Read the operator's manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!

Cover illustration may show optional equipment not supplied with standard unit.
DEALER PREPARATION CHECK LIST

PREDELIVERY

Before delivering machine the following check list should be completed. Use this Owner’s Manual as a guide.

1. ❑ Assembly completed.
2. ❑ Fluids added & checked.
3. ❑ All grease fittings lubricated. Refer to "Maintenance & Lubrication" section.
4. ❑ Check & tighten all hardware. Refer to "Nut & Bolt Torquing Chart".
5. ❑ All decals are in place & readable. See "Decal Placement" section.
6. ❑ All safety shields or guards are in place.
7. ❑ Overall conditions good (i.e. paint, welds).

This check list is to remain in Owner’s Manual.

It is the responsibility of the dealer to complete the procedures listed above BEFORE delivery of this machine to the customer.

DELIVERY

Review this Owner’s Manual with the customer. Explain the following & check off as completed.

1. ❑ Safety procedures for operation & service.
2. ❑ Basic operating & adjustments.
5. ❑ Great Plains parts & service.
6. ❑ Record serial number. See "Introduction" on next page.
7. ❑ Remind customer that all decals should remain in place & readable. See "Decal Placement" section & contact dealership for replacements when needed.
8. ❑ Remind customer that ALL safety shields & guards are not to be removed.
9. ❑ Give customer this Owner’s Manual & encourage them to read it.
Your Great Plains End Wheel Drill is designed to give you many years of dependable service. This manual has been prepared to instruct you in the safe and efficient operation of this machine. Read and study it thoroughly. Follow all instructions and service procedures carefully.

The parts on your End Wheel Drill have been specially designed and should only be replaced with genuine Great Plains parts. Therefore; should your drill require replacements parts, purchase them from your Great Plains Dealer.

Space has been provided below for you to record your model number and serial number of your drill. Be sure to bring this information with you to your dealer when ordering parts or attachments for your drill.

The following signal symbol and words should be clearly understood! When seen in this manual or on your equipment, this symbol and words will alert you to the seriousness of a situation. They should not be ignored or taken lightly.

The **SAFETY ALERT SYMBOL** indicates that there is a potential hazard to personal safety involved and extra safety precautions must be taken. When you see this symbol, be alert and carefully read the message that follows it. In addition to design and configuration of equipment; hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

**DANGER:** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.

**WARNING:** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

**CAUTION:** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Thank you for buying a Great Plains End Wheel Drill.

SERIAL NUMBER ___________________

MODEL NUMBER ___________________

DATE PURCHASED _________________
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SAFETY RULES

The safe operation of machinery is a big concern to farmers and manufacturers. We have designed our End Wheel Drill with many built-in safety features. However, no one should operate this drill before carefully reading this Owner’s Manual.

1. **NEVER** permit anyone to ride on or walk beside the drill when moving.
2. **NEVER** permit anyone to ride on tractor when the drill is being moved.
3. **NEVER** allow anyone to be near the drill when performing operating functions with the drill or tractor.
4. **DO NOT** allow anyone to operate the Drill who has not been properly trained in its safe operation.
5. **ALWAYS** fasten the drill hitch securely to the tractor drawbar with a safety lock type pin & fasten safety chain securely to tractor.
6. **NEVER** load the drill without being hooked up to a tractor
7. **NEVER** exceed 20 MPH when transporting.
8. Extra care should be taken when transporting with seed in the boxes.
9. Reduce speed of the tractor when transporting over uneven or rough terrain. Avoid all chuck holes and washboard areas in roads.
10. Reduce speed of the tractor when transporting over hills or steep slopes.
11. When in transport, use accessory lights and devices for adequate warning to operators of other vehicles and use safety hitch chain. Comply with all Federal, State and Local laws when traveling on public roads.
12. Use "Slow Moving Vehicle" emblem for warning vehicles approaching from the rear.
13. When transporting, remember the drill is wider than your tractor and extreme care must be taken to allow for safe clearance.
14. **NEVER** back up when openers are in the ground.
15. **ALWAYS** set the drill in field position **BEFORE** lubrication, making adjustments, or servicing.
16. **DO NOT** lubricate, adjust or repair the drill while it is in operation.
17. **DO NOT** permit smoking, sparks, or an open flame where combustible lubricants or liquids are being used.
18. When using treated seed, avoid direct contact with the seed.
19. When using compressed air to clean the drill, wear safety glasses.
20. **NEVER** unhook drill from tractor when negative tongue weight is present.

**CAUTION!** Escaping fluid under pressure can have sufficient force to penetrate the skin. Check all hydraulic lines and hoses **BEFORE** applying pressure. Fluid escaping from a very small hole can be almost invisible. Use paper or cardboard, NOT BODY PARTS, to check for suspected leaks. If injured, seek medical assistance from a doctor that is familiar with this type of injury. Foreign fluids in the tissue must be surgically removed within a few hours or gangrene will result.
--IMPORTANT--

* Your End Wheel Drill comes equipped with all safety decals in place.

* Always keep safety decals clean and legible.

* Replace all damaged or missing safety decals. To order new safety decals go to your Great Plains Dealer and reference part numbers as shown on page 1-3.

* To install new safety decals:
  A) Clean the area the decal is to be placed. (Refer to page 1-3.)
  B) Peel backing from decal and press firmly onto clean surface.
Includes ALL SAFETY Decals As Shown Below.

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>818-188C</td>
<td>Warning Transport Speed</td>
</tr>
<tr>
<td>2.</td>
<td>818-229C</td>
<td>Amber Reflectors</td>
</tr>
<tr>
<td>3.</td>
<td>818-230C</td>
<td>Red Reflectors</td>
</tr>
<tr>
<td>4.</td>
<td>818-055C</td>
<td>Slow Moving Vehicle</td>
</tr>
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</table>
NUT & BOLT TORQUING CHART

This chart is based on torque requirements in foot pounds for grade 5 bolts.

