General Information

Proper servicing and adjustment is key to the long life of all farm equipment. With careful and systematic inspection of equipment, costly maintenance, time and repair can be avoided. The following information will assist recommended servicing and adjustments:
Hydraulic Hose Hookup (To Air Cart):

The drill has two or three hydraulic circuits (with a low pressure sump return line). The standard circuits power lift, fold and weight-transfer with an optional circuit for markers.

Great Plains hydraulic hoses have color coded handle grips to help hookup hoses to the cart outlets. Hoses with the same color use the same remote.

Using the following table to assist with hooking up the drill:

<table>
<thead>
<tr>
<th>Color</th>
<th>Cart Ports</th>
<th>Hydraulic Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>A, B</td>
<td>Markers/Auger on Cart</td>
</tr>
<tr>
<td>Blue</td>
<td>C, D</td>
<td>Lower, Lift</td>
</tr>
<tr>
<td>Yellow</td>
<td>E, F</td>
<td>Fold, Unfold &amp; Weight Transfer</td>
</tr>
<tr>
<td>No Color</td>
<td>G</td>
<td>Sump Return</td>
</tr>
</tbody>
</table>

Unfolding The Implement:

The fold/unfold (and weight transfer) functions are on a hydraulic circuit that is shared with the hydraulic fan on the air cart. The fan must be disabled during fold and unfold, but is not disabled for weight transfer.

1) Completely lift the implement and install the transport locks. Once installed, leave the lift circuit in neutral.

2) Set the hydraulic circuit for Fold/Unfold to neutral.

3) On the seed monitor, set the Fold/Unfold function to Off using the soft key.

4) Remove the wing fold pin (1) under the tool bar on each side of the implement. Do not, at this time, remove any Marker Stops if present.

5) Set the air cart’s hydraulic fan valve (2) to Off.
6) Check that the hydraulic selector valve (3) is in the Fold/Unfold position (handle down).

7) Set tractor at low idle speed.

8) On the seed monitor, set Fold/Unfold function to Unfold using the soft key.

9) Energize the tractor hydraulics for the Fold system and slowly unfold the implement. Continue to unfold the implement only until each wing gauge wheel rests on the ground. Return the hydraulic circuit lever to neutral.

10) Turn the implement selector valve (3) to the Field position.

**Folding The Implement:**

The Fold/Unfold (and weight transfer) functions are on a hydraulic circuit that is shared with the hydraulic fan on the air cart. The fan must be disabled during Fold and Unfold, but is not disabled for weight transfer.

1) Fold the implement on a level surface while being aware of clearances required to fold the implement.

2) Set the tractor hydraulic circuit for Fold/Unfold to neutral.

3) On the seed monitor, use the soft key to command Fold to Off.

4) Set the air cart’s hydraulic fan valve (2) to Off.

5) Turn the implements hydraulic selector valve (3) to Fold/Unfold (handle down).

6) Raise the drill until all lift cylinders are completely extended and install the transport locks.

**Note:** First time fold: If the drill has markers, make sure that the Marker Stop Bolt is installed. Do not fold with markers if this bolt is not present. The markers will strike drill components and damage will result.
8) If the wing lock-up pin was stored in the end (4) or second lock hole (5), remove it. If it is stored in the weldment ring (6), it may be left in place during Fold.

9) On the seed monitor, press the soft key to enable Fold.

10) Engage the tractor level for the Fold/Unfold circuit and slowly fold the drill. When folded, set the tractor hydraulic circuit lever to neutral.

11) Insert the wing fold lock-up pins to secure the wings. Insert them in the highest available hole pair under the tool bar.

12) On the seed monitor, set Fold/Unfold to Off with the soft key.

**Leveling The Frame Side to Side:**

All frame sections must be level to maintain even seeding depth across the drill.

1) Unfold and lower the implement to the ground. **Note:** Ensure that the lift cylinders are completely retracted, then block up or otherwise support the frame.

2) Take a reference measurement by laying a straight edge across the top of the two coulter mount tubes on the center section. Measure from the bottom of the straight edge to the center of one rockshaft-wheel axle. Because rockshaft gauge wheels are non adjustable, all adjustments will be made relative to this measurement.

3) Move the straight edge to one of the wings and measure the distance from the bottom of the straight edge to the center of the wing gauge wheel axle. **Note:** If the wing measurement is the same as the reference measurement, no further adjustment is required.
4) If the wing measurement differs from the reference measurement, remove the pin (7) from the rod end off the wing gauge wheel cylinder.

5) Block or support the wing gauge wheels so the distance from the bottom of the straight edge to the center of the wing gauge wheel axle is the same as the reference measurement.

6) Loosen the nuts (8) on the cylinder eye bolt.

7) Move the eye bolt either in or out until the rod end of the cylinder can be pinned to it's lug.

8) Once adjusted, secure the eye bolt by tightening the nuts.

Repeat step 4 though 8 as needed for the other wing.

**Leveling the Frame Font to Rear:**

The front to rear levelness of the drill affects overall seeding depth. If the lift-assist wheels raise the rear of the implement higher than the front, the openers may operate at the wrong angle.

