



John Berends Implements Pty Ltd

AGRICULTURAL ENGINEERS

OPERATOR'S MANUAL PARTS LIST



'S' Tine Cultivators

PRODUCT NO.

	HEAVY DUTY – 45 x 12mm tines
0300	2.4m (16 Tines)
0301	3.0m (20 Tines)
0302	3.6m (24 Tines)
	STANDARD - 32 X 10mm tines
0311	1.2m (12 Tines)
0312	1.6m (16 Tines)
0313	2.0m (20 Tines)
0314	2.4m (24 Tines)
0315	2.8m (28 Tines)
0316	3.2m (32 Tines)
0317	3.6m (36 Tines)

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Safety Features

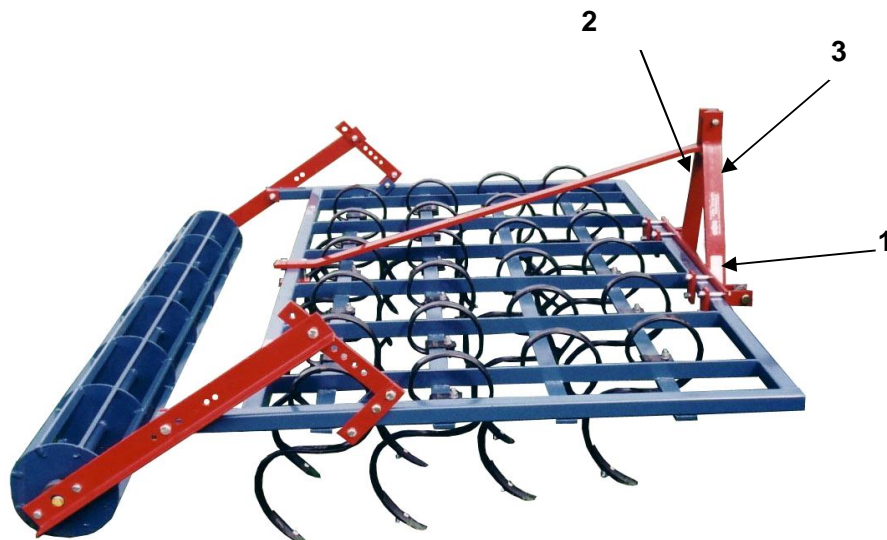
1. SERIAL NUMBER (Decal)



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.

'S' Tine Cultivators

The "S" Tine cultivators are most commonly used for secondary cultivation, although they can be used for primary cultivation in lighter soils. The factors which determine which cultivator one should purchase are the conditions of the soil, the horsepower of the tractor and, most importantly, what ones objectives are. For example, are we turning the soil over to plant a crop or do we just wish to aerate an old pasture. All cultivators have the option of a wheel kit for depth control, and in the case of the "S" Tine cultivator, a crumbler is also available for controlling depth and levelling out clumps and clods. All machines have reversible points and all spare parts are available from the manufacturer

MACHINE SPECIFICATIONS

MODEL	Standard 'S' Tines	Heavy Duty 'S' Tines
No. Tines	12- 36	16-24
Tine Size	32mm x 10mm	45mm x 12mm
Machine Width	1.3m to 3.7m	2.5m to 3.7m
Frame Size	50mm x 12mm flat	50mm x 50mm RHS
Tractor H.P.	2 HP per tine	3 HP per tine
Tractor CAT connection	3 Point Linkage – Cat 1/2	3 Point Linkage – Cat 1/2

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

Main Frame

Attach the headstock (A-frame) and secure with plates and 3 ½" x ½" bolts provided. Attach long support stays to headstock with 2" x ¾" and secure with plates and 4" x ½" bolts (centre stay) and 3 ½" x ½" bolts/50 x 16mm bolts (outside stays – only on frames larger than 2.8m). Mark out the tine positions on the frame using the 'set-up' sheet at the back of the manual (p 9). When mounting the tines there are two main methods of doing it:

a) Raise the frame horizontally off the ground allowing enough clearance underneath to mount the tines without them touching the ground (approx 500mm). Support the frame adequately so that it can't fall over. This process would require a forklift or similar.

or

b) Using a crane or jib, lift the rear of the cultivator so that the frame is standing vertically, resting with the headstock on the ground. Ensure that the frame is securely supported at all times whilst in this position.