<table>
<thead>
<tr>
<th>BOLT DIAMETER</th>
<th>MINIMUM TORQUE</th>
<th>MAXIMUM TORQUE</th>
<th>BOLT DIAMETER</th>
<th>MINIMUM TORQUE</th>
<th>MAXIMUM TORQUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>9</td>
<td>11</td>
<td>3/4&quot;</td>
<td>270</td>
<td>324</td>
</tr>
<tr>
<td>5/16&quot;</td>
<td>17</td>
<td>20</td>
<td>7/8&quot;</td>
<td>400</td>
<td>480</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>35</td>
<td>42</td>
<td>1&quot;</td>
<td>580</td>
<td>696</td>
</tr>
<tr>
<td>7/16&quot;</td>
<td>54</td>
<td>64</td>
<td>1 1/8&quot;</td>
<td>800</td>
<td>880</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>80</td>
<td>96</td>
<td>1 1/4&quot;</td>
<td>1120</td>
<td>1240</td>
</tr>
<tr>
<td>9/16&quot;</td>
<td>110</td>
<td>132</td>
<td>1 3/8&quot;</td>
<td>1460</td>
<td>1680</td>
</tr>
<tr>
<td>5/8&quot;</td>
<td>150</td>
<td>180</td>
<td>1 1/2&quot;</td>
<td>1940</td>
<td>2200</td>
</tr>
</tbody>
</table>

**NOTE:** Torque requirements listed above do not apply to self-locking nuts. For self-locking nuts increase the torque requirements listed above by 15%.

---

TIRE INFLATION CHART

<table>
<thead>
<tr>
<th>TIRE SIZE</th>
<th>INFLATION PSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.90 x 15&quot; 4 Ply Rib Implement</td>
<td>32</td>
</tr>
<tr>
<td>7.50 x 20&quot; 4 Ply Rib Implement</td>
<td>28</td>
</tr>
<tr>
<td>9.0 x 22.5 10 Ply Highway Service 70</td>
<td>70</td>
</tr>
<tr>
<td>9.0 x 24&quot; 8 Ply Rib Implement</td>
<td>40</td>
</tr>
<tr>
<td>9.5L x 15&quot; 6 Ply Rib Implement</td>
<td>32</td>
</tr>
<tr>
<td>9.5L x 15&quot; 8 Ply Rib Implement</td>
<td>44</td>
</tr>
<tr>
<td>9.5L x 15&quot; 12 Ply Rib Implement</td>
<td>60</td>
</tr>
<tr>
<td>11L x 15&quot; 6 Ply Rib Implement</td>
<td>28</td>
</tr>
<tr>
<td>11L x 15&quot; 12 Ply Rib Implement</td>
<td>52</td>
</tr>
<tr>
<td>12.5L x 15&quot; 8 Ply Rib Implement</td>
<td>36</td>
</tr>
<tr>
<td>12.5L x 15&quot; 10 Ply Rib Implement</td>
<td>44</td>
</tr>
<tr>
<td>16.5L x 16.1&quot; 10 Ply Rib Implement</td>
<td>36</td>
</tr>
<tr>
<td>41 x 15&quot; x 18 22 Ply Rib Implement</td>
<td>44</td>
</tr>
</tbody>
</table>
For the following assembly instructions, refer to Fig. 1 below.

1. Remove the 5/8" x 3 1/2" x 5" long u-bolts (#17), 5/8" lockwashers (#19), and 5/8" nuts (#18) that hold the opener channel to the drill frame for shipping. Remove 1/2" nut (#8) and 1/2" lockwasher (#7) from the front of the opener channel leaving the 1/2" x 3 1/2" x 4 3/4" long u-bolt (#6) in place.

2. Assemble the rear of right and left pull bars (#1), {left hand shown} to the drill. First use 1/2" x 1" long carriage bolt (#2) and whiz nut (#3) to bolt the bottom leg of pull bar to the bottom leg of the opener channel.

3. Lift pull bar (#1) up and bolt top leg using 1/2" x 1 1/4" long whiz bolt (#4) and whiz nut (#5).

4. Attach inside leg of pull bar with 1/2" x 3 1/2" x 4 3/4" long u-bolt (#6), 1/2" lock washers (#7), and 1/2" hex nut (#8).

5. Attach outside leg of pull bar with 1/2" x 1 1/2" whiz bolts (#9), and whiz nuts (#10).

**NOTE: DO NOT** tighten hardware until final assembly.

6. Lay the tongue (#11) between the pull bars (#1) and bolt to the drill with 5/8" x 3 17/32" x uneven leg u-bolts (#12), 5/8" lock washers (#13), and 5/8" hex nuts (#14).

7. Assemble the front end of pull bars to the tongue (#11) with 1/2" x 1 1/4" long whiz bolts (#15), and whiz nuts (#16).

8. Tighten ALL mounting hardware when assembly is completed.
For the following assembly instructions, refer to Fig. 2 below.

1. Start the bolts on each end of the step weldment (#1) to the drill (#2) using 3/4" x 2" long bolts (#3), 3/4" lock washers (#4), and 3/4" SAE flat washers (#5).

**NOTE: DO NOT** tighten hardware until final assembly.

2. Bolt the step hanger weldment (#6) to the center mount (#7) on the drill box (#2) using 1/2" x 1 1/4" long hex bolts (#8), 1/2" lock washers (#9), and 1/2" hex nuts (#10). Bolt the lower part of the step hanger to the front leg of the step using the same 1/2" hardware.

