

Rate Charts and Settings with Metric Units

(Serial No. 790101 -)



JOHN DEERE

OPERATOR'S MANUAL

Rate Charts and Settings

OMA138554 ISSUE D3 (ENGLISH)

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

If this product contains a gasoline engine:



WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The State of California requires the above two warnings.

John Deere Seeding Group

Worldwide Edition
PRINTED IN U.S.A.

Introduction

Record Rate Settings

Once machine is set for a specific crop and is performing as desired, enter machine settings in the following table as shown. That information can then be

used later, when changing from one crop to another, or from one year to the next. An identical table is provided in your planter operator's manual.

Rates and Settings Record Sheet						
<i>See first column for example.</i>						
Seed	Soybeans					
Transmission Range	High					
Driver Sprocket	20					
Driven Sprocket	26					
Rate	180,000					
Number of Seeds per Foot or Seed Spacing	10.5 per foot					
Ground Speed	6 mph					
Meter Type	Vacuum					
Seed Size	3200 per pound					
Vacuum Meter						
Disk	Soybean A42586					
Baffle Setting	Upper					
Brush	Long					
Doubles Eliminator Setting	No					
Knockout Wheel	No					
Vacuum Level	8 in.					
Talc	1/2 cup per hopper					
Plateless Meter						
Graphite						
Granular Chemical						
Rate						
Meter Setting						
Fertilizer						
Rate						
Meter Setting						
User Notes	Use this area for entering any info that may be needed in the future					

Rates and Settings Record Sheet						
Seed						
Transmission Range						
Driver Sprocket						
Driven Sprocket						
Rate						

Introduction

Rates and Settings Record Sheet						
Seed Spacing						
Ground Speed						
Meter Type						
Size/Type						
Vacuum Settings						
Disk						
Baffle Setting						
Brush						
Doubles Eliminator Setting						
Knockout Wheel						
Vacuum Level						
Talc						
Plateless Meter						
Graphite						
Granular Chemical						
Rate						
Meter Setting						
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Safety

Recognize Safety Information



T81389—UN—28JUN13

This is a safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

DX,ALERT-19-03OCT22

Understand Signal Words



▲ WARNING

▲ CAUTION

TS187—19—30SEP88

DANGER; The signal word DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING; The signal word WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION; The signal word CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. CAUTION may also be used to alert against unsafe practices associated with events which could lead to personal injury.

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol. DANGER identifies the most serious hazards. DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

DX,SIGNAL-19-05OCT16

Follow Safety Instructions



TS201—UN—15APR13

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

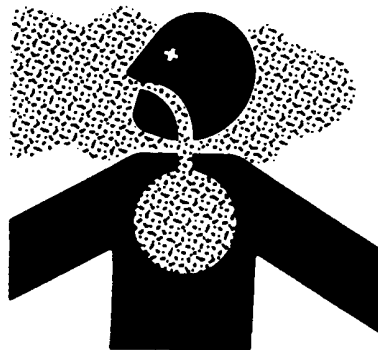
Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

DX,READ-19-01AUG22

Handle Agricultural Chemicals Safely



TS220—UN—15APR13



A34471

A34471—UN—11OCT88

Chemicals used in agricultural applications such as fungicides, herbicides, insecticides, pesticides, rodenticides, and fertilizers can be harmful to your health or the environment if not used carefully.

Always follow all label directions for effective, safe, and legal use of agricultural chemicals.

Reduce risk of exposure and injury:

- Wear appropriate personal protective equipment as recommended by the manufacturer. In the absence of manufacturer's instructions, follow these general guidelines:
 - Chemicals labeled '**Danger**': Most toxic. Generally require use of goggles, respirator, gloves, and skin protection.
 - Chemicals labeled '**Warning**': Less toxic. Generally require use of goggles, gloves, and skin protections.
 - Chemicals labeled '**Caution**': Least toxic. Generally require use of gloves and skin protection.
- Avoid inhaling vapor, aerosol or dust.
- Always have soap, water, and towel available when working with chemicals. If chemical contacts skin, hands, or face, wash immediately with soap and water. If chemical gets into eyes, flush immediately with water.
- Wash hands and face after using chemicals and before eating, drinking, smoking, or urination.
- Do not smoke or eat while applying chemicals.
- After handling chemicals, always bathe or shower and change clothes. Wash clothing before wearing again.
- Seek medical attention immediately if illness occurs during or shortly after use of chemicals.
- Keep chemicals in original containers. Do not transfer chemicals to unmarked containers or to containers used for food or drink.
- Store chemicals in a secure, locked area away from human or livestock food. Keep children away.
- Always dispose of containers properly. Triple rinse

empty containers and puncture or crush containers and dispose of properly.

DX,WW,CHEM01-19-24AUG10

Live With Safety

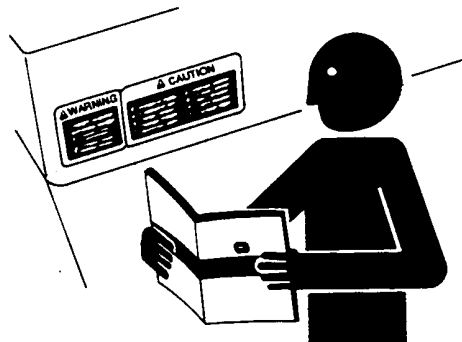


TS231—19—07OCT88

Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.

DX,LIVE-19-25SEP92

Replace Safety Signs



TS201—UN—15APR13

Replace missing or damaged safety signs. Use this operator's manual for correct safety sign placement.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

DX,SIGNS-19-18AUG09

Meter Lubrication

Use of Talc Lubricant



A34471

A34471—UN—11OCT88

CAUTION: Avoid chemical injury to eyes, skin, and lungs when accessing and handling components coated with seed treatment. If using seed treatments, use caution when handling parts coated with seed treatment. Read and follow the safety instructions on the product label.

IMPORTANT: Avoid negative effects on seed placement and population from residue on components. Only use lubricants approved for use in seed meters. (See your John Deere dealer or qualified service provider.)

NOTE: Wax-based lubricant typically has lower levels of inert and seed treatment dust in the vacuum blower exhaust.

Talc lubricant is compatible with MaxEmerge 5 and MaxEmerge 5e seed meters. A meter lubricant (fluency agent) is required for optimum performance of the vacuum seed meter and central commodity system (CCS). To obtain a consistent seed release from the seed disk and improve spacing accuracy, properly lubricate the seed. Seed and seed treatment must be free of clumps.

Farmer-Applied Seed Treatment:

Farmer-applied seed treatments are NOT recommended.

IMPORTANT: Avoid seed meter failure from sticky seeds and meter components due to chemical reactions between farmer-applied seed treatments and commercially applied treatments. If farmer-applied treatments are used, follow recommendations of the chemical manufacturer. Avoid treatments with high oil content. Certain temperature and humidity levels also complicate material compatibility.

If farmer-applied treatment is used, apply seed treatment first, meter lubricant second, and allow seed treatment to dry before placing seed in hoppers and CCS tanks. If seed treatment accumulates in the meter

while using the following lubricant application rates, contact the treatment manufacturer for assistance.

Commercially Treated Seed:

Some treated seed is coated with commercially applied lubricant. To maintain meter performance, apply the recommended amount of lubricant in addition to the commercial application.

IMPORTANT: Avoid meter malfunction due to poor seed flow. Thoroughly incorporate the lubricant. Verify that all seeds are evenly coated.

NOTE: If the lubricant builds up in the bottom of the hopper, reduce the amount of lubricant.

When using 1.6, 2.0, 2.7, or 3.0 bushel hoppers (without CCS tanks) to deliver seed to seed meters, use the following table:

Application Rate in Row Unit Hoppers	
<i>NOTE: Thoroughly incorporate the lubricant until all seeds are coated.</i>	
Hopper Size	Amount of Lubricant
58 L (1.6 bu)	120 mL (1/2 cup)
70 L (2.0 bu)	177 mL (3/4 cup)
9.5 L (2.7 bu)	240 mL (1 cup)
106 L (3.0 bu)	
Per 80 000 Kernel Seed Unit	74 mL (5 tbsp) (2.5 oz)

When using CCS system to deliver seed to seed meters, use the following table:

Application Rate in CCS Tanks	
<i>NOTE: Apply lubricant to seed as seed enters tank. All seeds must be coated to ensure movement through the CCS system and for proper meter performance. Mix seed and lubricant as necessary.</i>	
CCS Tank Size	Amount of Lubricant
880 L (25 bu) Bulk Tank	1.9 L (8 cups)
1233 L (35 bu) Bulk Tank	2.6 L (11 cups)
1585 L (45 bu) Bulk Tank	3.3 L (14 cups)
1762 L (50 bu) Bulk Tank	3.8 L (16 cups)
1938 L (55 bu) Bulk Tank	4.3 L (18 cups)
2290 L (65 bu) Bulk Tank	4.7 L (20 cups)
Per 80 000 Kernel Seed Unit	74 mL (5 tbsp) (2.5 oz)

Adjust lubricant rates until all seeds are coated, while avoiding an accumulation of lubricant in the bottom of the hopper.

Double the lubricant recommendation when planting small seed, large seed, seeds with heavy treatment, or in humid planting conditions.

Triple the lubricant recommendation when a

combination of sticky seed treatments, large or small seed, and high humidity occurs.

IMPORTANT: Avoid meter malfunction from the formation of lubricant clumps. Clean excess seed treatment and lubricant out of hoppers between fills.

If vacuum system requires frequent cleanout, reduce the amount of lubricant. If a coating of seed treatment is found on seed disks, increase the amount of lubricant.

When using seed treatments, clean the seed meters and seed disks with warm, soapy water. Spray a graphite coating on the vacuum seal side of the seed disks as needed.

OUC6045,00006CD-19-28FEB23

Use of Wax-Based Lubricant



A34471

A34471—UN—11OCT88

CAUTION: Avoid chemical injury to eyes, skin, and lungs when accessing and handling components coated with seed treatment. If using seed treatments, use caution when handling parts coated with seed treatment. Read and follow the safety instructions on the product label.

IMPORTANT: Avoid negative effects on seed placement and population from residue on components. Only use lubricants approved for use in seed meters. (See your John Deere dealer or qualified service provider.)

NOTE: Wax-based lubricant typically has lower levels of inert and seed treatment dust in the vacuum blower exhaust.

Wax-based lubricant (fluency agent) is compatible with MaxEmerge 5, MaxEmerge 5e, and ExactEmerge seed meters. A meter lubricant (fluency agent) is required for optimum performance of the vacuum seed meter and central commodity system (CCS). To obtain a consistent seed release from the seed disk and improve spacing accuracy, properly lubricate the seed. Seed and seed treatment must be free of clumps.

Farmer-Applied Seed Treatment

Farmer-applied seed treatments are NOT recommended.

IMPORTANT: Avoid seed failure from sticky seeds and meter components due to chemical reactions between farmer-applied seed treatments and commercially applied treatments. If farmer-applied treatments are used, follow recommendations of the chemical manufacturer. Avoid treatments with high oil content. Certain temperature and humidity levels also complicate material compatibility.

If farmer-applied treatment is used, apply seed treatment first, meter lubricant second, and allow seed treatment to dry before placing seed in hoppers and CCS tanks. If seed treatment accumulates in the meter while using the following lubricant application rates, contact the treatment manufacturer for assistance.

Commercially Treated Seed

Some treated seed is coated with commercially applied lubricant. To maintain meter performance, apply the recommended amount of lubricant in addition to the commercial application.

IMPORTANT: Avoid meter malfunction due to poor seed flow. Thoroughly incorporate the lubricant. Verify that all seeds are evenly coated.

NOTE: If the lubricant builds up in the bottom of hopper, reduce the amount of lubricant.

When using 1.6, 2.0, 2.7, or 3.0 bushel hoppers (without CCS tanks) to deliver seed to seed meters, use the following table:

Application Rate in Row Unit Hoppers	
<i>NOTE: Thoroughly incorporate the lubricant until all seeds are coated.</i>	
Hopper Size	Amount of Lubricant
58 L (1.6 bu)	48 mL (1/5 cup)
70 L (2.0 bu)	60 mL (1/4 cup)
95 L (2.7 bu)	90 mL (3/8 cup)
106 L (3.0 bu)	
Per 80 000 Kernel Seed Unit	30 mL (1/8 cup)

When using CCS system to deliver seed to seed meters, use the following table:

Application Rate of Approved Fluency Agents in CCS Tanks	
NOTE: Apply fluency agents to seed as seed enters tank. All seeds must be coated to ensure movement through the CCS system and for proper meter performance. Mix seed and fluency agent as necessary.	
CCS Tank Size	Amount of Wax-Based Agent
880 L (25 bu) Bulk Tank	0.75 L (3-1/8 cups)
1233 L (35 bu) Bulk Tank	1.05 L (4-3/8 cups)
1585 L (45 bu) Bulk Tank	1.3 L (5-5/8 cups)
1762 L (50 bu) Bulk Tank	1.5 L (6-1/4 cups)
1938 L (55 bu) Bulk Tank	1.6 L (6-7/8 cups)
2290 L (65 bu) Bulk Tank	1.9 L (8-1/8 cups)
Per 80 000 Kernel Seed Unit	30 mL (2 tbsp) (1 oz)

Adjust lubricant rates until all seeds are coated, while avoiding an accumulation of lubricant in the bottom of the hopper.

Double the lubricant recommendation when planting small seed, large seed, seeds with heavy treatment, or in humid planting conditions.

Triple the lubricant recommendation when a combination of sticky seed treatments, large or small seed, and high humidity occurs.

IMPORTANT: Avoid meter malfunction from the formation of lubricant clumps. Clean excess seed treatment and lubricant out of hoppers between fills.

If vacuum system requires frequent cleanout, reduce the amount of lubricant. If a coating of seed treatment is found on seed disks, increase the amount of lubricant.

When using seed treatments, clean the seed meters and seed disks with warm, soapy water. Spray a graphite coating on the vacuum seal side of seed disks as needed.

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coated with commercially applied lubricant. Apply the recommended amount of lubricant, in addition to the commercial application.

CAUTION: Avoid chemical injury to eyes, skin, and lungs when accessing and handling components coated with seed treatment. Wear the appropriate personal protective equipment. Read and follow the safety instructions on the product label.

IMPORTANT: Avoid premature meter wear. To reduce the wear of meter components and prolong the life of the seed meter, regularly use powdered graphite. Graphite filters down into the seed meter to ensure proper lubrication.

Avoid sticky seeds and meter components. Some types of graphite have an oil base that leaves a residue on the components. John Deere graphite provides dry lubrication.

NOTE: Every seed is visibly gray when properly coated.

At the beginning of each season, add 9 mL (0.6 tbsp) or (0.3 oz) of graphite to each empty row-unit hopper.

If the lubricant frequently accumulates in the hoppers, reduce the lubricant rate. If a coating of seed treatment forms on the meter components, increase the amount of lubricant.

Row Unit Hopper—Graphite Application Rate	
Hopper Size	Amount of Graphite
58 L (1.6 bu)	15 mL (1 tbsp)
106 L (3 bu)	30 mL (2 tbsp)
80 000 Kernel Seed Corn Unit	15 mL (1 tbsp) or (0.5 oz)
If the seed is treated, apply extra lubrication at the following rate.	
80 000 Kernel Seed Corn Unit	15 mL (1 tbsp) or (0.5 oz)

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Use of Powdered Graphite Lubricant



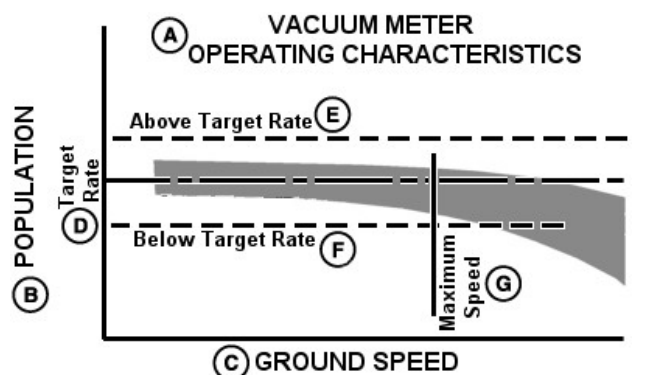
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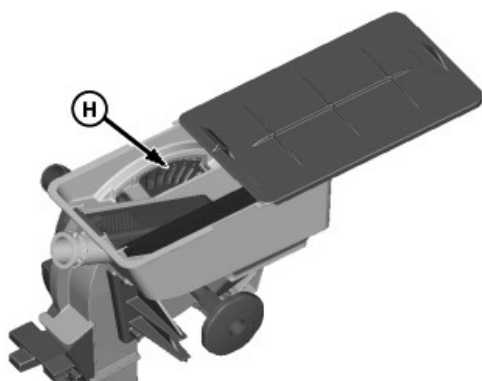
Meter lubricants improve the finger pick-up meter and radial bean meter performance. Some treated seed is

Vacuum Seed Meter Setup

Vacuum Meter Operating Characteristics



A68173—UN—14JUL10



A82415—UN—23APR14

- A—Vacuum Meter Operating Characteristics
- B—Population
- C—Ground Speed
- D—Target Rate
- E—Higher Than Target Rate
- F—Lower Than Target Rate
- G—Maximum Speed
- H—Seed Cell

The operating band (gray area) illustrates how a vacuum meter performs in relation to target rate (D).

The width of the operating band varies based upon:

- Various sizes and shapes of seeds
- Planting rate variations
- Field Conditions

In most cases, meter accuracy does not decline unless maximum planting speed is exceeded.

The maximum speed varies based upon field conditions. Rough field conditions can knock seed off seed disks and can cause row unit bounce which severely affects seed placement. Adding attachments such as pneumatic down force improves seed placement in rough field conditions.

Always verify that the correct seed disk is used for seed selection. If the seed is unusually sized or shaped, try a disk for a different crop and re-evaluate the performance. See SEED DISK RECOMMENDATIONS in this section or your John Deere™ dealer.

If seed varies widely in size and shape, try a flat disk and double eliminator for improved population control.

To check for the proper seed disk application with mini-hoppers:

- Remove lid from seed hopper.
- Place seed in meter.
- Connect vacuum hose to meter dome.
- Activate vacuum to recommended level for crop.
- To verify that only one seed fits into each cell (H), turn meter by hand.

CROP STAND = SEED SINGULATION + SEED PLACEMENT + AGRONOMIC FACTORS

Seed Singulation = Seed Selection + Seed Disk Selection + Vacuum Level + Field Conditions + Maintenance

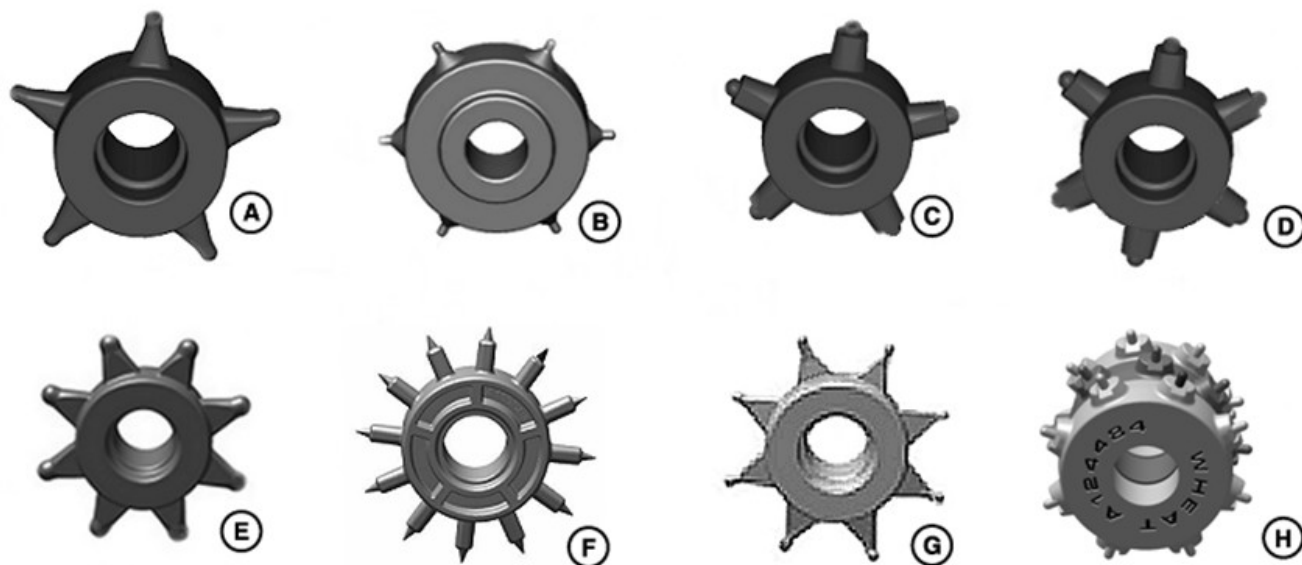
Seed Placement = Row Unit Maintenance + Speed + Field Conditions + Planter Attachments + Observation & Adjustment

Agronomic Factors = Seed Germination + Soil Temperature + Moisture + Nutrients + Pest Control + Weather

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Seed Meter Settings

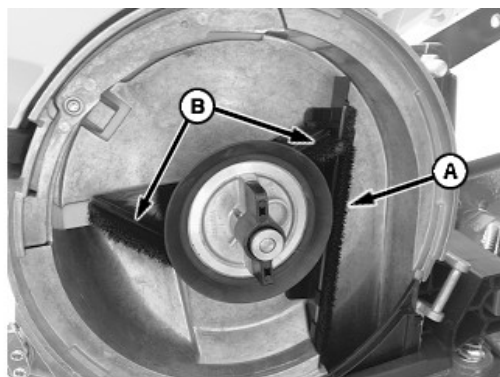


Knockout Wheels

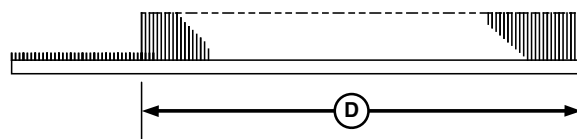
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Knockout wheels are used with some seed disks and crops.

Knockout Wheel Identification		
Knockout Wheel	Wheel Part Number	Assembly Part Number
Type A	A102718	AA85899
Type B	H136448	AA79986
Type C	A52389	AA81736
Type D	A53272	AA85089
Type E	A106147	AA89145
Type F	A119983	AA103137
Type G	A123990	AA103153
Type H	A124484, A124483, and A124473	AA103597

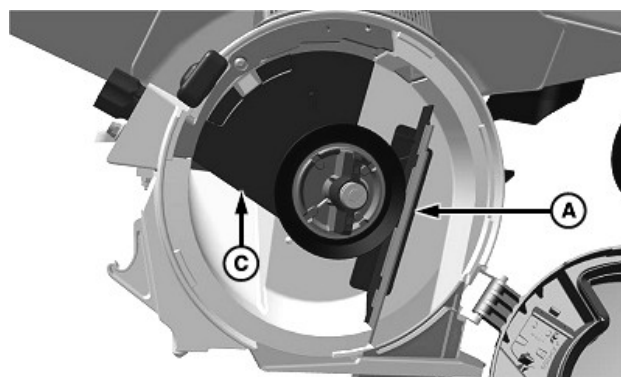


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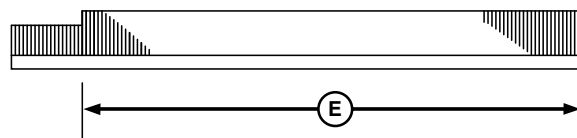


Front Brush (short)

A109249—UN—16FEB21



A105685—UN—11SEP19



Front Brush (long)

A109250—UN—16FEB21

A—Front Brush
B—Rear Brush
C—Baffle
D—Dimension, 146 mm (5.75 in)

Vacuum Seed Meter Setup

E—Dimension, 165 mm (6.5 in)

except when planting canola. The baffle (C) is used with large hoppers or mini-hoppers when planting canola.

The front brush (A) is available in two sizes for different crops. The rear brush (B) is used with mini-hoppers,

CCS Compatible	Crop	Disk Name (Part Number)	Front Brush (A)	Baffle Position ^a	Double Eliminator	Knockout Wheel
<i>NOTE: The nozzle insert and hopper elbow recommendations are shown in the CCS operation. Use this table as a quick reference for common settings. (See Seed Disk Recommendations in this section for additional information.) ProMax are flat-type disks that are visually identified by the quantity and the diameter (in millimeters) of the holes in the disk. For example, ProMax 40 x 4.5 has 40 holes that are 4.5 mm in diameter.</i>						
Yes	Field Corn	Large Corn (A50617) or Medium Corn (A43215)	Long	Upper	See Footnote ^b	No ^c
Yes	Field Corn	ProMax 40 x 4.5 (A52391)	Long	Upper	See Footnote ^d	Wheel C
Yes	Sweet Corn	ProMax 40 x 4.5 (A52391)	Long	Upper	See Footnote ^e	Wheel C
Yes	Sweet Corn	ProMax 40 x 3.75 (A52390)	Long	Upper	See Footnote ^e	Wheel C
Yes	Popcorn	Small Corn, Sunflower, and Popcorn (H136478)	Long	Lower	See Footnote ^b	No ^c
Yes	Popcorn	Sorghum (A43066)	Long	Lower	See Footnote ^b	Wheel B
Yes	Oil Sunflower	Small Corn, Sunflower, and Popcorn (H136478)	Long	Lower	See Footnote ^b	No ^c
Yes	Oil Sunflower	ProMax 40 x 2.5 (A102717)	Long	Lower	See Footnote ^b	Wheel A
Yes	Confection Sunflower	ProMax 40 x 4.5 (A52391)	Long	Upper	See Footnote ^e	Wheel C
Yes	Confection Sunflower	ProMax 40 x 3.75 (A52390)	Long	Upper	See Footnote ^e	Wheel C
Yes	Wheat	Wheat (A124486)	Long	Lower	See Footnote ^b	Wheel H
Yes	Cotton	Low-Rate Cotton (A70163)	Long	Upper	See Footnote ^b	No ^c
Yes	Cotton	Cotton and Soybean (A56251)	Long	Upper	See Footnote ^b	No ^c
Yes	Cotton	ProMax 50 x 3.75 (A52903)	Long	Upper	See Footnote ^d	Wheel D
Yes	Cotton	ProMax 64 x 2.8 (A121489)	Long	Upper	See Footnote ^d	Wheel G
Yes	Hilddrop Cotton (4-Seed)	4-Seed Hilddrop Cotton (A65622)	Short	Upper	See Footnote ^b	No ^c
Yes	Hilddrop Cotton (2-Seed)	2-Seed Hilddrop Cotton (A74961)	Long	Upper	See Footnote ^b	No ^c
Yes	Low-Rate Sorghum	Sorghum (A43066)	Long	Lower	See Footnote ^b	Wheel B
Yes	High-Rate Sorghum	High-Rate Sorghum (A52802)	Long	Lower	See Footnote ^b	No ^c
Yes	Sorghum	Sugar Beet (A51712) (H136445) (A51713)	Long	Lower	See Footnote ^b	Wheel B
Yes	Canola	Canola (A119979)	Long	Lower	See Footnote ^b	Wheel F
Yes	Soybean	Soybean (A42586)	Long	Upper	See Footnote ^b	No ^c
Yes	Soybean	Cotton and Small Soybean (A56251)	Long	Upper	See Footnote ^b	No ^c
Yes	Soybean ^f	ProMax 64 x 4.5 (A105848)	Long	Upper	See Footnote ^d	Wheel E
Yes	Sugar Beet	Sugar Beet (A51712) (H136445) (A51713)	Long	Lower	See Footnote ^b	Wheel B
Yes	Sugar Beet	Sugar Beet (A43066)	Long	Lower	See Footnote ^b	Wheel B
The following crops are not approved for the Central Commodity System (CCS™) delivery.						
No	Small Common Edible Bean and Smooth Pea	Small Edible Bean Cell-Type (H136468)	Long	Upper	See Footnote ^b	No ^c
No	Medium Common Edible Bean, Black-Eyed Pea, and Wrinkle Pea	Medium Edible Bean Cell-Type (A51696)	Short	Upper	See Footnote ^b	No ^c
No	Large Common Edible Bean	Large Edible Bean Cell-Type (H136092)	Short	Upper	See Footnote ^b	No ^c
No	Small Common Edible Bean	ProMax 50 x 3.75 (A52903)	Long	Upper	See Footnote ^e	Wheel D
No	Medium Common Edible Bean	ProMax 50 x 4.5 (A52904)	Long	Upper	See Footnote ^e	Wheel D
No	Large Common Edible Bean	ProMax 50 x 5.0 (A52878)	Long	Upper	See Footnote ^e	Wheel D
No	Runner and Spanish Peanuts	Large Edible Bean Cell-Type (H136092)	Short	Upper	See Footnote ^b	No ^c
No	Virginia Peanut	Virginia Peanut (H138722)	Short	Upper	See Footnote ^b	No ^c

Vacuum Seed Meter Setup

CCS Compatible	Crop	Disk Name (Part Number)	Front Brush (A)	Baffle Position ^a	Double Eliminator	Knockout Wheel
No	Cucumber	Sorghum (A43066)	Long	Lower	See Footnote ^b	Wheel B
No	Cucumber	Blank (A52554) ^g	Long	Lower	See Footnote ^d	No ^c

^aA rear brush is used with mini-hoppers instead of a baffle, except when planting canola.

^bThe double eliminator is not used with this disk. Set the double eliminator to position "0."

^cInstall the wiper attachment when a knockout wheel is not used.

^dSet the double eliminator to 5 (50% hole coverage). (See Operate Double Eliminator for additional information.)

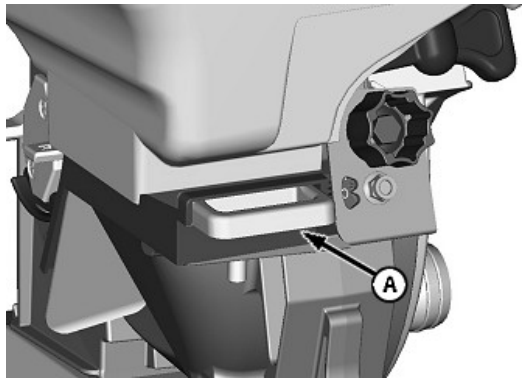
^eAdjust the tip of the eliminator towards the center of the meter as far as possible.

^fThe ProMax 64 x 4.5 disk is only recommended for 38, 51, and 56 cm (15, 20, and 22 in) row spacing.

^gSee the Seed Disk Recommendations for disk configuration.

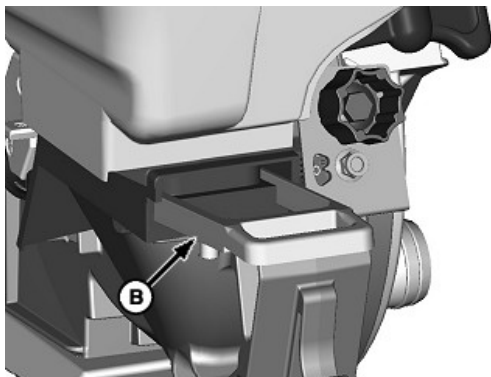
OUO6074,0000CF3-19-09MAR23

Clean Out the Vacuum Seed Meter



Open Position

A82646—UN—23MAY14



Closed Position

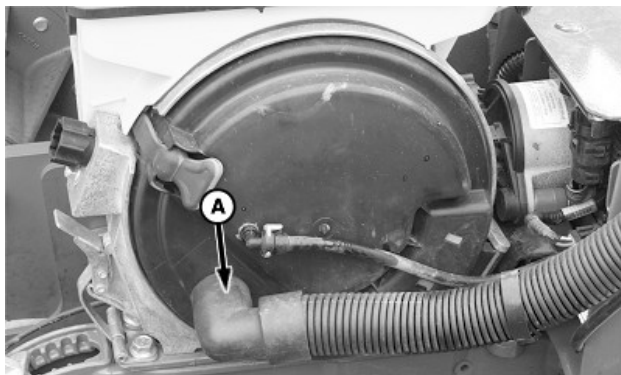
A82648—UN—23MAY14

A—Open Gate Position
B—Closed Gate Position

NOTE: If the planter is equipped with a mini hopper, proceed to step 3.

NOTE: If seed bridging occurs, verify that the gate is open (A) and add more meter lubricant to the seed.

1. Shutoff gates are used on 1.6 bu and 3 bu hoppers. Open the gate when the meter is in use. Close the gate before inspection or cleanout of the seed meter.

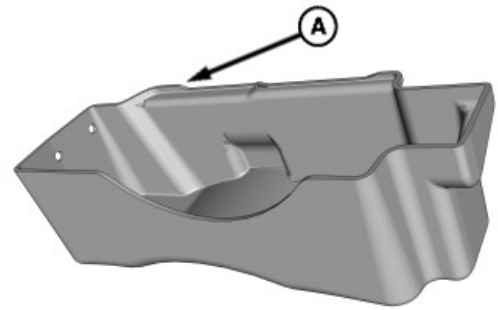


A—Vacuum Hose

A105812—UN—19SEP19

2. Remove the vacuum hose (A).

NOTE: The catch pan (A) is either on the planter frame, inside the planter frame, or on the ladder.



A—Catch Pan

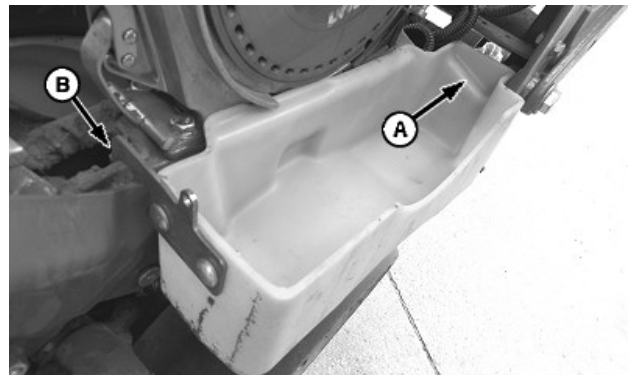
A89605—UN—01MAR16

3. Locate the catch pan (A).

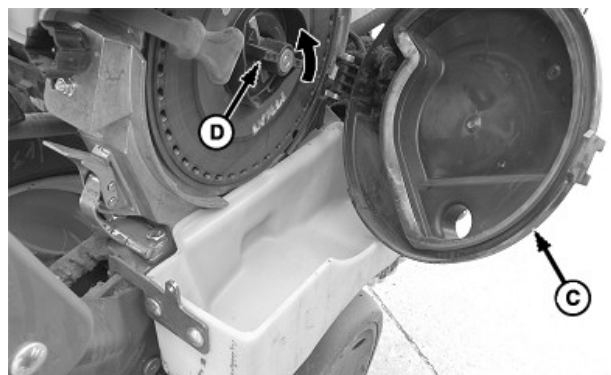


A34471

A34471—UN—11OCT88



A82664—UN—29MAY14



A82665—UN—29MAY14

- A—Front Edge
- B—Hooked Plate
- C—Cover
- D—Handle

CAUTION: Avoid chemical injury to eyes, skin, and lungs. When using seed treatments, use caution when accessing and handling components coated with seed treatment. Read and follow the safety instructions on the product label.

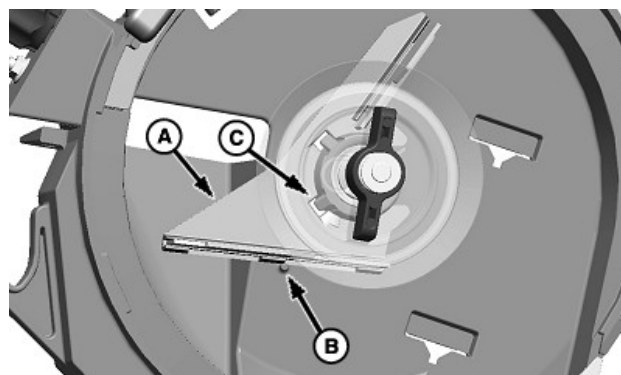
4. Install front edge (A) into position near the parallel arms.
5. Install hooked plate (B) into the notched area as shown.
6. Open cover (C), rotate the handle (D) into the unlocked position, and remove the seed disk.