The opener bodies should run parallel to the ground. If they do not, level the angle which the implement runs.

1) Check that the lift hydraulics are bled of any air and full of oil.

2) Adjust the lift-assist cylinder eye bolt nuts (9). To raise the rear of the implement, move the eye bolt in towards the drill. To lower the rear of the implement, move the eye bolt out.

3) Repeat for the other lift-assist cylinder.

**Hydraulic Depth Stop/Coulter Frame Height Adjustment:**

The frame mounted coulters are factory configured to provide satisfactory results in most conditions. When the frame is lowered, the gauge wheel lift cylinders are usually not fully retracted. They have an adjustable hydraulic depth stop set to provide 2 inch coulter depth.

If the coulter depth must be adjusted to achieve 2 inches, adjust the knob on the hydraulic depth stop. Each complete rotation is equivalent to 3/16 inch of depth. **Note: Turn the know clockwise to lower the coulters or counterclockwise to raise the coulters.**
**Individual Coulter Height Adjustment:**

Individual coulters that run in tire tracks can be lowered as desired.

1) Loosen all six mounting clamp nuts (10) (11) and adjust the coulter spring bar (12) to the desired height.
2) Tighten the hex-head clamp bolts (10) just until the u-bolts are tight on each side of the spring bar.
3) Check the alignment of the coulter blade with the row unit. Once aligned, tighten the u-bolts.
4) Finish tightening the hex-head clamp bolts.

*Note: Ground clearance on lowered coulters will be reduced when the drill is raised.*

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**Coulter Down-Pressure Adjustment:**

Coulter springs are factory preset at 10 inches, giving the coulters an initial operating force of 400 pounds. This setting is adequate for many difficult no-till conditions. If adjustment is required, using the following chart:

<table>
<thead>
<tr>
<th>Spring Length</th>
<th>Force</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.25 inches</td>
<td>300 lbs</td>
</tr>
<tr>
<td>10 inches</td>
<td>400 lbs</td>
</tr>
<tr>
<td>9.75 inches</td>
<td>525 lbs</td>
</tr>
</tbody>
</table>

*Note: Setting the coulter spring length shorter than 9.75 inches may contribute to premature failure of parts and void the warranty. If additional force is needed, add weights to the implement.*

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**Weight Transfer Adjustment:**

During field operation, the fold cylinders distribute center section weight to the wings. If insufficient weight is transferred, the wings will run higher than the center section. If excess weight is transferred, the center section runs higher.

1) Lower the drill and set the valve selector handle (13) to the Field (down) position.
2) On the seed monitor, set the Fold function to On via the soft key.
3) Engage the Fan/Fold hydraulic circuit on the tractor.
4) Release the lock ring (14) on the drill valve.
6) Adjust the knob (15) while observing the gauge (16). Increase the weight transfer by turning the knob clockwise or decrease by turning the know counterclockwise.
7) Set the initial pressure per the following:

<table>
<thead>
<tr>
<th>Weights Installed</th>
<th>PSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>200</td>
</tr>
<tr>
<td>2 (1 additional weight kit)</td>
<td>300</td>
</tr>
<tr>
<td>4 (2 additional weight kits)</td>
<td>400</td>
</tr>
<tr>
<td>6 (3 additional weight kits)</td>
<td>500</td>
</tr>
<tr>
<td>8 (4 additional weight kits)</td>
<td>600</td>
</tr>
</tbody>
</table>

8) When satisfied with the pressure reading, raise the implement while watching the pressure gauge. The gauge reading should drop as the implement is raised.

9) Tighten the lock ring (14). Note: If the wings run lower than the center section when at the minimum pressure setting, add weight to the center section.

10) During field operation, monitor the opening depth of the wings and center section. Adjust the weight transfer as required for consistent depth across the drill.

**Adjusting Row-Unit Down Pressure:**

Row unit springs provide the down pressure necessary for the row unit discs to open a seed trench.

1) Raise the drill to relieve pressure from the row units. Note: The springs can be adjusted with the drill lowered, but will require more effort and could lead to damaged tools.

2) Taking the provided adjustment tool stored behind the tool bar at the Slow-Moving-Vehicle placard, position the wrench into the adjustment holes and pull back and down to adjust the cam to a new setting. Note: Do not set all rows higher than notch two. Using high settings across all rows causes uneven planting. Individual rows can be set higher if running in tire tracks.

<table>
<thead>
<tr>
<th>Cam Notch</th>
<th>Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero (out of notch)</td>
<td>Maintenance Only</td>
</tr>
<tr>
<td>One</td>
<td>100 lbs</td>
</tr>
<tr>
<td>Two</td>
<td>116 lbs</td>
</tr>
<tr>
<td>Three</td>
<td>140 lbs</td>
</tr>
<tr>
<td>Tip</td>
<td>Do Not Use</td>
</tr>
</tbody>
</table>
T-Handle Adjustment:

The depth of each opener is controlled by the height of the press wheel. Varying the height of the press wheel changes the seeding depth of the opener. Moving the “T” handle to the front of the opener shallows the depth; moving the “T” handle towards the rear of the opener increases the depth. For a starting point, place the “T” handle in the center.