3. Tighten **ALL** hardware when assembly is complete.

4. Mount the Slow Moving Decal (#11) to the step hanger using 1/4" x 5/8" long round head screws (#12), 1/4" lock washers (#13), and 1/4" hex nuts (#14).
A minimum 65 H.P. tractor is required to operate your 13' End Wheel Drill in most field conditions.

1. One remote outlet is required to operate the drill.

2. Two remote outlets are required if your drill is equipped with markers.

**TRACTOR REQUIREMENTS**

When hitching the drill to the tractor drawbar, it is important to level the drill by adjusting the tongue jack so that the drill box is parallel with the ground.

The hitch clevis straps can now be adjusted to match the tractor drawbar height, Fig. 3.

Your drill comes equipped with a hitch safety chain. The safety chain should be securely attached to the drill hitch and the tractor drawbar whenever towing or planting. Pin the drill hitch to tractor drawbar and lower the tongue using the screw jack. Unpin the tongue jack and move it to its horizontal transport position on top of tongue.

**NOTE:** Make sure the hitch is securely bolted to the drill tongue.

**ALWAYS** use a pin that contains a safety locking device to prevent it from falling out.

**ALWAYS** Attach safety chain from the drill hitch to the tractor and lock the hook securely on the chain. Adjust the chain length to allow just enough slack to permit turning of the drill and tractor.

**TRACTOR DRAW BAR HOOKUP**

When hitching the drill to the tractor drawbar, it is important to level the drill by adjusting the tongue jack so that the drill box is parallel with the ground.

The hitch clevis straps can now be adjusted to match the tractor drawbar height, Fig. 3.

Your drill comes equipped with a hitch safety chain. The safety chain should be securely attached to the drill hitch and the tractor drawbar whenever towing or planting. Pin the drill hitch to tractor drawbar and lower the tongue using the screw jack. Unpin the tongue jack and move it to its horizontal transport position on top of tongue.

**NOTE:** Make sure the hitch is securely bolted to the drill tongue.

**ALWAYS** use a pin that contains a safety locking device to prevent it from falling out.

**ALWAYS** Attach safety chain from the drill hitch to the tractor and lock the hook securely on the chain. Adjust the chain length to allow just enough slack to permit turning of the drill and tractor.

**HYDRAULIC HOOK-UP**

Attach the female swivel end of the hydraulic hoses to the fittings on the cylinder.

You are now ready to hook-up your hydraulic hoses. Apply pipe sealant to the male pipe end of the hydraulic fitting and screw the two hydraulic fittings into your cylinder ports. Then insert hydraulic hoses through the spring type hose loop on the tongue and attach hydraulic male coupler tip to hoses. Plug the male coupler into tractor outlets as instructed in your tractor operators manual.

When using sealant on pipe threads the friction between the threads is reduced, therefore be certain not to over tighten causing damage to the cylinder port or fitting.

**NOTE:** JIC fittings **DO NOT** require high torque. JIC and O-Ring fitting do not require sealant. **ALWAYS** use liquid pipe sealant when adding or replacing pipe thread fittings. To avoid possible danger of cracking hydraulic fittings from over tightening, **DO NOT** use plastic sealant tape.

**CAUTION!** Escaping fluid under pressure can have sufficient force to penetrate the skin. Check all hydraulic lines and hoses BEFORE applying pressure. Fluid escaping from a very small hole can be almost invisible. Use paper or cardboard, **NOT** BODY PARTS, to check for suspected leaks. If injured, seek medical assistance from a doctor that is familiar with this type of injury. Foreign fluids in the tissue must be surgically removed within a few hours or gangrene will result.
This End Wheel Drill requires the use of a 3 1/2" bore x 8" stroke cylinder with a 20 1/4" {pin to pin} retracted length.

**NOTE:** Check the hydraulic fluid level in the tractor reservoir and fill to the proper level. If the bleeding is performed with a low tractor reservoir supply, there is a chance of drawing air into the system. The system capacity is approximately 1/2 gallon and requires 1 pair of remote outlets.

1. With the transport lock in the transport position, refer to "Operating Transport Lock" on page 3-1. Loosen the connection between the hose end and the cylinder base end fitting.

2. With the tractor at idle, slowly retract the lift cylinder. When the air is expelled and oil starts flowing out, tighten the base end hose connection.

3. Repeat this procedure with the rod end hose connection while extending the cylinder.

4. Recheck the tractor reservoir level and add clean fluid as necessary.

5. It is advisable to extend and retract the lift cylinder several times. The majority of air should now be expelled from the system. Any remaining air will gradually be pushed to the tractor during day to day operations.
To prepare your drill for field operation, you first must fully extend the cylinder, remove the transport lock pin from the lower hole in the rod end cylinder lug Fig. 4 and replace in the upper hole Fig. 5.

When transporting long distances, or transporting without a cylinder, the transport lock pin should be placed in the lock position as shown in Fig. 4.

**NOTE:** If your drill is equipped with markers the marker body must be pinned up for transport. See Marker Manual located in Optional Equipment Section.

**HYDRAULIC DEPTH CONTROL**

The optional cylinder package purchased with your drill contains a hydraulic cylinder with depth control stop, Fig. 6. This cylinder allows for a variable adjustment from zero to maximum stroke which controls the down pressure applied to your disk openers. In order to adjust the stroke of the cylinder, retract cylinder until the openers are set at the desired down pressure required. Next, loosen the bolt on the depth control actuator plate and slide it down the cylinder until it stops against the plunger of the control valve on the head of the cylinder. You will now need to extend the cylinder slightly and move the depth control actuator plate down to compensate for the control valve plunger length.
Before transporting the drill, you should always check the following items:

1. Make sure that drill is securely attached to the draw bar of the tractor and that the hitch safety chain has been securely attached.