WP29706,00008BC-19-19SEP19

needed. (See Seed Meter Settings for additional information.)

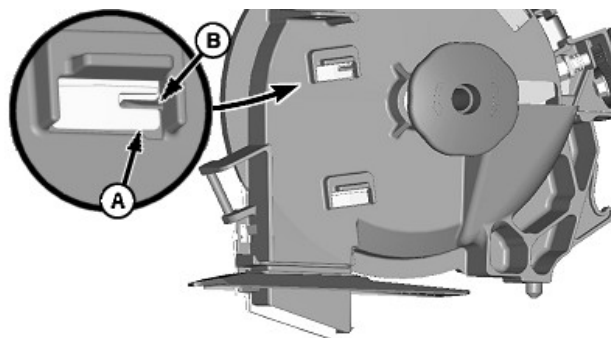
3. Pry the front-brush tab (A) over the lock (B) and remove the front-brush holder (C) from the meter.

NOTE: The rear brush is only used with mini seed hoppers except when planting canola.



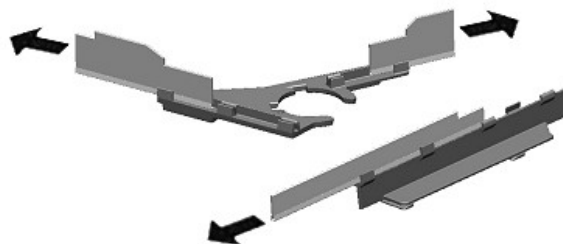
A105687—UN—18SEP19

Change the Vacuum Seed Meter Brush

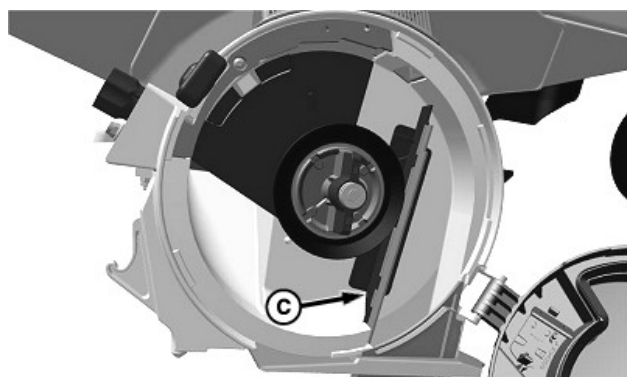


A77792—UN—01MAY13

Rear of Seed Meter



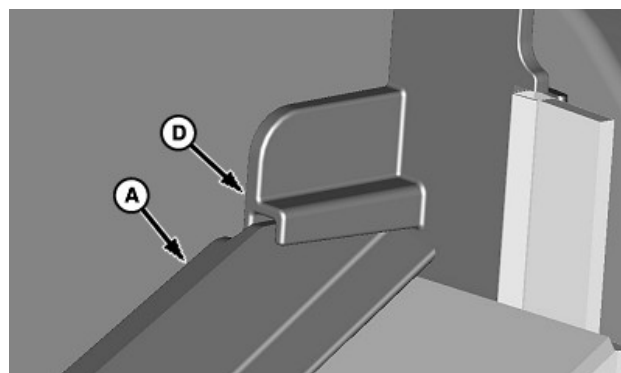
A77794—UN—01MAY13



A105686—UN—12SEP19

- A—Front-Brush Tab
- B—Lock
- C—Front-Brush Holder

1. Open the seed meter and empty any seed contained within it. (See Clean Out the Vacuum Seed Meter for additional information.)
2. Inspect the brushes for wear and replace them as



A105688—UN—09OCT19

Brushes Seated

- A—Rear-Brush Holder
- B—Pin
- C—Grooves and Tabs
- D—Front-Brush Holder

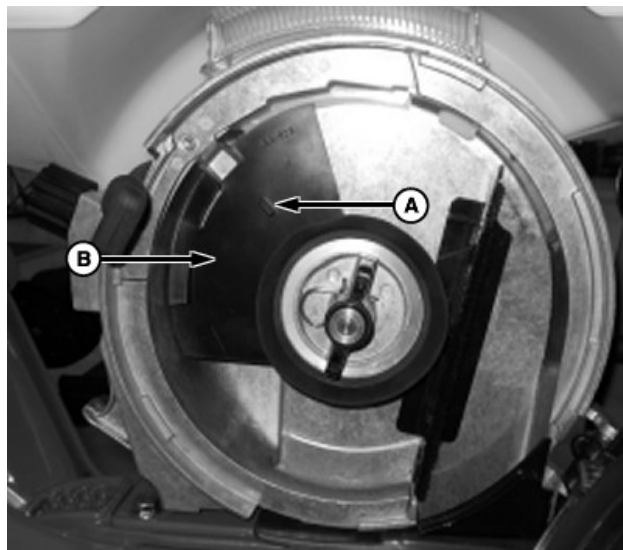
4. Rotate the rear-brush holder (A) until it contacts the pin (B) and the grooves and tabs (C) align. Lift and remove the rear-brush holder.
5. To replace the brushes, slide them in and out of the brush holders.

NOTE: Install the rear brush first.

6. Insert the brush holders into the meter and verify that the holders are locked into position.
7. Verify that the rear-brush holder (A) is seated under the front-brush holder (D).

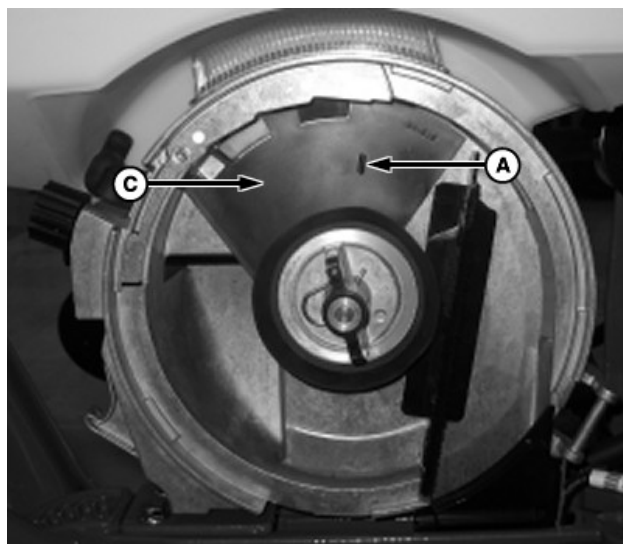
WP29706,00008CF-19-16FEB21

Adjust the Baffle in the Vacuum Seed Meter



A78486—UN—31JUL13

Lower Baffle Position



A78487—UN—31JUL13

Upper Baffle Position

A—Tab
B—Lower Position
C—Upper Position

The baffle is used to avoid over-population due to the seed meter over-filling.

NOTE: The baffle is not used on meters with mini hoppers except when planting canola.

1. Open the seed meter and remove the seed disk.

NOTE: The lower position (B) is recommended for smaller seeds such as: sugar beet, sorghum, oil sunflower, and popcorn.

The upper position (C) is recommended for larger seeds such as: corn, soybean, cotton, common edible bean, peanut, sweet corn, and confectionary sunflower.

2. Move the tab (A) to the position recommended in the Seed Meter Settings.

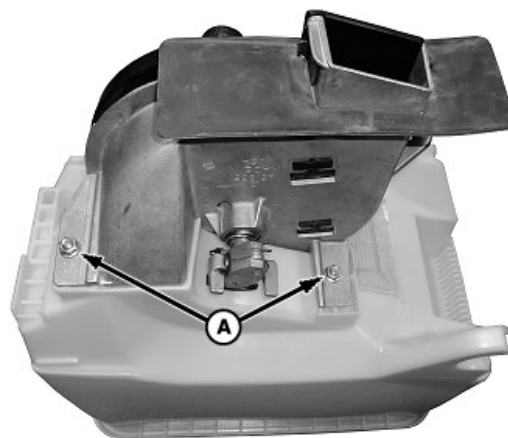
If seed bridges at the baffle, adjust the baffle to the upper position (C) and increase the amount of meter lubricant.

Lowering the baffle does not eliminate an over-filled seed meter caused by rough field conditions. To reduce the effects of a rough field, increase downforce on the row units and reduce ground speed.

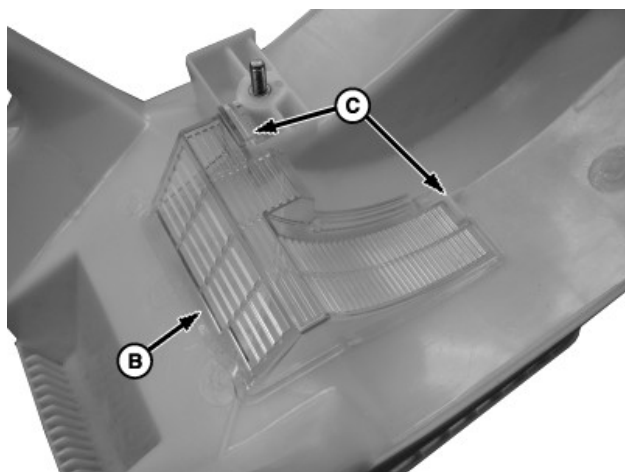
If over-population occurs when planting sideways on a hill: reduce ground speed, use round seeds, or install flat style seed disks. Over-population occurs on hillsides when the agitator tabs on some seed disks hold and carry additional seeds past the meter brush and into the seed tube. Round seeds and flat seed disks improve performance on hillsides.

OUC6074,0000CF4-19-07FEB22

Install Meter Inlet Screen



A68445—UN—26JUL10

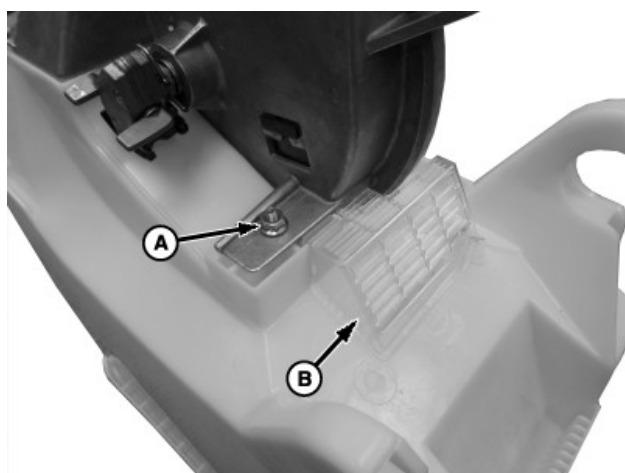


A68446—UN—26JUL10

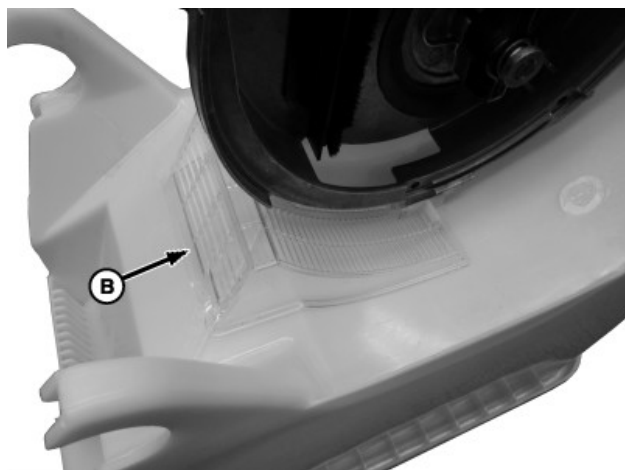
1. Remove hopper and meter from row unit (refer to ACCESSING THE VACUUM METER in this section).
2. Loosen meter nuts (A) and remove meter from hopper.
3. Place inlet screen (B) onto hopper and align with tabs (C).
4. Replace meter and tighten meter nuts.
5. Install meter and hopper on row unit.

OUC6074,0000A51-19-26JUL10

Seed Knockout Wheel Operation



A68447—UN—26JUL10

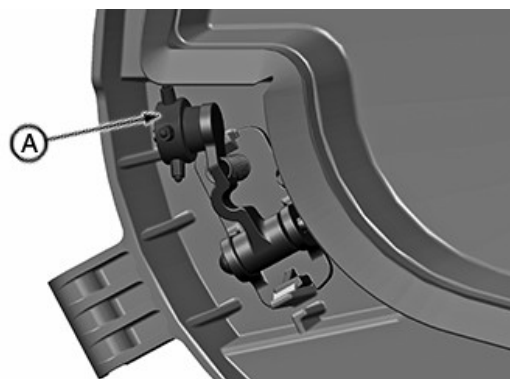


A68448—UN—26JUL10

A—Nuts
B—Screen
C—Tabs

Planting in high residue field conditions can cause pieces of crop residue to build up in the vacuum meter. Meter inlet screens (B) are available from a John Deere™ dealer to prevent crop residue from entering the meter.

To install:



CQ297999—UN—26FEB14

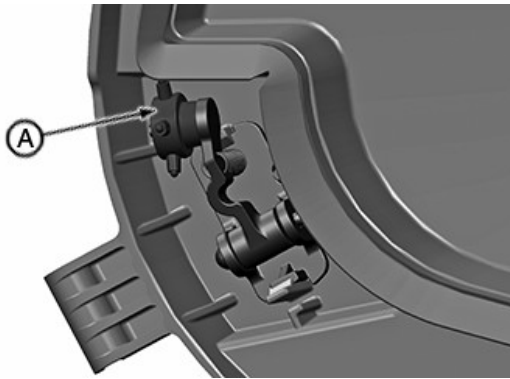
A—Seed Knockout Wheel

The seed knockout wheel (A) is used to push seeds from the seed cell. Wheel projections engage the seed cell holes, forcing all the seeds and foreign material from the seed cell.

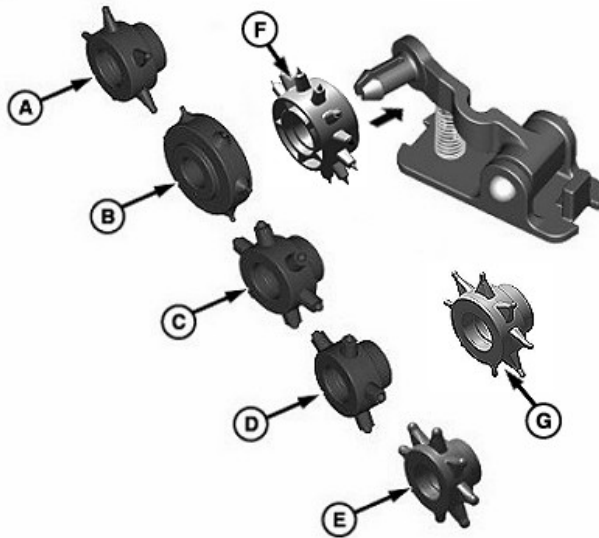
The seed knockout wheel is required when planting sorghum, monogerm sugar beet, canola, wheat, cucumber, and seed planted with flat-type seed disks. Sugar beet and sweet corn seeds can have sharp edges and are typically irregular in shape, which contributes to seed lodging in the seed cell. Some sorghum seed contains large amounts of foreign material, which can also become trapped in the seed cell.

WP29706,000051F-19-24FEB22

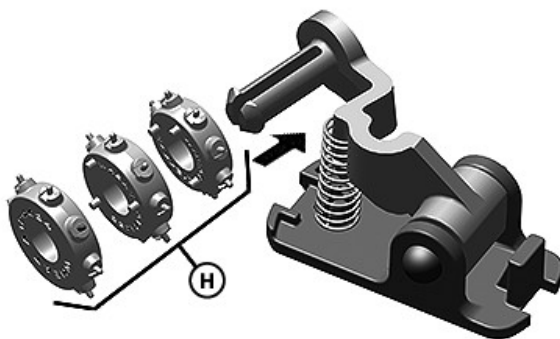
Install the Knockout Wheel Assembly



CQ297999—UN—26FEB14



A109233—UN—29MAR21



A116099—UN—17FEB22

- A—Knockout Wheel (type A)
- B—Knockout Wheel (type B)
- C—Knockout Wheel (type C)
- D—Knockout Wheel (type D)
- E—Knockout Wheel (type E)
- F—Knockout Wheel (type F)
- G—Knockout Wheel (type G)
- H—Knockout Wheel (type H)

NOTE: The knockout wheel is used to ensure that irregularly shaped seeds are fully released from the seed cell hole. Wheel projections engage the seed cell holes to eject all the seeds and foreign material.

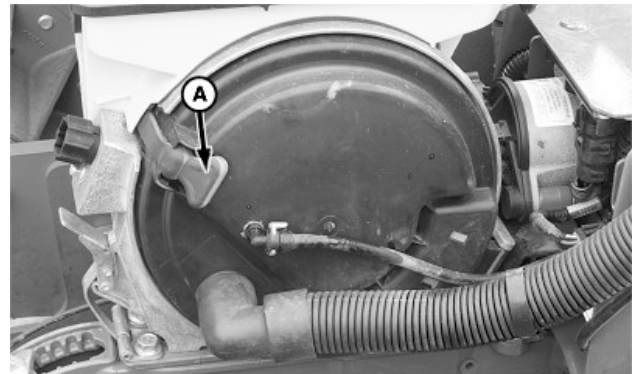
There are eight knockout wheels available for use with different seed disks and seed types. (See Seed Meter Settings in this section for additional information.)

To remove a knockout wheel, squeeze the hub and pull off the wheel.

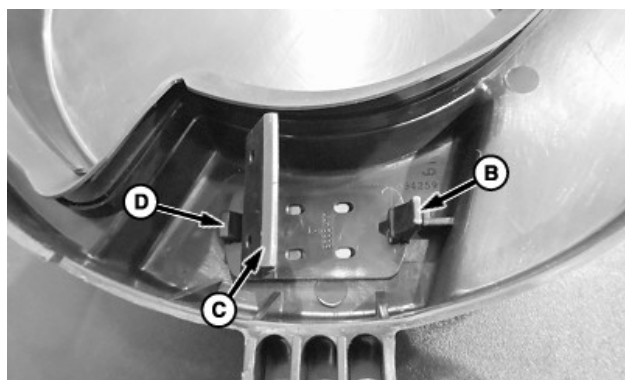
NOTE: Orient the knockout wheel as shown. The shoulder of the selected knockout wheel (type A—G) faces the knockout arm. The smallest wheel for type H is next to the arm.

To install a knockout wheel, press the wheel onto the hub.

Knockout Wheel Identification		
Knockout Wheel	Wheel Part Number	Assembly Part Number
Type A	A102718	AA85899
Type B	H136448	AA79986
Type C	A52389	AA81736
Type D	A53272	AA85089
Type E	A106147	AA89145
Type F	A119983	AA103137
Type G	A123990	AA103153
Type H	A124484, A124483, and A124473	AA103597



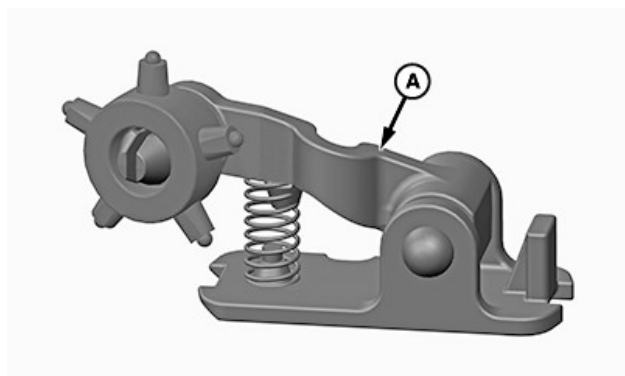
A105814—UN—19SEP19



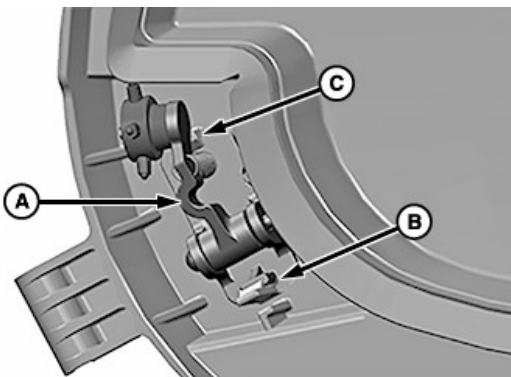
A77663—UN—27AUG13

A—Handle
B—Retaining Clip
C—Wiper Assembly
D—Fastener Clip

1. Disengage handle (A) and open the meter dome.
2. To remove wiper assembly (C), push the retaining clip (B) and pull the wiper assembly away from the fastener clip (D).



A100237—UN—03APR18



A100238—UN—03APR18

A—Knockout Wheel Assembly
B—Retaining Clip
C—Fastener Clip

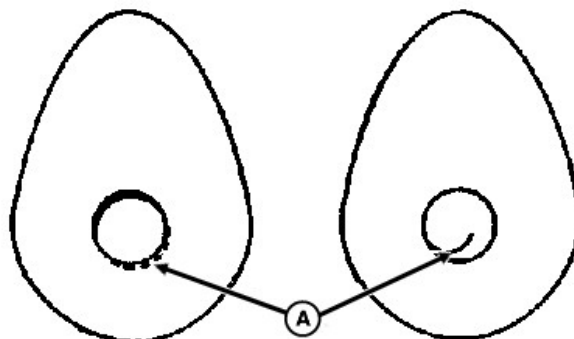
3. Install knockout wheel assembly (A) between the retaining clip (B) and the fastener clip (C).

NOTE: When closing the dome, verify that the wheel and the row of seed cells, on the seed disk, are aligned.

4. Close and latch the meter dome.

WP29706,0000520-19-24FEB22

Inspect the Seed Disk Cell



A46242—UN—27JUL00

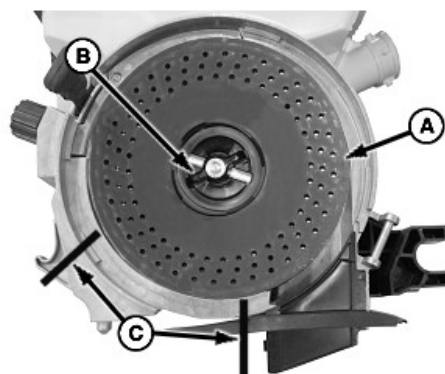
A—Flash

NOTE: To determine seed meter accuracy, perform a field check. If metering performance is satisfactory, it is not necessary to replace any seed disk.

Check seed cell and hole for flash (A) (particles of material left behind in molding process). Remove any flash before installing seed disk. If flash cannot be easily removed, replaced the disk.

WP29706,00005B9-19-13JUL15

Install Seed Disk



A77666—UN—15OCT13

A—Seed Disk
B—Hub Handle
C—Section

1. Open the seed meter dome.
2. Fit seed disk (A) into housing. Hold the seed disk stationary and rotate hub handle (B) into locked position.
3. Inspect the hub adjustment. If the following conditions are not met, adjust the hub. (See Adjust Seed Meter Hub for additional information.)

- Verify that seed disk (A) continues to rotate approximately 1/4 revolution after the hub is spun rapidly by hand and quickly released.
- Verify that there is light contact between the seed disk and the double eliminator as the seed disk is rotated.
- Verify that no seed loss occurs through any gap in section (C) as the seed disk is rotated.

WP29706,0000521-19-05APR19

Adjust Seed Meter Hub

NOTE: The seed disk lightly contacts the double eliminator when properly adjusted.

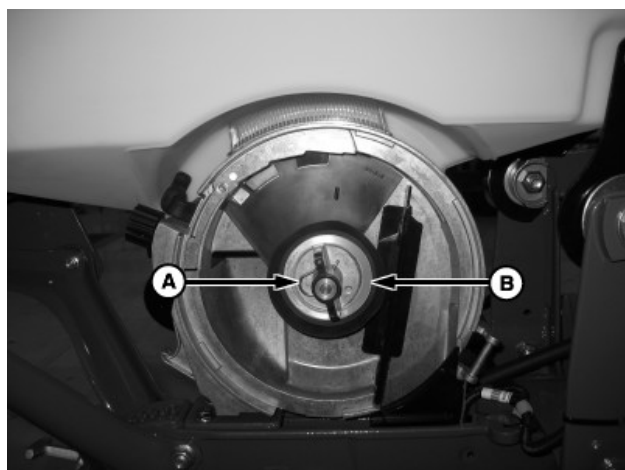


A96513—UN—11MAY17

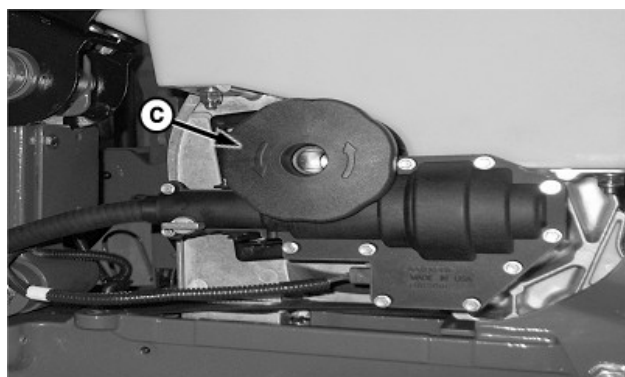
A—Hub Handle

Improve meter accuracy and minimize seed damage with a properly adjusted meter hub. Check this adjustment whenever the seed disks are changed. If a gap between the seed disk and double eliminator exists or seed disk is difficult to turn, adjust the meter hub.

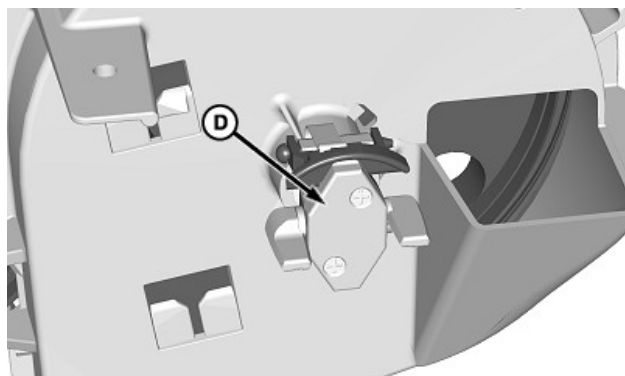
1. Disconnect the seed delivery hose, vacuum hose, and the vacuum sense hose (if equipped).
2. Release meter latch and rotate the meter assembly slightly upward, then remove the meter assembly from the row unit shank.
3. Open the seed meter dome.
4. Turn hub handle (A) counterclockwise and remove the seed disk.



A78484—UN—30JUL13



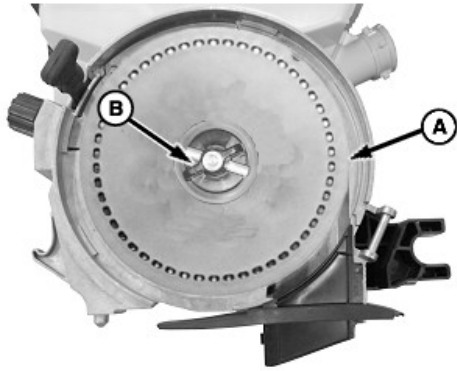
A78485—UN—11NOV13



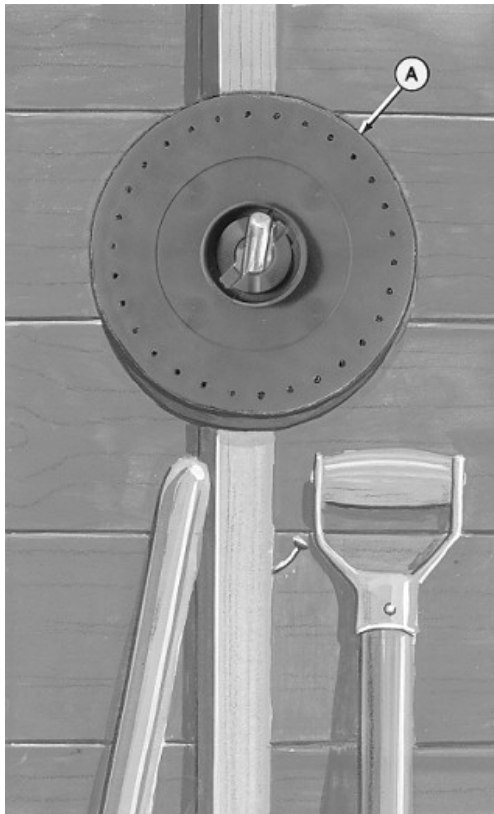
A78490—UN—31JUL13

- A—Spring Clip
- B—Hub
- C—Meter Handle
- D—Meter Drive

5. Remove the spring clip (A).
6. Adjust the hub (B).
 - Make small adjustments.
 - Hold meter handle (C) or the meter drive (D).
 - Thread hub (B) clockwise to move the seed disk closer to the double eliminator.
 - Thread hub (B) counterclockwise to move the seed disk away from the double eliminator.
7. Align the slot with the hole in the shaft and attach the spring clip (A).



A96514—UN—11MAY17



A44241—UN—19NOV97

Storage

A—Seed Disk
B—Hub Handle

8. Attach seed disk (A) and lock the hub handle (B).
9. Inspect the adjustment.
 - Spin and release the seed disk rapidly by hand.
 - Observe the distance that the seed disk rotates. If seed disk rotates approximately 1/4 revolution and stops, the hub is adjusted properly.
 - Repeat the hub adjustment until correct.

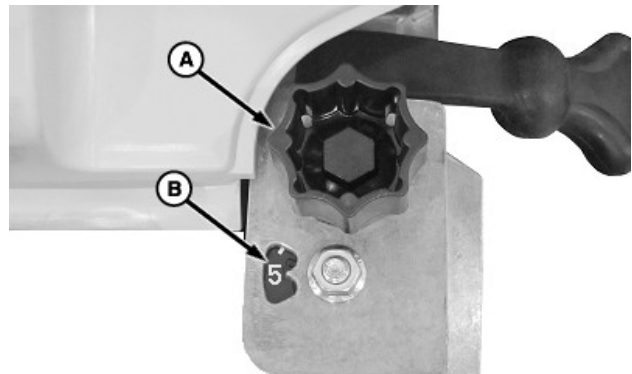
IMPORTANT: Avoid warped seed disks. Do not store seed disks in the seed meters. Store the seed disks horizontal on the hub or hang on the wall from the hub. Do not store under heavy items or hang from the seed hole. Store away from high heat and sunlight.

NOTE: The seed disk lightly contacts the double eliminator when properly adjusted.

10. Rotate seed disk slowly by hand and observe that the seed disk contacts the double eliminator. If a gap large enough for seed to wedge between the seed disk and the housing appears, repeat the hub adjustment. If seed disk is warped, replace the seed disk.
11. When hub adjustment is complete, install the meter assembly on the row unit shank and engage the meter latch.
12. Connect seed delivery hose, vacuum hose, and the vacuum sense hose (if equipped).

WP29706,0000522-19-18OCT19

Calibrate the Double Eliminator



A86028—UN—20APR15

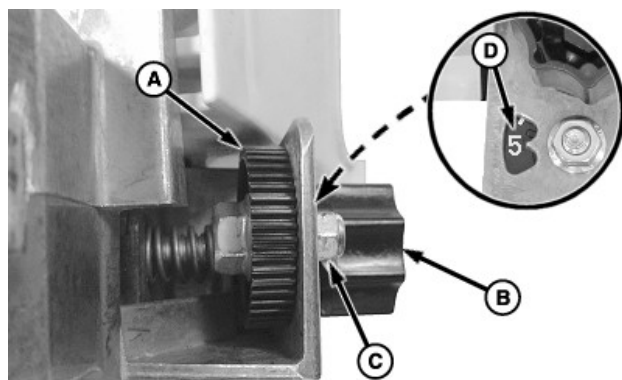
Setting 5

A—Adjustment Knob
B—Setting, 5

Calibrate double eliminator setting 5 (B) for 50% hole coverage on the seed disk.

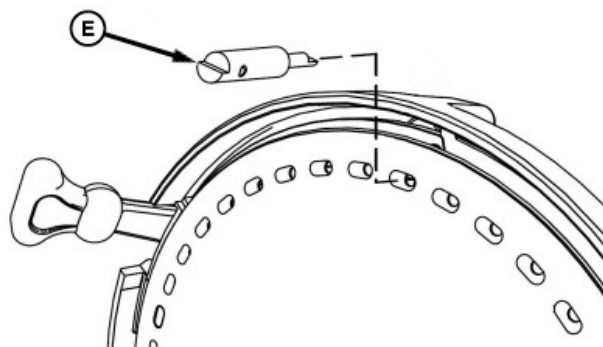
NOTE: To provide more clearance, the calibration procedure requires removal of the hopper.

1. Turn adjustment knob (A) until the double eliminator setting 5 (B) is visible.
2. Install the ProMax 40 seed disk in the meter.



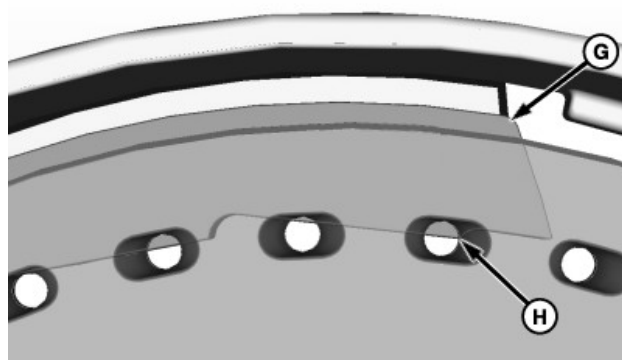
Double Eliminator Knob

A86033—UN—20APR15



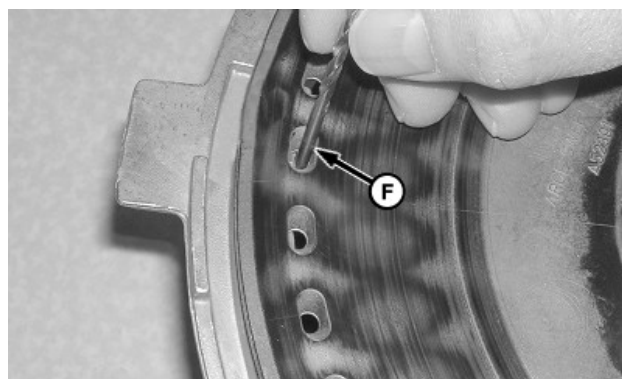
Adjustment Tool Method

A86030—UN—20APR15



50% Coverage

A86032—UN—20APR15



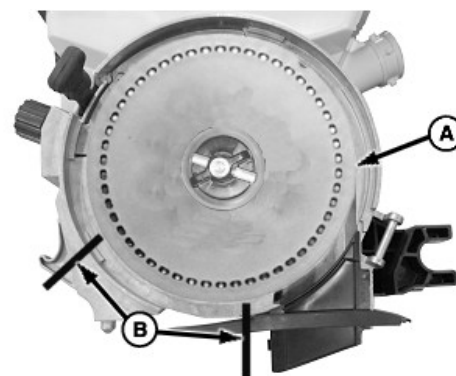
Drill Bit Method

A86031—UN—20APR15

- A—Dial
- B—Adjustment Knob
- C—Nut
- D—Window
- E—Double Eliminator Tool
- F—Drill Bit
- G—Double Eliminator Plate
- H—High Point

NOTE: Contact a John Deere dealer or qualified service provider for the adjustment tool JDG10965.

