



Planter Adjustments for Corn

Proper Planter Settings can help Maximize Yield Potential

Maximizing corn yield is dependent on many manageable and non-manageable agronomic factors. Planter maintenance and using recommended settings for each seed size to help assure proper seed drop and placement are factors that can be managed. Factors that can impact seed drop and placement include:

- Worn or broken parts (sprockets, discs, bearings, frame).
- Improper adjustments (vacuum settings, tire pressure, hitch alignment).
- Soil condition (rough, too fine, too moist or dry) and tillage method (no-till, conventional).
- Field topography (flat vs. hill sides).



Setting and Adjusting the Planter

Prior to heading to the field, seed bags and tags should be reviewed for any seed drop recommendations. The bag weight and seeds per bag are commonly printed on the tag or bag. If seeds per pound does not appear, divide the total seeds by the weight (80,000 seeds per bag/55.4 pounds = 1470 seeds/pound). For many farmers, electronic monitors and computers are the means for setting a desired seeding rate as the plateless planting mechanism allows for the planting of most seed sizes. Regardless, the planter manufacturer's manual and any after market equipment manuals should be referenced for recommended seed drop settings, planting speed, and down pressure settings. Table 1 may be helpful for selecting an initial vacuum or pressure setting. Table 2, for those relying on plates, may be helpful for selecting an initial plate recommendation.

After planting a short distance, seed spacing should be checked to determine if adjustments are needed. If field conditions change, adjustments may be necessary to maintain seed placement.

General Planting Equipment Guidelines

- Always refer to the manufacturer's and after market manuals before performing maintenance.
- Plateless Planters (Air, Vacuum, and Finger Pickup)
- GRAPHITE should be used in finger pickup planters.
- TALC should be used in vacuum planters.
- Additional GRAPHITE/TALC should be used with seed-applied insecticides.
- **Maximum levels of GRAPHITE/TALC** should be used on high applications of seed-applied insecticides.
- Seeding units and electronic monitors should be checked for GRAPHITE and TALC build-up which can interfere with seed drop.
- Air pressure/vacuum settings should be adjusted and monitored continually for desired planting rate.
- The proper drum or disc usage should be based on seeds/pound and seed shape.

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- Observe electronic monitors continually for desired seed drop and to make sure the monitor is operating correctly.
- Treated seed does not flow as freely as untreated seed. Adjustments should be made to compensate for restricted seed flow to help prevent lower than desired seeding rates.

CASE IH Cyclo® Planters

- The Cyclo drum gauge should be used to determine the correct seed drum to use.
- No part of the seed should poke through the hole(s) in the drum selected.
- Air pressure and the brush should be adjusted to optimize desired seeding rate.

John Deere® Finger Pickup Planters

- Planter should be operated between 1/2 speed and maximum speed to optimize planting rate.
- Planting too fast may result in doubles and triples; planting too slow may result in skips.
- Poor depth control and erratic seed spacing may result from planting too fast for conditions.
- The torque required to turn the finger pickup mechanism should be adjusted with the appropriate tension tool.

High Speed Planters

Planters equipped with a type of belt to deliver the seed to the seed furrow can be very accurate for seed placement at higher planting speeds. The belts carry the seed to the bottom of the seed furrow

instead of the seed being released from the bottom of the seed box and dropping via gravity through the seed tube to the seed furrow. While in the seed tube, the seed can ricochet off the sides of the seed tube and bounce within the seed furrow, particularly at higher planting speeds (5 to 10 MPH).¹ Seeding rates are set and monitored by sophisticated electronic sensors.

- In general, 20 to 40 pounds of increased downforce per row unit is required.¹
- In general, at least one additional notch in closing wheel pressure is required.¹

Settings in Tables 1 and 2 are suggestions and should be changed based on actual planting performance. Seed tag or bag should be reviewed for planting recommendations. Operator assumes all responsibility for selected settings, plates, and planter operation. Along with the manufacturer's manual, the manuals for any added aftermarket parts manuals should be referenced for planting recommendations.

Sources (verified 03/03/20)

¹ Bergman, R. 2020. High speed planting technology. Integrated Crop Management. Iowa State University Extension and Outreach. <https://crops.extension.iastate.edu/>.

ProMAX 40 Flat Disk. 2018. Deere & Company, Moline, IL.

