140/145

Dowdeswell

GETTING THE BEST FROM

This guide has been produced to help owners and operators obtain maximum performance, reliability and results from their 140 Series or 145 Series reversible plough. Similar in design, the principal difference between the two models is the extended offset of the 145 Series, enabling it to be used both in-the-furrow behind wheeled tractors or on-the-land behind track layers or tractors shod with extra large tyres. The 140 Series plough is suitable for use solely in-the-furrow behind wheeled tractors. Maximum tractor horsepower for both ploughs is 300hp.

The following information is designed to guide the plough user through the principal tractor and plough adjustments as they apply to the 140 and 145 Series ploughs. Follow the recommendations given here and you can be confident of achieving consistent ploughing results, optimum fuel economy and maximum life from your plough and its wearing parts. We wish you successful ploughing.

Note: All of the advice given assumes that the plough is in good condition, that its soil-engaging parts are evenly worn and that all fastenings are tight. We recommend that you have the Operator's Manual to hand when reading this guide.

SETTING UP THE TRACTOR

Front Weights

The tractor must have appropriate ballast for the length and weight of the plough to ensure maximum safety during transport and turnover, and optimum traction and balance in work. Weight should be added, as required, to the front of the tractor and, if necessary to the wheels and/or tyres in the case of wheeled tractors. Always adhere to the tractor or tyre makers recommendations. If in doubt, seek advice from your dealer.

Tyre Pressures

Tyre pressures across an axle should be equal. A difference of only 5psi can affect ploughing depth by 2in. Adjust tyre pressures in accordance with the tractor or tyre manufacturer recommendations.

Inside Tyre Measurements 140 Series

The single most common omission when matching a plough and tractor is not taking tractor wheel width settings into account. Measure the front wheel internal width at the bottom to accommodate camber, and between the fat part of the tyres. This measurement should be no more than 2" wider than at the rear (pic 1). If incorrect, alter the setting accordingly.

Inside Tyre Measurements 145 Series

The 145cm (57") of offset provided on the 145 Series plough (pic 2) enables it to be used successfully in-the-furrow or on-the-land. Follow the tyre measurement guide for the 140 Series when working in-the-furrow.

Lower Lift Arms

Both lower lift arms should be set at the same height from the ground. Check by measuring the length of the drop arms on both sides (pic 3) and adjusting as necessary.

Operating tip: Where a choice is offered, the drop arms should be attached to the lower lift arms using the holes nearest the plough. This will produce improved lift capacity and sensing of draught forces.

The tractor will be fitted with either sway blocks, check chains or stabiliser bars to restrain the lower lift arms. These should be set to allow free lateral movement of the plough when it is in the ground.

This will prevent possible breakage or bending of the lower links whenever ploughing cannot be carried out in a straight line. If the option is available, the lower lift arms should be restrained to give minimal lateral movement of the plough when the lift arms are raised.

DESIGNED AND BUILT IN BRITAIN

Top Link Connection

The 140 Series and 145 Series ploughs are designed for use with tractors towards the upper end of the power scale, the majority of which sense draught forces through their lower lift arms.

In such cases, the tractors top link need carry no load in work and is used solely to support the plough when it is lifted from the ground at the headland or in transport.

Where the tractor has lower link draught sensing, the top link should be positioned in the slotted hole in the ploughs headstock to allow a certain amount of free movement between the tractor and plough when working on uneven or contoured ground.

When ploughing on level ground, the top link pin should be free from load in either direction and sitting close to the centre of the slotted hole (pic 4). If the plough is being connected to the tractor on level ground, adjust the top link initially so that its pin sits in the centre of the slotted hole, as shown. If necessary further adjustment can be made in the field.

If the tractor has top link draught sensing, the top link should be positioned in one of the three circular holes in the ploughs headstock.

Note: The higher the top link is positioned, the higher the plough will lift.

PLOUGH SETTINGS – IN THE FARMYARD

Vertical Setting Bolts

Both of these should show a similar length of thread below the block.

Furrow Width Setting

Furrow widths on MA (manual adjustment) ploughs can be adjusted in 1” (2.5cm) increments from 12” – 18”.