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

Secure the tines with the clamps and 50 x 12mm bolts provided. When all tines are fitted, lower the frame to the ground so that it is resting on the tines.

Crumbler (optional)

Insert bearing into bearing housing and secure to outside of main arm (angle) with 1 ¾" x ½" bolts. Attach main crumbler arm onto the crumbler shaft and secure bearings with grubscrew. Position crumbler behind the frame and secure crumbler arms to the outside of frame 'end bars' using the 4" x 5/8" bolts. Ensure the square block washer is fitted on the inside to prevent bolt pushing through frame when tightening up. Attach short plate (3 holes) to outside of frame using 3 ½" x ½" bolts provided. Use remaining adjustable bracket (9 holes) to connect crumbler arm to short plate with 50 x 16mm bolts,

Line the lower linkage arms between the lower linkage plates of the cultivator, slide the linkage pins through the holes and secure with lynch pins. Attach the top link to the cultivator. The lower linkage arms must be level with each other. The tractor top link may need to be adjusted to ensure the cultivator is parallel to the ground when working. However, never have the top link horizontal as this will cause the cultivator to move sideways and make it difficult to track

OPERATION

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

Working Speed

Depending on the soil condition, tractor speed should be at 8-12 kph. This will produce the best crumbling affect without leaving large clods. It is advised that travelling fast with a light cultivation a couple of times is more beneficial than a slow pass doing heavy cultivation. A weeks interval between passes allows weeds to germinate in between passes which are subsequently turned over in the second pass.

Turning

Lift the cultivator 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 cultivator in the soil, you must use so big a circle that the innermost tines never move backward.

Reversing

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

Stopping

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

CAUTION: When the cultivator is on the ground, yet not linked to the tractor, it may be unstable. Make sure something is put in place to keep the machine balanced. ie chock up the linkage with a block of wood.

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

Wheel kit

Check tyre pressure. Wheel must run freely on axle.
Note: Bearings are replaceable if necessary.

Crumbler

Ensure both bearings are kept lubricated with bearing grease.

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.

