

## Planter Preparation for Spring

### Tips to Improve Emergence Uniformity and Seed Spacing Accuracy

#### Tire Pressure

One of the most overlooked elements by the average planter operator is correct tire pressure. Proper tire pressure is what makes a planter perform to the specs shown in its charts for seed, chemical and fertilizer delivery. Run a planter with under-inflated tires and you will reduce its gear drive making more revolutions for each acre of ground covered and subsequently higher seeding and fertilization rates. Over-inflate and you will experience just the opposite. Check the manual for recommended tire pressures for your planter.

Always replace tires with the same size as the originals.



#### Planter Leveling

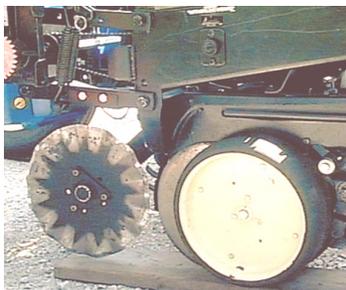
For proper disc cutting action, seed delivery, planting depth accuracy and press wheel action planters need to run slightly uphill. Check your planter for its levelness. If you are running downhill you may need to reverse your drawbar

#### Parallel Linkage Arm Wear

With your planter raised in the air stand behind each row unit and push up. If you find that you can push a row unit up much it is time to replace the parallel linkage bushings. Bushing wear will tend to make a row unit plant slightly shallower with more tendency for erratic seed distribution.

#### Coulters and Attachments

Coulters and other attachments can impact seed to soil contact, especially with heavy residues. Coulters depth and sharpness are important to allow residues to be cut cleanly rather than crimping and pushing them into the seed furrow.



Most coulters should be set to run about 1/4 inch above the depth of the double-disk openers. Be sure that coulters and residue attachments are aligned properly with the double-disk openers. Running coulters too deep can lead to seed being planted too deep and double disc openers not turning properly.

#### Check your Seed Drop Tubes for Wear

Check your seed drop tubes to be sure they are free and clear of any obstructions, and make sure that they are not worn by your double disc openers. Rough edges caused by wear can alter your planters seed drop accuracy. Any hindrance or obstruction that interferes with seed drop can result in erratic seed distribution, even though meters are functioning perfectly. If seed tubes are worn, they should be replaced.



Sharp cutting double-disk openers can either make or break a planter. A business card can be used to determine if the disks have the necessary 2 inches of cutting edge contact (see below). The V- trench they form is critical for good seed-to-soil contact and uniform emergence. As disk openers wear, they become shorter and they may no longer form a firm cutting point. This can lead to an irregular furrow, shaped like a "W" instead of a "V" (see top of next page) resulting in variable seed depth placement and a lack of seed to soil contact. When disks measure less than 14 1/2 inches in diameter, they should be replaced with new disks measuring 15 inches.



**Depth-gauge wheels should also be checked to make sure that** they turn freely and move up and down easily. Yearly inspections will tell you if they need to be shimmed in against the double disk openers to avoid soil from flowing between them and into the seed trench thereby creating planting depth variability.

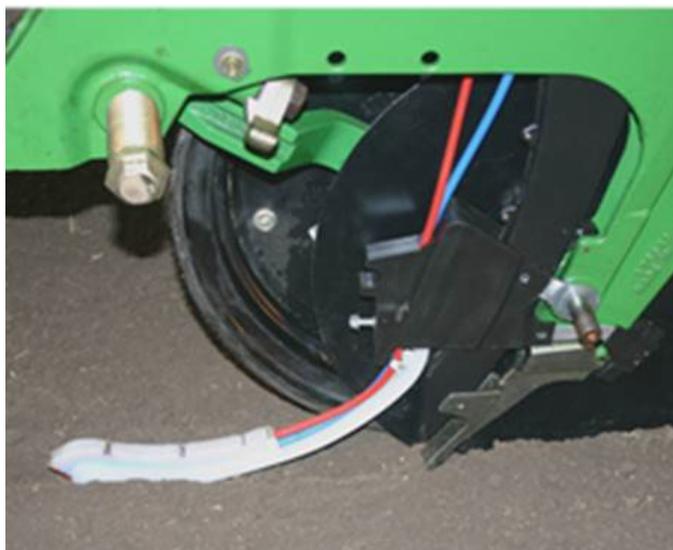


Worn disks affect furrow shape.