Kinze® Manufacturing, Williamsburg, Iowa

AGCO Corporation, Duluth, Georgia

Case IH, Racine, Wisconsin

Deere & Company, Moline, Illinois

Legal Information

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TABLE 1. INITIAL PLANTER SETTINGS BASED ON SEED WEIGHT

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Manufacturer	Smaller   Larger							
John Deere® Vacuum Meter™ & Pro-Series™	Recommended Vacuum Level (Inches of Water). Apply Talc.							
Bag Weight (lb) of 80K seeds	32 to 36	37 to 40	41 to 45	46 to 49	50 to 53	54 to 57	58 to 61	62+
Standard Disc (A50617)			8 to 9	8 to 10	9 to 10	9 to 11	11 to 12	11 to 15
Small Disc (A43215)*	7 to 9	9 to 10	11 to 12	12 to 14				
	*John Deere® Vacuum Meter™ & Pro-Series™ Extra Small (H136478) - for 80K bag wt (lb) < 28; Recommended Vacuum Level (Inches of Water) is 9.5 to 12.5.							
ProMAX 40 Flat Seed Metering Disks (A52391)**	**Higher vacuum levels required because there is no cell to hold the seed on the disk. Double eliminator is required for proper operation - option code 9215 for MaxEmerge XP™ units and base equipment for MY09 and more recent Pro-Series XP™ row units. When switching back to a cell-style disk, such as a soybean disk, the double elimiator must be set to the storage, or disengaged position. Need to 1) Remove the knockout wheel, 2) Install a cell-disk scraper, 3) Remove the double-notch brush, and 4) Install a single-notch brush (ProMAX 40 Flat Disk, Deere & Company, Moline, IL)							
Kinze® EdgeVac™ Metering	Recommended Vacuum Level (Inches of Water)							
Bag Weight (lb) of 80K seeds	32 to 36	37 to 40	41 to 45	46 to 49	50 to 53	54 to 57	58 to 61	62+
Corn Disc 39 Cell (D14465)	17 to 19	17 to 19	17 to 19	19 to 21	19 to 21	19 to 21	19 to 21	19 to 21
John Deere®, Kinze® Finger Pickup	Use Graphite							
Bag Weight (lb) of 80K seeds	< 36 to 38		39 to 50			51+		
Maximum Speed Recommendation	Reduce Maximum Speed by 30%		Reduce Maximum Speed by 10%			Maximum Recommended Speed		
White Air 5100/6100	Recommended Ounces of Pressure (PSI)							
Bag Weight (lb) of 80K seeds	32 to 36	37 to 40	41 to 45	46 to 49	50 to 53	54 to 57	58 to 61	62+
Regular Disc (852435)			1.5 to 1.8	1.8 to 2.0	2.0 to 2.2	2.2 to 2.4	2.4 to 2.5	2.5 to 3.0
Small Disc (852436)	2.5 to 3.0	3.0 to 3.4	3.5 to 3.7	3.8 to 4.0				
White Air 5400	Recommended Discs for Weight of 80K Seeds							
Bag Weight (lb) of 80K seeds	30 to 45			46 to 70			60 to 70	
Seed Disc	W247535B			W24745B			W247396B	
Case IH Vacuum Early Riser®	Singulator Setting of 3.0. Recommended Vacuum Setting (Inches of Water). Use Graphite.							
Bag Weight (lb) of 80K seeds	32 to 36	37 to 40	41 to 45	46 to 49	50 to 53	54 to 57	58 to 61	62+
Seed Disc 4855 (192995)	18 to 20	18 to 20	18 to 20	20 to 22	20 to 22	20 to 22	20 to 22	20 to 22
Case IH Cyclo®	Use Standard A-Pocket Drum with 0.22 Inch Holes. 36 Hole: Part #60270C93 to #60270C95, 24 Hole: Part #648777R93 to #648777R95. If population is too low, use the E-pocket drum, 0.16 inch hole: Part #1546935C1							
Bag Weight (lb) of 80K seeds	32 to 36	37 to 40	41 to 45	46 to 49	50 to 53	54 to 57	58 to 61	62+
Pressure (oz)	8 to 9	8 to 9	9 to 10	10 to 11	10 to 11	11 to 12	12 to 13	12 to 14
Brush	Full Up	Full Up	Half Down	Half Down	Half Down	Full Down	Wire Down***	Wire Down***
	***Wire Down Only If Full Down Gives Low Population							



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TABLE 2. PLANTER PLATE SUGGESTIONS

Manufacturer	Flat Seed							
	Small ← → Large							
John Deere® 24 Cell Plastic	B90-24	B9-24X	B6-24X	B12-24	B7-24X	B11-24	B8-24X	B5-24X
John Deere® 24 Cell Metal		16236	30070	2711	1302	2848	950	2594
Case IH 24 Cell Plastic	C90-24	C697X-24	C7-24X	C7-24X	C11-24	C8-24	C8-24	C18-24
		C9-24	C6-24	C65-24	C7-24	C11-24	C7-24	
Case IH 24 Cell Metal						469-811	469-811	474-665
		480-190	469-809	480-189	469-810		469-810	

Manufacturer	Round Seed						
	Small ← → Large						
John Deere® 24 Cell Plastic	B3-24X	B25-24	B2-24	B150-24	B1-24X	B54-24	B0-24
John Deere® 24 Cell Metal	16238		2824		10853		2712
Case IH 24 Cell Plastic	C25-24	C15-24X	C1X-24	C1X-24	C1X-24	C12-54	C0X-24
	C3-24X	C25-24	C2X-24	C150-24		C54-24	
Case IH 24 Cell Metal		480-509				480-693	

Suggestions are for the SMOOTH SIDE of floor plate next to seed plate, except where printed GROOVE UP under planter plate suggestions. If suggested plateplants too heavy, the planter should be checked for a worn floor plate, faulty cut-off tongue, weak or broken seed ejector, or sluggish valve action.