DRILL MAINTENANCE

Proper servicing and adjustment is key to the long life of all farm equipment. With careful and systematic inspection of your grain drill, you can avoid costly maintenance, time and repair.

1) After several hours of operation inspect all bolts and hydraulic fittings for looseness or leakage. Refer to torque chart in your operator's manual.
2) Reference the operator's manual section 5 for all grease locations and intervals.
3) Inspect all tower and row unit hoses for locations where they are rubbing or are being pinched.

ADJUSTMENT BEFORE GOING TO THE FIELD

1). Attach drill to cart, and be certain to properly attach the hydraulic couplers. As outlined in section 1 preparation and set up.
PROPER HYDRAULIC ATTACHMENT AT THE REAR OF THE SEED CART

<table>
<thead>
<tr>
<th>CART OUTLET</th>
<th>IMPLEMENT HOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Attach either marker hose.</td>
</tr>
<tr>
<td>B.</td>
<td>Attach remaining marker hose.</td>
</tr>
<tr>
<td>C.</td>
<td>Attach either blue-tie hose (opener-lift and fold) to outlet C. Opener lift and fold hoses attach to front of implement valve block.</td>
</tr>
<tr>
<td>D.</td>
<td>Attach remaining blue tie hose (opener-lift and fold) to outlet D.</td>
</tr>
<tr>
<td>E.</td>
<td>Skip outlet E.</td>
</tr>
<tr>
<td>F.</td>
<td>Skip outlet F.</td>
</tr>
<tr>
<td>G.</td>
<td>Attach sump-line hose to outlet G. (Attaches to rear of implement valve block)</td>
</tr>
</tbody>
</table>

2). Be certain that all warning lights are attached and functioning correctly.
3). Carefully unfold the drill as outlined in the operators manual.
4). Release the sub frame transport locks and lower the openers to the ground; Leave the hydraulic down pressure lever engaged. If it will not stay engaged refer to the Proper hydraulic attachment guide.

5). With the hydraulic lever for the fan engaged increase and decrease the pressure at the pressure-reducing valves. You should be able to adjust the pressure easily at this time.
6). Measure the tractor duals and place the openers behind the tractor in the lower hole to compensate for the wheel tracks.

7). It may also be necessary to shorten the individual opener springs 1/2" to increase the pressure on these rows.

8). Further depth change may be achieved by changing the setting of T handles on these rows.

To adjust the by-pass kit engage hydraulic lever, place the tractor at field operating rpm and increase the opener down pressure to 2000 lbs. by turning the pressure reducing valves clockwise. Turn the by-pass valve counter clock-wise until the opener down pressure gauges read 1600 lbs. Now Base set the opener down pressure to 700lbs. for the center and 600 lbs. on the wings and 200lbs. for the wing transfer pressure.

<table>
<thead>
<tr>
<th>Base Settings</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Center</td>
<td>700 psi</td>
</tr>
<tr>
<td>wing</td>
<td>600 psi</td>
</tr>
<tr>
<td>weight transfer</td>
<td>200psi</td>
</tr>
</tbody>
</table>

NOTE this is a starting point. Soft fields will require less pressure harder fields will require more pressure. **Start at a low opener down pressure, remember the more pressure you apply the more rigid the drill will operate on undulations in the field. This is equally true with the wing transfer pressure.**

**DEFINITIONS**

Opener down pressure: The pressure applied downward on the openers to help the openers penetrate. This is controlled by the pressure reducing valves marked CTR (center) and WINGS.

Weight transfer pressure: The pressure applied outward to the wing sections by the fold cylinders. This is used to equalize the weight available to all row units. This is controlled by the pressure-reducing valve marked WT TRANS (weight transfer)

**FIELD ADJUSTMENTS**

1). Unfold drill and place in field position (follow procedure outlined in operator's manual)
2). Re check opener down pressure (start with 700psi. on center, 600psi. on wings and 200psi. on the weight transfer
3). Pull ahead at field speed and check overall setting of drill
   a). Inspect the actual depth of seed in several places along the drill.
      Check 1: Behind the wing gauge wheels.
      Check 2: Towards the outer end of the drill but not behind the wing gauge wheel tracks.
      Check 3: Behind the wheel tracks of the tractor.
      Check 4: Towards the center of the drill but not behind the tractor tracks.
This unit has several adjustments available to achieve consistent seeding depth and even emergence across the entire unit

**INDIVIDUAL ROW ADJUSTMENTS**

1). **Individual Opener Height Adjustment**: Individual rows behind wheel tracks of tractor and wing gauge wheels may be lowered to compensate for the depression left by wheel tracks. Never lower the rows not behind wheel tracks, as this will have a negative affect on the drills geometry.
2). **Spring Pressure**: The length of the opener spring is adjustable. The factory spring length is 13 5/16". Each 1/4" of additional compression will add 13 lbs. to the individual rows down pressure. A maximum of 1 inch of additional compression is allowed (or 12 5/16' spring length). This adjustment is designed to add pressure to individual rows **behind wheel tracks only**. Do not change the length of the opener springs on the **openers not behind wheel tracks**. Doing so will make the drill rigid and it will not flex properly.

3). **Opener T-handle Adjustment**: Moving the T-handle towards the front of the opener will shallower the depth moving the t-handle towards the rear of the opener will increase the depth.

**Note**: When checking seed placement be sure that you do not mistake poor seed placement with too high of fan speed. Too high of fan speed can bounce seed and affect overall seed placement. See operators manual for guide lines.
SUB-FRAME ADJUSTMENTS

Opener Sub-Frame Mounting Bolts: This adjustment is designed to change the geometry of the subframe to the ground depending on the hydraulic down pressure applied. Each sub-frame pivot has 3 holes and 2 attachment bolts. Use the two lower holes for pressures between (200psi. and 1200psi.) Use the lowest hole and the top hole for pressures above 1200 psi.

NOTE: It is suggested that pressures below 1200 psi. are used.

Hydraulic Down Pressure: (CTR & WINGS) This adjustment is used to apply pressure to the opener sub frames. Two hydraulic down pressure valves are used. One valve for the center of the drill behind wheel tracks and one for the wings. This feature allows the customer to adjust the pressure in areas of the drill that require more pressure to penetrate the ground. A normal starting point is 100 psi. more on the center pressure reducing valve than the wing. A good starting point is 700psi. on the center and 600psi. on the wings.
**Weight Transfer Pressure:** (WT TRANS) This adjustment shifts weight from the center section of the drill to the wings of the drill. A good starting pressure is 200 psi. **NEVER EXCEED 800PSI.** The lower the pressure on the gauge the less weight is being transferred to the wings. Remember every pound of weight transferred to the wing section is removed from the center section. For this adjustment to be effective at least 1 set of 160-233A (1400lbs.) must be on the implement. A maximum of 2 sets of 160-233A (2800lbs.) is allowed. **This is the last adjustment that should be changed.**

**Drive Clutch Implement Rocker Switch:** Lower openers until they are almost ready to touch the ground. Loosen the worm drive clamp and rotate the cam until the switch is just ready to make contact with the ramp. Now raise openers and be sure that the switch is being sufficiently depressed. **NOTE:** Do not over compress this switch or it will be damaged.