3. Insert double eliminator tool (E) or the shank of a 2.5 mm (3/32 in) drill bit (F) into the seed disk hole.
4. Position the tool or drill bit in-line with the high point (H) of the double eliminator plate (G).
5. Turn adjustment knob (B) until the high point of the double eliminator lightly contacts the tool or drill bit.
6. If the setting is between 4.5 and 5.5 in the center of window (D), no adjustment is needed.
7. If the setting is less than 4.5 or greater than 5.5, loosen nut (C) enough to move the dial (A).
8. Position the dial with number 5 showing in the center of window (D).
9. Tighten nut (C).
10. Remove the tool or drill bit from the seed disk.



A86177—UN—22APR15

- A—Disk
- B—Inspection Area

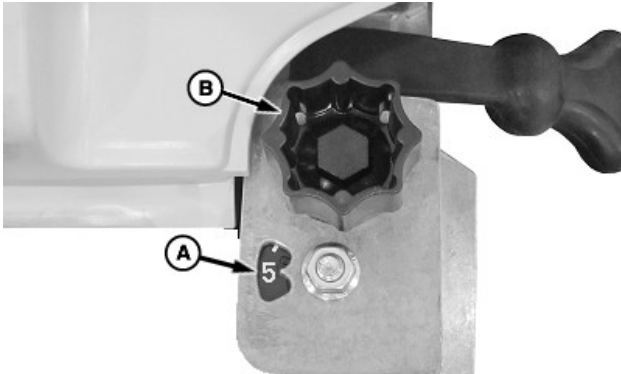
NOTE: The seed disk must turn smoothly and have light contact with the double eliminator. A small gap between the seed disk and the housing is acceptable. Seed must not pass between the disk and the housing. To improve inspection process, place a small amount of seed in the meter.

11. Turn the seed disk (A) by hand and inspect the gap between the disk and the meter in the inspection area (B). If the disk turns too hard or if the seed passes through the gap, adjust the hub position, adjust the seed meter hub. (See Adjust Seed Meter Hub for additional information).

12. Close the meter dome and if previously removed, attach the meter to the hopper.
13. Set all the rows the same.
14. To evaluate seed delivery and meter performance, plant a short distance and perform a field check. Adjust the individual seed meters as necessary.

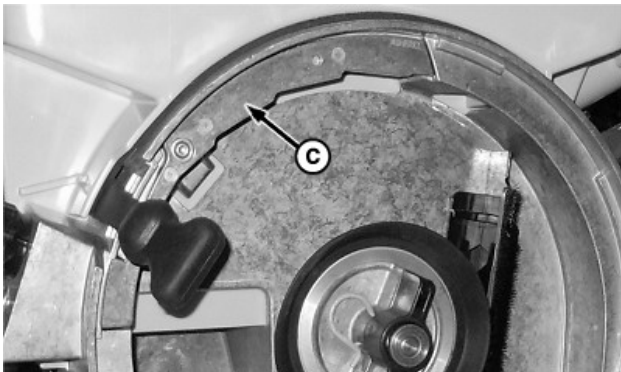
WP29706,0000A09-19-16APR20

Operate Double Eliminator



A86638—UN—01JUN15

Indicator and Adjustment Knob



A86639—UN—01JUN15

Eliminator Plate

- A—Indicator
B—Adjustment Knob
C—Eliminator Plate

NOTE: Set a vacuum level using the vacuum chart for the disk and seed that is used. The number indicator on the meter has a range of 0—10.

There is a number indicator (A) next to the knob for consistent adjustment.

Smaller numbers on the indicator = less hole coverage and increase vacuum at the hole.

Middle numbers on the indicator = 1/2 of the hole covered (detent position).

Larger numbers on the indicator = more hole coverage and reduce vacuum at the hole.

Double Eliminator Operating Tips:

- To position the eliminator plate (C) for more or less hole coverage on the seed disks, turn the adjustment knob (B).

For the seed disk used with flat corn seed, the normal operating position is number 5 on the indicator.

When in position number 5, the double eliminator plate covers 1/2 of the seed disk hole and provides good seed singulation for a wide variety of seed sizes and shapes.

If seed singulation performance is inconsistent and cannot be corrected by varying the vacuum level, adjust the double eliminator. If skips are occurring, adjust the double eliminator to a lower setting. If doubles are occurring, adjust the double eliminator to a higher setting.

- Disk hub height is critical for proper performance. Adjust the seed-disk hub, so the seed disk is in light contact with the meter housing. Proper adjustment is achieved when the seed disk turns approximately 1/4 to 1/2 turn when the hub is spun rapidly by hand. (See Adjust the Seed Meter Hub for additional information.)

WP29706,0000523-19-05APR19

Seed Disk Selection Guidelines

IMPORTANT: These seed disk recommendations are based on seed testing from various sources. Because seed size and shape changes from year to year, there is always a possibility that an alternative disk can provide better performance. Consult your John Deere dealer or qualified service provider for the most complete and up-to-date listing of available seed disks and recommendations.

The following seed disk recommendations show a seed size range where optimum performance can be expected with each seed disk. Select a disk which best handles the seed to be planted or best represents most seed sizes to be planted.

If several seed sizes are planted and their seed size falls within overlapping areas of two seed disks, it is recommended that BOTH seed disks are ordered to optimize performance to individual seed shape.

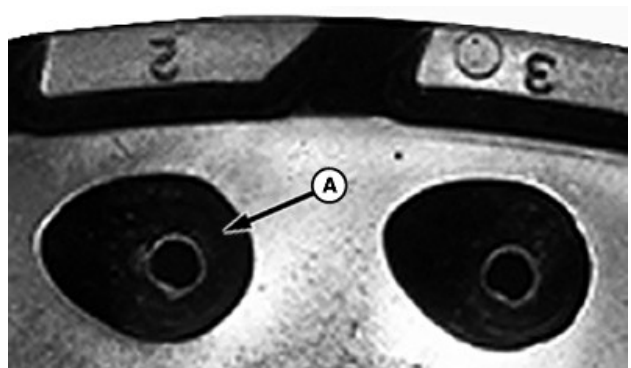
To determine proper disk usage, place a sample of seed into the cells of a seed disk. If two seeds easily fit in the cell, a smaller disk must be used. If one seed does not fit properly in the cell, a larger disk must be used. If two disks work well for a particular seed size, always use the smaller disk. Increase the vacuum level to compensate for skips (and rough fields). Lower the vacuum level to eliminate doubles.

For seed sizes outside the ranges listed, seed disks for

other crops can be used. As with any seed disk change, population and spacing must always be checked in the field.

OUO6074,0000ECD-19-29MAR18

Seed Disk Recommendations for Optimum Performance with Field Corn

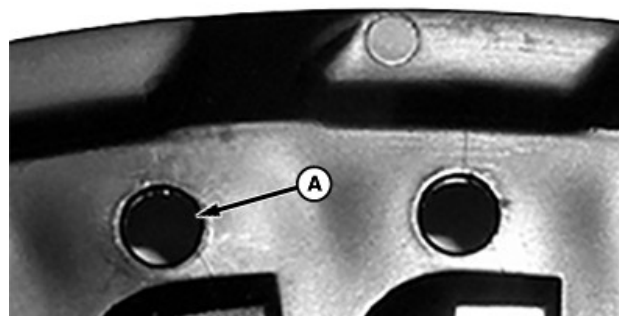


A106624—UN—27MAR20

Cell-Type Disk Close-Up

A—Cell-Type

Vacuum seed disks come in two types, cell-type and



A106625—UN—27MAR20

Flat-Type Disk Close-Up

A—Flat-Type

Flat-type (A) disks only have holes on the flat surface of the disk. The hole quantity and diameter vary by disk. The variety of disks provide optimized control of population and spacing for different seed types, shapes, and sizes. Follow all recommendations for seed meter settings and vacuum level for each disk. Maintain the meter components and disk hub adjustment.

Seed Disk Guide for Field Corn					
Seed Shape	Seeds/kg (seeds/lb)	Disk Name	Part Number (type)	Number of Holes (hole diameter [mm])	If population is difficult to control:
Non-Uniform (mixed shapes)	Mixed Sizes (mixed sizes)	ProMax 40 x 4.5	A52391 (flat-type)	40 (4.5)	If over or under seed populating, adjust the double eliminator.
Uniform Flat	Less than 3308 (1500)	ProMax 40 x 4.5	A52391 (flat-type)	40 (4.5)	If over or under seed populating, adjust the double eliminator.
Uniform Flat	3308—6175 (1500—2800)	Medium Corn	A43215 (cell-type)	30 (3.6)	Adjust vacuum first. If problems persist, switch to an overlapping disk shown in the vacuum level chart. ^a
Uniform Flat	Greater than 6175 (2800)	Small Corn, Sunflower, and Popcorn	H136478 (cell-type)	30 (2.6)	Adjust vacuum first. If problems persist, switch to the Medium Corn Disk (A43215).
Uniform Round	Less than 3308 (1500)	Large Corn	A50617 (cell-type)	30 (3.6)	Adjust vacuum.
Uniform Round	3308—6175 (1500—2800)	Medium Corn	A43215 (cell-type)	30 (3.6)	Adjust vacuum first. If problems persist, switch to Large Corn Disk (A50617).
Uniform Round	Greater than 6175 (2800)	Small Corn, Sunflower, and Popcorn	H136478 (cell-type)	30 (2.6)	Adjust vacuum first. If problems persist, switch to Medium Corn Disk (A43215).

^aFor larger seed sizes less than 3970 seeds/kg (1800 seeds/lb), switch to the Large Corn Disk (A50617). If population control problems persist, switch to the ProMax 40 x 4.5 Disk (A52391) with a double eliminator. For smaller seed sizes greater than 5072 seeds/kg (2300 seeds/lb), switch to the Small Corn, Sunflower, and Popcorn Disk (H136478). If population control problems persist, switch to the ProMax 40 x 4.5 Disk (A52391) with a double eliminator.

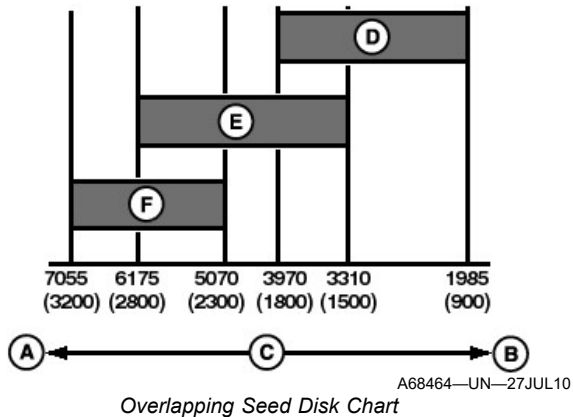
For optimum performance, use the Seed Disk Guide for Field Corn, adjust the seed meter (see Seed Meter Settings), and then refer to the vacuum level chart for an initial vacuum setting.

Nearly 100% of target population is achievable when the proper vacuum level and the medium corn or large corn seed disks (with seed cells) are used.

Using cell-type disks (medium and large corn disks) requires careful seed selection for optimum performance.

Metering performance is directly dependent on the consistency of seed size. Seeds that are mixed shapes and sizes do not perform optimally with cell-type disks. The ProMax 40 x 4.5 Disk (A52391) with a double

eliminator is required for optimum seed singulation and seed release when seeds vary in size.



A—Small Seeds
 B—Large Seeds
 C—Seed Size, Seeds/kg (seeds/lb)
 D—Large Corn Disk
 E—Medium Corn Disk
 F—Small Corn, Sunflower, and Popcorn Disk

NOTE: A knockout wheel is required when using John Deere flat disks.

For seed sizes that overlap the Medium Corn Disk (A43215) and the Large Corn Disk (A50617), choose the medium corn disk for initial setting. If population is difficult to control, switch to the large corn disk.

DIFFICULT TO PLANT SEEDS

IMPORTANT: Avoid population errors. Adjust all settings on the planter and monitor when using a ProMax disk.

- Difficult to plant seeds include varieties with mixed sizes, mixed shapes, combinations of sizes and shapes, long and slender seeds, seeds with a sharp point (germ), and others.
- A ProMax disk is a flat disk used to improve seed singulation with difficult to plant seeds. The ProMax requires higher vacuum levels than cell-type disks and requires the installation of a double eliminator and knockout wheel in each meter assembly.
- Quality-graded seed also requires proper seed disk selection for optimal performance.

PLANTING CORN IN HILLSIDE CONDITIONS

Diminished meter performance is possible on steep hillsides or when changing directions on a hillside. If the left side of machine is the downhill side, skips are possible due to the seeds falling away from the seed disk and a smaller seed reservoir next to the seed disk. If the right side of machine is the downhill side, overpopulation is possible due to the seeds being forced against the seed disk and a large seed reservoir

next to the seed disk. To maximize seed meter performance on hillsides, follow these steps:

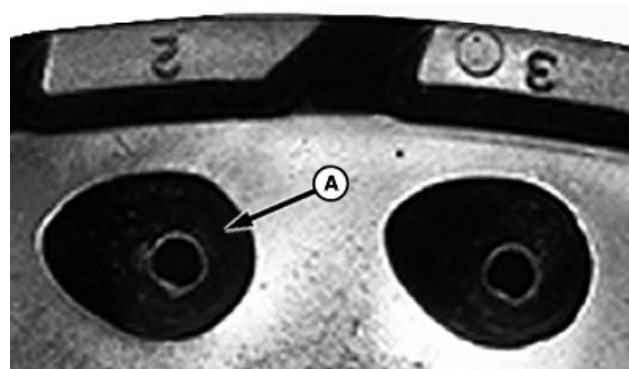
- Use a disk with the fewest holes possible when using cell-type disks. Fewer holes provide less opportunity for doubles.
- Use round seed. Round seed remains in the cell of a cell-type disk better and reduces the chance for doubles.

IMPORTANT: Avoid population errors. Adjust all settings on the planter and monitor when using a ProMax disk.

- If round seed is not available or hillsides are steep, use a flat-type disk with a double eliminator. The flat-type disk has no seed cells and requires higher vacuum levels, a double eliminator, and a knockout wheel. The double eliminator is used to remove one of two seeds covering a single hole in a seed disk. The knockout wheel is used to remove debris from holes in a seed disk.

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Seed Disk Recommendations for Crops other than Field Corn

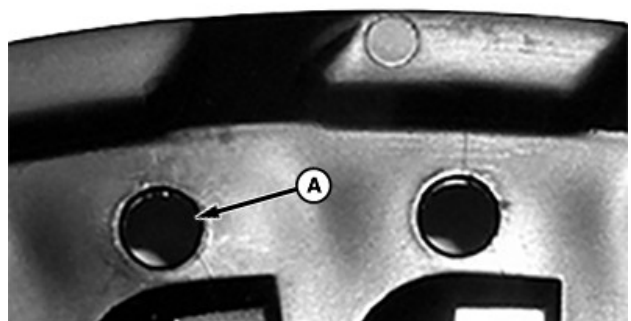


A106624—UN—27MAR20

Cell-Type Disk Close-Up

A—Cell-Type

Vacuum seed disks come in two types, cell-type and flat-type. Cell-type (A) disks have recessed cells around each vacuum hole in the disk. The cell sizes, hole quantity, and hole diameter vary by disk.



A106625—UN—27MAR20

Flat-Type Disk Close-Up

A—Flat-Type

Flat-type (A) disks only have holes on the flat surface of the disk. The hole quantity and diameter vary by disk. The various disks provide optimized control of population and spacing for different seed types, shapes, and sizes.

NOTE: Flat-type disks require higher vacuum than cell-type disks.

Follow all recommendations for seed meter settings and vacuum level for each disk. Maintain the meter components and disk hub adjustment.

John Deere flat-type disks meter a wide variety of seed sizes and shapes, including crops that are non-approved for the CCS system. For optimum performance, select the seed disk, adjust the seed meter (see Seed Meter Settings), and then refer to the vacuum level chart for the initial vacuum setting.

Sweet Corn

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.				
ProMax 40 x 4.5	A52391 (flat-type)	<8600 (<3900)	40	4.5
ProMax 40 x 3.75	A52390 (flat-type)	>7700 (>3500)	40	3.75

Popcorn

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.				
Small Corn, Sunflower,	H136478 (cell-type)	5500—9900 (2500—4500)	30	2.6

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
and Popcorn				
Sorghum	A43066 (cell-type)	>9900 (>4500)	45	1.5
On difficult to plant seeds, the ProMax 40 x 4.5 (A52390) improves performance. Sometimes a Medium Corn Disk (A43215) or Small Corn, Sunflower, and Popcorn Disk (H136478) can provide satisfactory performance.				

Confection Sunflower

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.				
ProMax 40 x 4.5	A52391 (flat-type)	5000—7200 (2250—3250)	40	4.5
ProMax 40 x 3.75	A52390 (flat-type)	7200—11 600 (3250—5250)	40	3.75

Oil Sunflower

Disk Name	Part Number (type)	Seed Sizes	Number of Holes	Hole Diameter (mm)
NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.				
Small Corn, Sunflower, and Popcorn	H136478 (cell-type)	4 (small) 3 (medium) 2 (large)	30	2.6
ProMax 40 x 2.5	A102717 (flat-type)	4 (small) 3 (medium) 2 (large)	40	2.5
For oil sunflower seed sizes 1 (extra large) and 5 (extra small), see the recommendations for confectionary sunflowers. Small Corn, Sunflower, and Popcorn Disk (H136478) is recommended for oil sunflower seed sizes 4 (small), 3 (medium), and 2 (large). Small Corn, Sunflower, and Popcorn Disk (H136478) is not recommended for oil sunflower seed sizes 1 (extra large) and 5 (extra small) or confectionary sunflower seeds.				

Wheat

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.				
Wheat	A124486 (cell-type)	22 710—37 920 (10 300—17 200)	210	2
For small seeds that result in doubles on the cotton and small soybean disk, using a Small Edible Bean Disk (A52903) with the double eliminator is recommended. The ProMax 64 disk has better seed singulation than the Cotton and Small Soybean Disk (A56251). The ProMax 64 disk is				

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
recommended for 91, 97, and 102 cm (36, 38, and 40 in) rows. If seed singulation is below expectations when using wax-based meter lubrication, try a talc and graphite blend (see the Meter Lubrication section).				

Drilled Cotton

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>				
Cotton and Small Soybean	A56251 (cell-type)	8800—13 200 (4000—6000)	64	2.5
Low-Rate Cotton	A70163 (cell-type)	8800—13 200 (4000—6000)	32	2.5
ProMax 50 x 3.75	A52903 (flat-type)	3520—7260 (1600—3300)	50	3.75
ProMax 64 x 2.8	A121489 (flat-type)	7260—13 900 (3300—6300)	64	2.8
For small seeds that result in doubles on the cotton and small soybean disk, using a Small Edible Bean Disk (A52903) with the double eliminator is recommended. The ProMax 64 disk has better seed singulation than the Cotton and Small Soybean Disk (A56251). The ProMax 64 disk is recommended for 91, 97, and 102 cm (36, 38, and 40 in) rows. If seed singulation is below expectations when using wax-based meter lubrication, try a talc and graphite blend (see the Meter Lubrication section).				

4-Seed Hilldrop Cotton

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>				
4-Seed Hilldrop Cotton	A65622 (cell-type)	8800—13 200 (4000—6000)	48	2.5
For small seeds that result in dropping more than four seeds, use of the 2-seed hilldrop cotton disk is recommended.				

2-Seed Hilldrop Cotton

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>				
2-Seed Hilldrop Cotton	A74961	8800—13 200 (4000—6000)	64	2.5

Soybean

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>				
Soybean	A42586 (cell-type)	<7700 (<3500)	108	4.4
Cotton and Small Soybean	A56251 (cell-type)	>7700 (>3500)	64	2.5
ProMax 64 x 4.5	A105848 (flat-type)	<7700 (<3500)	64	4.5
For smaller seed sizes that result in doubles, Cotton and Small Soybean Disk (A56251) can provide improved performance. The ProMax 64 disk is recommended for narrow row spacing with the following rates and ground speeds.				

ProMax 64			
Maximum Rates for Row Spacing and Ground Speed			
	38 cm (15 in)	51 cm (20 in)	56 cm (22 in)
Ground Speed kPh (mph)	Population Seeds/ha (acre)		
6.5 (4)	733 900 (297 000)	550 400 (222 750)	500 400 (202 500)
7.25 (4.5)	652 400 (264 000)	489 300 (198 000)	444 800 (180 000)
8 (5)	587 100 (237 600)	440 300 (178 200)	400 300 (162 000)
9 (5.5)	533 700 (216 000)	400 300 (162 000)	363 900 (147 273)
9.75 (6)	489 300 (198 000)	367 000 (148 500)	333 600 (135 000)
10.5 (6.5)	451 600 (182 769)	338 700 (137 077)	307 900 (124 615)
11.25 (7)	419 400 (169 714)	314 500 (127 286)	285 900 (115 714)

Low-Rate Sorghum

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>				
Low-Rate Sorghum	A43066 (cell-type)	22 000—35 300 (10 000—16 000)	45	1.5
For smaller seed sizes, a Medium Sugar Beet Disk (H136445) or a Small Sugar Beet Disk (A51712) can provide improved performance.				

High-Rate Sorghum

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>				
High-Rate Sorghum	A52802 (cell-type)	22 000—35 300 (10 000—16 000)	90	1.5

Canola

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>				
Canola	A119979 (cell-type)	189 200—199 200 (86 000—96 000)	90	2.5

Monogerm Sugar Beet

Disk Name	Part Number (type)	Seed Size mm (in)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>				
Small Sugar Beet	A51712 (cell-type)	2.6—3.2 (6.5/64—8/64)	45	1.5
Medium Sugar Beet	H136445 (cell-type)	3.0—3.6 (7.5/64—9/64)	45	1.5
Large Sugar Beet	A51713 (cell-type)	3.4—4.0 (8.5/64—10/64)	45	1.6

Pelleted Sugar Beet

Disk Name	Part Number (type)	Seed Size mm (in)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>				
Medium Sugar Beet	H136445 (cell-type)	3.2—4.0 (8/64—10/64)	45	1.5
Large Sugar Beet	A51713 (cell-type)	3.6—4.6 (9/64—11.5/64)	45	1.5
Sorghum	A43066 (cell-type)	3.6—4.6 (9/64—11.5/64)	45	1.5

Small Common Edible Bean and Pea with Disk H136468 (cell-type)

Seed	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>			
Black Turtle	4180—5720 (1900—2600)	108	3.5
Navy	3960—5500 (1800—2500)	108	3.5
Pink Viva	3740—4290 (1700—1950)	108	3.5
Small White	5280—6600 (2400—3000)	108	3.5
Smooth Pea	6160—7040 (2800—3200)	108	3.5

Medium Common Edible Bean and Pea with Disk A51696 (cell-type)

Seed	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>			
Black-Eyed Pea	3520—4400 (1600—2000)	56	4
Green Bean (garden)	2200—4840 (1000—2200)	56	4
Kidney (small)	2530—3080 (1150—1400)	56	4
Pinto	1760—3080 (800—1400)	56	4
Red Mexican (small)	2640—3300 (1200—1500)	56	4
Wrinkle Pea	3960—5060 (1800—2300)	56	4

Large Common Edible Bean and Peanut with Disk H136092 (cell-type)

Seed	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>			
Cranberry Bean	1760—2640 (800—1200)	50	4.8
Kidney (medium)	2090—2530 (950—1150)	50	4.8
Great Northern	1980—2860 (900—1300)	50	4.8
Garbanzo	1650—1980 (750—900)	50	4.8
Peanut (runner)	1430—1760 (650—800)	50	4.8

Seed	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
Peanut (Spanish)	2200—2750 (1000—1250)	50	4.8

Small Common Edible Bean and Pea with ProMax 50 X 3.75 Disk (A52903)

Seed	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>			
Green Garden (small)	3520—5280 (1600—2400)	50	3.75
Black Turtle	4180—5720 (1900—2600)	50	3.75
Navy	3960—5720 (1800—2600)	50	3.75
Small White	5280—7260 (2400—3300)	50	3.75
Wrinkle Pea	3740—5060 (1700—2300)	50	3.75

Medium Common Edible Bean and Pea with ProMax 50 X 4.5 Disk (A52904)

Seed	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>			
Green Garden (medium)	2640—3520 (1200—1600)	50	4.5
Small Red	2640—3300 (1200—1500)	50	4.5
Pinto	All Sizes	50	4.5
Medium Kidney	2530—3080 (1150—1400)	50	4.5
Lima	2640—3520 (1200—1600)	50	4.5
Pink Viva	3740—4180 (1700—1900)	50	4.5
Black-Eyed Pea	3520—4400 (1600—2000)	50	4.5
Smooth Pea	6160—7040 (2800—3200)	50	4.5

Large Common Edible Bean with ProMax 50 X 5.0 Disk (A52878)

Seed	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>			
Green Garden (large)	1540—2640 (700—1200)	50	5.0
Cranberry	1760—2640 (800—1200)	50	5.0
Large Kidney	1870—2530 (850—1150)	50	5.0
Great Northern	1980—2860 (900—1300)	50	5.0
Garbanzo	1650—1980 (750—900)	50	5.0

Virginia Peanut

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
<i>NOTE: On planters equipped with CCS, see the CCS section for nozzle and elbow recommendations.</i>				
Virginia Peanut	H138722 (cell-type)	1100—1760 (500—800)	46	5.3

Cucumber

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter (mm)
Sorghum	A43066 (cell-type)	22 000—35 300 (10 000—16 000)	45	1.5
Blank	A52554 (flat-type)	22 000—35 300 (10 000—16 000)	60	2
To improve performance with the blank disk, use small seed tube inserts.				

Blank Seed Disk

The Blank ProMax Seed Disk (A52554) (flat-type) allows custom drilling of a specific hole size for specialty crops. (See your John Deere dealer for additional information.)

WP29706,00005BA-19-05APR23

Optimize Seed Spacing

Match the seed disk to the seed for optimal meter performance. Seed spacing depends on ground conditions, meter speed, and ground speed.

IMPORTANT: Avoid poor seed spacing. Avoid rough ground conditions, high metering speeds, and high ground speeds. The operator determines if the planting timeline is more important than optimal spacing.

To optimize the seed spacing, observe the following:

GROUND CONDITIONS—To achieve optimal spacing, slow down in rough ground conditions.

METER SPEED—With high seed populations, reduce ground speed to reduce meter speed.

GROUND SPEED—Ground speed directly affects in-ground seed spacing. As the ground speeds rise above 8 km/h (5 mph), seed spacing performance decreases.

OUO6074,0000ED1-19-29MAR18

Check Meter Performance

IMPORTANT: After a Seed Disk is selected, in ground spacing checks are required to determine the level of metering performance. (See Checking Seed Population section.)

The seed-disk selection guidelines are recommendations resulting from tests with seed from various sources. Because of changes in seed shape and size from year to year, there is always the possibility that an alternative disk provides better performance.

OUO6074,0000ED0-19-10APR14

Install The Hopper Extension (Mini-Hopper Only)



A86748—UN—17JUN15

A—CCS™ Solenoid Harness

IMPORTANT: Avoid interference with the frame tube. Do not use the mini-hopper extension on the 1795 rockshaft near the mainframe.

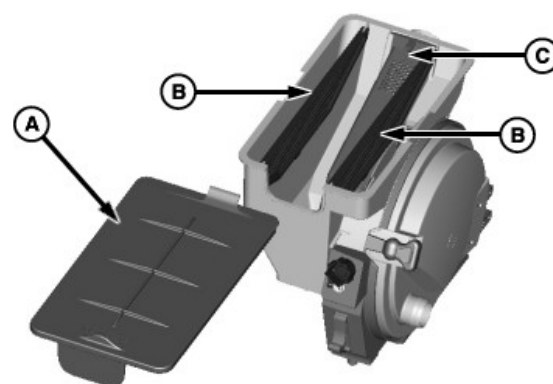
NOTE: When sugar beets are used or when using seed not approved for CCS™ seed tank delivery, the seed must be added to the hoppers, not the CCS™ tank. The extensions allow for more seeds to be planted. The extensions are useful when planting seed plots.

Disable the CCS™ blower when using the mini-hopper extension.

Do not install more than one extension on a mini-hopper.

When filling the mini-hopper extension, do not fill the seed over the screen vent holes.

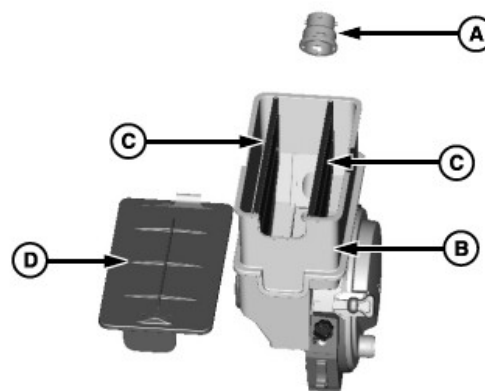
1. Disconnect harness (A) to disable the CCS™ blower.



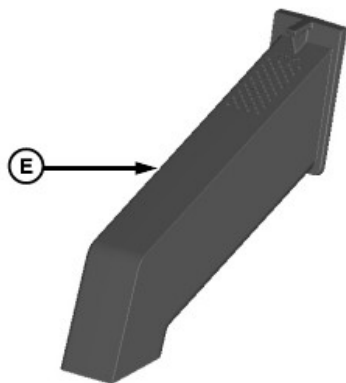
A78492—UN—31JUL13

A—Lid
B—Screened Dividers
C—Discharge Tube

2. Remove the lid (A), the screened dividers (B), and the discharge tube (C).



A78493—UN—31JUL13



A78494—UN—31JUL13

- A—Cap
- B—Mini-Hopper Extension
- C—Non-Screened Dividers
- D—Lid
- E—Discharge Tube

3. Install cap (A) between the CCS™ tube and the hose.

NOTE: Mini-hopper extensions are compatible with the CCS™ delivery system. To return to CCS™ system use, install the discharge tube (E) removed in step 2, reconnect the CCS™ blower harness, and remove the cap (A) (if used).

NOTE: Do not fill the mini hopper higher than the bottom of the screens. If seeds restrict the airflow through the screens, meter performance suffers.

4. Install extension (B) onto the mini-hopper.
5. Install the dividers (C) into the mini-hopper and the extension (B).
6. Reinstall the lid (D).

MH69740,000054F-19-04MAR16

Set Vacuum Levels

Use of Talc Lubricant

See the Lubricating the Seed Meter section.

OUO6045,0000705-19-24JUL18

Zero the Vacuum Sensor

NOTE: To zero the SeedStar™ monitor vacuum sensors, refer to your SeedStar™ monitor operator's manual.

OUO6074,00009C3-19-11MAY16

Set the Vacuum Level

Vacuum Level Chart	
Crop	Vacuum Level, mm (in) of Water
Sugar Beet	See Chart
Corn	See Chart
Sweet Corn	See Chart
Popcorn	See Chart
Common Edible Beans, Peas, and Peanuts with an Edible Bean Cell-Type Seed Disk	Use 203 (8) for common edible beans except the following: Use 152 (6) for small common edible beans with 6160 seeds/kg (2800 seeds/lb) or more. Use 152 (6) for medium common edible beans with 3960 seeds/kg (1800 seeds/lb) or more.
Common Edible Beans and Peas with a ProMax Seed Disk	See Chart
Wheat	See Chart
Cotton (cell-type disk)	203 (8)
Cotton Hilldrop	203 (8)
Cotton with a ProMax Seed Disk	See Chart
Runner, Spanish, and Virginia Peanuts	See Chart
Sorghum	203 (8)
High-Rate Sorghum	203 (8)
Canola	Use 203 (8) when planting 556 000—667 200 seeds/ha (225 000—270 000 seeds/acre). Use 254 (10) when planting 667 200—889 600 seeds/ha (270 000—360 000 seeds/acre).
Oil Sunflower	See Chart
Confection Sunflower	See Chart
Soybean	203 (8)
Soybean with a Cotton Disk	127—178 (5—7)
Soybean with a ProMax 64 Disk	280—560 (11—22)
Cucumber with a Sorghum Disk	254 (10)
Cucumber with a Blank (custom) Disk	203—305 (8—12)

Some seed sizes, seed shapes, and situations require vacuum levels slightly higher or lower than the settings shown. Always verify the vacuum level with a field check. The vacuum charts are a guide and are accurate in most conditions.

Blower control is determined by the blower configuration and hose attachment to the tractor. Multiple vacuum blowers on one selective control valve (SCV) use in-line flow control valves for adjustment. A single blower on an SCV uses the tractor flow control for adjustment.

Use the vacuum level charts for the initial vacuum setting and adjust the level as needed. The charts are based on a typical ground speed and population rate. If high population rates or high ground speeds affect seed placement, increase the vacuum level. If low population rates or low ground speeds affect seed placement, decrease the vacuum level.

NOTE: At any setting, the vacuum level is slightly lower when the hydraulic oil is cold or when seeds are not covering holes in the seed disk. Make the final setting after the oil has warmed and the seed disks are full.

in vacuum can help. Extra downforce can improve the ride quality, but do not exceed a level of downforce that degrades the seed furrow. If all the possible adjustments do not reduce seed skips, reduce ground speed.

The vacuum level is indicated on the vacuum gauge or on the screen.

Set the vacuum level as follows:

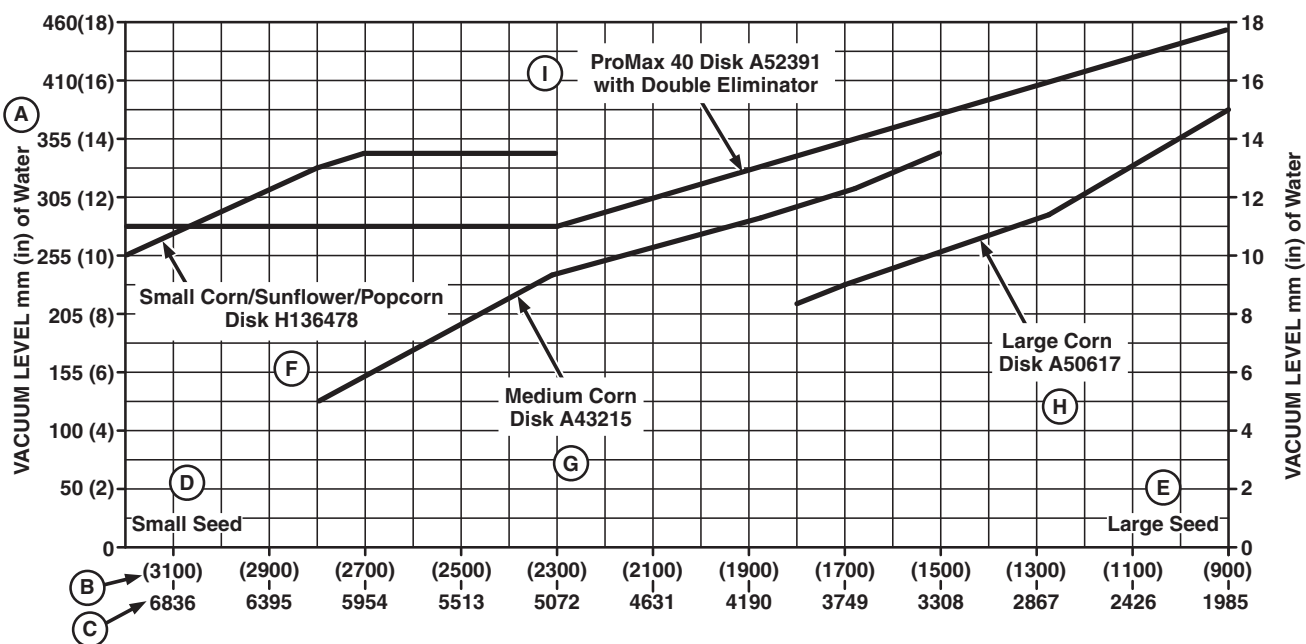
1. Verify that the seed meters are set up for the crop.
2. Engage the vacuum (SCV lever in the detent position). Let the oil warm (approximately 15 minutes).
3. Fill all the tanks and hoppers with seed.
4. Plant a short distance or use the on-screen meter fill function to fill the seed disks with seed.
5. Adjust the vacuum level manually with the tractor or the in-line valves, or activate the vacuum automation on the screen.
6. To refine the vacuum level (when using electric

If rough field conditions cause seed skips, an increase

driven seed meters), use the runoff feature on the screen.