2. To prevent possible damage in case of hydraulic failure during transport, always insert your transport lock pin in the lock position as shown on page 3-1 in Fig. 4.

3. Check to see that the end wheel tires have the proper inflation as noted on the "Tire Inflation Chart."

4. Comply with all Federal, State and Local Safety Laws when traveling on public roads.

5. Remember, the drill is wider than the tractor and extreme care must be taken to allow for safe clearance.

6. Make sure the drive lock-out hub (left side) is disengaged before transporting, refer to Fig. 7. This will protect from excessive wear on the gauge wheel drive system.

CAUTION! THIS DRILL SHOULD NEVER BE PULLED FASTER THAN 20 MILES PER HOUR!
CLUTCH

The main drive clutch (#1) on your drill is a mechanical release - jaw style design, which may require some adjustments before using your drill. Raise the drill openers to the transport position. Check between the two cam plates which disengage the jaws of the clutch halves (#2) & (#3).

The clutch jaws (#4) & (#5) should be completely separated at this point. Adjustments can be made to the cam plate (#2) that is bolted to the slot (#6) in the box frame.

By loosening the cam plate (#2) and rotating it, the clutch may be adjusted to engage quicker or slower as the drill openers are being lowered. Whenever adjusting the clutch, check to be sure the clutch jaws (#4) & (#5) are engaged completely when the openers are in the field position. The clutch jaws should also be completely disengaged when the openers are raised for transport.

CHAIN DRIVE

This grain drill uses standard no. 40 roller chain throughout its drive system. The drive system is simple and designed for low maintenance. At the speed change box and inside the double wall end panel on the left end of your drill are spring loaded chain idlers that should be checked at the beginning of each season to insure that chain wear has not exceeded the travel of the idler arm and spring.

To do a maintenance check, simply remove the inspection cover from the inside of the box end panel and move idler arms back and forth to insure that they have not seized to their pivot bolt.

On fertilizer drills the inspection cover for the fertilizer drive is located on the outside of the left box end panel. This cover must be removed to inspect the fertilizer drive chain and idler.
Setting the seeding rate requires four steps: arranging the drive sprockets, setting the seed-rate adjustment handle, positioning the seed-cup doors, and checking the seeding rate.

Refer to the seed-rate charts starting on page 5-3. These charts list the proper sprocket sizes and seed-rate-handle settings for various seeds and seeding rates. The seed-rate charts are based on cleaned, untreated seed of average size and test weight. The rates are based on 7.5 x 20 rib implement tires. Many factors will affect seeding rates including foreign material, seed treatment, seed size, field conditions, tire pressure and test weight. Minor adjustments likely will be needed. Set and check the seeding rate using the procedures below, then re-adjust the rate as necessary.

NOTE: Your drill can be equipped with a special pea drive (Great Plains part number 152-204A). This drive will include different seed-rate charts.

### CHANGING DRIVE SPROCKETS

Refer to the seed-rate charts for the correct drive type—1, 1A, 2 or 2A. Fig. 9 shows the sprocket arrangement for each drive type.

![Drive Types](Fig. 9)

<table>
<thead>
<tr>
<th>Drive-Type Ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2 is Slowest</td>
</tr>
<tr>
<td>Type 2A is Two Times Faster Than Type 2</td>
</tr>
<tr>
<td>Type 1 is Three Times Faster Than Type 2</td>
</tr>
<tr>
<td>Type 1A is Five Times Faster Than Type 2</td>
</tr>
</tbody>
</table>

To change the drive types:

1. Refer to Fig. 10. Loosen the nut (1) holding the idler arm (2). Turn arm so chain is slack. Remove chain from sprockets.

2. Refer to Fig. 11. Rearrange sprocket (1) and plastic spacers (2) on front shaft so the correct front and rear sprockets are aligned according to the drive type.
   a. Pull spacers off shaft.

b. Slide sprockets as necessary and place plastic dividers back on shaft between sprockets as necessary.

3. Slide idlers on idler arms so they are aligned with correct sprockets. Reinstall chain.

4. Turn idler arm as indicated by drive type to remove slack from chain. Retighten nut that holds idler arm.

![Loosen Idler Spacer](Fig. 10)

![Rearrange Sprockets on Front Shaft](Fig. 11)
SEED CALIBRATION (CON’T)

POSITIONING SEED-CUP DOORS

For wheat and other small seeds, move the seed-cup-door handles to the highest position. For soybeans and other large seeds, lower the handles to the second position. If excessive seed cracking occurs, lower the handles to the third position. Move the handles to the fourth, wide-open position for seed-cup clean out. Make sure all handles are in the same position before drilling.

CHECKING SEEDING RATE

1. Hydraulically lower the drill to planting position to activate clutch.
2. Check that your tires are 7.5 x 20 rib implement and properly inflated. Refer to Tire Inflation Chart, page 1-5.
3. Weigh an empty container large enough to hold the seed metered for one acre.
4. Jack the drive (left) end wheel off the ground. Rotate the wheel to see that the drive system is working properly and seed cups are free from foreign material.
5. Place several pounds of seed over three seed cups on an outside end of the drill box. Pull the seed tubes off of these three openers.
6. Turn the drive wheel several times to fill the seed cups. Turn the wheel until seed drops to the ground from all three cups.
7. Place a container under the three tubes to gather metered seed.
8. Rotate the drive wheel until one acre has been tallied on the acremeter. This will be about 348 rotations. Check that the three seed cups have plenty of seed coming into them.
9. Weigh the metered seed. Subtract the initial weight of the container. Divide by three. Multiply by the number of openers on your drill to determine total pounds-per-acre seeded. If this figure is different than desired, reset sprockets accordingly.