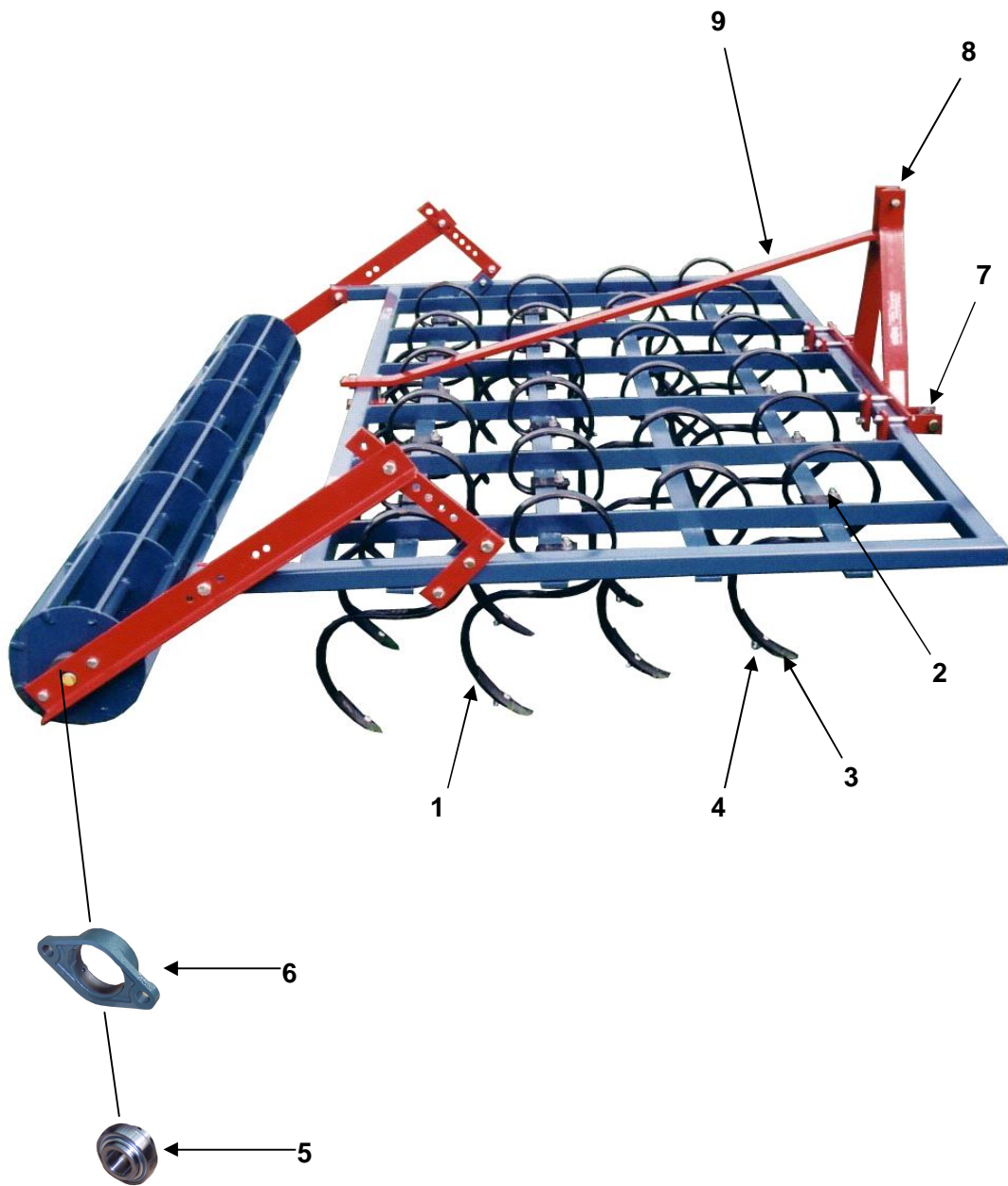
Standard 'S' tine cultivator

Key No.	Part No.	Quantity	Description
1	1670	ar	Tine with point 32 x 10
2	1672	ar	Clamp bracket, bolt/nut/sw to fit 1670 to 50 x 12 frame
3	1678	ar	Reversible point
	1680	ar	2 1/2" Goosefoot
	1682	ar	4" Duckfoot
	1684	ar	Lucerne or grass point
4	1686	ar	Plough bolt/nut
5	1927	2	Bearing to suit crumbler roller
6	1965	2	Bearing housing to suit crumbler
7	1969	2	Cat 1 push thru pin suit 1.2 -2.4 'S' tine cultivators
	1972	2	Cat 2 push thru pin suit 2.8 - 3.6 'S' tine cultivators
8	1963	1	Headstock (1.2 – 2.4m models only)
	2318	1	Headstock (2.8m – 3.6m models only)
9	2319	1	Centre support stay (1.2m – 2.4m models only)
	2320	1	Centre support stay (with T-piece – 2.8m – 3.6m models only)
	2321	2	Long outside support stays (suit 2.8m – 3.6m models only)
	2322	2	Outside stay rear support bolt/pipe/plate (suit above)