OUO6064,000015A-19-05APR23

Vacuum Level for Field Corn Using H136478, A43215, A50617, or A52391 Seed Disks



A106657—UN—01APR20

A—Vacuum Level, mm (in) of Water

B—Seeds per Pound

C—Seeds per Kilogram

D—Small Seed

E—Large Seed

Determine the vacuum level based on the seeds per kg (lb). To calculate the seeds per kg (lb), divide the number of seeds in a bag by the weight of the bag.

EXAMPLE: If there are 4190 seeds per kg (1900 seeds per lb), the chart indicates a vacuum level of 280 mm (11 in) with a medium corn disk.

Use the vacuum level charts for the initial vacuum setting and adjust the level as needed. The charts are based on a typical ground speed and population rate. If high population rates or high ground speeds affect seed placement, increase the vacuum level. If low population rates or low ground speeds affect seed placement, decrease the vacuum level.

F—Small Corn, Sunflower, and Popcorn Disk

G—Medium Corn Disk

H—Large Corn Disk

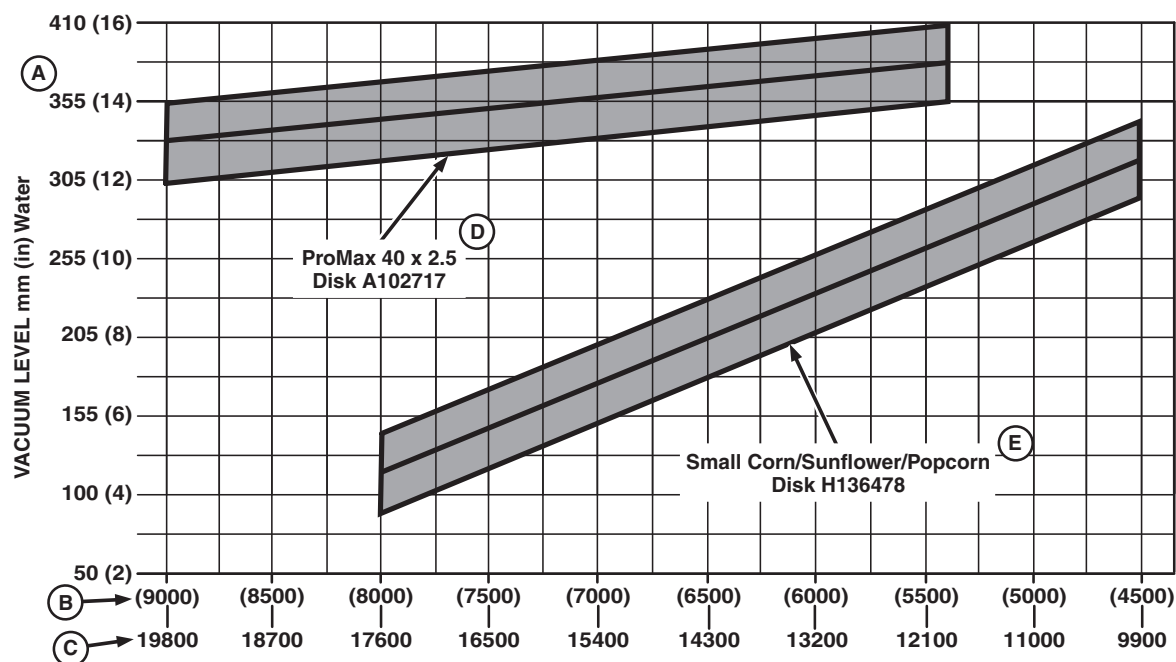
I—ProMax 40 Disk

If rough field conditions cause seed skips, an increase in vacuum can help. Extra downforce can improve the ride quality, but do not exceed a level of downforce that degrades the seed furrow. If all the possible adjustments do not reduce seed skips, reduce ground speed.

Where the medium and large corn disks overlap, select the medium seed disk initially. If the target rate is difficult to control, switch to the large corn disk.

MH69740,000055C-19-15APR20

Vacuum Level for Oil Sunflower



A106658—UN—01APR20

A—Vacuum Level, mm (in) of Water**B**—Seeds per Pound**C**—Seeds per Kilogram

Determine the vacuum level based on the seeds per kg (lb). To calculate the seeds per kg (lb), divide the number of seeds in a bag by the weight of the bag.

EXAMPLE: If there are 12 100 seeds per kg (5500 seeds per lb), the chart indicates a vacuum level of 254 mm (10 in) with the small corn, sunflower, and popcorn disk (E).

Use the vacuum level charts for the initial vacuum setting and adjust the level as needed. The charts are based on a typical ground speed and population rate. If high population rates or high ground speeds affect seed

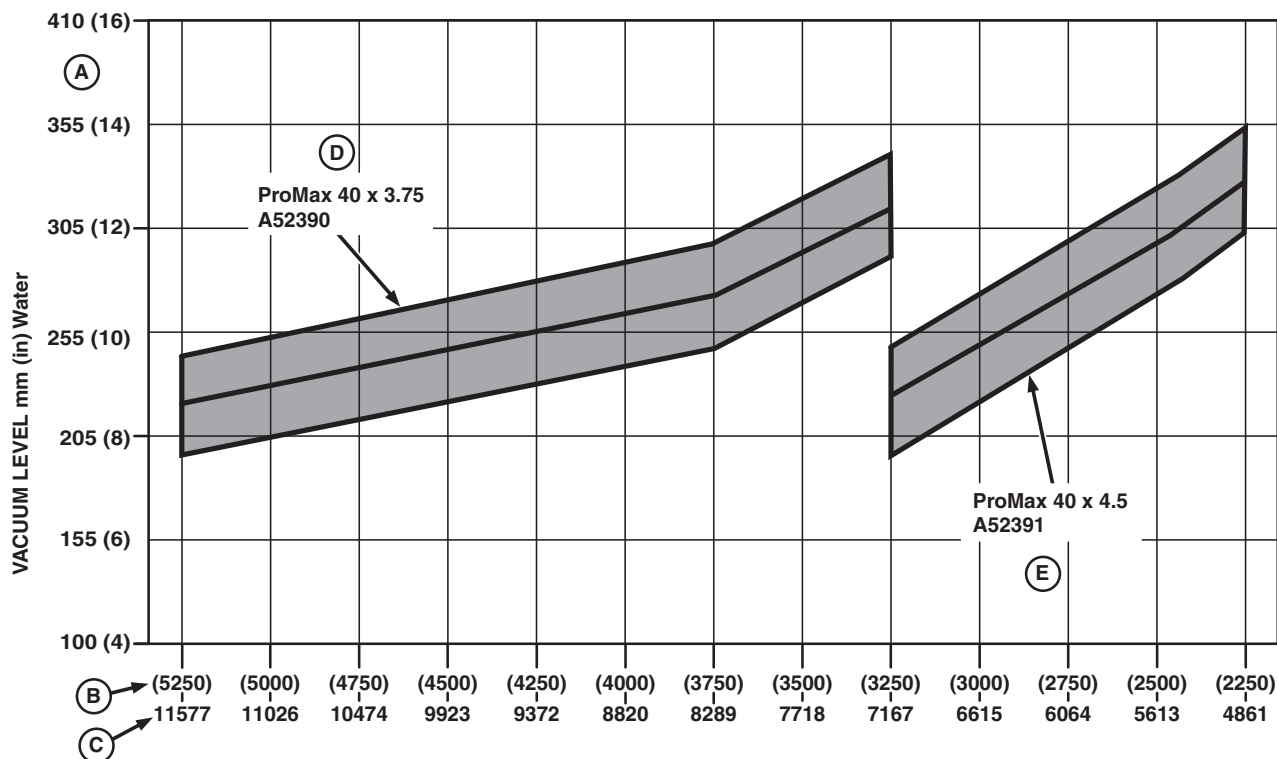
D—ProMax 40 x 2.5 Disk**E**—Small Corn, Sunflower, and Popcorn Disk

placement, increase the vacuum level. If low population rates or low ground speeds affect seed placement, decrease the vacuum level.

If rough field conditions cause seed skips, an increase in vacuum can help. Extra downforce can improve the ride quality, but do not exceed a level of downforce that degrades the seed furrow. If all the possible adjustments do not reduce seed skips, reduce ground speed.

MH69740,000055D-19-15APR20

Vacuum Level for Confectionary Sunflower



A106659—UN—01APR20

A—Vacuum Level, mm (in) of Water**B—Seeds per Pound****C—Seeds per Kilogram**

Determine the vacuum level based on the seeds per kg (lb). To calculate the seeds per kg (lb), divide the number of seeds in a bag by the weight of the bag.

EXAMPLE: If there are 9372 seeds per kg (4250 seeds per lb), the chart indicates a vacuum level of 254 mm (10 in) with a ProMax 40 x 3.75 disk.

Use the vacuum level charts for the initial vacuum setting and adjust the level as needed. The charts are based on a typical ground speed and population rate. If high population rates or high ground speeds affect seed

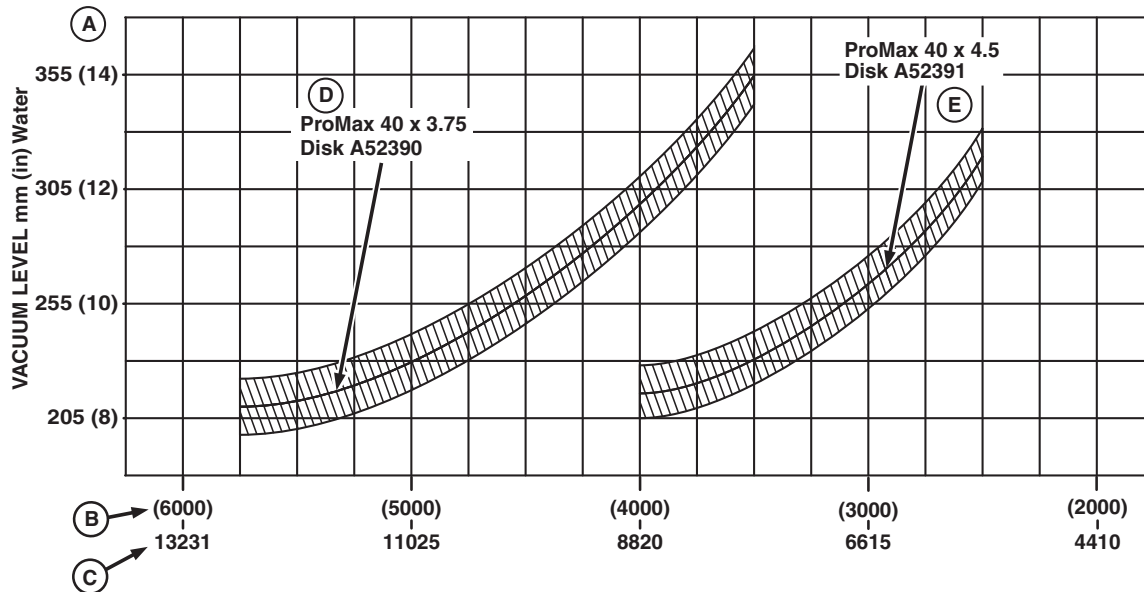
D—ProMax 40 x 3.75 Disk**E—ProMax 40 x 4.5 Disk**

placement, increase the vacuum level. If low population rates or low ground speeds affect seed placement, decrease the vacuum level.

If rough field conditions cause seed skips, an increase in vacuum can help. Extra downforce can improve the ride quality, but do not exceed a level of downforce that degrades the seed furrow. If all the possible adjustments do not reduce seed skips, reduce ground speed.

MH69740,000055E-19-15APR20

Vacuum Level for Sweet Corn



A106660—UN—01APR20

A—Vacuum Level, mm (in) of Water

B—Seeds per Pound

C—Seeds per Kilogram

D—ProMax 40 x 3.75 Disk

E—ProMax 40 x 4.5 Disk

Determine the vacuum level based on the seeds per kg (lb). To calculate the seeds per kg (lb), divide the number of seeds in a bag by the weight of the bag.

EXAMPLE: If there are 9370 seeds per kg (4250 seeds per lb), the chart indicates a vacuum level of 280 mm (11 in) with a ProMax 40 x 3.75 disk.

Use the vacuum level charts for the initial vacuum setting and adjust the level as needed. The charts are based on a typical ground speed and population rate. If high population rates or high ground speeds affect seed placement, increase the vacuum level. If low population rates or low ground speeds affect seed placement, decrease the vacuum level.

If rough field conditions cause seed skips, an increase in vacuum can help. Extra downforce can improve the ride quality, but do not exceed a level of downforce that degrades the seed furrow. If all the possible adjustments do not reduce seed skips, reduce ground speed.

MH69740,000055F-19-15APR20

Vacuum Level for Wheat

Seed Size Seeds/kg (Seeds/lb)	Seed Size Seeds/kg (Seeds/lb)	Seed Size Seeds/kg (Seeds/lb)	Seed Size Seeds/kg (Seeds/lb)
22 710 (10 300)	27 560 (12 500)	29 760 (13 500)	37 920 (17 200)
Vacuum mm (in) of Water	Vacuum mm (in) of Water	Vacuum mm (in) of Water	Vacuum mm (in) of Water
203 (8)	203 (8)	178 (7)	51 (2)
305 (12)	305 (12)	254 (10)	76 (3)
381 (15)	356 (14)	279 (11)	102 (4)
457 (18)	432 (17)	305 (12)	152 (6)
559 (22)	559 (22)	356 (14)	178 (7)
660 (26)	584 (23)	457 (18)	279 (11)

Determine the vacuum level based on the seeds per kg (lb). To calculate the seeds per kg (lb), divide the number of seeds in a bag by the weight of the bag.

Use the vacuum level charts for the initial vacuum setting and adjust the level as needed. The charts are based on a typical ground speed and population rate. If high population rates or high ground speeds affect the seed placement, increase the vacuum level. If low population rates or low ground speeds affect the seed placement, decrease the vacuum level.

If rough field conditions cause seed skips, an increase in the vacuum level can help. Extra downforce can improve the ride quality, but do not exceed a level of downforce that degrades the seed furrow. If all the possible adjustments do not reduce the seed skips, reduce the ground speed.

WP29706,0000F59-19-10FEB22

Vacuum Level for Cotton Using a ProMax Disk

Disk	Seed Size	Vacuum Range
ProMax	Recommendations Seeds/kg (Seeds/lb)	mm (in) of Water
50 x 3.75 (A52903)	3520—7260 (1600—3300)	305—457 (12—18)
64 x 2.8 (A121489)	6610—8600 (3000—3900)	280—508 (11—20)
64 x 2.8 (A121489)	8600—10 360 (3900—4700)	228—407 (9—16)
64 x 2.8 (A121489)	10 360—14 330 (4700—6500)	152—305 (6—12)

NOTE: To maintain the vacuum levels when using a ProMax 50 disk, do not exceed 12 row units per vacuum blower.

Determine the vacuum level based on the seeds per kg (lb). To calculate the seeds per kg (lb), divide the number of seeds in a bag by the weight of the bag.

Use the vacuum level charts for the initial vacuum setting and adjust the level as needed. The charts are based on a typical ground speed and population rate. If high population rates or high ground speeds affect the seed placement, increase the vacuum level. If low population rates or low ground speeds affect the seed placement, decrease the vacuum level.

If rough field conditions cause seed skips, an increase in the vacuum level can help. Extra downforce can improve the ride quality, but do not exceed a level of downforce that degrades the seed furrow. If all the possible adjustments do not reduce the seed skips, reduce the ground speed.

OUO6074,00011D7-19-31MAR21

Vacuum Level for Common Edible Beans and Peas Using a ProMax 50 Disk

Vacuum Chart Using the ProMax Edible Beans and Peas Disk						
Crop	ProMax 50 Disks			Vacuum Range	Double Eliminator	Seed Size
	50 x 3.75 (A52903)	50 x 4.5 (A52904)	50 x 5 (A52878)	mm (in) of Water	Percent of Hole Covered	Recommendations Seeds/kg (Seeds/lb)
Small Common Edible Beans						
Small Green Garden	X			406—457 (16—18)	0—50	3528—5292 (1600—2400)
Black Turtle	X			406—457 (16—18)	0—50	4190—5733 (1900—2600)
Navy	X			406—457 (16—18)	0—50	3969—5733 (1800—2600)
Small Whites	X			305—356 (12—14)	0—50	5292—7277 (2400—3300)
Pink Viva		X		457—508 (18—20)	0—50	3749—4190 (1700—1900)
Medium Common Edible Beans						
Medium Green Garden		X		457—508 (18—20)	0—50	2649—3528 (1200—1600)
Small Red		X		457—508 (18—20)	0—50	2649—3308 (1200—1500)
Pinto		X		508—559 (20—22)	0—50	All Sizes
Medium Kidney		X		356—406 (14—16)	0—50	2536—3087 (1150—1400)
Lima		X		457—508 (18—20)	0—50	2649—3528 (1200—1600)
Large Common Edible Beans						
Large Green Garden			X	508—559 (20—22)	0—25	1544—2649 (700—1200)
Cranberry			X	508—559 (20—22)	0—50	1764—2649 (800—1200)
Large Kidney			X	457—508 (18—20)	0—50	1874—2536 (850—1150)
Great Northern			X	457—508 (18—20)	0—50	1985—2867 (900—1300)
Garbanzo			X	406—457 (16—18)	0—50	1654—1985 (750—900)
Edible Peas						
Black-Eyed		X		406—457 (16—18)	0—50	3528—4410 (1600—2000)
Smooth		X		356—406 (14—16)	0—50	6174—7056 (2800—3200)
Wrinkle	X			305—356 (12—14)	0—50	3749—5072 (1700—2300)

NOTE: To maintain the vacuum levels when using a ProMax 50 disk, do not exceed 12 row units per vacuum blower.

A Vacuum Gauge (AA38407) with a 762 mm (30 in) vacuum range is available from your John Deere dealer or qualified service provider.

Determine the vacuum level based on the seeds per kg (lb). To calculate the seeds per kg (lb), divide the number of seeds in a bag by the weight of the bag.

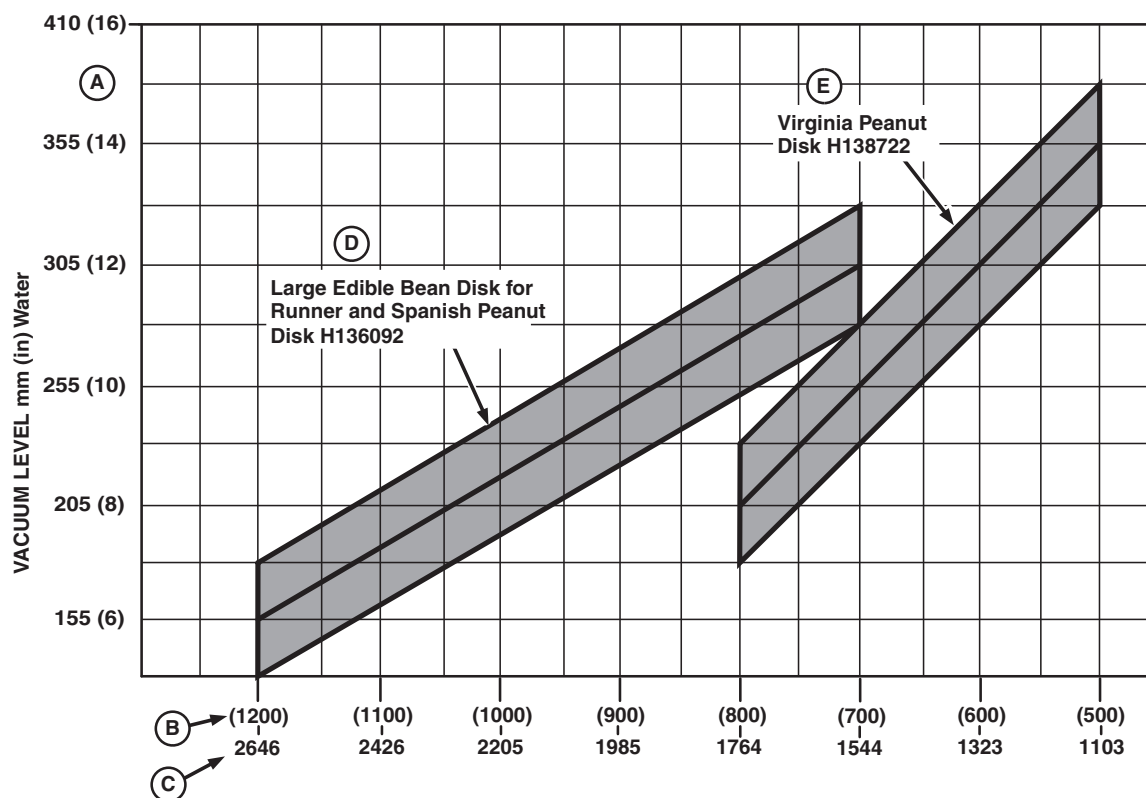
Use the vacuum level charts for the initial vacuum setting and adjust the level as needed. The charts are based on a typical ground speed and population rate. If

high population rates or high ground speeds affect the seed placement, increase the vacuum level. If low population rates or low ground speeds affect the seed placement, decrease the vacuum level.

If rough field conditions cause seed skips, an increase in the vacuum level can help. Extra downforce can improve the ride quality, but do not exceed a level of downforce that degrades the seed furrow. If all the possible adjustments do not reduce the seed skips, reduce the ground speed.

MH69740,0000564-19-25FEB22

Vacuum Level for Peanuts



A96361—UN—04MAY17

A—Vacuum Level, mm (in) of Water**B—Seeds Per Pound****C—Seeds Per Kilogram**

Determine the vacuum level based on the seeds per kg (lb). To calculate the seeds per kg (lb), divide the number of seeds in a bag by the weight of the bag.

EXAMPLE: If there are 1764 seeds per kg (800 seeds per lb), the chart indicates a vacuum level of 280 mm (11 in) with the large edible-bean disk for Runner Peanuts or a vacuum level of 203 mm (8 in) with the Virginia Peanut disk.

Use the vacuum level charts for the initial vacuum setting and adjust the level as needed. The charts are based on a typical ground speed and population rate. If

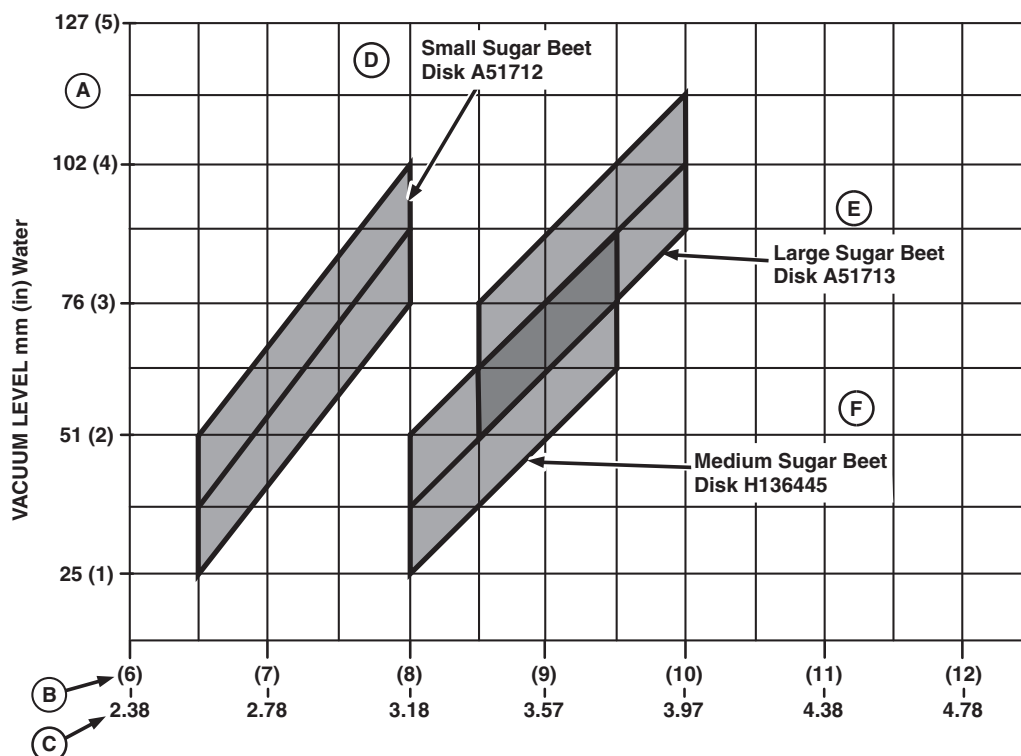
D—Large Edible-Bean Disk for Runner and Spanish Peanut
E—Virginia Peanut Disk

high population rates or high ground speeds affect seed placement, increase the vacuum level. If low population rates or low ground speeds affect seed placement, decrease the vacuum level.

If rough field conditions cause seed skips, an increase in vacuum can help. Extra downforce can improve the ride quality, but do not exceed a level of downforce that degrades the seed furrow. If all the possible adjustments do not reduce seed skips, reduce ground speed.

MH69740,0000562-19-03MAY17

Vacuum Level for Sugar Beet



A96362—UN—04MAY17

A—Vacuum Level, mm (in) of Water
 B—Seed Diameter (per 64th of an inch)
 C—Seed Diameter (per Millimeter)

D—Small Sugar Beet
 E—Large Sugar Beet
 F—Medium Sugar Beet

EXAMPLE: If the seed label indicates a medium seed diameter of 3.6 mm (9/64 in), set the vacuum level to 64 mm (2.5 in) with the medium sugar-beet disk.

Use the vacuum level charts for the initial vacuum setting and adjust the level as needed. The charts are based on a typical ground speed and population rate. If high population rates or high ground speeds affect seed placement, increase the vacuum level. If low population rates or low ground speeds affect seed placement, decrease the vacuum level.

If rough field conditions cause seed skips, an increase in vacuum can help. Extra downforce can improve the ride quality, but do not exceed a level of downforce that degrades the seed furrow. If all the possible adjustments do not reduce seed skips, reduce ground speed.

MH69740,0000563-19-03MAY17

Vacuum Seed Meter Rate Charts

How to Use Rate Charts

IMPORTANT: Actual planting rate must be checked in the field. See Check Seed Population section.

NOTE: All rate charts are based on typical drive wheel slippage. Crop residue, unit down force, tire pressure, and soil conditions affect drive wheel slippage.

1. Locate rate chart for crop and row spacing.
2. Locate row spacing column.
3. Scan down the column to find target population.
4. Determine if target population is in the High Range or Low Range table. The input sprocket on seed transmission must be set to this range.
5. Scan left of target population to find number of teeth on Driver and Driven sprockets. The Planting Rate Sprockets must be set to this combination.
6. Scan right of target population to find recommended speed range. The top of the speed range is for optimum field conditions. If planting in rough conditions, reduce speed and increase unit down force.
7. See Seed Transmission section for this planter to set transmission.

Determine Transmission Settings for a Row Spacing Not Shown in Operator's Manual

To find transmission sprocket settings for the row widths not shown in seed charts, use the following formula.

FORMULA:

$$(A \div B) \times C = D$$

A = Actual row spacing on planter

B = Row spacing in chart nearest to actual row width

C = Target population

D = Calculated population used to determine transmission setting and speed

The following example is for a planter with vacuum seed meters on 71 cm row spacing that is planting corn. A 30-hole seed disk is selected following the seed disk recommendations. The corn (small, medium, or large), sunflower, and popcorn disks on 76 to 102 cm Rows (30-hole disk) rate chart is the closest match.

EXAMPLE:

$$(71 \div 76) \times 69\ 188 = 64\ 636$$

The population value in the 76 cm column nearest to the calculated population 64 636 is 65 203.

The chart recommends a 29-tooth driver and a 27-tooth driven in the low input range for this example.

OJ06074.0000065-19-10MAR09

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	149	88 530	73 937	69 364	65 964	4.8—12.9
35	25	155	84 989	70 980	66 589	63 325	4.8—12.9
35	26	161	81 720	68 250	64 028	60 889	4.8—12.9
35	27	167	78 693	65 722	61 657	58 634	4.8—12.9
35	28	173	75 883	63 375	59 455	56 540	4.8—12.9
29	24	179	73 353	61 262	57 473	54 656	6.4—12.9
29	25	187	70 419	58 812	55 174	52 469	6.4—12.9
29	26	194	67 711	56 550	53 052	50 451	6.4—12.9
29	27	202	65 203	54 455	51 087	48 583	6.4—12.9
29	28	209	62 874	52 510	49 262	46 848	6.4—12.9
24	24	217	60 706	50 700	47 564	45 232	6.4—12.9
24	25	226	58 278	48 672	45 661	43 423	6.4—12.9
24	26	235	56 037	46 800	43 905	41 753	6.4—12.9
24	27	244	53 961	45 066	42 279	40 206	6.4—12.9
24	28	253	52 034	43 457	40 769	38 770	6.4—12.9
20	24	260	50 589	42 250	39 636	37 693	6.4—12.9
20	25	271	48 565	40 560	38 051	36 186	6.4—12.9
20	26	282	46 697	39 000	36 587	34 794	6.4—12.9
20	27	293	44 968	37 555	35 232	33 505	6.4—12.9

Vacuum Seed Meter Rate Charts

20	28	303	43 362	36 214	33 974	32 309	6.4—12.9
16	24	325	40 471	33 800	31 709	30 155	6.4—12.9
16	25	339	38 852	32 448	30 441	28 949	6.4—12.9
16	26	352	37 358	31 200	29 270	27 835	6.4—12.9
16	27	366	35 974	30 044	28 186	26 804	6.4—12.9
16	28	379	34 689	28 971	27 179	25 847	6.4—12.9

OUO6074,0000066-19-27MAR23

Corn (Small, Medium, or Large), Sunflower, and Popcorn Disks on 38 to 70 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
High-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (A50617, A43215, and H136478) 30-Hole Disks (cell-type)				Recommended Speed Range in km/h
Driver	Driven		38 cm Rows	51 cm Rows	56 cm Rows	70 cm Rows	
35	24	56	472 160	351 806	320 395	288 482	3.2—4.8
35	25	58	453 274	337 734	307 579	276 942	3.2—4.8
35	26	60	435 840	324 744	295 749	266 291	3.2—4.8
35	27	63	419 698	312 716	284 795	256 428	3.2—5.6
35	28	65	404 709	301 548	274 624	247 270	3.2—5.6
29	24	67	391 219	291 496	265 470	239 028	3.2—5.6
29	25	70	375 570	279 836	254 851	229 466	3.2—5.6
29	26	73	361 125	269 073	245 049	220 641	3.2—6.4
29	27	76	347 750	259 108	235 973	212 469	3.2—6.4
29	28	78	335 330	249 854	227 545	204 881	3.2—6.4
24	24	81	323 767	241 238	219 699	197 816	3.2—7.2
24	25	85	310 816	231 689	210 911	189 903	3.2—7.2
24	26	88	298 862	222 681	202 799	182 599	3.2—7.2
24	27	91	287 793	214 434	195 288	175 836	3.0—8.0
24	28	96	277 516	206 776	188 314	169 556	3.0—8.0
20	24	98	269 806	201 032	183 083	164 847	3.2—8.8
20	25	102	259 014	192 991	175 759	158 253	3.2—8.8
20	26	106	249 052	185 568	168 999	152 166	3.2—9.6
20	27	110	239 827	178 695	162 740	146 530	3.2—9.6
20	28	114	231 262	172 313	156 928	141 297	3.2—10.5
16	24	122	215 845	160 825	146 466	131 877	3.2—10.5
16	25	127	207 211	154 392	140 607	126 602	3.2—11.2
16	26	132	199 241	148 454	135 199	121 733	3.2—11.2
16	27	137	191 862	142 956	130 192	117 224	3.2—12.0
16	28	142	185 010	137 350	125 542	113 038	3.2—12.9

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A50617, A43215, and H136478) 30-Hole Disks (cell-type)				
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	70 cm Rows	Recommended Speed Range in km/h
35	24	149	177 060	131 927	120 148	108 181	4.8—12.9
35	25	155	169 978	126 650	115 342	103 853	4.8—12.9
35	26	161	163 440	121 779	110 906	99 859	4.8—12.9
35	27	167	157 387	117 269	106 798	96 161	4.8—12.9
35	28	173	151 766	113 080	102 984	92 726	4.8—12.9
29	24	179	146 707	109 311	99 551	89 635	6.4—12.9
29	25	187	140 839	104 939	95 569	86 050	6.4—12.9
29	26	194	135 422	100 903	91 893	82 740	6.4—12.9
29	27	202	130 406	97 165	88 490	79 676	6.4—12.9
29	28	209	125 749	93 695	85 330	76 830	6.4—12.9
24	24	217	121 413	90 464	82 387	74 181	6.4—12.9
24	25	226	116 558	86 846	79 092	71 214	6.4—12.9
24	26	235	112 073	83 506	76 050	68 475	6.4—12.9
24	27	244	107 922	80 413	73 233	65 939	6.4—12.9
24	28	253	104 068	77 541	70 618	63 584	6.4—12.9
20	24	260	101 177	75 387	68 656	61 817	6.4—12.9
20	25	271	97 130	72 371	65 910	59 345	6.4—12.9
20	26	282	93 394	69 588	63 375	57 062	6.4—12.9
20	27	293	89 935	67 011	61 028	54 949	6.4—12.9
20	28	303	86 723	64 817	58 848	52 986	6.4—12.9
16	24	325	80 942	60 310	54 925	49 454	6.4—12.9
16	25	339	77 704	57 897	52 728	47 476	6.4—12.9
16	26	352	74 715	55 870	50 700	45 650	6.4—12.9
16	27	366	71 946	53 608	48 822	43 959	6.4—12.9
16	28	379	69 379	51 694	47 078	42 389	6.4—12.9

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Corn (Small, Medium, and Large), Sunflower, and Popcorn Disks on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
High-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A50617, A43215, and H136478) 30-Hole Disks (cell-type)				
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	56	236 080	197 166	184 970	175 903	3.2—4.8
35	25	58	226 637	189 279	177 571	168 867	3.2—4.8
35	26	60	217 920	181 999	170 742	162 372	3.2—4.8
35	27	63	209 849	175 259	164 418	156 358	3.2—5.6
35	28	65	202 354	168 999	158 546	150 774	3.2—5.6
29	24	67	195 609	163 366	153 261	145 748	3.2—5.6
29	25	70	187 785	156 831	147 130	139 918	3.2—5.6
29	26	73	180 562	150 799	141 472	134 537	3.2—6.4
29	27	76	173 875	145 214	136 232	129 554	3.2—6.4

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (A50617, A43215, and H136478) 30-Hole Disks (cell-type)				Recommended Speed Range in km/h
Driver	Driven		76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
29	28	78	167 665	140 028	131 366	124 927	3.2—6.4
24	24	81	161 884	135 199	126 837	120 619	3.2—7.2
24	25	85	155 408	129 791	121 763	115 794	3.2—7.2
24	26	88	149 431	124 799	117 080	111 341	3.2—7.2
24	27	91	143 896	120 177	112 744	107 217	3.2—8.0
24	28	95	138 757	115 885	108 717	103 388	3.2—8.0
20	24	98	134 903	112 666	105 697	100 516	3.2—8.8
20	25	102	129 507	108 160	101 469	96 495	3.2—8.8
20	26	106	124 526	104 000	97 567	92 784	3.2—9.6
20	27	110	119 914	100 148	93 953	89 347	3.2—9.6
20	28	114	115 631	96 571	90 598	86 157	3.2—10.5
16	24	122	107 922	90 133	84 558	80 413	3.2—10.5
16	25	127	103 605	86 528	81 175	77 196	3.2—11.2
16	26	132	99 621	83 200	78 053	74 227	3.2—11.2
16	27	137	95 931	80 118	75 162	71 478	3.2—12.0
16	28	142	92 505	77 257	72 478	68 925	3.2—12.9