NOTE: You may want to repeat the calibration procedure if your results vary greatly from the seed-rate chart.
10. When drilling, check the rate by noting acres drilled, amount of seed added to drill and seed level in drill box. If you are seeding more or less than desired, adjust the rate slightly to compensate for field conditions.
### HARD RED WINTER WHEAT

<table>
<thead>
<tr>
<th>DRIVE TYPE</th>
<th>SETTINGS</th>
<th>ROW SPACING</th>
<th>POUNDS PER ACRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0 5 10</td>
<td>20 25 30</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
<tr>
<td>2</td>
<td>0 10 15</td>
<td>25 30 35</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
<tr>
<td>3</td>
<td>0 15 20</td>
<td>30 35 40</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
<tr>
<td>4</td>
<td>0 20 25</td>
<td>35 40 45</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
</tbody>
</table>

*Based On 60#/Bushel*

### RICE SHORT GRAIN

<table>
<thead>
<tr>
<th>DRIVE TYPE</th>
<th>SETTINGS</th>
<th>ROW SPACING</th>
<th>POUNDS PER ACRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0 5 10</td>
<td>20 25 30</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
<tr>
<td>2</td>
<td>0 10 15</td>
<td>25 30 35</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
<tr>
<td>3</td>
<td>0 15 20</td>
<td>30 35 40</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
<tr>
<td>4</td>
<td>0 20 25</td>
<td>35 40 45</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
</tbody>
</table>

*Based On 60#/Bushel*

### RICE LONG GRAIN

<table>
<thead>
<tr>
<th>DRIVE TYPE</th>
<th>SETTINGS</th>
<th>ROW SPACING</th>
<th>POUNDS PER ACRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0 5 10</td>
<td>20 25 30</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
<tr>
<td>2</td>
<td>0 10 15</td>
<td>25 30 35</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
<tr>
<td>3</td>
<td>0 15 20</td>
<td>30 35 40</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
<tr>
<td>4</td>
<td>0 20 25</td>
<td>35 40 45</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
</tbody>
</table>

*Based On 60#/Bushel*

### BARLEY

<table>
<thead>
<tr>
<th>DRIVE TYPE</th>
<th>SETTINGS</th>
<th>ROW SPACING</th>
<th>POUNDS PER ACRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0 5 10</td>
<td>20 25 30</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
<tr>
<td>2</td>
<td>0 10 15</td>
<td>25 30 35</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
<tr>
<td>3</td>
<td>0 15 20</td>
<td>30 35 40</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
<tr>
<td>4</td>
<td>0 20 25</td>
<td>35 40 45</td>
<td>40 45 50 55 60 65 70 75 80 85 90 95 100</td>
</tr>
</tbody>
</table>

*Based On 60#/Bushel*
### OATS SEED RATE INDICATOR SETTING NUMBER

| Drive Type 1 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|--------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Row Spacing  | \*Based On 39#/Bushel |

### RYE SEED RATE INDICATOR SETTING NUMBER

| Drive Type 2 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|--------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Row Spacing  | Pounds Per Acre |

### MILLET SEED RATE INDICATOR SETTING NUMBER

| Drive Type 2 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|--------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Row Spacing  | Pounds Per Acre |

### BUCKWHEAT SEED RATE INDICATOR SETTING NUMBER

| Drive Type 1 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|--------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Row Spacing  | Pounds Per Acre |

### FLAX OR SUDAN SEED RATE INDICATOR SETTING NUMBER

| Drive Type 2 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|--------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Row Spacing  | Pounds Per Acre |

### SUNFLOWERS SEED RATE INDICATOR SETTING NUMBER

| Drive Type 2 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|--------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Row Spacing  | Pounds Per Acre |

### SOYBEANS SEED RATE INDICATOR SETTING NUMBER

| Drive Type 1 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|--------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Row Spacing  | Pounds Per Acre |

*Based On 59.1#/Bushel
### Soybeans Seed Rate Indicator Setting Number

<table>
<thead>
<tr>
<th>Drive Type 2</th>
<th>Setting Number</th>
<th>Row Spacing</th>
<th>Seeds Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>35</td>
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<td>60</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>80</td>
<td>85</td>
<td>90</td>
</tr>
</tbody>
</table>

*Based on 59.1#/Bushel

### Peas Seed Rate Indicator Setting Number

<table>
<thead>
<tr>
<th>Drive Type 1A</th>
<th>Setting Number</th>
<th>Row Spacing</th>
<th>Seeds Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>30</td>
<td>35</td>
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<td>45</td>
</tr>
<tr>
<td>60</td>
<td>65</td>
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<td>75</td>
</tr>
<tr>
<td>90</td>
<td>95</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

*Based on 59.1#/Bushel. Setting the feed cup adjustment handle between 50 & 60 allows for optimum seeding of soybeans.

### Pinto Beans Seed Rate Indicator Setting Number

<table>
<thead>
<tr>
<th>Drive Type 2</th>
<th>Setting Number</th>
<th>Row Spacing</th>
<th>Seeds Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>30</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>60</td>
<td>65</td>
<td>70</td>
<td>75</td>
</tr>
<tr>
<td>90</td>
<td>95</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

### Rape Seed Rate Indicator Setting Number

<table>
<thead>
<tr>
<th>Drive Type 2</th>
<th>Setting Number</th>
<th>Row Spacing</th>
<th>Seeds Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>30</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>60</td>
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<td>70</td>
<td>75</td>
</tr>
<tr>
<td>90</td>
<td>95</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

*Based on 49#/Bushel

### Alfalfa Seed Rate Indicator Setting Number

<table>
<thead>
<tr>
<th>Drive Type 2</th>
<th>Setting Number</th>
<th>Row Spacing</th>
<th>Seeds Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>30</td>
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<td>45</td>
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<td>70</td>
<td>75</td>
</tr>
<tr>
<td>90</td>
<td>95</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

*Based on 60.7#/Bushel

### Milo Seed Rate Indicator Setting Number

<table>
<thead>
<tr>
<th>Drive Type 2</th>
<th>Setting Number</th>
<th>Row Spacing</th>
<th>Seeds Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>30</td>
<td>35</td>
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<td>45</td>
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<tr>
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<td>65</td>
<td>70</td>
<td>75</td>
</tr>
<tr>
<td>90</td>
<td>95</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

*Based on 62.4#/Bushel
### Optional Equipment

**Feed Cup Plugs**

When you desire to block off certain rows to create wider row spacings, you should use Great Plains feed cup plugs which are available to cover feed cups not being used. To install, center plug over opening and push in. When ordering, specify Part No. 109-009H.

