

SERIES 77

DISC HARROW

Instruction Manual

FOR ALL SPARES CONTACT:

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SAFETY PRECAUTIONS

- 1) Read and familiarise your-self with the operating instruction book.
- 2) Take all possible precautions when leaving the tractor, such as lowering the attachment(s), shifting into neutral, setting the parking brake, stopping the tractor engine and removing the key.
- 3) Keep all nuts, bolts and screws tight and be sure that the equipment is regularly lubricated to keep it in safe working condition.
- 4) Ensure all guards and covers are in working order and in position before starting work.
- 5) Only use the machine for the tasks mentioned in this book.
- 6) Never operate the machine with persons on or near it.
- 7) Consult the tractor Manufacturers Manual for instructions on mounting implements and safe working methods.
- 8) Observe all safe driving procedures such as reducing speed on slopes and sharp turns.
- 9) Avoid working on ground where there is a risk of the tractor overturning.
- 10) Do not cultivate across the face of slopes.
- 11) Always wear substantial or safety footwear.
- 12) Always avoid loose clothing which may be caught in moving parts.
- 13) Always wear gloves when handling machines or parts with sharp edges.
- 14) Never allow children or untrained persons to operate the machine.
- 15) Never carry out repairs or adjustments to a mounted machine unless the tractor engine is stopped and the machine firmly supported or lowered to the ground.

OPERATING INSTRUCTIONS

Read through all the instructions before using the implement.

The terms left hand and right hand apply to the machine as viewed from the rear of the machine looking in the normal direction of travel.

All pins are retained by lynch pins unless otherwise stated. Always remember to remove and replace these as necessary.

ASSEMBLY OF MACHINE

These instructions apply only to the 4.5m model with hydraulically operated folding wings.

1) Fit extension gangs to main centre gang beams, using the large 50mm diameter pivot pins.

A collar is placed over the end of the pin and a 3/8" diameter x 3 1/2" long cotter pin fits into the hole in the end of the pin. The smaller diameter pins are used to mechanically retain the extension gangs in either the lowered or raised position. The extension gangs are stamped LH (left hand) or RH (right hand) and F (front) or R (rear) according to their position on the machine.

2) Attach the disc harrow drawbar to the tractor drawbar. Ensure that the hitch pin is securely retained in position and cannot jump out.

3) Connect the hydraulic hoses to double-acting external hydraulic services on the tractor.

4) The diverter valve on the disc harrow function as follows:
With the control lever pushed towards the rear of the machine, the transport wheels will be operated, with the control lever pulled towards the front of the machine, the extension gangs will be raised or lowered. Move the lever to the latter position and carefully extend the two rams which are used to raise the extension gangs.

5) Place pivot pins through the brackets on the extension gang beams and the free end of links, inserting split cotter pins through the holes in the end of the pivot pins.

SETTING UP FOR WORK

- 1) Attach the machine drawbar to the tractor drawbar. Ensure that the hitch pin is securely retained in position and cannot jump out.
- 2) Connect the hydraulic hoses to double-acting external hydraulic services on the tractor.

Instructions 3 to 8 inclusive apply only to the 4.5m model with hydraulically folding wings.

- 3) Move control lever of the diverter valve on the disc harrow to the rearmost position. Move tractor hydraulic lift control lever to the 'raised' position and lift discs clear of the ground.

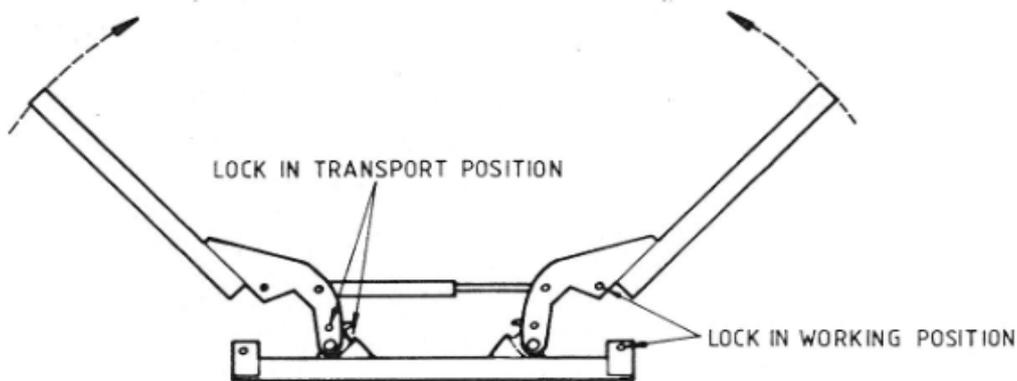


Fig 3. Shows the folding action of 4.5m model

FIG 3. SHOWS THE FOLDING ACTION OF 4.5M MODEL

- 4) Remove locking pins from extension gangs.
- 5) Move diverter valve control lever on the machine to the forward position. Move the tractor hydraulic lift control lever to the 'lower' position and lower the extension gangs.
- 6) Replace locking pins to retain the extension gangs in the lowered position.
- 7) Return the diverter valva control lever to the rearmost position.
- 8) Always remove locking pins before raising or lowering extension gangs and remember to replace them afterwards – especially if raising the extension gangs for transport along the highway.

Replace the front gang angle adjusting pin B in the hole just forward of the gang beam.

To obtain maximum working angle, the gang beam should be set up against the bracket supporting the gang beam.

The displaced rear pin should be put in one of the spare holes so that it does not become lost.

To decrease the gang angle setting, follow the above procedure, but move the front pin to the desired setting first, and reverse the tractor to move the disc gangs.