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (A50617, A43215, and H136478) 30-Hole Disks (cell-type)				Recommended Speed Range in km/h
Driver	Driven		76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	149	88 530	73 937	69 364	65 964	4.8—12.9
35	25	155	84 989	70 980	66 589	63 325	4.8—12.9
35	26	161	81 720	68 250	64 028	60 889	4.8—12.9
35	27	167	78 693	65 722	61 657	58 634	4.8—12.9
35	28	173	75 883	63 375	59 455	56 540	4.8—12.9
29	24	179	73 353	61 262	57 473	54 656	6.4—12.9
29	25	187	70 419	58 812	55 174	52 469	6.4—12.9
29	26	194	67 711	56 550	53 052	50 451	6.4—12.9
29	27	202	65 203	54 455	51 087	48 583	6.4—12.9
29	28	209	62 874	52 510	49 262	46 848	6.4—12.9
24	24	217	60 706	50 700	47 564	45 232	6.4—12.9
24	25	226	58 278	48 672	45 661	43 423	6.4—12.9
24	26	235	56 037	46 800	43 905	41 753	6.4—12.9
24	27	244	53 961	45 066	42 279	40 206	6.4—12.9
24	28	253	52 034	43 457	40 769	38 770	6.4—12.9
20	24	260	50 589	42 250	39 636	37 693	6.4—12.9
20	25	271	48 565	40 560	38 051	36 186	6.4—12.9
20	26	282	46 697	39 000	36 587	34 794	6.4—12.9
20	27	293	44 968	37 555	35 232	33 505	6.4—12.9
20	28	303	43 362	36 214	33 974	32 309	6.4—12.9
16	24	325	40 471	33 800	31 709	30 155	6.4—12.9
16	25	339	38 852	32 448	30 441	28 949	6.4—12.9
16	26	352	37 358	31 200	29 270	27 835	6.4—12.9
16	27	366	35 974	30 044	28 186	26 804	6.4—12.9

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A50617, A43215, and H136478) 30-Hole Disks (cell-type)					
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
16	28	379	34 689	28 971	27 179	25 847	6.4—12.9

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ProMax 40 x 3.75 and ProMax 40 x 4.5 Disks on 38 to 70 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
High-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A52390 and A52391) 40-Hole Disk (flat-type)					
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	70 cm Rows	Recommended Speed Range in km/h
35	24	42	629 547	469 074	427 193	384 642	0.8—2.4
35	25	44	604 365	450 311	410 105	369 256	0.8—2.4
35	26	45	581 120	432 992	394 332	355 054	0.8—2.4
35	27	47	559 597	416 955	379 727	341 904	0.8—2.4
35	28	49	539 612	402 064	366 165	329 693	0.8—2.4
29	24	50	521 625	388 662	353 960	318 703	0.8—3.2
29	25	53	500 760	373 115	339 801	305 955	0.8—3.2
29	26	55	481 500	358 765	326 732	294 188	0.8—3.2
29	27	57	463 666	345 477	314 631	283 292	0.8—3.2
29	28	59	447 107	333 139	303 394	273 174	0.8—3.2
24	24	61	431 689	321 651	292 932	263 755	0.8—3.2
24	25	64	414 422	308 785	281 215	253 204	0.8—3.2
24	26	66	398 483	296 909	270 399	243 466	1.6—4.0
24	27	69	383 724	285 912	260 384	234 448	1.6—4.0
24	28	71	370 020	275 701	251 085	226 075	1.6—4.0
20	24	73	359 741	268 042	244 110	219 795	1.6—4.0
20	25	76	345 352	257 321	234 346	211 004	1.6—4.8
20	26	79	332 069	247 424	225 332	202 888	1.6—4.8
20	27	82	319 770	238 260	216 987	195 374	1.6—4.8
20	28	85	308 350	229 751	209 237	188 396	1.6—4.8
16	24	91	287 793	214 434	195 288	175 836	1.6—5.6
16	25	95	276 281	205 857	187 477	168 803	1.6—5.6
16	26	99	265 655	197 939	180 266	162 310	1.6—5.6
16	27	103	255 816	190 608	173 589	156 299	2.6—6.4
16	28	107	246 680	183 801	167 390	150 717	2.6—6.4

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A52390 and A52391) 40-Hole Disk (flat-type)					
Driver	Driven	Average Seed	38 cm Rows	51 cm Rows	56 cm Rows	70 cm Rows	Recommended Speed Range in km/h

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A52390 and A52391) 40-Hole Disk (flat-type)				
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	70 cm Rows	Recommended Speed Range in km/h
		Spacing (mm)					
35	24	111	236 080	175 903	160 197	144 241	2.4—6.4
35	25	116	226 637	168 867	153 789	138 471	2.4—7.2
35	26	121	217 920	162 372	147 874	133 145	2.4—7.2
35	27	125	209 849	156 358	142 398	128 214	2.4—8.0
35	28	130	202 354	150 774	137 312	123 635	2.4—8.0
29	24	135	195 609	145 748	132 735	119 514	3.2—8.0
29	25	140	187 785	139 918	127 425	114 733	3.2—8.8
29	26	146	180 562	134 537	122 524	110 320	3.2—8.8
29	27	151	173 875	129 554	117 987	106 234	3.2—9.6
29	28	157	167 665	124 927	113 773	102 440	3.2—9.6
24	24	163	161 884	120 619	109 850	98 908	3.2—10.4
24	25	169	155 408	115 794	105 456	94 952	4.0—10.4
24	26	176	149 431	111 341	101 440	91 300	4.0—10.4
24	27	183	143 896	107 217	97 644	87 918	4.0—10.4
24	28	190	138 757	103 388	94 157	84 778	4.0—10.4
20	24	195	134 903	100 518	91 541	82 423	4.0—10.4
20	25	203	129 507	96 495	87 880	79 126	4.8—10.4
20	26	211	124 526	92 784	84 500	76 083	4.8—10.4
20	27	219	119 914	89 347	81 370	73 265	4.8—10.4
20	28	228	115 631	86 157	78 464	70 649	4.8—10.4
16	24	244	107 922	80 413	73 233	65 939	5.6—10.4
16	25	254	103 605	77 196	70 304	63 301	5.6—10.4
16	26	264	99 621	74 227	67 600	60 866	5.6—10.4
16	27	274	95 931	71 478	65 096	58 612	6.4—10.4
16	28	284	92 505	68 925	62 771	56 519	6.4—10.4

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ProMax 40 x 3.75 and ProMax 40 x 4.5 Disks on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
High-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A52390 and A52391) 40-Hole Disk (flat-type)				
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	42	314 774	262 888	246 627	234 537	0.8—2.4
35	25	44	302 183	252 372	236 762	225 156	0.8—2.4
35	26	45	290 560	242 666	227 655	216 496	0.8—2.4
35	27	47	279 799	233 678	219 224	208 477	0.8—2.4
35	28	49	269 806	225 332	211 394	201 032	0.8—2.4
29	24	50	260 812	217 821	204 348	194 331	0.8—3.2
29	25	53	250 380	209 108	196 174	186 558	0.8—3.2
29	26	55	240 750	201 066	188 629	179 382	0.8—3.2

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (A52390 and A52391) 40-Hole Disk (flat-type)				Recommended Speed Range in km/h
Driver	Driven		76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
29	27	57	231 833	193 619	181 643	172 738	0.8—3.2
29	28	59	223 553	186 704	175 155	166 569	0.8—3.2
24	24	61	215 845	180 266	169 115	160 825	0.8—3.2
24	25	64	207 211	173 055	162 351	154 392	0.8—4.0
24	26	66	199 241	166 399	156 107	148 454	1.6—4.0
24	27	69	191 862	160 236	150 325	142 956	1.6—4.0
24	28	71	185 010	154 514	144 956	137 850	1.6—4.0
20	24	73	179 871	150 222	140 930	134 021	1.6—4.0
20	25	76	172 676	144 213	135 292	128 660	1.6—4.8
20	26	79	166 034	138 666	130 089	123 712	1.6—4.8
20	27	82	159 885	133 530	125 271	119 130	1.6—4.8
20	28	85	154 175	128 761	120 797	114 875	1.6—4.8
16	24	91	143 896	120 177	112 744	107 217	1.6—5.6
16	25	95	138 141	115 370	108 234	102 928	1.6—5.6
16	26	99	132 828	110 933	104 071	98 970	1.6—5.6
16	27	103	127 908	106 824	100 217	95 304	2.6—6.4
16	28	107	123 340	103 009	96 637	91 900	2.6—6.4

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (A52390 and A52391) 40-Hole Disk (flat-type)				Recommended Speed Range in km/h
Driver	Driven		76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	111	118 040	98 583	92 458	87 951	2.4—6.4
35	25	116	113 318	94 640	88 786	84 433	2.4—7.2
35	26	121	108 960	91 000	85 371	81 186	2.4—7.2
35	27	125	104 925	87 629	82 209	78 179	2.4—8.4
35	28	130	101 177	84 500	79 273	75 387	2.4—8.0
29	24	135	97 805	81 683	76 360	72 874	3.2—8.0
29	25	140	93 892	78 416	73 565	69 959	3.2—8.8
29	26	146	90 281	75 400	70 736	67 268	3.2—8.8
29	27	151	86 937	72 607	68 116	64 777	3.2—9.6
29	28	157	83 833	70 014	65 683	62 463	3.2—9.6
24	24	163	80 942	67 600	63 418	60 310	3.2—10.4
24	25	169	74 704	64 896	60 882	57 897	4.0—10.4
24	26	176	74 715	62 400	58 540	55 670	4.0—10.4
24	27	183	71 948	60 089	56 372	53 608	4.0—10.4
24	28	190	69 379	57 943	54 359	51 694	4.0—10.4
20	24	195	67 451	56 333	52 849	50 258	4.8—10.4
20	25	203	64 753	54 080	50 735	48 248	4.8—10.4
20	26	211	62 263	52 000	48 783	46 392	4.8—10.4
20	27	219	59 957	50 074	46 977	44 674	4.8—10.4
20	28	228	57 816	48 286	45 299	43 078	4.8—10.4
16	24	244	53 961	45 066	42 279	40 206	5.6—10.4
16	25	254	51 803	43 264	40 588	38 598	5.6—10.4
16	26	264	49 810	41 600	39 027	37 114	5.6—10.4

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A52390 and A52391) 40-Hole Disk (flat-type)					
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
16	27	274	47 965	40 059	37 581	35 739	6.4—10.4
16	28	284	46 252	38 628	36 239	34 463	6.4—10.4

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Low-Rate Cotton Disk on 38 to 81 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
High-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A70163) 32-Hole Disk (cell-type)					
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	76 cm Rows	81 cm Rows	Recommended Speed Range in km/h	
35	24	52	502 102	251 051	235 360	3—13	
35	25	54	482 018	241 009	225 946	3—13	
35	26	57	463 478	231 739	217 256	3—13	
35	27	59	446 312	223 156	209 209	3—13	
35	28	61	430 373	215 186	201 738	3—13	
29	24	63	416 027	208 014	195 013	3—13	
29	25	66	399 387	199 693	187 213	3—13	
29	26	68	384 026	192 013	180 012	3—13	
29	27	71	369 801	184 900	173 344	3—13	
29	28	74	356 594	178 297	167 154	3—13	
24	24	76	344 298	172 149	161 390	3—13	
24	25	79	330 526	165 263	154 934	3—13	
24	26	83	317 815	158 907	148 976	3—13	
24	27	86	306 043	153 021	143 458	3—13	
24	28	89	295 113	147 557	138 334	3—13	
20	24	91	286 915	143 458	134 492	3—13	
20	25	95	275 440	137 720	129 113	3—13	
20	26	99	264 846	132 423	124 147	3—13	
20	27	103	255 035	127 517	119 548	3—13	
20	28	107	245 928	122 964	115 279	3—13	
16	24	114	229 532	114 766	107 593	5—13	
16	25	119	220 351	110 176	103 290	5—13	
16	26	124	211 877	105 938	99 317	5—13	
16	27	128	204 029	102 015	95 639	5—13	
16	28	133	196 743	98 371	92 223	5—13	

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A70163) 32-Hole Disk (cell-type)					
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	76 cm Rows	81 cm Rows	Recommended Speed Range in km/h	
35	24	139	188 288	94 144	88 260	5—13	
35	25	145	180 757	90 379	84 730	5—13	

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A70163) 32-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	76 cm Rows	81 cm Rows	
35	26	151	173 804	86 902	81 471	5—13
35	27	157	167 367	83 684	78 453	5—13
35	28	163	161 390	80 695	75 652	5—13
29	24	168	156 010	78 005	73 130	5—13
29	25	175	149 771	74 885	70 205	6—13
29	26	182	144 008	72 004	67 504	6—13
29	27	189	138 676	69 338	65 004	6—13
29	28	196	133 723	66 862	62 683	6—13
24	24	203	129 112	64 556	60 521	6—13
24	25	212	123 947	61 974	58 100	6—13
24	26	220	119 180	59 590	55 866	6—13
24	27	229	114 766	57 383	53 797	6—13
24	28	237	110 668	55 334	51 876	6—13
20	24	244	107 593	53 797	50 434	6—13
20	25	254	103 290	51 645	48 417	6—13
20	26	264	99 316	49 658	46 555	6—13
20	27	274	95 638	47 819	44 831	6—13
20	28	284	92 222	46 111	43 229	6—13
16	24	305	86 075	43 037	40 348	6—13
16	25	317	82 631	41 316	38 734	6—13
16	26	330	79 452	39 726	37 243	6—13
16	27	343	76 511	38 255	35 864	6—13
16	28	356	73 779	36 889	34 584	6—13

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Low-Rate Cotton Disk on 91 to 102 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.						
High-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A70163) 32-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	52	209 209	198 201	188 289	3—13
35	25	54	200 841	190 273	180 757	3—13
35	26	57	193 116	182 954	173 805	3—13
35	27	59	185 963	176 178	167 367	3—13
35	28	61	179 322	169 886	161 390	3—13
29	24	63	173 345	164 223	156 011	3—13
29	25	66	166 411	157 655	149 770	3—13
29	26	68	160 011	151 591	144 010	3—13
29	27	71	154 084	145 976	138 676	3—13
29	28	74	148 581	140 763	133 723	3—13
24	24	76	143 458	135 909	129 112	3—13
24	25	79	137 719	130 472	123 947	3—13
24	26	83	132 423	125 455	119 181	3—13

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (A70163) 32-Hole Disk (cell-type)			Recommended Speed Range in km/h
Driver	Driven		91 cm Rows	97 cm Rows	102 cm Rows	
24	27	86	127 518	120 808	114 766	3—13
24	28	89	122 964	116 494	110 668	3—13
20	24	91	119 548	113 257	107 593	3—13
20	25	95	114 766	108 728	103 290	3—13
20	26	99	110 352	104 546	99 317	3—13
20	27	103	106 265	100 673	95 638	3—13
20	28	107	102 470	97 078	92 223	3—13
16	24	114	95 638	90 606	86 075	5—13
16	25	119	91 813	86 982	82 632	5—13
16	26	124	88 282	83 637	79 454	5—13
16	27	128	85 012	80 539	76 511	5—13
16	28	133	81 976	77 663	73 779	5—13

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (A70163) 32-Hole Disk (cell-type)			Recommended Speed Range in km/h
Driver	Driven		91 cm Rows	97 cm Rows	102 cm Rows	
35	24	139	78 453	74 325	70 608	5—13
35	25	145	75 315	71 352	67 784	5—13
35	26	151	72 418	68 608	65 177	5—13
35	27	157	69 736	66 067	62 763	5—13
35	28	163	67 246	63 707	60 521	5—13
29	24	168	65 004	61 584	58 504	5—13
29	25	175	62 405	59 121	56 164	6—13
29	26	182	60 004	56 846	54 003	6—13
29	27	189	57 782	54 741	52 004	6—13
29	28	196	55 718	52 786	50 146	6—13
24	24	203	53 797	50 966	48 417	6—13
24	25	212	51 645	48 927	46 480	6—13
24	26	220	49 658	47 045	44 693	6—13
24	27	229	47 819	45 303	43 037	6—13
24	28	237	46 112	43 685	41 501	6—13
20	24	244	44 831	42 472	40 348	6—13
20	25	254	43 038	40 773	38 734	6—13
20	26	264	41 382	39 204	37 244	6—13
20	27	274	39 849	37 752	35 864	6—13
20	28	284	38 426	36 404	34 583	6—13
16	24	305	35 864	33 977	32 278	6—13
16	25	317	34 430	32 618	30 987	6—13
16	26	330	33 105	31 363	29 795	6—13
16	27	343	31 879	30 202	28 692	6—13
16	28	356	30 741	29 124	27 667	6—13

Cotton and Small Soybean Disk on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (A56251) 64-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven		76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	26	503 638	420 620	394 603	375 259	3.2—8.8
35	25	27	483 492	403 796	378 819	360 249	3.2—8.8
35	26	28	464 896	388 265	364 249	346 393	3.2—9.6
35	27	29	447 678	373 885	350 758	333 564	3.2—9.6
35	28	30	431 689	360 532	338 231	321 651	3.2—10.4
29	24	32	417 300	348 514	326 957	310 929	3.2—10.4
29	25	33	400 608	334 574	313 878	298 492	3.2—11.2
29	26	34	385 200	321 705	301 806	287 012	3.2—11.2
29	27	35	370 933	309 790	290 628	276 382	3.2—12.0
29	28	37	357 686	298 726	280 248	266 511	3.2—12.0
24	24	38	345 352	288 425	270 585	257 321	3.2—12.9
24	25	40	331 538	276 888	259 761	247 028	3.2—12.9
24	26	41	318 786	266 239	249 771	237 527	3.2—12.9
24	27	43	306 979	256 378	240 520	228 730	3.2—12.9
24	28	44	296 016	247 222	231 930	220 561	3.2—12.9
20	24	46	287 793	240 355	225 487	214 434	3.2—12.9
20	25	48	276 281	230 740	216 468	205 857	3.2—12.9
20	26	50	265 655	221 866	208 142	197 939	3.2—12.9
20	27	51	255 816	213 649	200 433	190 608	3.2—12.9
20	28	53	246 680	206 018	193 275	183 801	3.2—12.9
16	24	57	230 234	192 284	180 390	171 547	4.8—12.9
16	25	60	221 025	184 592	173 174	164 685	4.8—12.9
16	26	62	212 524	177 493	166 514	158 351	4.8—12.9
16	27	64	204 653	170 919	160 347	152 486	4.8—12.9
16	28	67	197 344	164 815	154 620	147 040	4.8—12.9

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (A56251) 64-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven		76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	70	188 864	157 733	147 976	140 722	4.8—12.9
35	25	73	181 310	151 423	142 057	135 093	4.8—12.9
35	26	75	174 336	145 599	136 593	129 898	4.8—12.9
35	27	78	167 879	140 207	131 534	125 086	4.8—12.9
35	28	81	161 884	135 199	126 837	120 619	4.8—12.9
29	24	84	156 487	130 693	122 609	116 598	4.8—12.9
29	25	88	150 228	125 462	117 704	111 935	6.4—12.9
29	26	91	144 450	120 640	113 177	107 629	6.4—12.9
29	27	95	139 100	116 171	108 986	103 643	6.4—12.9
29	28	98	134 132	112 022	105 093	99 942	6.4—12.9
24	24	102	129 507	108 160	101 469	96 495	6.4—12.9
24	25	106	124 327	103 833	97 411	92 635	6.4—12.9
24	26	110	119 545	99 840	93 664	89 073	6.4—12.9

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A56251) 64-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
24	27	114	115 117	96 142	90 195	85 774	6.4—12.9
24	28	119	111 006	92 708	86 974	82 710	6.4—12.9
20	24	122	107 922	90 133	84 558	80 413	6.4—12.9
20	25	127	103 605	86 528	81 175	77 196	6.4—12.9
20	26	132	99 621	83 200	78 053	74 227	6.4—12.9
20	27	137	95 931	80 118	75 162	71 478	6.4—12.9
20	28	142	92 505	77 257	72 478	68 925	6.4—12.9
16	24	152	86 338	72 106	67 646	64 330	6.4—12.9
16	25	159	82 884	69 222	64 940	61 757	6.4—12.9
16	26	165	79 697	66 560	62 443	59 382	6.4—12.9
16	27	171	76 745	64 095	60 130	57 182	6.4—12.9
16	28	178	74 004	61 805	57 982	55 140	6.4—12.9

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Cotton and Small Soybean Disk on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.						
High-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A121489) 64-Hole Disk (flat-type)				
Driver	Driven	Average Seed Spacing (mm)	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	26	420 620	394 603	375 259	3.2—8.8
35	25	27	403 796	378 819	360 249	3.2—8.8
35	26	28	388 265	364 249	346 393	3.2—9.6
35	27	29	373 885	350 758	333 564	3.2—9.6
35	28	30	360 532	338 231	321 651	3.2—10.4
29	24	32	348 514	326 957	310 929	3.2—10.4
29	25	33	334 574	313 878	298 492	3.2—11.2
29	26	34	321 705	301 806	287 012	3.2—11.2
29	27	35	309 790	290 628	276 382	3.2—12.0
29	28	37	298 726	280 248	266 511	3.2—12.0
24	24	38	288 425	270 585	257 321	3.2—12.9
24	25	40	276 888	259 761	247 028	3.2—12.9
24	26	41	266 239	249 771	237 527	3.2—12.9
24	27	43	256 378	240 520	228 730	3.2—12.9
24	28	44	247 222	231 930	220 561	3.2—12.9
20	24	46	240 355	225 487	214 434	3.2—12.9
20	25	48	230 740	216 468	205 857	3.2—12.9
20	26	50	221 866	208 142	197 939	3.2—12.9
20	27	51	213 649	200 433	190 608	3.2—12.9
20	28	53	206 018	193 275	183 801	3.2—12.9
16	24	57	192 284	180 390	171 547	4.8—12.9
16	25	60	184 592	173 174	164 685	4.8—12.9
16	26	62	177 493	166 514	158 351	4.8—12.9
16	27	64	170 919	160 347	152 486	4.8—12.9

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A121489) 64-Hole Disk (flat-type)				
Driver	Driven	Average Seed Spacing (mm)	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
16	28	67	164 815	154 620	147 040	4.8—12.9

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A121489) 64-Hole Disk (flat-type)				
Driver	Driven	Average Seed Spacing (mm)	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	70	157 733	147 976	140 722	4.8—12.9
35	25	73	151 423	142 057	135 093	4.8—12.9
35	26	75	145 599	136 593	129 898	4.8—12.9
35	27	78	140 207	131 534	125 086	4.8—12.9
35	28	81	135 199	126 837	120 619	4.8—12.9
29	24	84	130 693	122 609	116 598	4.8—12.9
29	25	88	125 462	117 704	111 935	6.4—12.9
29	26	91	120 640	113 177	107 629	6.4—12.9
29	27	95	116 171	108 986	103 643	6.4—12.9
29	28	98	112 022	105 093	99 942	6.4—12.9
24	24	102	108 160	101 469	96 495	6.4—12.9
24	25	106	103 833	97 411	92 635	6.4—12.9
24	26	110	99 840	93 664	89 073	6.4—12.9
24	27	114	96 142	90 195	85 774	6.4—12.9
24	28	119	92 708	86 974	82 710	6.4—12.9
20	24	122	90 133	84 558	80 413	6.4—12.9
20	25	127	86 528	81 175	77 196	6.4—12.9
20	26	132	83 200	78 053	74 227	6.4—12.9
20	27	137	80 118	75 162	71 478	6.4—12.9
20	28	142	77 257	72 478	68 925	6.4—12.9
16	24	152	72 106	67 646	64 330	6.4—12.9
16	25	159	69 222	64 940	61 757	6.4—12.9
16	26	165	66 560	62 443	59 382	6.4—12.9
16	27	171	64 095	60 130	57 182	6.4—12.9
16	28	178	61 805	57 982	55 140	6.4—12.9

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ProMax 50 x 3.75 Disk on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
High-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A52903) 50-Hole Disk (flat-type)				
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	33	393 467	328 610	308 283	293 171	4.8—6.4
35	25	35	377 728	315 465	295 952	281 445	4.8—6.4
35	26	36	363 200	303 332	284 569	270 620	4.8—6.4
35	27	38	349 748	292 098	274 030	260 597	4.8—7.2
35	28	39	337 257	281 666	264 243	251 290	4.8—7.2
29	24	40	326 015	272 277	255 435	242 913	4.8—7.2
29	25	42	312 975	261 386	245 217	233 197	4.8—8.0
29	26	44	300 937	251 332	235 786	224 228	4.8—8.0
29	27	45	289 792	242 024	227 053	215 923	4.8—8.9
29	28	47	279 442	233 380	218 944	208 212	4.8—8.9
24	24	49	269 806	225 332	211 394	201 032	4.8—8.9
24	25	51	259 014	216 319	202 939	192 991	4.8—9.7
24	26	53	249 052	207 999	195 133	185 568	6.4—9.7
24	27	55	239 827	200 295	187 906	178 695	6.4—10.5
24	28	57	231 262	193 142	181 195	172 313	6.4—10.5
20	24	59	224 838	187 777	176 162	167 527	6.4—11.3
20	25	61	215 845	180 266	169 115	160 825	6.4—11.3
20	26	63	207 543	173 333	162 611	154 640	6.4—11.3
20	27	66	199 856	166 913	156 588	148 912	6.4—12.9
20	28	68	192 719	160 952	150 996	143 594	6.4—12.9
16	24	73	179 871	150 222	140 930	134 021	6.4—11.3
16	25	76	172 676	144 213	135 292	128 660	6.4—11.3
16	26	79	166 034	138 666	130 089	123 712	6.4—11.3
16	27	82	159 885	133 530	125 271	119 130	6.4—12.9
16	28	85	154 175	128 761	120 797	114 875	6.4—12.9

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A52903) 50-Hole Disk (flat-type)				
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	89	147 550	123 229	115 606	109 939	6.4—11.3
35	25	93	141 648	118 300	110 982	105 542	6.4—11.3
35	26	97	136 200	113 750	106 713	101 482	6.4—11.3
35	27	100	131 156	109 537	102 761	97 724	6.4—12.9
35	28	104	126 472	105 625	99 091	94 234	6.4—12.9
29	24	108	122 256	102 104	95 788	91 093	6.4—11.3
29	25	112	117 366	98 020	91 957	87 449	6.4—11.3
29	26	117	112 852	94 250	88 420	84 085	6.4—11.3
29	27	121	108 672	90 759	85 145	80 971	6.4—12.9
29	28	126	104 791	87 517	82 104	78 079	6.4—12.9
24	24	130	101 177	84 500	79 273	75 387	6.4—11.3
24	25	135	97 130	81 120	76 102	72 371	6.4—11.3
24	26	141	93 394	78 000	73 175	69 588	6.4—11.3

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A52903) 50-Hole Disk (flat-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
24	27	146	89 935	75 111	70 465	67 011	6.4—12.9
24	28	152	86 723	72 428	67 948	64 617	6.4—12.9
20	24	156	84 314	70 416	66 061	62 822	6.4—11.3
20	25	163	80 942	67 600	63 418	60 310	6.4—11.3
20	26	169	77 829	65 000	60 979	57 990	6.4—11.3
20	27	176	74 946	62 592	58 721	55 842	6.4—12.9
20	28	182	72 269	60 357	56 623	53 848	6.4—12.9
16	24	195	67 431	56 333	52 849	50 258	6.4—11.3
16	25	203	64 753	54 080	50 735	48 248	6.4—11.3
16	26	211	62 263	52 000	48 783	46 392	6.4—11.3
16	27	219	59 957	50 074	46 977	44 674	6.4—12.9
16	28	228	57 816	48 286	45 299	43 078	6.4—12.9

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4-Seed Hilldrop Cotton Disk on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
High-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A65622) 45-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Hill Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	139	377 728	315 465	295 952	281 445	3.2—5.6
35	25	145	362 619	302 847	284 114	270 187	3.2—5.6
35	26	151	348 672	291 199	273 187	259 795	3.2—5.6
35	27	157	335 758	280 414	263 068	250 173	3.2—5.6
35	28	163	323 767	270 399	253 673	241 238	3.2—6.4
29	24	168	312 975	261 386	245 217	233 197	3.2—6.4
29	25	175	300 456	250 930	235 409	223 869	3.2—6.4
29	26	182	288 900	241 279	226 355	215 259	3.2—7.2
29	27	189	278 200	232 343	217 971	207 286	3.2—7.2
29	28	196	268 264	224 045	210 186	199 883	3.2—7.2
24	24	203	259 014	216 319	202 939	192 991	3.2—8.0
24	25	212	248 653	207 666	194 821	185 271	3.2—8.0
24	26	220	239 090	199 679	187 328	178 145	3.2—8.9
24	27	229	230 234	192 284	180 390	171 547	3.2—8.9
24	28	237	222 012	185 416	173 947	165 420	3.2—8.9
20	24	244	215 845	180 266	169 115	160 825	3.2—9.7
20	25	254	207 211	173 055	162 351	154 392	3.2—9.7
20	26	264	199 241	166 399	156 107	148 454	3.2—10.5
20	27	274	191 862	160 236	150 325	142 956	3.2—10.5
20	28	284	185 010	154 514	144 956	137 850	3.2—11.3
16	24	305	172 676	144 213	135 292	128 660	4.8—11.3
16	25	318	165 769	138 444	129 881	123 514	4.8—12.9
16	26	330	159 393	133 119	124 885	118 763	4.8—12.9
16	27	343	153 490	128 189	120 260	114 365	4.8—12.9

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A65622) 45-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Hill Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
16	28	356	148 008	123 611	115 965	110 280	4.8—12.9

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A65622) 45-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Hill Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	372	141 648	118 300	110 982	105 542	4.8—12.9
35	25	387	135 982	113 568	106 543	101 320	4.8—12.9
35	26	403	130 752	109 200	102 445	97 423	4.8—12.9
35	27	418	125 909	105 155	98 651	93 815	4.8—12.9
35	28	434	121 413	101 400	95 127	90 464	4.8—12.9
29	24	449	117 366	98 020	91 957	87 449	4.8—12.9
29	25	467	112 671	94 099	88 278	83 951	6.4—12.9
29	26	486	108 337	90 480	84 883	80 722	6.4—12.9
29	27	504	104 325	87 129	81 739	77 732	6.4—12.9
29	28	523	100 599	84 017	78 820	74 956	6.4—12.9
24	24	542	97 130	81 120	76 102	72 371	6.4—12.9
24	25	564	93 245	77 875	73 958	69 477	6.4—12.9
24	26	587	89 659	74 880	70 248	66 804	6.4—12.9
24	27	610	86 338	72 106	67 646	64 330	6.4—12.9
24	28	632	83 254	69 531	65 230	62 033	6.4—12.9
20	24	650	80 942	67 600	63 418	60 310	6.4—12.9
20	25	677	77 704	64 896	60 882	57 897	6.4—12.9
20	26	704	74 715	62 400	58 540	55 670	6.4—12.9
20	27	732	71 948	60 089	56 372	53 608	6.4—12.9
20	28	759	69 379	57 943	54 359	51 694	6.4—12.9
16	24	813	64 753	54 080	50 735	48 248	6.4—12.9
16	25	847	62 163	51 917	48 705	46 318	6.4—12.9
16	26	881	59 772	49 920	46 832	44 536	6.4—12.9
16	27	914	57 559	48 071	45 097	42 887	6.4—12.9
16	28	948	55 503	46 354	43 487	41 355	6.4—12.9

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2-Seed Hilldrop Cotton Disk on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A74961) 64-Hole Disk (cell-type)				
Driver	Driven	Average Hill Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	52	503 638	420 620	394 603	375 259	3.2—8.8
35	25	54	483 492	403 796	378 819	360 249	3.2—8.8
35	26	56	464 896	388 265	364 249	346 393	3.2—9.6
35	27	58	447 678	373 885	350 758	333 564	3.2—9.6
35	28	60	431 689	360 532	338 231	321 651	3.2—10.4
29	24	64	417 300	348 514	326 957	310 929	3.2—10.4
29	25	66	400 608	334 574	313 878	298 492	3.2—11.2
29	26	68	385 200	321 705	301 806	287 012	3.2—11.2
29	27	70	370 933	309 790	290 628	276 382	3.2—12.0
29	28	74	357 686	298 726	280 248	266 511	3.2—12.0
24	24	76	345 352	288 425	270 585	257 321	3.2—12.9
24	25	80	331 538	276 888	259 761	247 028	3.2—12.9
24	26	82	318 786	266 239	249 771	237 527	3.2—12.9
24	27	86	306 979	256 378	240 520	228 730	3.2—12.9
24	28	88	296 016	247 222	231 930	220 561	3.2—12.9
20	24	92	287 793	240 355	225 487	214 434	3.2—12.9
20	25	96	276 281	230 740	216 468	205 857	3.2—12.9
20	26	100	265 655	221 866	208 142	197 939	3.2—12.9
20	27	102	255 816	213 649	200 433	190 608	3.2—12.9
20	28	106	246 680	206 018	193 275	183 801	3.2—12.9
16	24	114	230 234	192 284	180 390	171 547	4.8—12.9
16	25	120	221 025	184 592	173 174	164 685	4.8—12.9
16	26	124	212 524	177 493	166 514	158 351	4.8—12.9
16	27	128	204 653	170 919	160 347	152 486	4.8—12.9
16	28	134	197 344	164 815	154 620	147 040	4.8—12.9

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A74961) 64-Hole Disk (cell-type)				
Driver	Driven	Average Hill Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	140	188 864	157 733	147 976	140 722	4.8—12.9
35	25	146	181 310	151 423	142 057	135 093	4.8—12.9
35	26	150	174 336	145 599	136 593	129 898	4.8—12.9
35	27	156	167 879	140 207	131 534	125 086	4.8—12.9
35	28	162	161 884	135 199	126 837	120 619	4.8—12.9
29	24	168	156 487	130 693	122 609	116 598	4.8—12.9
29	25	176	150 228	125 465	117 704	111 935	6.4—12.9
29	26	182	144 450	120 640	113 177	107 629	6.4—12.9
29	27	190	139 100	116 171	108 986	103 643	6.4—12.9
29	28	196	134 132	112 022	105 093	99 942	6.4—12.9
24	24	204	129 507	108 160	101 469	96 495	6.4—12.9
24	25	212	124 327	103 833	97 411	92 635	6.4—12.9
24	26	220	119 545	99 840	93 664	89 073	6.4—12.9

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A74961) 64-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Hill Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
24	27	228	115 117	96 142	90 195	85 774	6.4—12.9
24	28	238	111 006	92 708	86 974	82 710	6.4—12.9
20	24	244	107 922	90 133	84 558	80 413	6.4—12.9
20	25	254	103 605	86 528	81 175	77 196	6.4—12.9
20	26	264	99 621	83 200	78 053	74 227	6.4—12.9
20	27	274	95 931	80 118	75 162	71 478	6.4—12.9
20	28	284	92 505	77 257	72 478	68 925	6.4—12.9
16	24	304	86 338	72 106	67 646	64 330	6.4—12.9
16	25	318	82 884	69 222	64 940	61 757	6.4—12.9
16	26	330	79 697	66 560	62 443	59 382	6.4—12.9
16	27	342	76 745	64 095	60 130	57 182	6.4—12.9
16	28	356	74 004	61 805	57 982	55 140	6.4—12.9