---

<table>
<thead>
<tr>
<th>WHEAT GRASS SEED RATE INDICATOR SETTING NUMBER</th>
<th>Pounds Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DRIVE TYPE 2</strong></td>
<td></td>
</tr>
<tr>
<td>Row Spacing</td>
<td></td>
</tr>
<tr>
<td>6”</td>
<td></td>
</tr>
<tr>
<td>7”</td>
<td></td>
</tr>
<tr>
<td>7 1/2”</td>
<td></td>
</tr>
<tr>
<td>8”</td>
<td></td>
</tr>
<tr>
<td>10”</td>
<td></td>
</tr>
</tbody>
</table>

*Based On 60#/Bushel*
Great Plains fertilizer drills have a center seed/fertilizer partition. This allows approximately the same seed capacity as fertilizer, Fig. 14. The partitions are removable panels to allow the drill to be used with all seed, Fig. 15.

If fertilizer is not being used with grain, remove the chain from fertilizer drive sprocket to eliminate unnecessary wear on the fertilizer drive system. If total box capacity is desired for grain, remove seed/fertilizer doors, Fig. 15. Set fertilizer rate adjustment lever at “0” to avoid seed loss through the fertilizer outlets.

The fertilizer rate is set by the adjustment handle located on the fertilizer tray. The setting that the handle is set on corresponds to the fertilizer application chart setting number.

The application rate of dry granular fertilizer is affected by many factors: type, density, relative humidity, and the moisture content of the material itself. Due to these variables, the chart below should be used only to closely approximate the amount of fertilizer being applied.

### FERTILIZER APPLICATION CHART

This chart has been computed using fertilizer that has a density of 65 lbs/cubic foot.

<table>
<thead>
<tr>
<th>Row Spacing</th>
<th>10</th>
<th>15</th>
<th>20</th>
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<th>80</th>
<th>85</th>
<th>90</th>
<th>95</th>
<th>100</th>
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</thead>
<tbody>
<tr>
<td>6&quot;</td>
<td>23</td>
<td>34</td>
<td>46</td>
<td>59</td>
<td>72</td>
<td>84</td>
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<td>125</td>
<td>139</td>
<td>153</td>
<td>166</td>
<td>179</td>
<td>193</td>
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<td>262</td>
</tr>
<tr>
<td>7&quot;</td>
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<td>31</td>
<td>41</td>
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<td>63</td>
<td>75</td>
<td>86</td>
<td>99</td>
<td>111</td>
<td>124</td>
<td>136</td>
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<td>157</td>
<td>170</td>
<td>182</td>
<td>194</td>
<td>207</td>
<td>220</td>
<td>223</td>
</tr>
<tr>
<td>7 1/2&quot;</td>
<td>18</td>
<td>28</td>
<td>38</td>
<td>48</td>
<td>58</td>
<td>68</td>
<td>79</td>
<td>90</td>
<td>100</td>
<td>111</td>
<td>123</td>
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<td>144</td>
<td>155</td>
<td>166</td>
<td>177</td>
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<td>200</td>
<td>212</td>
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<tr>
<td>8&quot;</td>
<td>17</td>
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<td>35</td>
<td>45</td>
<td>55</td>
<td>64</td>
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<td>85</td>
<td>95</td>
<td>105</td>
<td>116</td>
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<td>200</td>
</tr>
<tr>
<td>10&quot;</td>
<td>14</td>
<td>21</td>
<td>29</td>
<td>36</td>
<td>44</td>
<td>51</td>
<td>59</td>
<td>67</td>
<td>76</td>
<td>85</td>
<td>95</td>
<td>102</td>
<td>109</td>
<td>118</td>
<td>127</td>
<td>136</td>
<td>145</td>
<td>154</td>
<td>162</td>
</tr>
</tbody>
</table>

If you are applying fertilizer that has a density other than this, use the following table:

<table>
<thead>
<tr>
<th>Density Conversion Factor</th>
<th>45</th>
<th>50</th>
<th>55</th>
<th>60</th>
<th>65</th>
<th>70</th>
<th>75</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>1.45</td>
<td>1.30</td>
<td>1.20</td>
<td>1.10</td>
<td>1.00</td>
<td>0.93</td>
<td>0.87</td>
<td>0.81</td>
</tr>
</tbody>
</table>

**EXAMPLE:** You’re using fertilizer with a 75 lb/cubic foot density and you desire a rate of 100 lbs/acre. Multiply 100 x 0.87 = 87 lbs. Therefore, use the setting closest to 87 lbs.
The fertilizer feed speed is directly related to your ground speed so there are no chains or sprockets to adjust in order to change your rate. The rate is controlled by fertilizer outlet opening size. For fertilizer rates see that section of your manual.
The depth of each opener can be adjusted by the position of the press wheel, Fig. 16. You can adjust your press wheels up or down to achieve the correct seeding depth.

With the drill level and openers lowered to planting position, adjust the knob and adjustment trunnion located above each press wheel. This will vary the height of the press wheel which automatically changes the seeding depth of the opener. Simply rotate the knob until the seeding depth is correct.

