

Row Crop Planter Checklist

Tips to Achieve Successful Stand Establishment

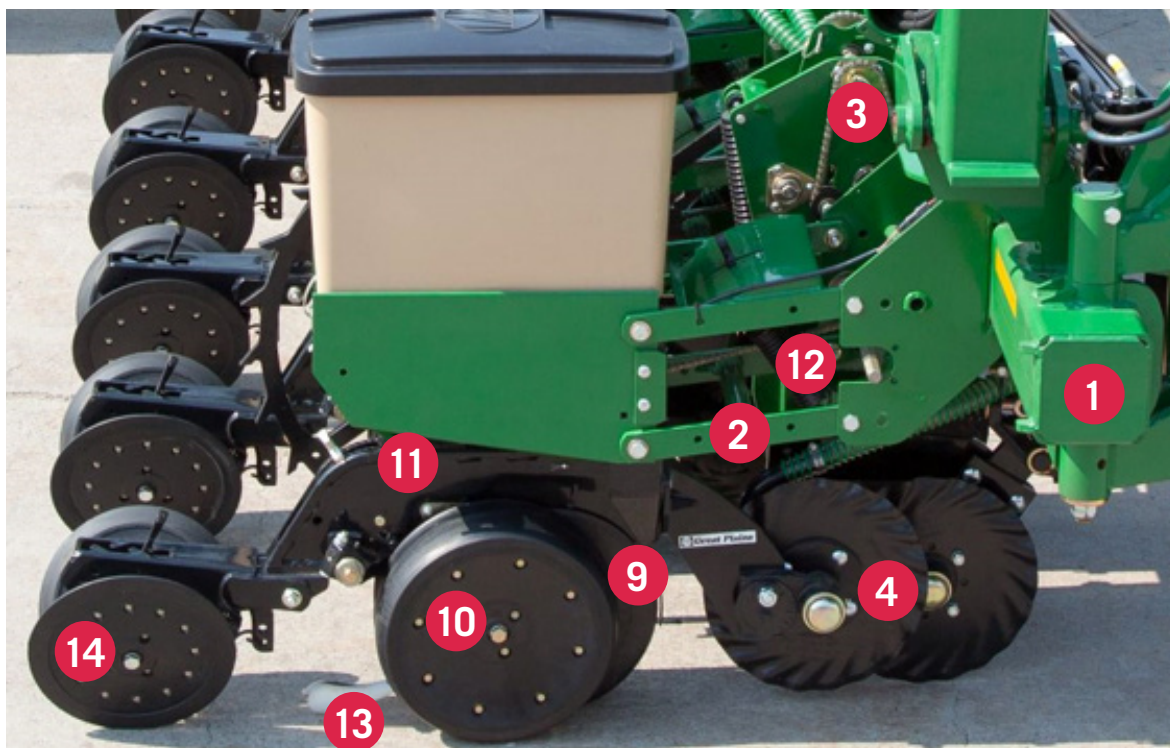
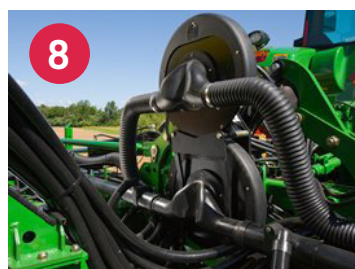
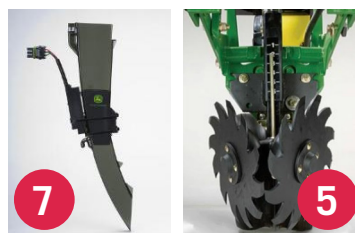
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Planting represents a critical field operation in row crop production. Correct planter setup and maintenance can reduce downtime in the field while ensuring optimum seeding performance during planting, which generally leads to successful stand establishment. Negligent planter maintenance and setup can lead to costly planting mistakes, resulting in stand establishment issues and poor crop yields. **The following tips will help producers evaluate the various planter components and make any necessary adjustments to achieve optimal planter performance.**



Always consult the operator's manual for the manufacturer-recommended settings for planter components such as vacuum, downforce, and closing wheel pressure to obtain optimal field performance. Properly lubricating all moving parts will help ensure efficient planter operation and extend the life of planter components.