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Sorghum Disk on 38 to 56 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.						
High-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A43066) 45-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	
35	24	37	708 241	527 709	480 592	3.2—8.8
35	25	39	679 911	506 600	461 368	3.2—8.8
35	26	40	653 760	487 116	443 623	3.2—9.6
35	27	42	629 547	469 074	427 193	3.2—9.6
35	28	43	607 063	452 322	411 936	3.2—10.4
29	24	45	586 828	437 244	398 205	3.2—10.4
29	25	47	563 355	419 755	382 276	3.2—11.2
29	26	49	541 687	403 610	367 573	3.2—11.2
29	27	50	521 625	388 662	353 960	3.2—12.0
29	28	52	502 995	374 781	341 318	3.2—12.0
24	24	54	485 651	361 857	329 549	3.2—12.9
24	25	56	466 225	347 383	316 367	3.2—12.9
24	26	59	448 293	334 022	304 199	3.2—12.9
24	27	61	431 689	321 651	292 932	3.2—12.9
24	28	63	416 272	310 163	282 470	3.2—12.9
20	24	65	404 709	301 548	274 624	3.2—12.9
20	25	68	388 521	289 486	263 639	3.2—12.9
20	26	70	373 577	278 352	253 499	3.2—12.9
20	27	73	359 741	268 042	244 110	3.2—12.9
20	28	76	346 893	258 470	235 392	3.2—12.9
16	24	81	323 767	241 238	219 699	4.8—12.9
16	25	85	310 816	231 589	210 911	4.8—12.9
16	26	88	298 862	222 681	202 799	4.8—12.9
16	27	91	287 793	214 434	195 288	4.8—12.9

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A43066) 45-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	
16	28	95	277 515	206 778	188 314	4.8—12.9

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A43066) 45-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	
35	24	99	265 590	197 891	180 222	4.8—12.9
35	25	103	254 967	189 976	173 013	4.8—12.9
35	26	107	245 160	182 668	166 359	4.8—12.9
35	27	111	236 080	175 903	160 197	4.8—12.9
35	28	116	227 649	169 621	154 476	4.8—12.9
29	24	120	220 060	163 967	149 327	6.4—12.9
29	25	125	211 258	157 408	143 354	6.4—12.9
29	26	130	203 133	151 354	137 840	6.4—12.9
29	27	135	195 609	145 748	132 735	6.4—12.9
29	28	140	188 623	140 543	127 994	6.4—12.9
24	24	144	182 119	135 697	123 581	6.4—12.9
24	25	151	174 834	130 269	118 638	6.4—12.9
24	26	157	168 110	125 258	114 075	6.4—12.9
24	27	163	161 884	120 619	109 850	6.4—12.9
24	28	169	156 102	116 311	105 926	6.4—12.9
20	24	173	151 766	113 080	102 984	6.4—12.9
20	25	181	145 695	108 557	98 865	6.4—12.9
20	26	188	140 092	104 382	95 062	6.4—12.9
20	27	195	134 903	100 516	91 541	6.4—12.9
20	28	202	130 085	96 926	88 272	6.4—12.9
16	24	217	121 413	90 464	82 387	6.4—12.9
16	25	226	116 556	86 846	79 092	6.4—12.9
16	26	235	112 073	83 506	76 050	6.4—12.9
16	27	244	107 922	80 413	73 233	6.4—12.9
16	28	253	104 068	77 541	70 618	6.4—12.9

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Sorghum Disk on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (A43066) 45-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven		76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	37	354 120	295 749	277 455	263 854	3.2—8.8
35	25	39	339 955	283 919	266 357	253 300	3.2—8.8
35	26	40	326 880	272 999	256 112	243 558	3.2—9.6
35	27	42	314 774	262 888	246 627	234 537	3.2—9.6
35	28	43	303 532	253 499	237 819	226 161	3.2—10.4
29	24	45	293 414	245 049	229 891	218 622	3.2—10.4
29	25	47	281 677	235 247	220 696	209 877	3.2—11.2
29	26	49	270 844	226 199	212 207	201 805	3.2—11.2
29	27	50	260 812	217 821	204 348	194 331	3.2—12.0
29	28	52	251 498	210 042	197 050	187 390	3.2—12.0
24	24	54	242 825	202 799	190 255	180 929	3.2—12.9
24	25	56	233 112	194 687	182 645	173 692	3.2—12.9
24	26	59	224 146	187 199	175 620	167 011	3.2—12.9
24	27	61	215 845	180 266	169 115	160 825	3.2—12.9
24	28	63	208 136	173 828	163 076	155 082	3.2—12.9
20	24	65	202 354	168 999	158 546	150 774	3.2—12.9
20	25	68	194 260	162 239	152 204	144 743	3.2—12.9
20	26	70	186 789	155 999	146 350	139 176	3.2—12.9
20	27	73	179 871	150 222	140 930	134 021	3.2—12.9
20	28	76	173 447	144 857	135 896	129 235	3.2—12.9
16	24	81	161 884	135 199	126 837	120 619	4.8—12.9
16	25	85	155 408	129 791	121 763	115 794	4.8—12.9
16	26	88	149 431	124 799	117 080	111 341	4.8—12.9
16	27	91	143 896	120 177	112 744	107 217	4.8—12.9
16	28	95	138 757	115 885	108 717	103 388	4.8—12.9

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (A43066) 45-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven		76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	99	132 795	110 906	104 046	98 945	4.8—12.9
35	25	103	127 483	106 470	99 884	94 988	4.8—12.9
35	26	107	122 580	102 375	96 042	91 334	4.8—12.9
35	27	111	118 040	98 583	92 485	87 951	4.8—12.9
35	28	116	113 824	95 062	89 182	84 810	4.8—12.9
29	24	120	110 030	91 893	86 209	81 983	6.4—12.9
29	25	125	105 629	88 218	82 761	78 704	6.4—12.9
29	26	130	101 566	84 825	79 578	75 677	6.4—12.9
29	27	135	97 805	81 683	76 630	72 874	6.4—12.9
29	28	140	94 312	78 766	73 894	70 271	6.4—12.9
24	24	144	91 059	76 050	71 346	67 848	6.4—12.9
24	25	151	87 417	73 008	68 492	65 134	6.4—12.9
24	26	157	84 055	70 200	65 857	62 629	6.4—12.9

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A43066) 45-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
24	27	163	80 942	67 600	63 418	60 310	6.4—12.9
24	28	169	78 051	65 185	61 153	58 156	6.4—12.9
20	24	173	75 883	63 375	59 455	56 340	6.4—12.9
20	25	181	72 848	60 840	57 076	54 279	6.4—12.9
20	26	188	70 046	58 500	54 881	52 191	6.4—12.9
20	27	195	67 451	56 333	52 849	50 258	6.4—12.9
20	28	202	65 042	54 321	50 961	48 463	6.4—12.9
16	24	217	60 706	50 700	47 564	45 232	6.4—12.9
16	25	226	58 278	48 672	45 661	43 423	6.4—12.9
16	26	235	56 037	46 800	43 905	41 753	6.4—12.9
16	27	244	53 961	45 066	42 279	40 206	6.4—12.9
16	28	253	52 034	43 457	40 769	38 770	6.4—12.9

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High-Rate Sorghum Disk on 38 to 56 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.						
High-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A52802) 90-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	
35	24	18	1 416 481	1 056 417	961 184	3.2—8.0
35	25	19	1 359 822	1 013 201	922 736	3.2—8.0
35	26	20	1 307 521	974 231	887 246	3.2—8.8
35	27	21	1 259 094	938 149	854 385	3.2—8.8
35	28	22	1 214 127	904 643	823 872	3.2—8.8
29	24	22	1 173 656	874 489	796 409	3.2—8.8
29	25	23	1 126 709	839 509	764 553	3.2—9.6
29	26	24	1 083 375	807 220	735 147	3.2—10.4
29	27	25	1 043 250	777 323	707 919	3.2—10.4
29	28	26	1 005 991	749 562	682 636	3.2—11.2
24	24	27	971 301	723 715	659 097	3.2—11.2
24	25	28	932 449	694 766	632 733	3.2—12.0
24	26	29	896 586	668 044	608 398	3.2—12.9
24	27	30	863 379	643 302	585 864	3.2—12.9
24	28	32	832 544	620 327	564 941	3.2—12.9
20	24	33	809 418	603 096	549 248	3.2—12.9
20	25	34	777 041	578 972	527 278	4.8—12.9
20	26	35	747 155	556 704	506 998	4.8—12.9
20	27	37	719 482	536 085	488 220	4.8—12.9
20	28	38	693 787	516 939	470 784	4.8—12.9
16	24	41	647 534	482 476	439 398	4.8—12.9
16	25	42	621 633	463 177	421 822	4.8—12.9
16	26	44	597 724	445 363	405 598	4.8—12.9
16	27	46	575 586	428 868	390 576	4.8—12.9

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A52802) 90-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	
16	28	47	555 029	413 551	376 627	4.8—12.9

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A52802) 90-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	
35	24	50	531 180	395 781	360 044	4.8—12.9
35	25	52	509 933	379 950	346 026	4.8—12.9
35	26	54	490 320	365 337	332 717	4.8—12.9
35	27	56	472 160	351 806	320 395	4.8—12.9
35	28	58	455 297	339 241	308 952	4.8—12.9
29	24	60	440 121	327 933	298 653	4.8—12.9
29	25	62	422 516	314 816	286 707	4.8—12.9
29	26	65	406 265	302 708	275 680	4.8—12.9
29	27	67	391 219	291 496	265 470	4.8—12.9
29	28	70	377 246	281 086	255 989	4.8—12.9
24	24	72	364 238	271 393	247 161	4.8—12.9
24	25	75	349 688	260 537	237 275	4.8—12.9
24	26	78	336 220	250 517	228 149	4.8—12.9
24	27	81	323 767	241 238	219 699	4.8—12.9
24	28	84	312 204	232 623	211 853	4.8—12.9
20	24	87	303 532	226 161	205 968	4.8—12.9
20	25	90	291 380	217 114	197 729	4.8—12.9
20	26	94	280 183	208 764	190 124	4.8—12.9
20	27	98	269 806	201 032	183 083	4.8—12.9
20	28	101	260 170	193 852	176 544	4.8—12.9
16	24	108	242 825	180 929	164 774	4.8—12.9
16	25	113	233 112	173 692	158 183	4.8—12.9
16	26	117	224 146	167 011	152 099	4.8—12.9
16	27	122	215 845	160 825	146 466	4.8—12.9
16	28	126	208 136	155 082	141 235	4.8—12.9

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High-Rate Sorghum Disk on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (A52802) 90-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven		76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	18	708 241	591 498	554 910	527 709	3.2—8.0
35	25	19	679 911	567 838	532 714	506 600	3.2—8.0
35	26	20	653 760	545 998	512 225	487 116	3.2—8.8
35	27	21	629 547	525 776	493 253	469 074	3.2—8.8
35	28	22	607 063	506 998	475 637	452 322	3.2—8.8
29	24	22	586 828	490 098	459 783	437 244	3.2—8.8
29	25	23	563 355	470 494	441 391	419 755	3.2—9.6
29	26	24	541 687	452 398	424 415	403 610	3.2—10.4
29	27	25	521 625	435 643	408 696	388 662	3.2—10.4
29	28	26	502 995	420 084	394 099	374 781	3.2—11.2
24	24	27	485 651	405 598	380 510	361 857	3.2—11.2
24	25	28	466 225	389 374	365 289	347 383	3.2—12.0
24	26	29	448 293	374 398	351 240	334 022	3.2—12.0
24	27	30	431 689	360 532	338 231	321 651	3.2—12.9
24	28	32	416 272	347 656	326 151	310 163	3.2—12.9
20	24	33	404 709	337 999	317 091	301 548	3.2—12.9
20	25	34	388 521	324 479	304 408	289 486	4.8—12.9
20	26	35	373 577	311 999	292 700	278 352	4.8—12.9
20	27	37	359 741	300 443	281 859	268 042	4.8—12.9
20	28	38	346 893	289 713	271 793	258 470	4.8—12.9
16	24	41	323 767	270 399	253 673	241 238	4.8—12.9
16	25	42	310 816	259 583	243 526	231 589	4.8—12.9
16	26	44	298 862	249 599	234 160	222 681	4.8—12.9
16	27	46	287 793	240 355	225 487	214 434	4.8—12.9
16	28	47	277 515	231 770	217 434	206 776	4.8—12.9

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (A52802) 90-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven		76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	50	265 590	221 812	208 091	197 891	4.8—12.9
35	25	52	254 967	212 939	199 768	189 975	4.8—12.9
35	26	54	245 160	204 749	192 084	182 668	4.8—12.9
35	27	56	236 080	197 166	184 970	175 903	4.8—12.9
35	28	58	227 649	190 124	178 364	169 621	4.8—12.9
29	24	60	220 060	183 787	172 418	163 967	4.8—12.9
29	25	62	211 258	176 435	165 522	157 408	4.8—12.9
29	26	65	203 133	169 649	159 156	151 354	4.8—12.9
29	27	67	195 609	163 366	153 261	145 748	4.8—12.9
29	28	70	188 623	157 531	147 787	140 543	4.8—12.9
24	24	72	182 119	152 099	142 691	135 697	4.8—12.9
24	25	75	174 834	146 015	136 984	130 269	4.8—12.9
24	26	78	168 110	140 399	131 715	125 258	4.8—12.9

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A52802) 90-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
24	27	81	161 884	135 199	126 837	120 619	4.8—12.9
24	28	84	156 102	130 371	122 307	116 311	4.8—12.9
20	24	87	151 766	126 749	118 909	113 080	4.8—12.9
20	25	90	145 695	121 680	114 153	108 557	4.8—12.9
20	26	94	140 092	117 000	109 762	104 382	4.8—12.9
20	27	98	134 903	112 666	105 697	100 516	4.8—12.9
20	28	101	130 085	108 642	101 922	96 926	4.8—12.9
16	24	108	121 413	101 400	95 127	90 464	4.8—12.9
16	25	113	116 556	97 344	91 322	86 846	4.8—12.9
16	26	117	112 073	93 600	87 810	83 506	4.8—12.9
16	27	122	107 922	90 133	84 558	80 413	4.8—12.9
16	28	126	104 068	86 914	81 538	77 541	4.8—12.9

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Soybean Disk on 38 to 51 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
High-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A42586) 108-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seeds per Meter	38 cm Rows	46 cm Rows	48 cm Rows	51 cm Rows	
35	24	65	1 699 777	1 404 164	1 345 657	1 266 501	3.2—12.9
35	25	62	1 631 786	1 347 997	1 291 831	1 215 841	3.2—12.9
35	26	60	1 569 025	1 296 151	1 242 145	1 169 078	3.2—12.9
35	27	57	1 510 913	1 248 146	1 196 140	1 125 778	3.2—12.9
35	28	55	1 456 952	1 203 569	1 153 420	1 085 572	3.2—12.9
29	24	54	1 408 387	1 163 450	1 114 973	1 049 386	3.2—12.9
29	25	51	1 352 051	1 116 912	1 070 374	1 007 411	3.2—12.9
29	26	49	1 300 049	1 073 954	1 029 206	968 664	3.2—12.9
29	27	48	1 251 899	1 034 178	991 087	932 788	3.2—12.9
29	28	46	1 207 189	997 243	955 691	899 474	3.2—12.9
24	24	44	1 165 562	962 855	922 736	868 458	3.2—12.9
24	25	43	1 118 939	924 341	885 827	833 719	3.2—12.9
24	26	41	1 075 903	888 789	851 757	801 653	3.2—12.9
24	27	39	1 036 055	855 871	820 210	771 962	3.2—12.9
24	28	38	999 053	825 304	790 917	744 392	3.2—12.9
20	24	37	971 301	802 379	768 947	723 715	3.2—12.9
20	25	35	932 449	770 284	738 189	694 766	3.2—12.9
20	26	34	896 586	740 658	709 797	668 044	3.2—12.9
20	27	33	863 379	713 226	683 508	643 302	3.2—12.9
20	28	32	832 544	687 754	659 097	620 327	3.2—12.9
16	24	30	777 041	641 903	615 157	578 972	4.8—12.9
16	25	28	745 959	616 227	590 551	555 813	4.8—12.9
16	26	27	717 269	592 526	567 838	534 435	4.8—12.9

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A42586) 108-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seeds per Meter	38 cm Rows	46 cm Rows	48 cm Rows	51 cm Rows	
16	27	26	690 703	570 581	546 807	514 642	4.8—12.9
16	28	25	666 035	550 203	527 278	496 261	4.8—12.9

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A42586) 108-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seeds per Meter	38 cm Rows	46 cm Rows	48 cm Rows	51 cm Rows	
35	24	24	637 416	526 561	504 621	474 938	4.8—12.9
35	25	23	611 920	505 499	484 437	455 940	4.8—12.9
35	26	22	588 384	486 057	465 804	438 404	4.8—12.9
35	27	22	566 592	468 055	448 552	422 167	4.8—12.9
35	28	21	546 357	451 338	432 533	407 090	6.4—12.9
29	24	20	528 145	436 294	418 115	393 520	6.4—12.9
29	25	19	507 019	418 842	401 390	377 779	6.4—12.9
29	26	19	487 519	402 733	385 952	363 249	6.4—12.9
29	27	18	469 462	387 817	371 658	349 795	6.4—12.9
29	28	17	452 696	373 966	358 384	337 303	6.4—12.9
24	24	17	437 086	361 071	346 026	325 672	6.4—12.9
24	25	16	419 602	346 628	332 185	312 645	6.4—12.9
24	26	15	403 464	333 296	319 409	300 620	6.4—12.9
24	27	15	388 521	320 952	307 579	289 486	6.4—12.9
24	28	14	374 645	309 489	296 594	279 147	6.4—12.9
20	24	14	364 238	300 892	288 355	271 393	6.4—12.9
20	25	13	349 668	288 857	276 821	260 537	6.4—12.9
20	26	13	336 220	277 747	266 174	250 517	6.4—12.9
20	27	12	323 767	267 460	256 316	241 238	6.4—12.9
20	28	12	312 204	257 908	247 161	232 623	6.4—12.9
16	24	11	291 390	240 714	230 684	217 114	6.4—12.9
16	25	11	279 735	231 085	221 457	208 430	6.4—12.9
16	26	10	268 976	222 197	212 939	200 413	6.4—12.9
16	27	10	259 014	213 968	205 052	192 991	6.4—12.9
16	28	9	249 763	206 326	197 729	186 098	6.4—12.9

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Soybean Disk on 56 and 70 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.					
High-Range Input Sprocket					
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A42586) 108-Hole Disk (cell-type)		
Driver	Driven	Average Seed Spacing (mm)	56 cm Rows	70 cm Rows	Recommended Speed Range in km/h
35	24	15	1 153 420	922 736	3.2—12.9
35	25	16	1 107 283	885 827	3.2—12.9
35	26	17	1 064 696	851 757	3.2—12.9
35	27	17	1 025 262	820 210	3.2—12.9
35	28	18	988 646	790 917	3.2—12.9
29	24	19	955 691	764 553	3.2—12.9
29	25	19	917 463	733 971	3.2—12.9
29	26	20	882 176	705 741	3.2—12.9
29	27	21	849 503	679 603	3.2—12.9
29	28	22	819 164	655 331	3.2—12.9
24	24	23	790 917	632 733	3.2—12.9
24	25	24	759 280	607 424	3.2—12.9
24	26	24	730 077	564 062	3.2—12.9
24	27	25	703 037	562 430	3.2—12.9
24	28	26	677 929	542 343	3.2—12.9
20	24	27	659 097	527 278	3.2—12.9
20	25	28	632 733	506 187	3.2—12.9
20	26	29	608 398	486 718	3.2—12.9
20	27	30	585 864	468 691	3.2—12.9
20	28	32	564 941	451 952	3.2—12.9
16	24	34	527 278	421 822	4.8—12.9
16	25	35	506 187	404 949	4.8—12.9
16	26	37	486 718	389 374	4.8—12.9
16	27	38	468 691	374 953	4.8—12.9
16	28	40	451 952	361 562	4.8—12.9

Low-Range Input Sprocket					
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A42586) 108-Hole Disk (cell-type)		
Driver	Driven	Average Seed Spacing (mm)	56 cm Rows	70 cm Rows	Recommended Speed Range in km/h
35	24	41	432 533	346 026	4.8—12.9
35	25	43	415 231	332 185	4.8—12.9
35	26	45	399 261	319 409	4.8—12.9
35	27	46	384 473	307 579	4.8—12.9
35	28	48	370 742	296 594	6.4—12.9
29	24	50	358 384	286 707	6.4—12.9
29	25	52	344 049	275 239	6.4—12.9
29	26	54	330 816	264 653	6.4—12.9
29	27	56	318 564	254 851	6.4—12.9
29	28	58	307 186	245 749	6.4—12.9
24	24	60	296 594	237 275	6.4—12.9
24	25	63	284 730	227 784	6.4—12.9
24	26	65	273 779	219 023	6.4—12.9

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket					
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A42586) 108-Hole Disk (cell-type)			
Driver	Driven	Average Seed Spacing (mm)	56 cm Rows	70 cm Rows	Recommended Speed Range in km/h
24	27	68	263 639	210 911	6.4—12.9
24	28	70	254 223	203 379	6.4—12.9
20	24	72	247 161	197 729	6.4—12.9
20	25	75	237 275	189 820	6.4—12.9
20	26	78	228 149	182 519	6.4—12.9
20	27	81	219 699	175 759	6.4—12.9
20	28	84	211 853	169 482	6.4—12.9
16	24	90	197 729	158 183	6.4—12.9
16	25	94	189 820	151 856	6.4—12.9
16	26	98	182 519	146 015	6.4—12.9
16	27	102	175 759	140 607	6.4—12.9
16	28	105	169 482	135 586	6.4—12.9

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Soybean Disk on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setups for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
High-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A42586) 108-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seeds per Meter	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	65	849 889	709 797	665 892	633 250	3.2—12.9
35	25	62	815 893	681 405	639 256	607 920	3.2—12.9
35	26	60	784 513	655 197	614 670	584 539	3.2—12.9
35	27	57	755 457	630 931	591 904	562 889	3.2—12.9
35	28	55	728 476	608 398	570 765	542 786	3.2—12.9
29	24	54	704 193	588 118	551 739	524 693	3.2—12.9
29	25	51	676 026	564 593	529 670	503 705	3.2—12.9
29	26	49	650 025	542 878	509 298	484 332	3.2—12.9
29	27	48	625 950	522 771	490 435	466 394	3.2—12.9
29	28	46	603 594	504 101	472 919	449 737	3.2—12.9
24	24	44	582 781	486 718	456 612	434 229	3.2—12.9
24	25	43	559 470	467 249	438 347	416 860	3.2—12.9
24	26	41	537 951	449 278	421 488	400 827	3.2—12.9
24	27	39	518 027	432 638	405 877	385 981	3.2—12.9
24	28	38	499 526	417 187	391 381	372 196	3.2—12.9
20	24	37	485 651	405 598	380 510	361 857	3.2—12.9
20	25	35	466 225	389 374	365 289	347 383	3.2—12.9
20	26	34	448 293	374 398	351 240	334 022	3.2—12.9
20	27	33	431 689	360 532	338 231	321 651	3.2—12.9
20	28	32	416 272	347 656	326 151	310 163	3.2—12.9
16	24	30	388 521	324 479	304 408	289 486	4.8—12.9
16	25	28	372 980	311 500	292 232	277 906	4.8—12.9
16	26	27	358 634	299 519	280 992	267 218	4.8—12.9

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setups for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A42586) 108-Hole Disk (cell-type)				
Driver	Driven	Average Seeds per Meter	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
16	27	26	345 352	288 425	270 585	257 321	4.8—12.9
16	28	25	333 018	278 125	260 921	248 131	4.8—12.9

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A42586) 108-Hole Disk (cell-type)				
Driver	Driven	Average Seeds per Meter	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	24	318 708	266 174	249 710	237 469	4.8—12.9
35	25	23	305 960	255 527	239 721	227 970	4.8—12.9
35	26	22	294 192	245 699	230 501	219 202	4.8—12.9
35	27	22	283 296	236 599	221 964	211 083	4.8—12.9
35	28	21	273 178	228 149	214 037	203 545	6.4—12.9
29	24	20	264 073	220 544	206 902	196 760	6.4—12.9
29	25	19	253 510	211 722	198 626	188 890	6.4—12.9
29	26	19	243 759	203 579	190 987	181 625	6.4—12.9
29	27	18	234 731	196 039	183 913	174 898	6.4—12.9
29	28	17	226 348	189 038	177 345	168 651	6.4—12.9
24	24	17	218 543	182 519	171 229	162 836	6.4—12.9
24	25	16	209 801	175 218	164 380	156 322	6.4—12.9
24	26	15	201 732	168 479	158 058	150 310	6.4—12.9
24	27	15	194 260	162 239	152 204	144 743	6.4—12.9
24	28	14	187 322	156 445	146 768	139 574	6.4—12.9
20	24	14	182 119	152 099	142 691	135 697	6.4—12.9
20	25	13	174 834	146 015	136 984	130 269	6.4—12.9
20	26	13	168 110	140 399	131 715	125 258	6.4—12.9
20	27	12	161 884	135 199	126 837	120 619	6.4—12.9
20	28	12	156 102	130 371	122 307	116 311	6.4—12.9
16	24	11	145 695	121 680	114 153	108 557	6.4—12.9
16	25	11	139 867	116 812	109 587	104 215	6.4—12.9
16	26	10	134 488	112 320	105 372	100 207	6.4—12.9
16	27	10	129 507	108 160	101 469	96 495	6.4—12.9
16	28	9	124 882	104 297	97 845	93 049	6.4—12.9

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ProMax 64 x 4.5 Disk on 38 to 56 cm Rows

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (A105848) 64-Hole Disk (cell-type)			Recommended Speed Range in km/h
Driver	Driven		38 cm Rows	51 cm Rows	56 cm Rows	
35	24	25	1 004 628	753 471	684 973	2—5
35	25	27	964 441	723 332	657 574	2—5
35	26	29	927 348	695 513	632 282	2—5
35	27	29	893 001	669 752	608 865	2—5
35	28	30	861 109	645 832	587 120	2—5
29	24	32	832 406	624 304	567 549	2—6
29	25	33	799 110	599 331	544 847	2—6
29	26	35	770 068	576 281	523 892	2—6
29	27	37	742 457	554 937	504 488	4
29	28	37	713 491	535 124	486 471	4
24	24	38	688 893	516 694	469 696	4
24	25	40	661 333	495 999	448 140	4.5
24	26	41	635 897	476 923	461 806	4.5
24	27	43	612 344	459 258	416 943	4.5
24	28	44	590 452	442 856	402 597	5
20	24	46	574 073	430 555	391 413	5
20	25	48	553 935	413 334	375 757	5
20	26	49	529 913	397 434	361 303	5.5
20	27	51	510 286	382 998	347 923	5.5
20	28	54	492 063	369 047	335 497	6
16	24	57	459 258	344 444	313 131	6.5
16	25	59	440 888	330 665	300 606	6.5
16	26	62	423 929	317 949	289 044	7
16	27	64	408 259	306 172	278 338	7
16	28	67	393 650	295 238	269 245	7

Low-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (A105848) 64-Hole Disk (cell-type)			Recommended Speed Range in km/h
Driver	Driven		38 cm Rows	51 cm Rows	56 cm Rows	
35	24	70	376 737	282 552	256 864	7
35	25	73	361 665	271 250	246 590	7
35	26	75	347 756	260 818	237 107	7
35	27	78	334 876	251 157	228 324	7
35	28	81	322 916	242 216	220 171	7
29	24	84	312 154	234 114	215 656	7
29	25	87	299 666	225 032	204 317	7
29	26	90	288 141	216 105	196 461	7
29	27	95	277 469	208 101	188 901	7
29	28	98	267 559	200 697	182 428	7
24	24	102	258 333	194 004	176 136	7
24	25	106	248 000	186 000	169 090	7
24	26	110	238 460	178 847	162 586	7

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A105848) 64-Hole Disk (cell-type)			
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	Recommended Speed Range in km/h
24	27	114	229 629	172 222	156 565	7
24	28	119	221 428	166 071	150 974	7
20	24	122	215 277	161 459	146 780	7
20	25	127	206 667	155 001	140 909	7
20	26	132	198 717	149 039	135 489	7
20	27	138	191 358	143 518	130 471	7
20	28	143	187 347	140 652	125 811	7
16	24	152	172 222	129 166	117 432	7
16	25	159	165 334	123 998	112 728	7
16	26	165	158 974	119 231	108 393	7
16	27	171	153 256	114 815	104 377	7
16	28	178	147 619	110 714	100 649	7

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Cotton and Small Soybean Disk on 38 to 56 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.						
High-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A56251) 64-Hole Disk (cell-type)			
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	Recommended Speed Range in km/h
35	24	25	1 004 628	753 471	684 973	3—8
35	25	27	964 441	723 332	657 574	3—8
35	26	29	927 348	695 513	632 282	3—8
35	27	29	893 001	669 752	608 865	3—8
35	28	30	861 109	645 832	587 120	3—8
29	24	32	832 406	624 304	567 549	3—9.5
29	25	33	799 110	599 331	544 847	3—9.5
29	26	35	770 068	576 281	523 892	3—9.5
29	27	37	742 457	554 937	504 488	3—9.5
29	28	37	713 491	535 124	486 471	3—9.5
24	24	38	688 893	516 694	469 696	3—11
24	25	40	661 333	495 999	448 140	3—11
24	26	41	635 897	476 923	461 806	3—11
24	27	43	612 344	459 258	416 943	3—11
24	28	44	590 452	442 856	402 597	3—11
20	24	46	574 073	430 555	391 413	3—12
20	25	48	553 935	413 334	375 757	3—12
20	26	49	529 913	397 434	361 303	3—12
20	27	51	510 286	382 998	347 923	3—12
20	28	54	492 063	369 047	335 497	3—12
16	24	57	459 258	344 444	313 131	5—13
16	25	59	440 888	330 665	300 606	5—13
16	26	62	423 929	317 949	289 044	5—13
16	27	64	408 259	306 172	278 338	5—13

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A56251) 64-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	
16	28	67	393 650	295 238	269 245	5—13

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A56251) 64-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	
35	24	70	376 737	282 552	256 864	5—13
35	25	73	361 665	271 250	246 590	5—13
35	26	75	347 756	260 818	237 107	5—13
35	27	78	334 876	251 157	228 324	5—13
35	28	81	322 916	242 216	220 171	5—13
29	24	84	312 154	234 114	215 656	5—13
29	25	87	299 666	225 032	204 317	6.5—13
29	26	90	288 141	216 105	196 461	6.5—13
29	27	95	277 469	208 101	188 901	6.5—13
29	28	98	267 559	200 697	182 428	6.5—13
24	24	102	258 333	194 004	176 136	6.5—13
24	25	106	248 000	186 000	169 090	6.5—13
24	26	110	238 460	178 847	162 586	6.5—13
24	27	114	229 629	172 222	156 565	6.5—13
24	28	119	221 428	166 071	150 974	6.5—13
20	24	122	215 277	161 459	146 780	6.5—13
20	25	127	206 667	155 001	140 909	6.5—13
20	26	132	198 717	149 039	135 489	6.5—13
20	27	138	191 358	143 518	130 471	6.5—13
20	28	143	187 347	140 652	125 811	6.5—13
16	24	152	172 222	129 166	117 432	6.5—13
16	25	159	165 334	123 998	112 728	6.5—13
16	26	165	158 974	119 231	108 393	6.5—13
16	27	171	153 256	114 815	104 377	6.5—13
16	28	178	147 619	110 714	100 649	6.5—13

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Cotton and Small Soybean Disk on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
High-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A56251) 64-Hole Disk (cell-type)				
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	26	503 638	420 620	394 603	375 259	3.2—8.8
35	25	27	483 492	403 796	378 819	360 249	3.2—8.8
35	26	28	464 896	388 265	364 249	346 393	3.2—9.6
35	27	29	447 678	373 885	350 758	333 564	3.2—9.6
35	28	30	431 689	360 532	338 231	321 651	3.2—10.4
29	24	32	417 300	348 514	326 957	310 929	3.2—10.4
29	25	33	400 608	334 574	313 878	298 492	3.2—11.2
29	26	34	385 200	321 705	301 806	287 012	3.2—11.2
29	27	35	370 933	309 790	290 628	276 382	3.2—12.0
29	28	37	357 686	298 726	280 248	266 511	3.2—12.0
24	24	38	345 352	288 425	270 585	257 321	3.2—12.9
24	25	40	331 538	276 888	259 761	247 028	3.2—12.9
24	26	41	318 786	266 239	249 771	237 527	3.2—12.9
24	27	43	306 979	256 378	240 520	228 730	3.2—12.9
24	28	44	296 016	247 222	231 930	220 561	3.2—12.9
20	24	46	287 793	240 355	225 487	214 434	3.2—12.9
20	25	48	276 281	230 740	216 468	205 857	3.2—12.9
20	26	50	265 655	221 866	208 142	197 939	3.2—12.9
20	27	51	255 816	213 649	200 433	190 608	3.2—12.9
20	28	53	246 680	206 018	193 275	183 801	3.2—12.9
16	24	57	230 234	192 284	180 390	171 547	4.8—12.9
16	25	60	221 025	184 592	173 174	164 685	4.8—12.9
16	26	62	212 524	177 493	166 514	158 351	4.8—12.9
16	27	64	204 653	170 919	160 347	152 486	4.8—12.9
16	28	67	197 344	164 815	154 620	147 040	4.8—12.9

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A56251) 64-Hole Disk (cell-type)				
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	70	188 864	157 733	147 976	140 722	4.8—12.9
35	25	73	181 310	151 423	142 057	135 093	4.8—12.9
35	26	75	174 336	145 599	136 593	129 898	4.8—12.9
35	27	78	167 879	140 207	131 534	125 086	4.8—12.9
35	28	81	161 884	135 199	126 837	120 619	4.8—12.9
29	24	84	156 487	130 693	122 609	116 598	4.8—12.9
29	25	88	150 228	125 465	117 704	111 935	6.4—12.9
29	26	91	144 450	120 640	113 177	107 629	6.4—12.9
29	27	95	139 100	116 171	108 986	103 643	6.4—12.9
29	28	98	134 132	112 022	105 093	99 942	6.4—12.9
24	24	102	129 507	108 160	101 469	96 495	6.4—12.9
24	25	106	124 327	103 833	97 411	92 635	6.4—12.9
24	26	110	119 545	99 840	93 664	89 073	6.4—12.9

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A56251) 64-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
24	27	114	115 117	96 142	90 195	85 774	6.4—12.9
24	28	119	111 006	92 708	86 974	82 710	6.4—12.9
20	24	122	107 922	90 133	84 558	80 413	6.4—12.9
20	25	127	103 605	86 528	81 175	77 196	6.4—12.9
20	26	132	99 621	83 200	78 053	74 227	6.4—12.9
20	27	137	95 931	80 118	75 162	71 478	6.4—12.9
20	28	142	92 505	77 257	72 478	68 925	6.4—12.9
16	24	152	86 338	72 106	67 646	64 330	6.4—12.9
16	25	159	82 884	69 222	64 940	61 757	6.4—12.9
16	26	165	79 697	66 560	62 443	59 382	6.4—12.9
16	27	171	76 745	64 095	60 130	57 182	6.4—12.9
16	28	178	74 004	61 805	57 982	55 140	6.4—12.9