**PRESS WHEEL ANGLE ADJUSTMENT** {2 x 13 DOUBLE "V" PRESS WHEELS ONLY}

The camber angle of the 2" x 13" double "V" press wheels may be adjusted by removing the angle bar adjustment pin and moving the angle bar. Moving the angle bar forward will cause the press wheels to pull more soil over the seed, Fig. 17. Moving the angle bar back will cause the press wheel to pull less soil over the seed, Fig. 18.
Each opener spring can be individually adjusted for down pressure. This is useful when penetrating hard soil and for seeding in tractor tire tracks. To adjust the pressure, remove the "w" clip at the bottom of the spring and place it in a higher hole in the spring rod for more pressure or in a lower hole for less pressure.

**SEEDING IN TRACTOR TIRE TRACKS**

When openers follow in tractor tire tracks and adjusting the spring pressure on the openers does not give satisfactory depth, Fig. 21, the opener lift arms at the top of the spring rods can be turned over and bolted on the underside of the square lift shaft, Fig. 22. Be sure to adjust spring pressure after making this change.

**WARNING:** Ground clearance of these openers will be reduced in transport.
1. Be certain that your drill tires are 7.50 x 20 and that they are inflated to 28 PSI.
2. Load seed box with seed. Cleaned seed is recommended to get the best results.
3. This machine can be transported with a full box of seed. It is best NOT to do this unless necessary because the increased weight does increase the chances for problems on the road. DO NOT EXCEED 20 MILES PER HOUR.
4. Your drill comes equipped with an acremeter and it should be mounted on the left end of the jackshaft. It will accumulate the total acres drilled with the machine. In order to find out the acres covered, write down the beginning reading and subtract it from the end reading for the total acres planted.
5. Make sure that the seed-cup-door handle on each cup is set the same across the drill.
6. If you notice excessive cracking on large grain seeds, adjust all seed-cup-door handles to a more open setting.
7. NEVER back up with the openers in the ground. If you do, check all openers to be sure none are plugged.
8. ALWAYS raise the openers at the end of field rows and other sharp turns.

**OPERATING CHECK LIST**

**BEFORE** operating your drill for the first time, make sure you have checked the following items:

1. Read and follow the "Safety Rules" carefully.
2. Read all "Hook-Up" and "Operating Instructions".
3. Set drive sprockets for drive type desired.
4. Inspect the feeder cups for foreign matter.
5. Rotate drive (left) wheel to make sure the drive system operates smoothly.
6. Set seed rate.
7. Disconnect fertilizer drive chain when fertilizer is not used.
8. Inspect the fertilizer agitator for foreign matter.
9. Set fertilizer rate.
10. Check disk opener scrapers for proper adjustment.
11. Lubricate the drill as needed.
12. Read and follow the "Drill Preparation" section.
13. See that the tires have the proper air pressure as listed on page 1-4.
14. Inspect seed and fertilizer tubes.
15. Check the drill initially and periodically for loose bolts, pins, and chains.
16. Check for leaks in the hydraulic system.

⚠️ **CAUTION!** ESCAPING FLUID UNDER PRESSURE CAN HAVE SUFFICIENT FORCE TO PENETRATE THE SKIN. CHECK ALL HYDRAULIC LINES AND HOSES BEFORE APPLYING PRESSURE. FLUID ESCAPING FROM A VERY SMALL HOLE CAN BE ALMOST INVISIBLE. USE PAPER OR CARDBOARD, NOT BODY PARTS, TO CHECK FOR SUSPECTED LEAKS. IF INJURED, SEEK MEDICAL ASSISTANCE FROM A DOCTOR THAT IS FAMILIAR WITH THIS TYPE OF INJURY. FOREIGN FLUIDS IN THE TISSUE MUST BE SURGICALLY REMOVED WITHIN A FEW HOURS OR GANGRENE WILL RESULT.
MAINTENANCE AND LUBRICATION

PROPER SERVICING AND ADJUSTMENT IS THE KEY TO THE LONG LIFE OF ANY FARM IMPLEMENT. WITH CAREFUL AND SYSTEMATIC INSPECTION, YOU CAN AVOID COSTLY MAINTENANCE, TIME AND REPAIR.

1. After using your drill for several hours, check all bolts to be sure they are tight.

2. Lubrication -- listed below are the items you need to lubricate every 8 - 10 hours of operation:
   a. Each opener lift tube, half clamp.
   b. Clutch assembly.

3. Lubrication -- listed below is the item you need to lubricate once a season:
   a. End wheel hub bearings.

4. Disk scrapers should be kept properly adjusted.

5. Always maintain the proper air pressure in the rib implement tires.

STORAGE

1. Clean the drill as necessary. **BE SURE** that the seed box, fertilizer box and all feed systems are completely cleaned before storing.

2. Oil and adjust all roller chains.

3. Feed cup drive sprocket hub should be oiled in its square bore. Squirt oil on to the square feed cup shaft and move feed cup adjustment lever back and forth in order to get the oil back into the square. This is most important before putting the drill in storage.

4. Lubricate all fittings as indicated in “Maintenance and Lubrication” on page 21.

5. When in storage, lower the drill with openers on a board or hard surface. Apply a light coat of oil to exposed cylinder rods.

6. Store the drill inside if possible for longer drill life.
PROBLEM | SOLUTION
--- | ---
1. Uneven seed spacing or uneven stand | a. Check for plugging in seed cup.  
b. Check to see if seed tubes are plugged.  
c. Reduce ground speed.  
d. Check opener disks to see they turn freely.  
e. Use faster drive type and close feed cup flutes to a more narrow position.  
f. Spring pressure on openers could be improperly adjusted causing opener to not penetrate low spots.  
g. Check for trash or mud build-up on Seed-Lok Wheel, refer to optional equipment section.  
h. Check to see if the drive clutch is fully engaged when openers are lowered.

