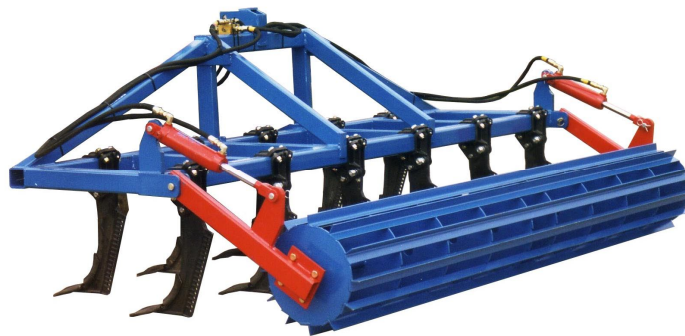




# John Berends Implements Pty Ltd

AGRICULTURAL ENGINEERS

## OPERATOR'S MANUAL PARTS LIST



### Deep Tillage Ploughs

**PRODUCT NO.**

|      |                             |
|------|-----------------------------|
| 0320 | 5 Tine Deep Tillage Plough  |
| 0322 | 7 Tine Deep Tillage Plough  |
| 0324 | 9 Tine Deep Tillage Plough  |
| 0326 | 11 Tine Deep Tillage Plough |

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## Safety Features

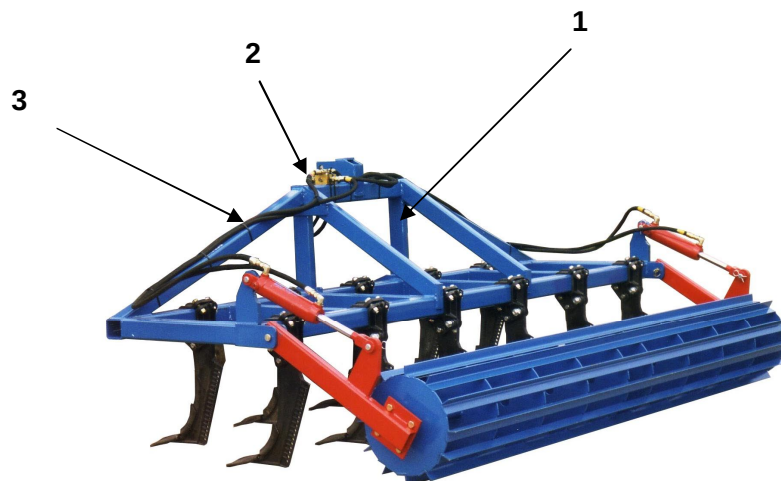
### 1. SERIAL NUMBER (Decal)



### 2. WARNING DECAL



### 3. BERENDS DECAL



**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.

**Ground Breakers**

The Deep Tillage Ploughs are designed to loosen the soil prior to cultivation and for aerating pastures without overly disturbing the top soil. Retaining surface residue will prevent top soil erosion and reduce moisture loss through evaporation. It also less likely to create clods on the surface, leaving a smoother finish. For a clean finish, it is most effective when there is some moisture in the soil but not too wet. Compact soils prevent root development and reduce water absorption. By loosening the soil, roots are able to access groundwater during dry periods.

**MACHINE SPECIFICATIONS**

| MODEL                  | 0320                    | 0322                    | 0324                    | 0326                    |
|------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| No. Tines              | 5                       | 7                       | 9                       | 11                      |
| Machine Width          | 1840mm                  | 2450mm                  | 3060mm                  | 3670mm                  |
| Frame Size             | 100 x 100 x 9mm RHS     | 100 x 100 x 9mm RHS     | 100 x 100 x 9mm RHS     | 100 x 100 x 9mm RHS     |
| Tractor H.P.           | 75 HP Plus              | 100 HP Plus             | 145 HP Plus             | 175 HP Plus             |
| Tractor CAT connection | 3 Point Linkage – Cat 2 | 3 Point Linkage – Cat 2 | 3 Point Linkage – Cat 2 | 3 Point Linkage – Cat 2 |

**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



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.**

## **ASSEMBLY**

The frame and tine components are extremely heavy so ensure that all parts are adequately supported when assembling. The best method is to raise the frame horizontally off the ground allowing enough clearance underneath to mount the tines without them touching the ground. Support the frame adequately so that it can't fall over. This process would require a forklift or similar.

Always ensure that assembly is carried out on flat even ground.

It may take two people to mount the tines onto the frame. Tine spacing is up to the discretion of the operator and the conditions it is to be worked in. Generally, the tine spacing is set at 12" centres. Secure the tines with the clamp plates and bolts provided. When all tines are fitted, lower the frame to the ground so that it is resting on the tines.

Line the lower linkage arms between the lower linkage plates of the machine, slide the linkage pins through the holes and secure with linch pins. Attach the top link to the plough. The lower linkage arms must be level with each other.