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Sugar Beet Disk on 45 to 97 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
High-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A51712, A51713, or H136445) 45-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	45 cm Rows	56 cm Rows	76 cm Rows	97 cm Rows	
35	24	37	673 105	480 592	354 120	295 749	3.2—4.8
35	25	39	646 180	461 368	339 955	283 919	3.2—4.8
35	26	40	621 327	443 623	326 880	272 999	3.2—4.8
35	27	42	598 315	427 193	314 774	262 888	3.2—5.6
35	28	43	576 947	411 936	303 532	253 499	3.2—5.6
29	24	45	557 715	398 205	293 414	245 049	3.2—5.6
29	25	47	535 407	382 276	281 677	235 247	3.2—6.4
29	26	49	514 814	367 573	270 844	226 199	3.2—6.4
29	27	50	495 747	353 960	260 812	217 821	3.2—6.4
29	28	52	478 042	341 318	251 498	210 042	3.2—6.4
24	24	54	461 557	329 549	242 825	202 799	3.2—7.2
24	25	56	443 095	316 367	233 112	194 687	3.2—7.2
24	26	59	426 053	304 199	224 146	187 199	3.2—7.2
24	27	61	410 273	292 932	215 845	180 266	3.2—8.0
24	28	63	395 621	282 470	208 136	173 828	3.2—8.0
20	24	65	384 631	274 624	202 354	168 999	3.2—8.0
20	25	68	369 246	263 639	194 260	162 239	3.2—8.8
20	26	70	355 044	253 499	186 789	155 999	3.2—8.8
20	27	73	341 894	244 110	179 871	150 222	3.2—9.6
20	28	76	329 684	235 392	173 447	144 857	3.2—9.6
16	24	81	307 705	219 699	161 884	135 199	4.8—10.4
16	25	85	295 397	210 911	155 408	129 791	4.8—10.4
16	26	88	284 035	202 799	149 431	124 799	4.8—11.2
16	27	91	273 516	195 288	143896	120 177	4.8—12.0

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A51712, A51713, or H136445) 45-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	45 cm Rows	56 cm Rows	76 cm Rows	97 cm Rows	
16	28	95	263 747	188 314	138 757	115 885	4.8—12.0

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A51712, A51713, or H136445) 45-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	45 cm Rows	56 cm Rows	76 cm Rows	97 cm Rows	
35	24	99	252 414	180 222	132 795	110 906	4.8—12.9
35	25	103	242 318	173 013	127 483	106 470	4.8—12.9
35	26	107	232 998	166 359	122 580	102 375	4.8—12.9
35	27	111	224 368	160 197	118 040	98 583	4.8—12.9
35	28	116	216 355	154 476	113 824	95 062	4.8—12.9
29	24	120	209 143	149 327	110 030	91 893	5.6 —12.9
29	25	125	200 777	143 354	105 629	88 218	5.6 —12.9
29	26	130	193 055	137 840	101 566	84 825	5.6 —12.9
29	27	135	185 905	132 735	97 805	81 683	5.6 —12.9
29	28	140	179 266	127 994	94 312	78 766	5.6 —12.9
24	24	144	173 084	123 581	91 059	76 050	5.6 —12.9
24	25	151	166 161	118 638	87 417	73 008	5.6 —12.9
24	26	157	159 770	114 075	84 055	70 200	6.4—12.9
24	27	163	153 852	109 850	80 942	67 600	6.4—12.9
24	28	169	148 358	105 926	78 051	65 185	6.4—12.9
20	24	173	144 237	102 984	75 883	63 375	7.2—12.9
20	25	181	138 467	98 865	72 848	60 840	7.2—12.9
20	26	188	133 142	95 062	70 046	58 500	7.2—12.9
20	27	195	128 210	91 541	67 451	56 333	8.0—12.9
20	28	202	123 631	88 272	65 042	54 321	8.0—12.9
16	24	217	115 389	82 387	60 706	50 700	8.8—12.9
16	25	226	110 774	79 092	58 278	48 672	8.8—12.9
16	26	235	106 513	76 050	56 037	46 800	9.6—12.9
16	27	244	102 568	73 233	53 961	45 066	9.6—12.9
16	28	253	98 905	70 618	52 034	43 457	9.6—12.9

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Small Edible Bean Disk on 38 to 56 cm Row

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (H136468) 108-Hole Disk (cell-type)			Recommended Speed Range in km/h
Driver	Driven		38 cm Rows	51 cm Rows	56 cm Rows	
35	24	15	1 699 777	1 266 501	1 153 420	3.2—6.4
35	25	16	1 631 786	1 215 841	1 107 283	3.2—6.4
35	26	17	1 569 025	1 169 076	1 064 696	3.2—6.4
35	27	17	1 510 913	1 125 778	1 025 262	3.2—6.4
35	28	18	1 456 952	1 085 572	988 546	3.2—6.4
29	24	19	1 408 387	1 049 366	955 691	3.2—7.2
29	25	19	1 352 051	1 007 411	917 463	3.2—7.2
29	26	20	1 300 049	968 664	882 176	3.2—8.0
29	27	21	1 251 899	932 788	849 503	3.2—8.0
29	28	22	1 207 189	899 474	819 164	3.2—9.7
24	24	23	1 165 562	868 458	790 917	3.2—9.7
24	25	24	1 118 938	833 719	759 280	3.2—10.5
24	26	24	1 075 903	801 653	730 077	3.2—10.5
24	27	25	1 036 055	771 862	703 037	3.2—10.5
24	28	26	999 053	744 392	677 929	3.2—10.5
20	24	27	971 301	723 715	659 097	3.2—10.5
20	25	28	932 449	694 766	632 733	3.2—11.3
20	26	29	896 586	668 044	608 398	3.2—11.3
20	27	30	863 379	643 302	585 864	3.2—12.1
20	28	32	832 544	620 327	564 691	3.2—12.1
16	24	34	777 041	578 972	527 278	4.8—12.9
16	25	35	745 959	555 813	506 187	4.8—12.9
16	26	37	717 269	534 435	486 718	4.8—12.9
16	27	38	680 703	514 542	468 691	4.8—12.9
16	28	40	666 035	496 261	451 952	4.8—12.9

Low-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (H136468) 108-Hole Disk (cell-type)			Recommended Speed Range in km/h
Driver	Driven		38 cm Rows	51 cm Rows	56 cm Rows	
35	24	41	637 418	474 938	432 533	4.8—12.9
35	25	43	611 920	455 940	415 231	4.8—12.9
35	26	45	588 384	438 404	399 261	4.8—12.9
35	27	46	566 592	422 167	384 473	4.8—12.9
35	28	48	546 357	407 090	370 742	4.8—12.9
29	24	50	528 145	393 520	358 384	6.4—12.9
29	25	52	507 019	377 779	344 049	6.4—12.9
29	26	54	487 519	363 249	330 816	6.4—12.9
29	27	56	469 462	349 795	318 564	6.4—12.9
29	28	58	452 696	337 303	307 186	6.4—12.9
24	24	60	437 086	325 672	296 594	6.4—12.9
24	25	63	419 602	312 645	284 730	6.4—12.9
24	26	65	403 464	300 620	273 779	6.4—12.9

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (H136468) 108-Hole Disk (cell-type)			
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	Recommended Speed Range in km/h
24	27	68	388 521	289 486	263 639	6.4—12.9
24	28	70	374 645	279 147	254 223	6.4—12.9
20	24	72	364 238	271 393	247 161	6.4—12.9
20	25	75	349 668	260 537	237 275	6.4—12.9
20	26	78	336 220	250 517	228 149	6.4—12.9
20	27	81	323 767	241 238	218 699	6.4—12.9
20	28	84	312 204	232 623	211 853	6.4—12.9
16	24	90	291 390	217 114	197 729	6.4—12.9
16	25	94	279 735	208 430	189 820	6.4—12.9
16	26	98	268 978	200 413	182 519	6.4—12.9
16	27	102	259 014	192 991	175 759	6.4—12.9
16	28	105	249 763	186 098	169 482	6.4—12.9

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Small Edible Bean Disk on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
High-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (H136468) 108-Hole Disk (cell-type)				
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	15	849 889	709 797	665 892	633 250	3.2—6.4
35	25	16	815 893	681 405	639 256	607 920	3.2—6.4
35	26	17	764 513	655 197	614 670	584 539	3.2—6.4
35	27	17	755 457	630 931	591 904	562 889	3.2—6.4
35	28	18	728 476	608 398	570 765	542 786	3.2—6.4
29	24	19	704 193	588 118	551 739	524 693	3.2—7.2
29	25	19	676 026	564 593	529 670	503 705	3.2—7.2
29	26	20	650 025	542 878	509 298	484 332	3.2—8.0
29	27	21	625 950	522 771	490 435	466 394	3.2—8.0
29	28	22	603 594	504 101	472 919	449 737	3.2—9.7
24	24	23	582 781	486 718	456 612	434 229	3.2—9.7
24	25	24	559 470	467 249	438 347	416 860	3.2—10.5
24	26	24	537 951	449 278	421 488	400 827	3.2—10.5
24	27	25	518 027	432 638	405 877	385 981	3.2—10.5
24	28	26	499 526	417 187	391 381	372 196	3.2—10.5
20	24	27	485 651	405 598	380 510	361 857	3.2—10.5
20	25	28	466 225	389 374	365 289	347 383	3.2—11.3
20	26	29	448 293	374 398	351 240	334 022	3.2—11.3
20	27	30	431 689	360 532	338 231	321 651	3.2—12.1
20	28	32	416 272	347 656	326 151	310 163	3.2—12.1
16	24	34	388 521	324 479	304 408	289 486	4.8—12.9
16	25	35	372 980	311 500	292 232	277 906	4.8—12.9
16	26	37	358 634	299 519	280 992	267 218	4.8—12.9
16	27	38	345 352	288 425	270 585	257 321	4.8—12.9

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (H136468) 108-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
16	28	40	333 018	278 125	260 921	248 131	4.8—12.9

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (H136468) 108-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	41	318 708	266 174	249 710	237 469	6.4—12.9
35	25	43	305 960	255 527	239 721	227 970	6.4—12.9
35	26	45	294 192	245 699	230 501	219 202	6.4—12.9
35	27	46	283 296	236 599	221 964	211 083	6.4—12.9
35	28	48	273 178	228 149	214 037	203 545	6.4—12.9
29	24	50	264 073	220 544	206 902	196 760	6.4—12.9
29	25	52	253 510	211 722	198 626	188 890	6.4—12.9
29	26	54	243 759	203 579	190 987	181 625	6.4—12.9
29	27	56	234 731	196 039	183 913	174 898	6.4—12.9
29	28	58	226 348	189 038	177 345	168 651	6.4—12.9
24	24	60	218 543	182 519	171 229	162 836	6.4—12.9
24	25	63	209 801	175 218	164 380	156 322	6.4—12.9
24	26	65	201 732	168 479	158 058	150 310	6.4—12.9
24	27	68	194 260	162 239	152 204	144 743	6.4—12.9
24	28	70	187 322	156 445	146 768	139 575	6.4—12.9
20	24	72	182 119	152 099	142 691	135 697	6.4—12.9
20	25	75	174 834	146 015	136 984	130 269	6.4—12.9
20	26	78	168 110	140 399	131 715	125 258	6.4—12.9
20	27	81	161 884	135 199	126 837	120 619	6.4—12.9
20	28	84	156 102	130 371	122 307	116 311	6.4—12.9
16	24	90	145 695	121 680	114 153	108 557	6.4—12.9
16	25	94	139 867	116 812	109 587	104 215	6.4—12.9
16	26	98	134 488	112 320	105 372	100 207	6.4—12.9
16	27	102	129 507	108 160	101 469	96 495	6.4—12.9
16	28	105	124 882	104 297	97 845	93 049	6.4—12.9

WP29706,0000E70-19-27MAR23

Medium Edible Bean Disk on 38 to 56 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.						
High-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A51696) 56-Hole Disk (cell-type)			
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	Recommended Speed Range in km/h
35	24	30	881 366	656 704	596 070	6.4—7.2
35	25	31	846 111	630 436	574 147	6.4—7.2
35	26	32	813 569	606 188	552 084	6.4—8.0
35	27	34	783 436	583 737	531 618	6.4—8.0
35	28	35	755 457	562 889	512 631	6.4—8.0
29	24	36	730 275	544 126	495 544	6.4—8.0
29	25	38	701 064	522 361	475 722	6.4—8.4
29	26	39	674 100	502 270	457 425	6.4—8.4
29	27	41	649 133	483 668	440 483	6.4—9.6
29	28	42	625 950	466 394	424 752	6.4—9.6
24	24	44	604 385	450 311	410 105	6.4—10.4
24	25	45	580 191	432 299	393 701	6.4—10.4
24	26	47	557 876	415 672	378 558	6.4—11.2
24	27	49	537 214	400 277	364 538	6.4—12.0
24	28	51	518 027	385 981	351 519	6.4—12.0
20	24	52	503 638	375 259	341 754	6.4—12.9
20	25	54	483 492	360 249	328 084	6.4—12.9
20	26	57	464 896	346 393	315 465	6.4—12.9
20	27	59	447 678	333 554	303 781	6.4—12.9
20	28	61	431 689	321 651	292 932	6.4—12.9
16	24	65	402 910	300 208	273 403	6.4—12.9
16	25	68	386 794	288 199	262 467	6.4—12.9
16	26	71	371 917	277 115	252 372	6.4—12.9
16	27	73	358 142	266 851	243 025	6.4—12.9
16	28	76	345 352	257 321	234 346	6.4—12.9

Low-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A51696) 56-Hole Disk (cell-type)			
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	Recommended Speed Range in km/h
35	24	80	330 512	246 264	224 276	6.4—12.9
35	25	83	317 292	236 413	215 305	6.4—12.9
35	26	86	305 088	227 321	207 024	6.4—12.9
35	27	90	293 789	218 901	199 357	6.4—12.9
35	28	93	283 296	211 083	192 237	6.4—12.9
29	24	96	273 853	204 047	185 629	6.4—12.9
29	25	100	262 899	195 885	178 398	6.4—12.9
29	26	104	252 787	188 351	171 534	6.4—12.9
29	27	108	242 425	181 375	165 181	6.4—12.9
29	28	112	234 731	174 898	159 282	6.4—12.9
24	24	116	226 637	168 867	153 789	6.4—12.9
24	25	121	217 571	162 112	147 638	6.4—12.9
24	26	126	209 203	155 877	141 959	6.4—12.9

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A51696) 56-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	
24	27	131	201 455	150 104	136 702	6.4—12.9
24	28	135	194 260	144 743	161 819	6.4—12.9
20	24	139	188 864	140 722	128 158	6.4—12.9
20	25	145	181 310	135 093	123 031	6.4—12.9
20	26	151	174 336	129 898	118 300	6.4—12.9
20	27	157	167 879	125 086	113 918	6.4—12.9
20	28	163	161 884	120 619	109 850	6.4—12.9
16	24	174	151 091	112 578	102 526	6.4—12.9
16	25	181	145 048	108 075	98 425	6.4—12.9
16	26	189	139 469	103 918	95 640	6.4—12.9
16	27	196	134 303	100 069	91 134	6.4—12.9
16	28	203	129 507	95 495	87 880	6.4—12.9

WP29706.0000E71-19-27MAR23

Medium Edible Bean Disk on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
High-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A51696) 56-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	30	440 683	368 043	345 277	328 352	6.4—7.2
35	25	31	423 056	353 321	331 466	315 218	6.4—7.2
35	26	32	406 784	339 732	318 718	303 094	6.4—8.0
35	27	34	391 718	327 149	306 913	291 868	6.4—8.0
35	28	35	377 728	315 465	295 952	281 445	6.4—8.0
29	24	36	365 137	304 950	286 087	272 063	6.4—8.0
29	25	38	350 532	292 752	274 644	261 181	6.4—8.4
29	26	39	337 050	281 492	264 080	251 135	6.4—8.4
29	27	41	324 567	271 067	254 300	241 834	6.4—9.6
29	28	42	312 975	261 386	245 217	233 197	6.4—9.6
24	24	44	302 183	252 372	236 762	225 156	6.4—10.4
24	25	45	290 095	242 277	227 291	216 149	6.4—10.4
24	26	47	278 938	232 959	218 549	207 836	6.4—11.2
24	27	49	268 607	224 331	210 455	200 138	6.4—12.0
24	28	51	259 014	216 319	202 939	192 991	6.4—12.0
20	24	52	251 819	210 310	197 301	187 630	6.4—12.9
20	25	54	241 746	201 898	189 409	180 125	6.4—12.9
20	26	57	232 448	194 133	182 124	173 197	6.4—12.9
20	27	59	223 839	186 942	175 379	166 782	6.4—12.9
20	28	61	215 845	180 266	169 115	160 825	6.4—12.9
16	24	65	201 455	168 248	157 841	150 104	6.4—12.9
16	25	68	193 397	161 518	151 527	144 100	6.4—12.9
16	26	71	185 959	155 306	145 699	138 557	6.4—12.9
16	27	73	179 071	149 554	140 303	133 426	6.4—12.9

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A51696) 56-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
16	28	76	172 676	144 213	135 292	128 660	6.4—12.9

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A51696) 56-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	80	165 256	138 016	129 479	123 132	6.4—12.9
35	25	83	158 646	132 495	124 300	118 207	6.4—12.9
35	26	86	152 544	127 399	119 519	113 660	6.4—12.9
35	27	90	146 894	122 681	115 092	109 451	6.4—12.9
35	28	93	141 648	118 300	110 982	105 542	6.4—12.9
29	24	96	136 927	114 356	107 283	102 024	6.4—12.9
29	25	100	131 449	109 782	102 991	97 943	6.4—12.9
29	26	104	126 394	105 560	99 030	94 176	6.4—12.9
29	27	108	121 712	101 650	95 362	90 688	6.4—12.9
29	28	112	117 366	98 020	91 957	87 449	6.4—12.9
24	24	116	113 318	94 640	88 786	84 433	6.4—12.9
24	25	121	108 786	90 854	85 234	81 056	6.4—12.9
24	26	126	104 602	87 360	81 956	77 939	6.4—12.9
24	27	131	100 728	84 124	78 921	75 052	6.4—12.9
24	28	135	97 130	81 120	76 102	72 371	6.4—12.9
20	24	139	94 432	78 866	73 988	70 361	6.4—12.9
20	25	145	90 655	75 712	71 028	67 547	6.4—12.9
20	26	151	87 168	72 800	68 297	64 949	6.4—12.9
20	27	157	83 940	70 103	65 767	62 543	6.4—12.9
20	28	163	80 942	67 600	63 418	60 310	6.4—12.9
16	24	174	75 546	63 093	59 190	56 289	6.4—12.9
16	25	181	72 524	60 569	56 823	54 037	6.4—12.9
16	26	189	69 734	58 240	54 637	51 959	6.4—12.9
16	27	196	67 152	56 083	52 614	50 035	6.4—12.9
16	28	203	64 753	54 080	50 735	48 248	6.4—12.9

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Large Edible Bean Disk on 38 to 56 cm Rows

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (H136092) 50-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	
35	24	33	766 934	586 343	533 991	6.4—7.2
35	25	35	755 457	562 889	512 831	6.4—7.2
35	26	36	726 401	541 240	492 915	6.4—7.2
35	27	38	699 497	521 194	474 659	6.4—7.2
35	28	39	674 515	502 580	457 706	6.4—7.2
29	24	40	652 031	485 827	442 450	6.4—8.0
29	25	42	625 950	466 394	424 752	6.4—8.8
29	26	44	601 875	448 456	408 415	6.4—8.8
29	27	45	579 583	431 846	383 289	6.4—8.8
29	28	47	558 884	416 423	379 242	6.4—9.6
24	24	49	539 612	402 064	366 165	6.4—9.6
24	25	51	518 027	385 951	351 519	6.4—10.4
24	26	53	498 103	371 136	337 998	6.4—10.4
24	27	55	479 655	357 390	325 480	6.4—11.2
24	28	57	462 524	344 626	313 856	6.4—11.2
20	24	59	449 677	335 053	305 138	6.4—12.0
20	25	61	431 889	321 651	292 932	6.4—12.0
20	26	63	415 088	309 280	281 866	6.4—12.9
20	27	66	399 712	297 825	271 233	6.4—12.9
20	28	68	385 437	287 188	261 547	6.4—12.9
16	24	73	359 471	268 042	244 110	6.4—12.9
16	25	76	345 352	257 321	234 346	6.4—12.9
16	26	79	332 069	247 424	225 332	6.4—12.9
16	27	82	319 770	238 260	216 987	6.4—12.9
16	28	85	308 350	229 751	209 237	6.4—12.9

Low-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (H136092) 50-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	
35	24	89	295 100	219 679	200 247	6.4—12.9
35	25	93	283 296	211 083	192 237	6.4—12.9
35	26	97	272 400	202 965	184 843	6.4—12.9
35	27	100	262 311	195 448	177 997	6.4—12.9
35	28	104	252 943	188 467	171 640	6.4—12.9
29	24	108	244 512	182 185	165 919	6.4—12.9
29	25	112	234 731	174 898	159 282	6.4—12.9
29	26	117	225 703	168 171	153 156	6.4—12.9
29	27	121	217 344	161 942	147 483	6.4—12.9
29	28	126	209 581	156 159	142 216	6.4—12.9
24	24	130	202 354	150 774	137 312	6.4—12.9
24	25	135	194 260	144 743	131 619	6.4—12.9
24	26	141	186 789	139 176	126 749	6.4—12.9

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket						
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (H136092) 50-Hole Disk (cell-type)			
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	56 cm Rows	Recommended Speed Range in km/h
24	27	146	179 871	134 021	122 055	6.4—12.9
24	28	152	173 447	129 235	117 696	6.4—12.9
20	24	156	168 629	125 645	114 427	6.4—12.9
20	25	163	161 884	120 819	109 850	6.4—12.9
20	26	169	155 657	115 980	105 625	6.4—12.9
20	27	176	149 892	111 684	101 713	6.4—12.9
20	28	182	144 539	107 695	98 080	6.4—12.9
16	24	195	134 903	100 516	91 541	6.4—12.9
16	25	203	129 507	96 495	87 880	6.4—12.9
16	26	211	124 526	92 784	84 500	6.4—12.9
16	27	219	119 914	89 347	81 370	6.4—12.9
16	28	228	115 531	86 157	78 464	6.4—12.9

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Large Edible Bean Disk on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
High-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (H136092) 50-Hole Disk (cell-type)				
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	33	393 467	328 610	308 283	293 171	6.4—7.2
35	25	35	377 728	315 465	295 952	281 445	6.4—7.2
35	26	36	363 200	303 332	284 569	270 620	6.4—7.2
35	27	38	349 748	292 098	274 030	260 597	6.4—7.2
35	28	39	337 257	281 666	264 243	251 290	6.4—7.2
29	24	40	326 015	272 277	255 435	242 913	6.4—8.0
29	25	42	312 975	261 386	245 217	233 197	6.4—8.8
29	26	44	300 937	251 332	235 786	224 228	6.4—8.8
29	27	45	289 792	242 024	227 053	215 923	6.4—8.8
29	28	47	279 442	233 380	218 944	208 212	6.4—9.6
24	24	49	269 806	225 332	211 394	201 032	6.4—9.6
24	25	51	259 014	216 319	202 939	192 991	6.4—10.4
24	26	53	249 052	207 999	195 133	185 568	6.4—10.4
24	27	55	239 827	200 295	187 906	178 695	6.4—11.2
24	28	57	231 262	193 142	181 195	172 313	6.4—11.2
20	24	59	224 838	187 777	176 162	167 527	6.4—12.0
20	25	61	215 845	180 266	169 115	160 825	6.4—12.0
20	26	63	207 543	173 333	162 611	154 640	6.4—12.9
20	27	66	199 856	166 913	156 588	148 912	6.4—12.9
20	28	68	192 719	160 952	150 996	143 594	6.4—12.9
16	24	73	179 871	150 222	140 930	134 021	6.4—12.9
16	25	76	172 676	144 213	135 292	128 660	6.4—12.9
16	26	79	166 034	138 666	130 089	123 712	6.4—12.9
16	27	82	159 885	133 530	125 271	119 130	6.4—12.9

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (H136092) 50-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
16	28	85	154 175	128 761	120 797	114 875	6.4—12.9

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (H136092) 50-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	89	147 550	123 229	115 606	109 939	6.4—12.9
35	25	93	141 648	118 300	110 982	105 542	6.4—12.9
35	26	97	136 200	113 750	106 713	101 482	6.4—12.9
35	27	100	131 156	109 537	102 761	97 724	6.4—12.9
35	28	104	126 472	105 652	99 091	94 234	6.4—12.9
29	24	108	122 256	102 104	95 788	91 093	6.4—12.9
29	25	112	117 366	98 020	91 957	87 449	6.4—12.9
29	26	117	112 852	94 250	88 420	84 085	6.4—12.9
29	27	121	108 672	90 759	85 145	80 971	6.4—12.9
29	28	126	104 791	87 517	82 104	78 079	6.4—12.9
24	24	130	101 177	84 500	79 273	75 387	6.4—12.9
24	25	135	97 130	81 120	76 102	72 371	6.4—12.9
24	26	141	93 394	78 000	73 175	69 588	6.4—12.9
24	27	146	89 935	75 111	70 465	67 011	6.4—12.9
24	28	152	86 723	72 428	67 948	64 617	6.4—12.9
20	24	156	84 314	70 416	66 061	62 822	6.4—12.9
20	25	163	80 942	67 600	63 418	60 310	6.4—12.9
20	26	169	77 829	65 000	60 979	57 990	6.4—12.9
20	27	176	74 946	62 592	58 721	55 842	6.4—12.9
20	28	182	72 269	60 357	56 623	53 848	6.4—12.9
16	24	195	67 451	56 333	52 849	50 258	6.4—12.9
16	25	203	64 753	54 080	50 735	48 248	6.4—12.9
16	26	211	62 263	52 000	48 783	46 392	6.4—12.9
16	27	219	59 957	50 074	46 977	44 674	6.4—12.9
16	28	228	57 816	48 286	45 299	43 078	6.4—12.9

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Peanut (Runner and Spanish) Disk on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (H136092) 50-Hole Disk (cell-type)				
Driver	Driven	Average Seeds per Meter	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	33	393 467	328 610	308 283	293 171	5.6—6.4
35	25	35	377 728	315 465	295 952	281 445	5.6—6.4
35	26	36	363 200	303 332	284 569	270 620	5.6—6.4
35	27	38	349 748	292 098	274 030	260 597	5.6—6.4
35	28	39	337 257	281 666	264 243	251 290	5.6—7.2
29	24	40	326 015	272 277	255 435	242 913	5.6—7.2
29	25	42	312 975	261 386	245 217	233 197	5.6—7.2
29	26	44	300 937	251 332	235 786	224 228	5.6—8.0
29	27	45	289 792	242 024	227 053	215 923	5.6—8.0
29	28	47	279 442	233 380	218 944	208 212	5.6—8.0
24	24	49	269 806	225 332	211 394	201 032	5.6—8.9
24	25	51	259 014	216 319	202 939	192 991	5.6—8.9
24	26	53	249 052	207 999	195 133	185 568	5.6—8.9
24	27	55	239 827	200 295	187 906	178 695	5.6—9.7
24	28	57	231 262	193 142	181 195	172 313	5.6—9.7
20	24	59	224 838	187 777	176 162	167 527	5.6—10.5
20	25	61	215 845	180 266	169 115	160 825	5.6—11.3
20	26	63	207 543	173 333	162 611	154 640	5.6—11.3

20	27	66	199 856	166 913	156 588	148 912	5.6—12.1
20	28	68	192 719	160 952	150 996	143 594	5.6—12.1
16	24	73	179 871	150 222	140 930	134 021	6.4—12.9
16	25	76	172 676	144 213	135 292	128 660	6.4—12.9
16	26	79	166 034	138 666	130 089	123 712	6.4—12.9
16	27	82	159 885	133 530	125 271	119 130	6.4—12.9
16	28	85	154 175	128 761	120 797	114 875	6.4—12.9

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (H136092) 50-Hole Disk (cell-type)				
Driver	Driven	Average Seeds per Meter	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	89	147 550	123 229	115 606	109 939	6.4—12.9
35	25	93	141 648	118 300	110 982	105 542	6.4—12.9
35	26	97	136 200	113 750	106 713	101 482	6.4—12.9
35	27	100	131 156	109 537	102 761	97 724	6.4—12.9
35	28	104	126 472	105 625	99 091	94 234	6.4—12.9
29	24	108	122 256	102 104	95 788	91 093	6.4—12.9
29	25	112	117 366	98 020	91 957	87 449	6.4—12.9
29	26	117	112 852	94 250	88 420	84 085	6.4—12.9
29	27	121	108 672	90 759	85 145	80 971	6.4—12.9
29	28	126	104 791	87 517	82 104	78 079	6.4—12.9

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (H136092) 50-Hole Disk (cell-type)				
Driver	Driven	Average Seeds per Meter	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
24	24	130	101 177	84 500	79 273	75 387	6.4—12.9
24	25	135	97 130	81 120	76 102	72 371	6.4—12.9
24	26	141	93 394	78 000	73 175	69 588	6.4—12.9
24	27	146	89 935	75 111	70 465	67 011	6.4—12.9
24	28	152	86 723	72 428	67 948	64 617	6.4—12.9
20	24	156	84 314	70 416	66 061	62 822	6.4—12.9
20	25	163	80 942	67 600	63 418	60 310	6.4—12.9
20	26	169	77 829	65 000	60 979	57 990	6.4—12.9
20	27	176	74 946	62 592	58 721	55 842	6.4—12.9
20	28	182	72 269	60 357	56 623	53 848	6.4—12.9
16	24	195	67 451	56 333	52 849	50 258	6.4—12.9
16	25	203	64 753	54 080	50 735	48 248	6.4—12.9
16	26	211	62 263	52 000	48 783	46 392	6.4—12.9
16	27	219	59 957	50 074	46 977	44 674	6.4—12.9
16	28	228	57 816	48 286	45 299	43 078	6.4—12.9

WP29706,0000E75-19-27MAR23

Peanut (Virginia) Disk on 70 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.				
High-Range Input Sprocket				
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (H138722) 46-Hole Disk (cell-type)	
Driver	Driven	Average Seed Spacing (mm)	70 cm Rows	Recommended Speed Range in km/h
35	24	36	393 017	0—4.8
35	25	38	377 297	0—4.8
35	26	39	362 785	0—4.8
35	27	41	349 349	0—4.8
35	28	42	336 872	0—4.8
29	24	44	325 643	0—4.8
29	25	46	312 617	4.8—5.6
29	26	48	300 593	4.8—5.6
29	27	49	289 460	4.8—6.4
29	28	51	279 122	4.8—6.4
24	24	53	269 498	4.8—6.4
24	25	55	258 718	4.8—6.4
24	26	57	248 767	4.8—7.2
24	27	60	239 553	4.8—7.2
24	28	62	230 998	4.8—7.2
20	24	64	224 581	4.8—8.0
20	25	66	215 598	4.8—8.0
20	26	69	207 306	4.8—8.0
20	27	72	199 628	4.8—8.8
20	28	74	192 498	4.8—9.6

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (H138722) 46-Hole Disk (cell-type)	
Driver	Driven	Average Seed Spacing (mm)	70 cm Rows	Recommended Speed Range in km/h
16	24	80	179 665	4.8—9.6
16	25	83	172 478	4.8—10.4
16	26	86	165 845	4.8—10.4
16	27	89	159 702	4.8—11.2
16	28	93	153 999	4.8—12.0

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (H138722) 46-Hole Disk (cell-type)	
Driver	Driven	Average Seed Spacing (mm)	70 cm Rows	Recommended Speed Range in km/h
35	24	97	147 381	4.8—12.0
35	25	101	141 486	4.8—12.9
35	26	105	136 044	4.8—12.9
35	27	109	131 006	4.8—12.9
35	28	113	126 327	4.8—12.9
29	24	117	122 116	6.4—12.9
29	25	122	117 231	6.4—12.9
29	26	127	112 723	6.4—12.9
29	27	132	108 548	6.4—12.9
29	28	136	104 671	6.4—12.9
24	24	141	101 062	6.4—12.9
24	25	147	97 019	6.4—12.9
24	26	153	93 288	6.4—12.9
24	27	159	89 833	6.4—12.9
24	28	165	86 624	6.4—12.9
20	24	170	84 218	6.4—12.9
20	25	177	80 849	6.4—12.9
20	26	184	77 740	6.4—12.9
20	27	191	74 860	6.4—12.9
20	28	198	72 187	6.4—12.9
16	24	212	67 374	6.4—12.9
16	25	221	64 679	6.4—12.9
16	26	230	62 192	6.4—12.9
16	27	239	59 888	6.4—12.9
16	28	247	57 749	6.4—12.9

WP29706,0000E76-19-27MAR23

Peanut (Virginia) Disk on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (H138722) 46-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven		76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	36	361 990	302 321	283 621	269 718	0—4.8
35	25	38	347 510	290 228	272 276	258 929	0—4.8
35	26	39	334 144	279 066	261 804	248 970	0—4.8
35	27	41	321 769	268 730	252 107	239 749	0—4.8
35	28	42	310 277	259 132	243 103	231 187	0—4.8
29	24	44	299 934	250 495	235 000	223 480	0—4.8
29	25	46	287 937	240 475	225 600	214 541	4.8—5.6
29	26	48	276 862	231 226	216 923	206 290	4.8—5.6
29	27	49	266 608	222 662	208 889	198 649	4.8—6.4
29	28	51	257 086	214 710	201 429	191 555	4.8—6.4
24	24	53	248 221	207 306	194 483	184 949	4.8—6.4
24	25	55	238 293	199 014	186 703	177 551	4.8—6.4
24	26	57	229 127	191 359	179 523	170 722	4.8—7.2
24	27	60	220 641	184 272	172 874	164 399	4.8—7.2
24	28	62	212 761	177 691	166 700	158 528	4.8—7.2
20	24	64	206 851	172 755	162 069	154 124	4.8—8.0
20	25	66	198 577	165 845	155 586	147 959	4.8—8.0
20	26	69	190 940	159 466	149 602	142 269	4.8—8.0
20	27	72	183 868	153 560	144 061	136 999	4.8—8.8
20	28	74	177 301	148 076	138 916	132 107	4.8—9.6
16	24	80	165 481	138 204	129 655	123 300	4.8—9.6
16	25	83	158 862	132 676	124 469	118 368	4.8—10.4
16	26	86	152 752	127 573	119 682	113 815	4.8—10.4
16	27	89	147 094	122 848	115 249	109 600	4.8—11.2
16	28	93	141 841	118 460	111 133	105 685	4.8—12.0

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Average Seed Spacing (mm)	Approximate Seed Population per Hectare (H138722) 46-Hole Disk (cell-type)				Recommended Speed Range in km/h
Driver	Driven		76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	97	135 746	135 370	106 358	101 144	4.8—12.0
35	25	101	130 316	108 836	102 103	97 098	4.8—12.9
35	26	105	125 304	104 650	98 176	93 364	4.8—12.9
35	27	109	120 663	100 774	94 540	89 906	4.8—12.9
35	28	113	116 354	97 175	91 164	86 695	4.8—12.9
29	24	117	112 475	93 935	88 125	83 805	6.4—12.9
29	25	122	107 976	90 178	84 600	80 453	6.4—12.9
29	26	127	103 823	86 710	81 346	77 359	6.4—12.9
29	27	132	99 978	83 498	78 333	74 493	6.4—12.9
29	28	136	96 407	80 516	75 536	71 833	6.4—12.9
24	24	141	93 083	77 740	72 931	69 356	6.4—12.9
24	25	147	89 360	74 630	70 014	66 582	6.4—12.9
24	26	153	85 923	71 760	67 321	64 021	6.4—12.9