2. Opener disks not turning freely | a. Check for trash or mud build-up on disk scraper.  Readjust scraper.  
b. Check to see if scraper is adjusted too tight and is restricting disk movement.  
c. Check disk bearings.  
d. Check opener frame for possible damage.  
e. If opener disks turn freely by hand but not in field, lessen down pressure on disk opener.  
f. Check press wheel adjustment for seeding depth.

3. Actual seeding rate is different than desired | a. Check tire pressure.  Proper inflation is listed on page 1-4 in "Tire Inflation Chart".  
b. Check tire size.  Proper size is 7.50" x 20".  
c. Seed treatment will affect seeding rate if the chemicals build up in seed cup.  Unless cleaned regularly, this build up can cause breakage of the feed shaft.  
d. Check sprocket drive type.  
e. See Operator’s Manual for instructions on calculating seed rate.

4. Excessive seed cracking | a. Use slower drive type and open flutes in feed cup to a wider position.  
b. Position feed cup handles to a lower notch.

5. Acremeter doesn’t measure accurately | a. Check tire pressure.  Proper inflation is listed on page 1-4 in "Tire Inflation Chart".  
b. Check tire size.  Proper size is 7.50" x 20".  
c. Check planting operation for excessive overlap or gaps between passes.  
d. Loose soil conditions and slippage will cause variations in acres registered.  
e. To check accuracy of acremeter, see page 5-1 on "Seeding Adjustments".  
f. Check to be sure your acremeter is for your width of drill.

6. Uneven seeding depth | a. See section on depth adjustments.

7. Press Wheel not compacting the soil as desired | a. Reset press wheel height, see seeding and press wheel adjustments sections.  
b. 2" x 13" Double "V" press wheel angles may need to be adjusted.  
c. Down pressure on disk openers is not enough (Refer to section on "Hydraulic Depth Control".

8. Grain box not emptying evenly | a. Certain models do not have the same number of seed cups between each divider of bulkhead.  The section with the larger number of cups will empty sooner.
9. Press wheel or openers plugging
   a. Drilling in damp or wet conditions may increase this problem
   b. Reduce down pressure on openers.
   c. Do not back up drill in the field, or stop and allow drill to roll backwards with openers in the ground.
   d. If using double "V" press wheels, adjust angle bar.
   e. Check Seed-Lok Wheel, refer to Optional Equipment manual.

11. Feeder cup sprockets locked up or twisted feeder drive shaft
   a. Check for foreign matter lodged in one or more feeder cup sprockets.
   b. Liquid insecticide from seed has dried within the feed cup. Remove the build up by disassembling each feed cup and scrape the foreign substance from the turning surfaces.
   **NOTE:** Liquid inoculant should be applied with caution and care should be taken to clean the feeder system after drilling treated seeds.
**SPECIFICATIONS**

**Box Length:** 13'
**Drill Width:** 15' 2"
**Tire Size:** 7.50" x 20"
**Box Capacity:** 36 Bu. (All Seed)
**Box Capacity:** 19 Bu./1308 lbs. (Seed/Fertilizer)

<table>
<thead>
<tr>
<th>Drill Row Spacing</th>
<th>Opener Spacing</th>
<th>No. Of Openers</th>
<th>Drill Weight*</th>
</tr>
</thead>
<tbody>
<tr>
<td>6&quot;</td>
<td>6&quot;</td>
<td>26</td>
<td>3390#</td>
</tr>
<tr>
<td>7&quot;</td>
<td>6 13/16&quot;</td>
<td>23</td>
<td>3240#</td>
</tr>
<tr>
<td>7 1/2&quot;</td>
<td>7 1/2&quot;</td>
<td>21</td>
<td>3140#</td>
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<tr>
<td>8&quot;</td>
<td>7 7/8&quot;</td>
<td>20</td>
<td>3090#</td>
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<tr>
<td>10&quot;</td>
<td>10</td>
<td>16</td>
<td>2890#</td>
</tr>
</tbody>
</table>

*Approximate weights for machines equipped with double disk openers, 2" x 13" single press wheels, step and hydraulic cylinder package.*
Warranty

Great Plains Manufacturing, Incorporated warrants to the original purchaser that this seeding equipment will be free from defects in material and workmanship for a period of one year from the date of original purchase when used as intended and under normal service and conditions for personal use; 90 days for commercial or rental purposes. This Warranty is limited to the replacement of any defective part by Great Plains Manufacturing, Incorporated and the installation by the dealer of any such replacement part. Great Plains reserves the right to inspect any equipment or part which are claimed to have been defective in material or workmanship.

This Warranty does not apply to any part or product which in Great Plains’ judgement shall have been misused or damaged by accident or lack of normal maintenance or care, or which has been repaired or altered in a way which adversely affects its performance or reliability, or which has been used for a purpose for which the product is not designed. This Warranty shall not apply if the product is towed at a speed in excess of 20 miles per hour.

Claims under this Warranty must be made to the dealer which originally sold the product and all warranty adjustments must be made through such dealer. Great Plains reserves the right to make changes in materials or design of the product at any time without notice.

This Warranty shall not be interpreted to render Great Plains liable for damages of any kind, direct, consequential, or contingent, to property. Furthermore, Great Plains shall not be liable for damages resulting from any cause beyond its reasonable control. This Warranty does not extend to loss of crops, losses caused by harvest delays or any expense or loss for labor, supplies, rental machinery or for any other reason.

No other warranty of any kind whatsoever, express or implied, is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale.

This Warranty is not valid unless registered with Great Plains Manufacturing, Incorporated with 10 days from the date of original purchase.