Heavy Duty 'S' tine cultivator

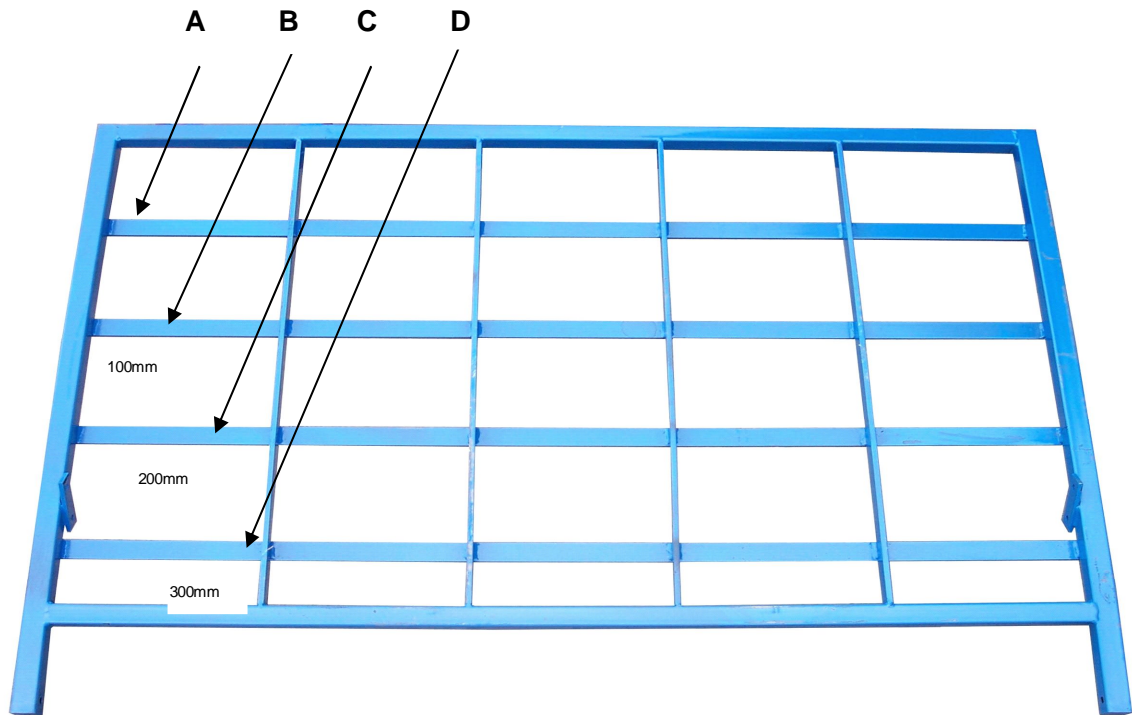
Key No.	Part No.	Quantity	Description
1	1961	ar	Tine with point 45 x 12
2	1662	ar	Clamp bracket, bolt/nut/sw to fit 1961 to 50 x 50 frame
3	1679	ar	Reversible point
	1680	ar	2 1/2" Goosefoot
	1682	ar	4" Duckfoot
	1684	ar	Lucerne or grass point
4	1686	ar	Plough bolt/nut
5	1927	2	Bearing to suit crumbler roller
6	1965	2	Bearing housing to suit crumbler
7	1969	2	Cat 1 push thru pin suit 2.4m 'S' tine cultivator
	1972	2	Cat 2 push thru pin suit 3.0m and 3.6m 'S' tine cultivator
8	1963	1	Headstock (2.4m models only)
	2318	1	Headstock (3.0m – 3.6m models only)
9	2319	1	Centre support stay (2.4m model only)
	2320	1	Centre support stay (with T-piece – 3.0m – 3.6m models only)
	2321	2	Long outside support stays (suit 3.0m model only)
	2323	2	Long outside support stays (suit 3.6m model only)
	2322	2	Outside stay rear support bolt/pipe/plate (suit above)

'S' Tine Cultivator



'S' Tine Assembly Instructions – Tine Positioning

This set-up refers to both the standard and heavy duty models. The measurements are different between them however they have been illustrated on the same frame.



Standard Model – 4 Row

Position tine **A** with the clamp on the front row (1st flat section row) as far to the left of the machine as it will go. Then put a tine every 400mm across the frame on the same row to the opposite side. It is easier to measure from the left hand edge of one clamp to the left hand edge of the next clamp rather than tine centres. Some slight variation may be required due to cross-members or stay positioning.

Position tine **B** on the second row with the left hand edge of the clamp 100mm from the left hand inside edge of the frame. Then position the tines every 400mm as per the first row.

Position tine **C** on the third row with the left hand edge of the clamp 200mm from the left hand inside edge of the frame. Then position the tines every 400mm as per the first row.

Position tine **D** on the fourth row with the left hand edge of the clamp 300mm from the left hand inside edge of the frame. Then position the tines every 400mm as per the first row.

This is the standard 100mm tine spacing and can be altered to customer specification if required.

Heavy Duty Model – 3 Row (2.4m, 3.0m and 3.6m models)

Position tine **E** with the clamp on the front row (doesn't include row that headstock is bolted to – therefore 2nd row) with the right hand edge of the clamp 350mm (2.4m model) ,200mm (3.0m model) or 50mm (3.6m model) from the right hand inside edge of the frame. Then position a tine every 450mm across the frame on the same row to the opposite side.

Position tine **F** on the second row with the right hand edge of the clamp 50mm (2.4m model), 350mm (3.0m model) or 200mm (3.6m model) from the right hand inside edge of the frame. Then position the tines every 450mm as per the first row.

Position tine **G** on the third row (rear row) with the right hand edge of the clamp 200mm (2.4m model), 50mm (3.0m model) or 350mm (3.6m model) from the right hand inside edge of the frame. Then position the tines every 450mm as per the first row.

There is no fourth row on the heavy duty model.