Check your planter transmission to verify sprocket settings for your desired seed drop. Check all chains for wear and be sure they are properly lubricated and tensioned with no stiff or frozen links.

### Improving Seed to Soil Contact

Keaton seed firmers are a planter add-on that I suggest every grower consider. They are easy to install between the double disc openers and act to firm the seed down into the bottom of the seed trench for better seed to soil contact.



### Checking Seed Drop

Release the down force pressure on each set of press wheels and then use a chain or bungee strap to tie them up so they don't touch the ground. Then plant far enough to get the planter up to field speed. Stop your planter and go back to check the seed drop of each row. Remember final average plant stands will generally run 93% of what you drop. Final average plant stands of ultra early plantings before April 20 that experience any degree of cold weather may only run 85% of actual seed drop.

**Measure off 1/1000<sup>th</sup> of an acre for your row width and then count the number of seeds in the furrow. Multiply by 1000 will convert your count into seeds/acre.**

Planting width (in)	Distance for 1/1000 <sup>th</sup> acre
15*	34 ft 10 in
20	26 ft 1 in
30	17 ft 5 in
38	13 ft 10 in

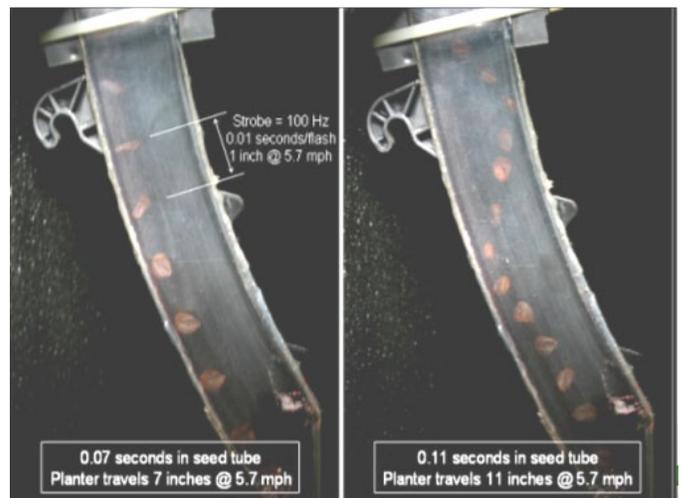
\* This number can also be used for twin-row planted on 30-inch centers.

### Planting speed

Properly maintained finger planters can accurately plant seed up to a maximum of 75RPM. For seed drops of 32,000 or more planter speeds should never exceed 5 mph. Optimum finger planter performance will generally be achieved at 4.5 mph. Higher seed drops will require even slower planter speeds to avoid overplanting.

The seed delivery mechanisms of vacuum and air planters will allow them to function properly at speeds slightly higher than finger planters but once speeds begin exceeding 5.5 mph planter bounce can become a serious issue.

Planter bounce will sacrifice seed spacing uniformity and planting depth accuracy by causing seed bounce in the seed drop tube ( see photo below ). If you want to maximize crop emergence uniformity and yield performance slow down to 5 mph.



## Planter Calibration Frequency

All planters should be calibrated on a yearly basis if over 50 acres per row is being planted.

## How to Achieve Accurate Seed Drop with Larger Seed Sizes

- Liberal use of talc, graphite or a talc/graphite blend, specific by planter type is critical to achieving proper seed drops with certain Centre Fill and Air Type Planters.
- Tank pressure, fan speeds and other adjustments should be made for the specific seed/treatment combination that is being planted. Refer to the planter operator's manual for recommendations.
- High population settings, especially when combined with high ground speed, may provide challenges.
- With higher ground speeds, the metering units are operating at faster RPM's, making it more challenging to keep seed in place as the unit rotates.
- If meters are "starving" for seed, a reduction in ground speed may provide a solution. Do not exceed the planter manufacturer's recommendations for ground speed.
- John Deere only recommends the use of talc in their vacuum planters and NO GRAPHITE.
- Though the White Seed Boss people do not recommend talc it has been found that adding a ½ to 1 cup of talc to each row unit has improved their planters' performance in high relative humidity environments.
- When soybean seed sizes fall below 2200 seeds/lb improved plantability will be found by using the 48 cell dark blue disc in Kinze brush meter planters.

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