Source: John Deere and Great Plains Ag

1 Toolbar: Make sure to level the planter toolbar before planting. The toolbar must be parallel to the ground when the planter is in operation to ensure proper row unit operation. This is an important adjustment, especially in no-till conditions, as an improperly leveled toolbar can result in the planter row unit nosediving or making insufficient ground contact.

2 Parallel arms: Check for any play in the parallel arm pivot points. Planters have excessive play in these points after normal usage, resulting in the planter row unit wobbling and causing seed placement issues. Replace bushings, bolts, or arms if there is any noticeable wear.

3 Main drive and chains: If the planter is equipped with drivelines and chains, they should turn freely without jumping or vibrating to achieve uniform seed placement. Check all the drive chains, chain idlers, sprockets, and bushings, and replace any parts that are worn. Chains should be snug and rust-free to be in proper operable condition.

- 4 Coulters:** Sometimes a single-disc coulter is mounted in the front of opening discs to cut through plant residue and loosen a narrow strip of soil. Check that the coulter is aligned directly in front of the opening discs and operating at a slightly shallower depth (around 1/4-inch) than the opening discs to prevent loosening soil and avoid making air pockets in the seed furrow.
- 5 Row cleaners:** A pair of row cleaners is generally used in front of the row unit to remove any soil clods or crop residue when planting in reduced, conservation, or no-till systems. Row cleaners should be adjusted so that they are barely touching the soil surface, only removing residue and not digging into the soil during planting.
- 6 Seed meters:** Seed meters should be checked regularly before and during the planting season. Remove seed meter covers each year and examine them for any worn or damaged parts including vacuum seals and other internal components. Replace worn or damaged parts if needed. Seed meters can be tested on a test stand every year to verify meter performance before actual planting.
- 7 Seed tube:** Check that seed tubes are in good condition and free of obstructions. Replace tubes that are cracked or have worn bottoms or edges. Seed tube sensors should be clean, secured properly to the tube, and working as intended to ensure correct population feedback during planting.
- 8 Vacuum:** Check that all vacuum hoses are connected properly to the main line and the seed meters. Inspect connections for any leaks or loose fittings. Vacuum pressure should be adjusted based on the seed size and shape as recommended by the seed disc manufacturer.
- 9 Opening discs:** Check opening discs for correct sharpness and blade diameter. Replace disc openers if they are worn by more than a half-inch from the original diameter. To ensure adequate contact between the opening discs, perform a quick check by sliding a business card on either side of the contact point of the discs. Adjust the distance between the opening discs (shimming) if the distance between the two cards is more than 2-2.5 inches.
- 10 Gauge wheels:** Evaluate the depth gauge arm, bushings and wheel. The gauge wheel should not rub too tightly against the disc and can be adjusted with shim washers or bushings if needed. The gauge wheels should not have a large gap between the disk and wheel. The arm and wheel should move freely up and down and should not stick in any position, and the gauge wheel should not have any wobble when rotated.
- 11 Seed depth:** Set the appropriate depth for the crop being planted, and check the depth settings both on a hard surface and once the planter is taken to the field. Because row-to-row variability can exist on planters, seed depth should be checked on every row unit to ensure correct seeding depth across the whole planter. Any significant changes in field conditions during planting would require additional checks.
- 12 Downforce:** Adjust the row unit downforce for the given field conditions so that you can barely turn the gauge wheel with one hand while the planter is in the ground. Make sure there is sufficient downforce on the row unit to create furrow at the desired seeding depth while not causing any compaction. Mechanical downforce systems can be adjusted by changing spring tension, whereas active downforce systems can be adjusted by changing downforce or margin settings via the in-cab display.
- 13 Seed firmers:** Assess seed firmers and adjust the tension bolt if needed. Worn seed firmers should be replaced as needed. Seed firmers can be beneficial in certain soil types, such as clay and loamy soils, to firm seed in the furrow and ensure adequate seed-to-soil contact.
- 14 Closing wheels:** Ensure that closing wheels are perfectly aligned behind the opening discs so that they close evenly on either side of the trench. Closing wheel pressure should be adjusted so that they close the seed trench without causing excessive compaction or trenching.

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