13) Before setting off in work move tractor hydraulic lift lever to lower machine to the ground. Continue to hold the lever in the lower position, and the transport wheels will be raised until they automatically stop at the required depth setting. Move lever back to the neutral position.

14) If the wheels are required to be lifted clear of the ground when the disc harrow is in work, insert pin D in the maximum depth position.

15) If when working the machine pulls the tractor to the right, one or any combination of the following adjustments may be made.

- a) Decrease gang angle of front disc gang.
- b) Increase gang angle of rear disc gang.
- c) Unbolt the drawbar from the transverse drawbar and re-bolt it in another position further to the left of the machine.
- d) Increase length of the link tube assembly by turning screw C.

If when working the machine pulls the tractor to the left, one or both of the following adjustments may be made.

- a) Increase gang angle of front disc gang
- b) Decrease gang angle of rear disc gang.
- c) Decrease length of the link tube assembly by turning screw C.

16) In general increasing the disc gang angles will aid penetration, but will also increase the power required from the tractor to pull the implement.

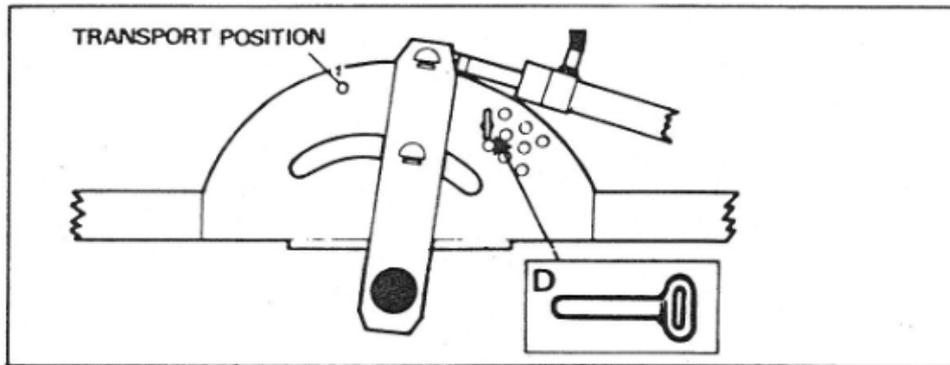


Fig. 4. Shows positions of depth control pin D.

FIG 4. SHOWS POSITION OF DEPTH CONTROL PIN D.

10) Insert depth control pin D in the required hole position in the depth control plates.

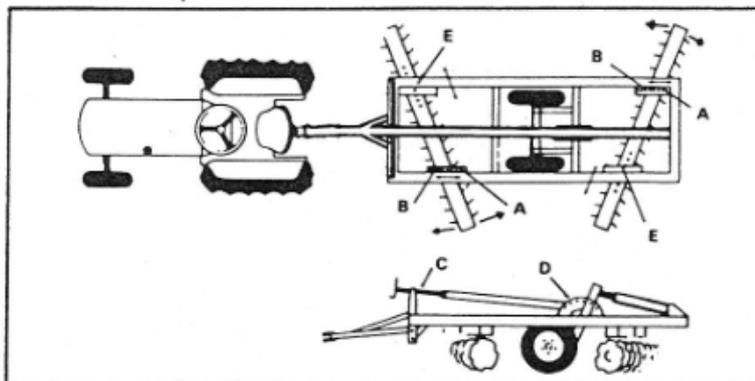


Fig.5. Shows the various adjustments that can be made to the Series 77 disc harrow.

FIG 5. SHOWS THE VARIOUS ADJUSTMENTS THAT CAN BE MADE TO THE SERIES 77 DISC HARROW.

11) Adjust screw C so that the rear row of discs is approximately 150mm (6") lower than the front discs when the tractor and disc harrow are standing on level ground.

12) Adjust gang angles to desired setting.

To do this first lower machine so that it is resting on the ground. To increase the gang angle place the rear gang angle adjusting pin A (Fig 5) in the hole at the setting required.

Raise discs clear of the ground by moving tractor hydraulic lever to the raised position.

Drive the tractor forward so that the disc gang beam swings round up to the pin. The gang beams will move more easily if the slideways are smeared with grease.

MAINTENANCE & STORAGE

- 1) Periodically inspect and adjust scrapers as necessary.
- 2) Check disc gang shaft end nut after first few hours of work, and thereafter check at regular intervals. Retighten if necessary.
- 3) The bearings should be re-lubricated regularly with one or two shots of grease from a low pressure grease gun of up to 60 PS1. Every seven to ten days during use and always before storage or after a period of non-use. If the disc harrow is stood outside for any length of time smear grease around the bearing faces to guard against corrosion at the seal lips.

A lithium-based grease is recommended and the following are approved:-

GREASE	SUPPLIER
Alvania R3	Shell UK Ltd
Alvania RFA	Shell UK Ltd
Energrease LS3	Shell UK Ltd
Beacon 3	Esso Petroleum Co Ltd
Multis Special 3	Total
Lupus A3	Walker (Century Oils)
Mobilux 3	Mobil Oil Co Ltd

- 4) Re-lubricate rocker shaft and pivot pins daily.
- 5) Re-lubricate screw thread C occasionally.
- 6) Re-lubricate sliding portion of screw C daily.
- 7) The discs should be coated with grease or a rust preventative before laying up the machine after use.
- 8) Periodically inspect all hydraulic hoses to check that there are no cuts or signs of abrasion. If in doubt about any hose it should be replaced.