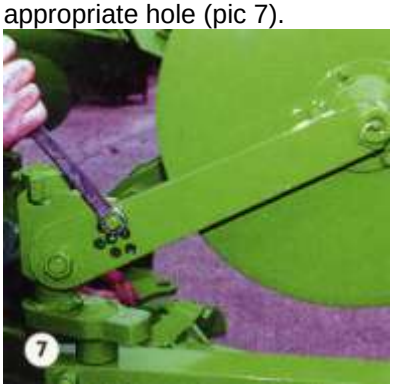
To set the required furrow width, slacken the clamping bolt (pic 5) and move the serrated notch plate to the required width setting. The leg and body can then be swiveled to the required position and the clamping bolt re-tightened.

Note: The required furrow width is achieved when the centre of the appropriate arrow is in line with the centre of the bolt (shown at 14”). Rotate the serrated notch plate through 180 degrees to achieve odd or even width settings. The furrow width of HA models can be adjusted hydraulically from the tractors seat across the full width range.

Disc Settings

Initially position the rear discs so that they are sitting parallel and approximately 1 cm wider than the landside. To adjust, slacken the pinch bolt on the discs arm (pic 6), swivel the disc to the required position and re-tighten.

With regard to disc depth, the distance from the centre of the disc bearing hub to the point of the share should be set at least 7.5cm (3”) greater than the maximum ploughing depth. To alter disc depth, remove the securing bolt (NB doubles also as a shearbolt), move the discs arm up or down as required and replace the bolt in an appropriate hole (pic 7).



Final settings are best carried out in the field to suit the level of trash and the chosen ploughing depth. The disc should be set deep enough to cut through all surface trash and wide enough that it does not press hard against the skim in work.

Skim Settings

Initially, set the skim height so that the distance between the point of the skim and the share is 5cm (2”) less than ploughing depth. Adjustment is simple. Remove the skim shanks retaining pin (pic 8) and move the skim up or down as required. Replace the pin.

With regard to width, start by positioning the point of the skim approximately 1.9cm (3/4”) outside of the share. Adjustment is made by slackening the four fastenings (pic 9) and sliding the skim

sideways in either direction, as required.

As with discs, final adjustment is best made in the field. The skim should be set deep enough to ensure that all stubble is deposited in the furrow bottom as the furrow is being turned. Lateral skim settings depend on trash levels. Higher levels of trash normally require skims to be moved closer to the land.

Underbeam and Point to Point Clearances.

These will arrive from the factory with the underbeam set to position the landside level and with a standard 91.4cm (36") point to point clearance.

Underbeam clearances can be measured individually or by stretching a line between the front and rear points. A screw adjuster is provided at the rear of the frog on all bodies (pic 10).

To check point to point clearances, make a mark on the top of every mouldboard at the same distance from a fixed non wearing point on each body assembly. On a centre body, measure from the mark to the centre of the shearbolt on the leg behind and repeat on the opposite handed body. The measurement should be the same.

Now, measure between the marks on adjacent bodies along the length of the plough on both left and right hand sides. The distance should be the same as the point to point clearance specified for the plough model. Adjustment can be made on the mouldboard stay (pic 11)

Before Setting Off For The Field

Check around the plough and make sure that all fastenings are secure and the implement is greased at all grease points. Check hydraulic hoses and connections, tyre pressures, and replace and worn or damaged parts.

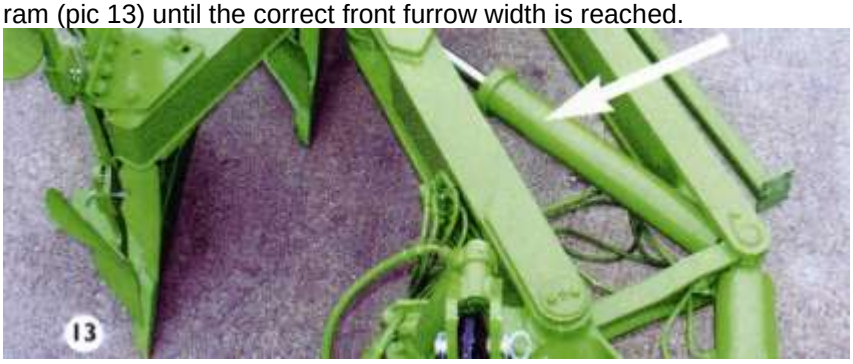
PLOUGH SETTINGS – IN THE FIELD

Plough Alignment

In work, the top link should be pointing directly ahead, bisecting the centre line of the tractor. If the top link is not running true, open or close the beam alignment ram (pic 12) until the correct top link position is achieved.