It is possible that once optimum depth is achieved, the tines may keep trying to pull into the ground. It is then likely that the top link is too short and may need to be lengthened.

If the top link is too long it will result in the tines trying to lift out of the ground. Adjustment will vary depending on working depth and the tractor model.

To make adjustment easier to regularly alter, a hydraulic top link can be used.

## **OPERATION**

Once all safety procedures have been followed, start the tractor and raise the Deep Tillage Plough off the ground. Ensure the tine spacing is acceptable and all tines are secure.

The Deep Tillage Plough leaves a cleaner soil surface than most other rippers and ploughs. However, in different conditions the result will vary. If soils are ripped when it is too wet or too dry they will tend to gape or produce excessive clods. Ideally, the machine should be used when conditions are optimal, preferably with some soil moisture at around 50% or less of field capacity. If conditions are too dry, then larger clods may form. If conditions are too wet, then plant material can collect and stick to the leading edge of the tines creating gaps in the surface.

The best time for using the Deep Tillage Plough is just before rain. If the outlook for rain is not good then it is suggested that the tine spacing be increased so that only half of the surface profile is disturbed. This will ensure that the root matter which is left undisturbed is not exposed to the dry/hot conditions.

Be careful working in areas where there are rocks. Most rocks will probably be lifted to the surface. If there are rock layers under the soil, adjust the tine depth to be above these layers. Failure to do so will result in breaking shear pins or possibly worse. This is what the shear pins are designed for. If they break, ensure that they are only replaced with genuine shear pins as other brands/types may have different breakout forces which may compromise the strength of the rest of the tine.

### **Working Depth**

In most cases, Deep Tillage Ploughs are used to break open the hard pan. Therefore, the operator needs to know at what level the hard pan is situated. It is of not much point digging well below the hardpan as this takes more horsepower and fuel for no real additional benefit. Once the bottom of the hardpan is found and measured, the tines can be set to go no more than 4" (100mm) below this hardpan. If there is no hard pan to break then the tines can set at full working depth of approximately 16" (400mm).

Wheelkits are available and can be adjusted for height. These help in controlling how deep the plough will dig.

### **Working Speed**

Tractor speed is governed by the condition of the soil and the HP of the tractor. An approximate ground speed would be around 8kph.

### **Turning/Reversing**

Lift the Deep Tillage Plough out of the soil. Never turn before the tines are completely free from the soil, otherwise the innermost tines will be forced sideways and backwards. When making part turns with the plough in the soil, you must use so big a circle that the innermost tines never move backward.

Never reverse with the tines in the soil, but make sure the machine is fully raised. When reversing in the soil the tines can very easily be overloaded, which later leads to shear bolt breakages.

### **Stopping**

Lower the machine, stop the tractor engine (removing the ignition key) and apply the park brake. Ensure that the plough is well supported when not in use. The tines do sit evenly on the surface which will result in the frame tipping back slightly. It is relatively stable in this position but be careful not to place excessive weight on the front or back of the frame unless it is well supported.

## **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 Deep Tillage Plough must be adequately supported under its body (Make certain it cannot fall).

### **Tines & Shins**

Clay and sandy soils can cause excessive wear on tines. Points should be replaced before they wear through to the main shank.

Replace shins once excessive wear occurs.

### **Bolts**

Ensure all bolts are regularly checked and kept tight. Replace shearbolts with genuine ones only.

## 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.

### Deep tillage plough (0320-0326)

| Key No | Part No | Quantity | Description                                |
|--------|---------|----------|--------------------------------------------|
| 1      |         | 1        | Deep tillage plough frame                  |
| 2      | 3698    | ar       | Deep tillage plough tine assembly complete |
| 3      | 3699    | ar       | 24" length cast shank only                 |
| 4      | 3700    | ar       | Shin – standard                            |
|        | 3810    | ar       | Shin – heavy duty                          |
| 5      | 3701    | ar       | Shear pin (inc. clips) – standard          |
|        | 3703    | ar       | Shear pin (inc. clips) – heavy duty        |
| 6      | 3702    | ar       | Standard Point                             |
|        | 3811    | ar       | Tungsten Point                             |
|        | 3812    | ar       | Mulch blade assembly (not shown)           |
| 7      | 1970    | 2        | Cat 1/2 stepped push through pin           |
| 8      | 3875    | 1        | 14" coulters disc                          |
|        | 3876    | 2        | Coulter bearings                           |
|        | 3877    | 2        | Coulter bearing housings                   |
|        | 3878    | 1        | Coulter centre bolt/nut                    |
|        | 3879    | 1        | Coulter yoke (inc pivot pin)               |
| 9      | 3880    | 2        | Crumbler arms                              |
| 10     | 1929    | 2        | Crumbler bearing                           |
| 11     | 1930    | 2        | Crumbler bearing housing                   |

