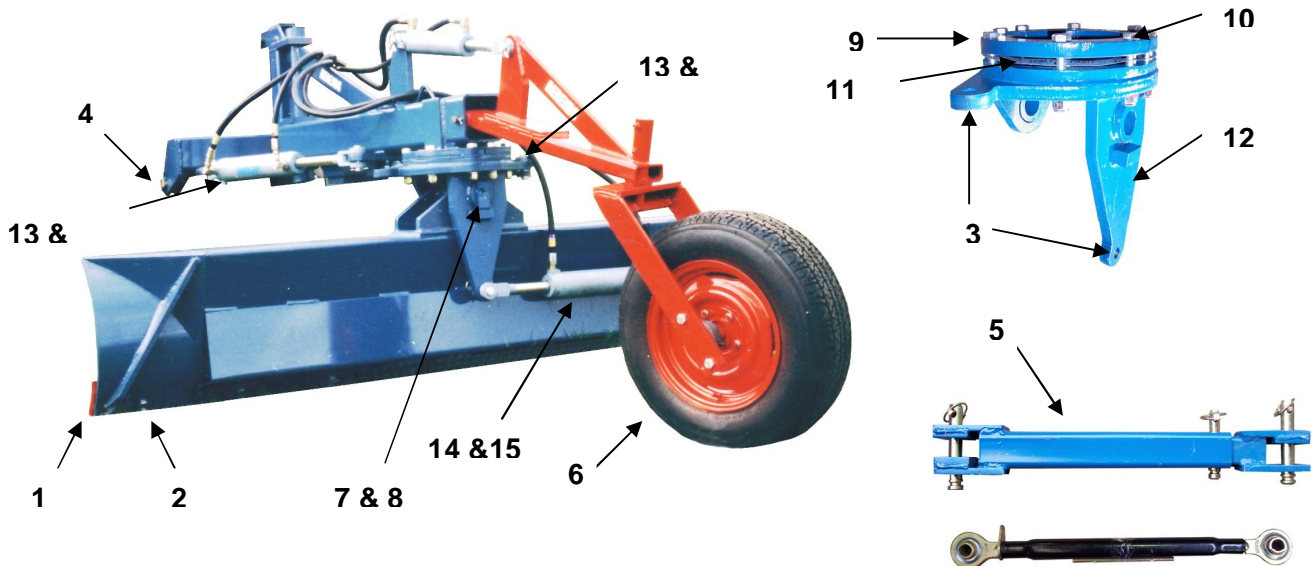
Key No.	Part No.	Quantity	Description
1	1504	1	7' Cutting edge
	1506	1	8' Cutting edge
2	1508	ar	Bolt and nut to suit cutting edge
3	1933	1	Locking index (three teeth) inc. bolt/nut/washers
4	1939	1	Spring, suit locking index
5	1972	2	Cat 2 push through pin
6	1498	1	EHD pivot pin (65mm)
7	1494	1	EHD pivot nut
8	1488	1	EHD Cog (complete with pin & support legs)
9	1486	1	EHD tilt pin (2")
10	1485	1	EHD tilt nut
11	1484	1	Angle adjustment lever
12	1483	1	Offset arm
13	1482	2	Offset arm pins (inc. R-clip)
14	1978	1	Tilt Ratchet (inc. clevis pins/clips)



8' Hydraulic Grader Blade 0013 & 0014

10' Hydraulic Grader Blade 0017 & 0028

Key No.	Part No.	Quantity	Description
1	1506	1	8' Cutting edge
		1	10' Cutting edge (consists of 4' (1500) and 6' (1502) pieces)
2	1508	ar	Bolt and nut to suit cutting edge
3	3377	6	Bronze bush (all ram pivot points)
4	1972	2	Cat 2 push through pin
5	1511	1	Manual adjusting arm (inc. pins) – pre 2006 (superseded)
	3872	1	Manual adjustment arm (inc bolts) – post 2006
6	0026/0027	1	Wheel kit (see breakdown on next page)
7	1521	1	Turntable tilt pin
8	1522	1	Turntable tilt pin nut
9	1523	2	Turntable plates (half moon)
10	1524	8	Turntable bolts/nuts
11	1525	4	Turntable gaskets (half moon)
12	1526	1	Complete turntable (jnc bolts/nuts/plates/gaskets)
13	1492	1	Hydraulic angle/offset ram inc. clevis pins/clips suit 8' model
	3873	1	Hydraulic angle/offset ram inc. clevis pins/clips suit 10' model
14	1489	1	Hydraulic tilt ram inc. clevis pins/clips
15	1527	1 pair	Hydraulic hoses suit tilt (inc. fittings)
16	1528	1 pair	Hydraulic hoses suit angle (inc. fittings)
17	1529	1 pair	Hydraulic hoses suit offset (inc. fittings – 3 ram model only)



Wheelkit suit Hydraulic, Extra Heavy & Heavy Duty Grader Blades 0026

Key No.	Part No.	Quantity	Description
1	1802	1	Main arm
2	1803	1	Yoke & sleeve
3	1804	1	Axle (inc. studs/nuts)
4	1927	2	Wheel bearing
5	1965	2	Bearing housing
6	3247	1	Rim
	3248	1	Tyre
7	3210	1	Ratchet