Front Furrow Width Setting

Correct front furrow width setting is achieved when the width of the front furrow matches the width of the rear furrow from the previous pass. To adjust front furrow width, open or closed the sideshift (offset) ram (pic 13) until the correct front furrow width is reached.

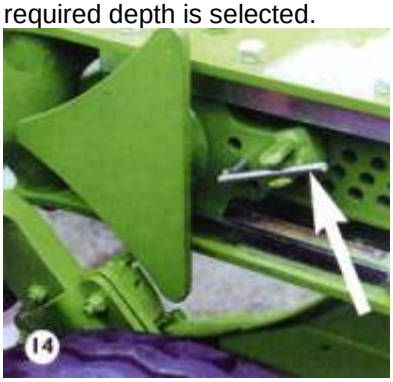


Note: When ploughing on-the-land or with extra wide tyres in-the-furrow it can be difficult to maintain a constant front furrow width. Before altering the offset check to ensure the tractor is remaining straight and a consistent distance from the furrow wall.

Depth of Ploughing

The depth at the front of the plough is determined by the height of the tractors linkage arms. The depth at the rear is determined by the setting of the depth wheel.

Adjustment is made using a sliding wedge within the depth wheel assembly. Remove the retaining pin (pic 14) and slide the wedge forward to reduce ploughing depth, rearwards to increase ploughing depth. Replace the pin when the required depth is selected.



Plough Attitude

The ploughs beam should sit parallel to the ground along its length. Adjustment is made on the linkage arms and depth wheel. Sloping forward gives poor soil inversion, sloping rearwards gives poor penetration.

In work the plough legs should be 90 degrees to the ground. Adjustment is made on the vertical setting bolts (pic 15) positioned either side of the headstock.

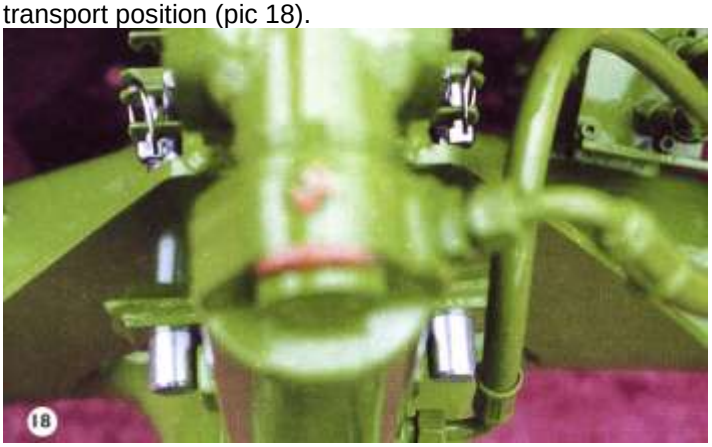
Transporting The Plough

The 140 and 145 Series ploughs have a combined depth/transport wheel. To move the plough into its transport (butterfly) position, start with the right hand bodies resting on the ground. Remove the locking pin from the wheel pivot (pic 16), rotate the wheel assembly through 90 degrees to face outwards and replace the locking pin (pic 17).

Moving to the front nearside of the plough, remove the lynch pin from left-hand transport locking pin, move the locking pin rearward and replace the lynch pin.

Return to the tractor seat, lift the plough fully and operate the turnover ***slowly***. The plough will move to the halfway (butterfly) position and locate against the left-hand transport locking pin.

Dismounting from the tractor, extend the right-hand transport locking pin and secure with the Lynch pin. The plough is now mechanically locked in its transport position (pic 18).



Lower the plough onto the transport wheel (pic 19). Drive off.

After Work

Remove soil and grime. Check around the plough for worn, loose or broken components, replacing or repairing as necessary. Dry off bare metal and apply preservative. Grease all points on the plough.