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (H138722) 46-Hole Disk (cell-type)					Recommended Speed Range in km/h
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
24	27	159	82 740	69 102	64 828	61 650	6.4—12.9
24	28	165	79 785	66 634	62 512	59 448	6.4—12.9
20	24	170	77 569	64 783	60 776	57 797	6.4—12.9
20	25	177	74 466	62 192	58 345	55 485	6.4—12.9
20	26	184	71 602	59 800	56 101	53 351	6.4—12.9
20	27	191	68 950	57 585	54 023	51 375	6.4—12.9
20	28	198	66 488	55 528	52 094	49 540	6.4—12.9
16	24	212	62 055	51 826	48 621	46 237	6.4—12.9
16	25	221	59 573	49 753	46 676	44 388	6.4—12.9
16	26	230	57 282	47 840	44 881	42 681	6.4—12.9
16	27	239	55 160	46 068	43 218	41 100	6.4—12.9
16	28	247	53 190	44 423	41 675	39 632	6.4—12.9

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Edible Bean Disk on 38 and 51 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.					
High-Range Input Sprocket					
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A52903, A52904, or A52878) 50-Hole ProMax Disk (flat-type)			
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	Recommended Speed Range in km/h
35	24	33	786 934	586 343	4.8—6.4
35	25	35	755 457	562 889	4.8—6.4
35	26	36	726 401	541 240	4.8—6.4
35	27	38	699 497	521 194	4.8—6.4
35	28	39	674 515	502 580	4.8—7.2
29	24	40	652 031	485 827	4.8—7.2
29	25	42	625 950	466 394	4.8—7.2
29	26	44	601 875	448 456	4.8—7.2
29	27	45	579 583	431 848	4.8—7.2
29	28	47	558 884	416 423	4.8—7.2
24	24	49	539 612	402 064	4.8—7.2
24	25	51	518 027	385 981	4.8—7.2
24	26	53	498 103	371 136	6.4—8.0
24	27	55	479 655	357 390	6.4—8.0
24	28	57	462 524	344 626	6.4—8.0
20	24	59	449 677	335 053	6.4—8.0
20	25	61	431 689	321 651	6.4—8.0
20	26	63	415 086	309 920	6.4—8.0
20	27	66	399 712	297 825	6.4—9.7
20	28	68	385 437	287 188	6.4—9.7
16	24	73	359 741	268 042	6.4—9.7
16	25	76	345 352	257 321	6.4—9.7
16	26	79	332 069	247 424	6.4—9.7

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A52903, A52904, or A52878) 50-Hole ProMax Disk (flat-type)			
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	Recommended Speed Range in km/h
16	27	82	319 770	238 260	6.4—9.7
16	28	85	308 350	229 751	6.4—9.7

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A52903, A52904, or A52878) 50-Hole ProMax Disk (flat-type)			
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	51 cm Rows	Recommended Speed Range in km/h
35	24	89	295 100	219 879	6.4—9.7
35	25	93	283 296	211 083	6.4—9.7
35	26	97	272 400	202 965	6.4—9.7
35	27	100	262 311	195 448	6.4—9.7
35	28	104	252 943	188 467	6.4—9.7
29	24	108	244 512	182 185	6.4—9.7
29	25	112	234 731	174 898	6.4—9.7
29	26	117	225 703	168 171	6.4—9.7
29	27	121	217 344	161 942	6.4—9.7
29	28	126	209 581	156 159	6.4—9.7
24	24	130	202 354	150 774	6.4—9.7
24	25	135	194 280	144 743	6.4—9.7
24	26	141	186 789	139 176	6.4—9.7
24	27	146	179 871	134 021	6.4—9.7
24	28	152	173 447	129 235	6.4—9.7
20	24	156	168 629	125 645	6.4—9.7
20	25	163	161 884	120 619	6.4—9.7
20	26	169	155 857	115 980	6.4—9.7
20	27	176	149 892	111 684	6.4—9.7
20	28	182	144 539	107 696	6.4—9.7
16	24	195	134 903	100 516	6.4—9.7
16	25	203	129 507	96 495	6.4—9.7
16	26	211	124 526	92 784	6.4—9.7
16	27	219	119 914	89 347	6.4—9.7
16	28	228	115 631	86 157	6.4—9.7

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Edible Bean Disk on 56 cm Rows

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare			
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Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A52903, A52904, or A52878) 50-Hole ProMax Disk (flat-type)	
Driver	Driven	Average Seeds per Meter	56 cm Rows	Recommended Speed Range in km/h
			(A52903, A52904, or A52878) 50-Hole ProMax Disk (flat-type)	
Driver	Driven	Average Seeds per Meter	56 cm Rows	Recommended Speed Range in km/h
35	24	30	533 991	4.8—6.4
35	25	29	512 631	4.8—6.4
35	26	28	492 915	4.8—6.4
35	27	27	474 659	4.8—6.4
35	28	26	457 706	4.8—7.2
29	24	25	442 450	4.8—7.2
29	25	24	424 752	4.8—7.2
29	26	23	408 415	4.8—7.2
29	27	22	393 289	4.8—7.2
29	28	21	379 242	4.8—7.2
24	24	21	366 165	4.8—7.2
24	25	20	351 519	4.8—7.2
24	26	19	337 999	6.4—8.0
24	27	18	325 480	6.4—8.0
24	28	18	313 856	6.4—8.0
20	24	17	305 138	6.4—8.0
20	25	16	292 932	6.4—8.0
20	26	16	281 666	6.4—8.0
20	27	15	271 233	6.4—9.7
20	28	15	261 547	6.4—9.7
16	24	14	244 110	6.4—9.7
16	25	13	234 346	6.4—9.7
16	26	13	225 332	6.4—9.7
16	27	12	216 987	6.4—9.7
16	28	12	209 237	6.4—9.7

Low-Range Input Sprocket

Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A52903, A52904, or A52878) 50-Hole ProMax Disk (flat-type)	
Driver	Driven	Average Seeds per Meter	56 cm Rows	Recommended Speed Range in km/h
35	24	11	200 247	6.4—9.7
35	25	11	192 237	6.4—9.7
35	26	10	184 843	6.4—9.7
35	27	10	177 997	6.4—9.7
35	28	10	171 640	6.4—9.7
29	24	9	165 919	6.4—9.7
29	25	9	159 282	6.4—9.7
29	26	9	153 156	6.4—9.7
29	27	8	147 483	6.4—9.7
29	28	8	142 216	6.4—9.7

Vacuum Seed Meter Rate Charts

Low-Range Input Sprocket				
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A52903, A52904, or A52878) 50-Hole ProMax Disk (flat-type)	
Driver	Driven	Average Seeds per Meter	56 cm Rows	Recommended Speed Range in km/h
24	24	8	137 312	6.4—9.7
24	25	7	131 819	6.4—9.7
24	26	7	126 749	6.4—9.7
24	27	7	122 055	6.4—9.7
24	28	7	117 696	6.4—9.7
20	24	6	114 427	6.4—9.7
20	25	6	109 850	6.4—9.7
20	26	6	105 625	6.4—9.7
20	27	6	101 713	6.4—9.7
20	28	5	98 080	6.4—9.7
16	24	5	91 541	6.4—9.7
16	25	5	87 880	6.4—9.7
16	26	5	84 500	6.4—9.7
16	27	5	81 370	6.4—9.7
16	28	4	78 464	6.4—9.7

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Edible Bean Disk on 76 to 102 cm Rows

Rates are approximate. Perform a rate check before planting. See the Vacuum Seed Meter Setup for the optimum configuration. See How to Use Rate Charts in this section for assistance with chart.							
High-Range Input Sprocket							
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare (A52903, A52904, or A52878) 50-Hole ProMax Disk (flat-type)				
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	33	393 467	328 610	308 283	293 171	4.8—6.4
35	25	35	377 728	315 465	295 952	281 445	4.8—6.4
35	26	36	363 200	303 332	284 569	270 620	4.8—6.4
35	27	38	349 748	292 098	274 030	260 597	4.8—7.2
35	28	39	337 257	281 666	264 243	251 290	4.8—7.2
29	24	40	326 015	272 277	255 435	242 913	4.8—7.2
29	25	42	312 975	261 386	245 217	233 197	4.8—8.0
29	26	44	300 937	251 332	235 786	224 228	4.8—8.0
29	27	45	289 792	242 024	227 053	215 923	4.8—8.9
29	28	47	279 442	233 380	218 944	208 212	4.8—8.9
24	24	49	269 806	225 332	211 394	201 032	4.8—8.9
24	25	51	259 014	216 319	202 939	192 991	4.8—9.7
24	26	53	249 052	207 999	195 133	185 568	6.4—9.7
24	27	55	239 827	200 295	187 906	178 695	6.4—10.5
24	28	57	231 262	193 142	181 195	172 313	6.4—10.5
20	24	59	224 838	187 777	176 162	167 527	6.4—11.3
20	25	61	215 845	180 266	169 115	160 825	6.4—11.3
20	26	63	207 543	173 333	162 611	154 640	6.4—11.3
20	27	66	199 856	166 913	156 588	148 912	6.4—12.9
20	28	68	192 719	160 952	150 996	143 594	6.4—12.9

Vacuum Seed Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See the Vacuum Seed Meter Setup for the optimum configuration.
See How to Use Rate Charts in this section for assistance with chart.

High-Range Input Sprocket

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A52903, A52904, or A52878) 50-Hole ProMax Disk (flat-type)					
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
16	24	73	179 871	150 222	140 930	134 021	6.4—11.3
16	25	76	172 676	144 213	135 292	128 660	6.4—11.3
16	26	79	166 034	138 666	130 089	123 712	6.4—11.3
16	27	82	159 885	133 530	125 271	119 130	6.4—12.9
16	28	85	154 175	128 761	120 797	114 875	6.4—12.9

Low-Range Input Sprocket

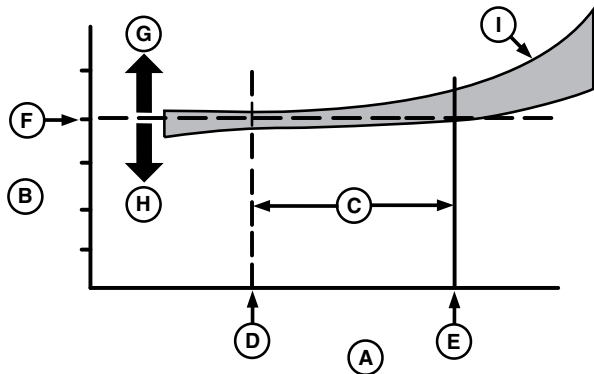
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare (A52903, A52904, or A52878) 50-Hole ProMax Disk (flat-type)					
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in km/h
35	24	89	147 550	123 229	115 606	109 939	6.4—11.3
35	25	93	141 648	118 300	110 982	105 542	6.4—11.3
35	26	97	136 200	113 750	106 713	101 482	6.4—11.3
35	27	100	131 156	109 537	102 761	97 724	6.4—12.9
35	28	104	126 472	105 625	99 091	94 234	6.4—12.9
29	24	108	122 256	102 104	95 788	91 093	6.4—11.3
29	25	112	117 366	98 020	91 957	87 449	6.4—11.3
29	26	117	112 852	94 250	88 420	84 085	6.4—11.3
29	27	121	108 672	90 759	85 145	80 971	6.4—12.9
29	28	126	104 791	87 517	82 104	78 079	6.4—12.9
24	24	130	101 177	84 500	79 273	75 387	6.4—11.3
24	25	135	97 130	81 120	76 102	72 371	6.4—11.3
24	26	141	93 394	78 000	73 175	69 588	6.4—11.3
24	27	146	89 935	75 111	70 465	67 011	6.4—12.9
24	28	152	86 723	72 428	67 948	64 617	6.4—12.9
20	24	156	84 314	70 416	66 061	62 822	6.4—11.3
20	25	163	80 942	67 600	63 418	60 310	6.4—11.3
20	26	169	77 829	65 000	60 979	57 990	6.4—11.3
20	27	176	74 946	62 592	58 721	55 842	6.4—12.9
20	28	182	72 269	60 357	56 623	53 848	6.4—12.9
16	24	195	67 451	56 333	52 849	50 258	6.4—11.3
16	25	203	64 753	54 080	50 735	48 248	6.4—11.3
16	26	211	62 263	52 000	48 783	46 392	6.4—11.3
16	27	219	59 957	50 074	46 977	44 674	6.4—12.9
16	28	228	57 816	48 286	45 299	43 078	6.4—12.9

WP29706,0000E7A-19-27MAR23

Finger Pick-Up and Radial Bean Meter Setup

Finger Pick-Up Metering Unit Operating Characteristics

IMPORTANT: The graph shows performance characteristics of the finger pick-up metering unit relative to operating speed (A). An increase in operating speed above a maximum speed (E) can cause overpopulation. Population (B) in the operating range (I) is shown as a gray band on the graph rather than a single line, since population can vary due to differences in seed size and shape.



A68478—UN—28JUL10

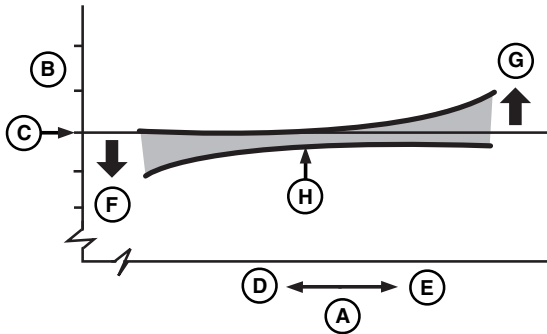
A—Operating Speed
B—Population
C—Recommended Operating Range
D—1/2 Maximum Speed
E—Maximum Speed
F—Target Population
G—Higher Than Target Population
H—Lower Than Target Population
I—Operating Range

The most accurate population is obtained when the machine is operated between one-half maximum speed (D) and maximum speed (E). Planting too fast can result in doubles and triples. Planting too slow can result in skips.

Maximum speeds, shown in planting rate charts, are for optimum conditions. Use slower speeds when planting in rough seedbeds to ensure satisfactory machine

performance. Poor depth control and erratic seed spacing can result from planting too fast for conditions.

See HOW TO USE PLANTING RATE CHARTS in Plateless Meter Rate Charts section for instructions on setting sprockets for target planting rate.



A68479—UN—28JUL10

A—Seed Size
B—Population
C—Target Population
D—Very Large Seed Size
E—Very Small Seed Size
F—Lower Than Target Population
G—Higher Than Target Population
H—Population Range

IMPORTANT: The chart illustrates how seed size affects population.

This meter provides consistent seed spacing and population control when planting corn. It also has good performance when planting confectionary (large) sunflower seeds.

The meter accommodates all normal sizes of U.S. seed corn (except popcorn).

Seedbed conditions, seed size, and operating characteristics of seed meter can influence meter accuracy. Rough seedbeds and fast planting speeds typically deteriorate the accuracy of seed placement.

CROP STAND = SEED SINGULATION + SEED PLACEMENT + AGRONOMIC FACTORS

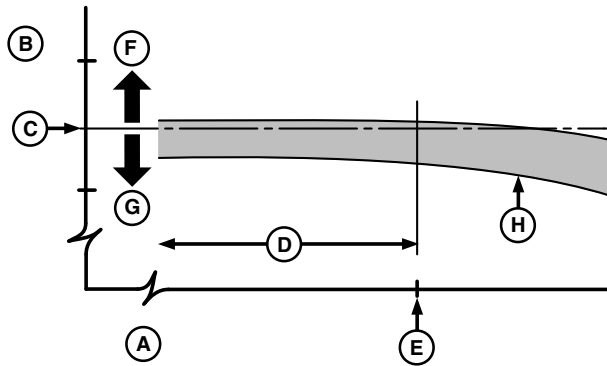
Seed Singulation = Seed Selection + Field Conditions + Maintenance

Seed Placement = Row Unit Maintenance + Speed + Field Conditions + Planter Attachments + Observation & Adjustment

Agronomic Factors = Seed Germination + Soil Temperature + Moisture + Nutrients + Pest Control + Weather

OUO6074,0000BDA-19-28JUL10

Radial Bean Meter Operating Characteristics



A68480—UN—28JUL10

- A—Operating Speed
- B—Population
- C—Target Rate
- D—Recommended Operating Range
- E—Maximum Speed
- F—Higher Than Target Rate
- G—Lower Than Target Rate
- H—Operating Range

IMPORTANT: The graph shows operating characteristics of radial bean metering units.

The graph shows performance characteristics of the radial bean metering unit relative to operating speed (A). An increase in operating speed above a maximum speed can affect meter performance. Population (B) in the operating range (H) is shown as a gray band on the graph rather than a single line, since population can vary due to differences in seed size and shape.

IMPORTANT: Avoid planting miscalculations. Perform field checks to determine if the target rate is achieved.

IMPORTANT: Replace hopper lids after hoppers have been filled. If lids are not installed, dust and debris can accumulate in seed metering mechanism, causing excessive wear.

Best results are obtained when machine is operated under maximum speed.

At higher speeds, large beans can result in lower rates than listed in the chart. Small beans can result in higher

rates at lower planting speeds. Actual rates **MUST** be checked in the field using target speed. Adjust machine settings accordingly.

The radial bean meter performs best with uniform seed sizes. Mixing seed sizes can cause high drive-torque, increased wear, or meter damage. If mixed seed must be used, always use settings for the smallest seed size.

IMPORTANT: If farmer-applied treatments are used, follow chemical manufacturers recommendations carefully. Dry powder or fast drying liquid treatments are recommended. **HIGH-OIL-CONTENT TREATMENTS ARE NOT RECOMMENDED.**

Chemical reaction between farmer-applied seed treatments and treatments commercially applied to seed can cause seed treatments to become sticky. Certain temperature and humidity levels can further complicate material compatibility. Treatments which adhere to radial bean meter components can cause reduced population and spacing control.

Check with the chemical and seed supplier for treatment compatibility.

NOTE: Using liquid hopper-applied seed treatments, which leave a wet coating on seed, is not recommended.

Metering rates can vary depending upon surface texture of beans and whether beans are coated with seed treatment. These factors, in combination with variations in seed size, can result in rate variations from those given in charts.

Increasing the amount of graphite per 35.2 L (1 bu.) of seed added into a hopper can improve metering rate of rough-textured or treated seed.

To determine if a radial bean meter is delivering the correct rate, check population in the field. See Check Seed Population section.

After determining correct sprocket combinations for the desired planting rate, plant at a speed no greater than maximum speed shown for the sprocket combination used. This can help ensure accurate planting rates.

CROP STAND = SEED SINGULATION + SEED PLACEMENT + AGRONOMIC FACTORS

Seed Singulation = Seed Selection + Field Conditions + Maintenance

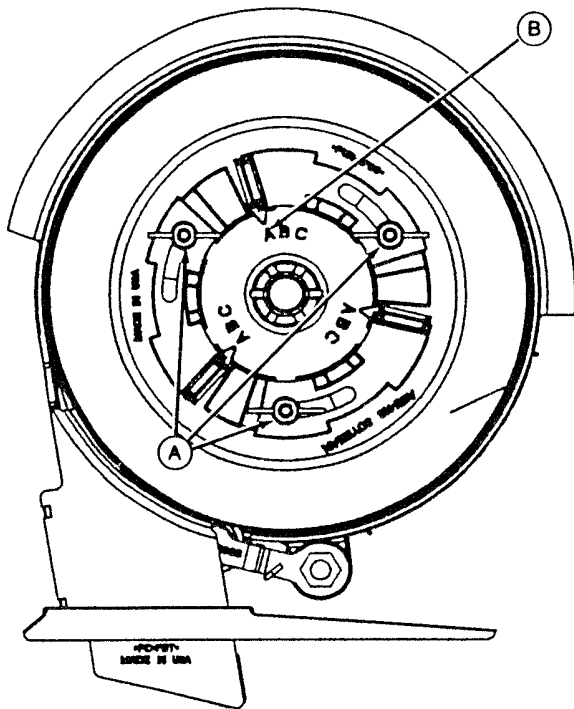
Seed Placement = Row Unit Maintenance + Speed + Field Conditions + Planter Attachments + Observation & Adjustment

Agonomic Factors = Seed Germination + Soil Temperature + Moisture + Nutrients + Pest Control + Weather

Setting Radial Bean Meter

IMPORTANT: Meter cannot be adjusted when bowl is full. Seed inside bowl prevents bowl cover from moving in. Hopper/meter should be placed on its side and seed shaken down to create room for bowl cover.

Bowl should turn with minimal resistance when cells are filled with seed. If bowl is difficult to turn, soybeans may be passing beneath bowl. Reduce setting by one position (C to B, or B to A), and check population in the field. See Checking Seed Population section.



A—Nut
B—Letter Indicator

A40338—UN—17OCT96

Loosen nuts (A) and align indicator with the corresponding letter (B) listed according to soybean size.

Position	Seed Size in Seeds/kg	Seed Size in Seeds/lb	Description
A	8158 to 9923	3700 to 4500	Small
B	6174 to 8159	2800 to 3700	Medium Small
C	4410 to 6174	2000 to 2800	Large

Settings above are approximate for a given seed size.

Operator should check population, and adjust setting to get best population control. Selecting next larger seed size will result in a slightly greater population. Selecting next smaller seed size will result in a slightly lower population.

NOTE: If a combination of seed sizes exists, meter should be set for smaller instead of larger sized seed. This will prevent damage to seed meter and hub caused by seeds wedged between bowl and meter housing.

For non-commercial or "bin run" seed, use the following method to determine proper A-B-C setting.

Remove meter from bottom of hopper. Fill meter with seed and spin meter for one full revolution. Scribe a mark on meter bowl and meter housing. Turn meter five full revolutions until scribed marks line up again. Count seeds that have been metered.

Setting Meter for "Bin Run" Seed	
Correct A-B-C Setting	270 to 290 Seeds
Low A-B-C Setting	269 Seeds or Below (Move to Next Highest Setting)
High A-B-C Setting	291 Seeds or Above (Move to Next Lowest Setting)

Addition of a 15 mL (1 Tbls.) of graphite per 58 L (1.6 bu) hopper is recommended for extending life of meter.

Addition of 120 mL (1/2 cup) of talc over top of each hopper full of seeds may improve population during humid planting conditions.

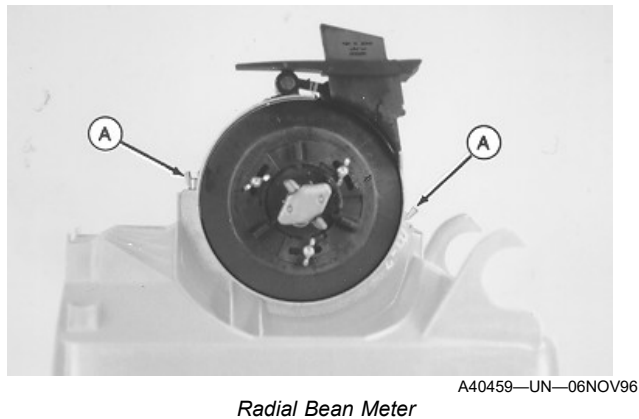
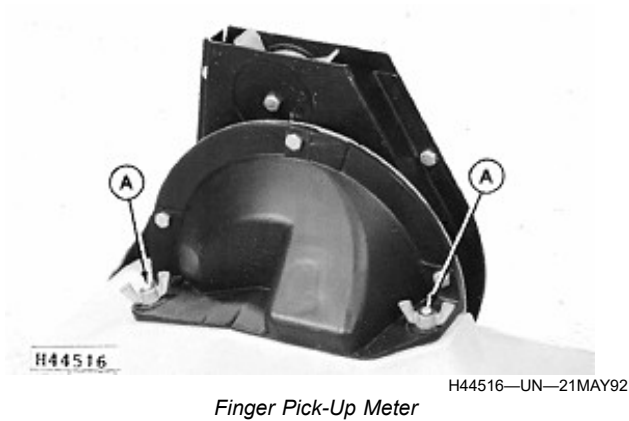
AG,OUO6074,1268-19-12JAN06

Plateless Meters

IMPORTANT: Avoid excessive wear. Close lids on seed hoppers when planting. If lids are not closed, dust and debris can accumulate in seed meter.

IMPORTANT: Always remove seed from hopper and meter after use.

Store meter assemblies in a clean place while not in use.



A—Wing Nuts

1. Meter assemblies are interchangeable.
2. Replace meters as follows:
 - a. Empty and remove seed hopper from row unit.
 - b. Turn hopper upside down and remove two wing nuts (A).
 - c. Pull meter assembly straight up.
 - d. Position desired meter on hopper and attach with wing nuts (A).
- Equip machine with finger pick-up meters to plant all sizes (or mixed sizes) of corn and sunflower seeds. Performance in sunflowers is optimized with use of sunflower finger assembly.
- Equip machine with radial bean meters to plant soybeans.

OUO6045,00006CF-19-11JUN09

Finger Pick-Up Meter Rate Charts

How to Use Rate Charts

IMPORTANT: Actual planting rate must be checked in the field. See Check Seed Population section.

NOTE: All rate charts are based on typical drive wheel slippage. Crop residue, unit down force, tire pressure, and soil conditions affect drive wheel slippage.

1. Locate rate chart for crop and row spacing.
2. Locate row spacing column.
3. Scan down the column to find target population.
4. Determine if target population is in the High Range or Low Range table. The input sprocket on seed transmission must be set to this range.
5. Scan left of target population to find number of teeth on Driver and Driven sprockets. The Planting Rate Sprockets must be set to this combination.
6. Scan right of target population to find recommended speed range. The top of the speed range is for optimum field conditions. If planting in rough conditions, reduce speed and increase unit down force.
7. See Seed Transmission section for this planter to set transmission.

OJ06074,0000065-19-10MAR09

Corn—38 cm to 51 cm Rows

Rates are approximate. Perform a rate check before planting.
See Finger Pick-Up and Radial Bean Meter Setup section to configure the meter.
See HOW TO USE RATE CHARTS in this section for assistance with chart.

HIGH RANGE INPUT SPROCKET

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare			
Driver	Driven	Average Seeds per Meter	38 cm Rows	51 cm Rows	Recommended Speed Range in Km/ H
35	24	11	278 326	207 340	3.2 - 4.8
35	25	10	267 193	199 085	3.2 - 4.8
35	26	10	256 916	191 428	3.2 - 4.8
35	27	9	247 401	184 330	3.2 - 6.4
35	28	9	238 565	177 754	3.2 - 6.4
29	24	9	230 613	171 829	4.8 - 6.4
29	25	8	221 389	164 956	4.8 - 6.4
29	26	8	212 874	158 612	4.8 - 6.4
29	27	8	204 989	152 737	4.8 - 6.4
29	28	8	197 668	147 282	4.8 - 6.4
24	24	7	190 852	142 204	4.8 - 8.0
24	25	7	183 218	136 515	4.8 - 8.0
24	26	7	176 171	131 265	4.8 - 8.0
24	27	6	169 646	126 403	4.8 - 8.0
24	28	6	163 588	121 889	4.8 - 8.0
20	24	6	159 043	118 503	6.4 - 9.7
20	25	6	152 682	113 763	6.4 - 9.7
20	26	6	146 809	109 387	6.4 - 9.7
20	27	5	141 372	105 336	6.4 - 11.3
20	28	5	136 323	101 574	6.4 - 11.3
16	24	5	127 235	94 802	6.4 - 11.3
16	25	5	122 145	91 010	8.0 - 12.9
16	26	4	117 447	87 510	8.0 - 12.9
16	27	4	113 098	84 269	8.0 - 12.9
16	28	4	109 058	81 259	8.0 - 12.9

LOW RANGE INPUT SPROCKET

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare			
Driver	Driven	Average Seeds per Meter	38 cm Rows	51 cm Rows	Recommended Speed Range in Km/ H
35	24	4	104 372	77 768	8.0 - 12.9
35	25	4	100 197	74 657	8.0 - 12.9
35	26	4	96 344	71 785	8.0 - 12.9
35	27	4	92 775	69 127	9.7 - 12.9
35	28	3	89 462	66 658	9.7 - 12.9
29	24	3	86 480	64 436	9.7 - 12.9
29	25	3	83 021	61 859	9.7 - 12.9
29	26	3	79 828	59 479	9.7 - 12.9
29	27	3	76 871	57 276	11.3 - 12.9
29	28	3	74 126	55 231	11.3 - 12.9
24	24	3	71 570	53 328	11.3 - 12.9

Finger Pick-Up Meter Rate Charts

LOW RANGE INPUT SPROCKET					
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare		
Driver	Driven	Average Seeds per Meter	38 cm Rows	51 cm Rows	Recommended Speed Range in Km/ H
24	25	3	68 707	51 193	11.3 - 12.9
24	26	3	66 064	49 224	12.9
24	27	2	63 617	47 401	12.9
24	28	2	61 345	45 708	12.9
20	24	2	59 641	44 439	12.9
20	25	2	57 256	42 661	12.9
20	26	2	55 054	41 020	12.9
20	27	2	53 014	39 509	12.9
20	28	2	51 121	38 090	12.9
16	24	2	47 713	35 551	12.9
16	25	2	45 805	34 129	12.9
16	26	2	44 043	32 816	12.9
16	27	2	42 412	31 601	12.9
16	28	2	40 897	30 472	12.9

OUO6074,000008D-19-07APR09

Corn—70 cm Rows

Rates are approximate. Perform a rate check before planting. See Finger Pick-Up and Radial Bean Meter Setup section to configure the meter. See HOW TO USE RATE CHARTS in this section for assistance with chart.				
HIGH RANGE INPUT SPROCKET				
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare	
Driver	Driven	Average Seed Spacing (mm)	70 cm Rows	Recommended Speed Range in Km/H
35	24	95	151 091	3 - 5
35	25	98	145 048	3 - 5
35	26	102	139 469	3 - 5
35	27	106	134 303	3 - 6.5
35	28	110	129 507	3 - 6.5
29	24	114	125 190	3 - 6.5
29	25	119	120 182	3 - 6.5
29	26	124	115 360	3 - 6.5
29	27	128	111 280	3 - 6.5
29	28	133	107 306	3 - 6.5
24	24	138	103 605	3 - 6.5
24	25	144	99 481	3 - 6.5
24	26	149	95 836	3 - 6.5
24	27	155	92 094	3 - 6.5
24	28	161	88 805	3 - 6.5
20	24	165	86 338	6.5 - 10
20	25	172	82 884	6.5 - 10
20	26	179	79 697	6.5 - 10
20	27	188	76 745	6.5 - 11
20	28	193	74 004	6.5 - 11
16	24	207	69 070	6.5 - 11

Finger Pick-Up Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See Finger Pick-Up and Radial Bean Meter Setup section to configure the meter.
See HOW TO USE RATE CHARTS in this section for assistance with chart.

HIGH RANGE INPUT SPROCKET

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare		
Driver	Driven	Average Seed Spacing (mm)	70 cm Rows	Recommended Speed Range in Km/H
16	25	215	66 308	8 - 13
16	26	224	62 757	8 - 13
16	27	233	61 396	8 - 13
16	28	241	59 203	8 - 13

LOW RANGE INPUT SPROCKET

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare		
Driver	Driven	Average Seed Spacing (mm)	70 cm Rows	Recommended Speed Range in Km/H
35	24	252	56 659	8 - 13
35	25	263	54 393	8 - 13
35	26	273	52 301	8 - 13
35	27	284	50 364	10 - 13
35	28	894	48 565	10 - 13
29	24	304	46 946	10 - 13
29	25	317	45 068	10 - 13
29	26	330	43 335	10 - 13
29	27	342	41 730	11- 13
29	28	355	40 240	11- 13
24	24	368	38 852	13
24	25	383	37 298	13
24	26	398	35 863	13
24	27	414	34 535	13
24	28	429	33 302	13
20	24	441	32 377	13
20	25	450	31 082	13
20	26	478	29 886	13
20	27	495	28 779	13
20	28	515	27 751	13
16	24	552	25 901	13
16	25	575	24 865	13
16	26	598	23 909	13
16	27	620	23 023	13
16	28	643	22 201	13

OUO6074,000008F-19-23MAR09

Corn—76 cm to 102 cm Rows

Rates are approximate. Perform a rate check before planting. See Finger Pick-Up and Radial Bean Meter Setup section to configure the meter. See HOW TO USE RATE CHARTS in this section for assistance with chart.							
HIGH RANGE INPUT SPROCKET							
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare				
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in Km/H
35	24	95	138 798	115 665	109 577	104 098	3.2 - 4.8
35	25	98	133 246	111 038	105 194	99 934	3.2 - 4.8
35	26	102	128 121	106 768	101 148	96 091	3.2 - 4.8
35	27	108	123 376	102 813	97 402	92 532	3.2 - 4.8
35	28	111	118 970	99 141	93 923	89 227	3.2 - 4.8
29	24	114	115 004	95 837	90 793	86 253	4.8 - 6.4
29	25	117	110 404	92 003	87 161	82 803	4.8 - 6.4
29	26	124	106 157	88 465	83 808	79 618	4.8 - 6.4
29	27	127	102 226	85 188	80 704	76 669	4.8 - 6.4
29	28	133	98 575	82 146	77 822	73 931	4.8 - 6.4
24	24	140	95 176	79 313	75 139	71 382	4.8 - 8.0
24	25	143	91 369	76 141	72 133	68 526	4.8 - 8.0
24	26	149	87 854	73 212	69 359	65 891	4.8 - 8.0
24	27	156	84 601	70 500	66 790	63 450	4.8 - 8.0
24	28	162	81 579	67 983	64 405	61 184	4.8 - 8.0
20	24	165	79 313	66 094	62 616	59 485	4.8 - 9.6
20	25	171	76 141	63 450	60 111	57 105	6.4 - 9.6
20	26	178	73 212	61 010	57 799	54 909	6.4 - 9.6
20	27	187	70 500	58 750	55 658	52 875	6.4 - 9.6
20	28	194	67 983	56 652	53 670	50 987	6.4 - 11.2
16	24	206	63 450	52 875	50 092	47 588	6.4 - 11.2
16	25	216	60 912	50 760	48 089	45 684	6.4 - 11.2
16	26	226	58 570	48 808	46 239	43 927	8.0 - 12.8
16	27	232	56 400	47 000	44 527	42 300	8.0 - 12.8
16	28	241	54 386	45 322	42 936	40 790	8.0 - 12.8

LOW RANGE INPUT SPROCKET							
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare				
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in Km/H
35	24	252	52 049	43 374	41 091	39 037	8.0 - 12.8
35	25	263	49 967	41 639	39 448	37 475	8.0 - 12.8
35	26	273	48 045	40 038	37 931	36 034	8.0 - 12.8
35	27	284	46 266	38 555	36 526	34 699	9.6 - 12.8
35	28	294	44 614	37 178	35 221	33 460	9.6 - 12.8
29	24	304	43 126	35 939	33 047	32 345	9.6 - 12.8
29	25	317	41 401	34 501	32 685	31 051	9.6 - 12.8
29	26	330	39 809	33 174	31 428	29 857	9.6 - 12.8
29	27	342	38 335	31 946	30 264	28 751	11.2 - 12.8
29	28	356	36 966	30 805	29 183	27 724	11.2 - 12.8
24	24	368	35 691	29 742	28 177	26 768	11.2 - 12.8
24	25	383	34 263	28 553	27 050	25 697	11.2 - 12.8
24	26	398	32 945	27 465	26 010	24 709	12.8

Finger Pick-Up Meter Rate Charts

LOW RANGE INPUT SPROCKET							
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare				
Driver	Driven	Average Seed Spacing (mm)	76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in Km/H
24	27	414	31 725	26 438	25 046	23 794	12.8
24	28	429	30 592	25 493	24 152	22 944	12.8
20	24	441	29 742	24 785	23 481	22 307	12.8

OUO6074,000008E-19-23MAR09

Radial Bean Meter Rate Charts

How to Use Rate Charts

IMPORTANT: Actual planting rate must be checked in the field. See Check Seed Population section.

NOTE: All rate charts are based on typical drive wheel slippage. Crop residue, unit down force, tire pressure, and soil conditions affect drive wheel slippage.

1. Locate rate chart for crop and row spacing.
2. Locate row spacing column.
3. Scan down the column to find target population.
4. Determine if target population is in the High Range or Low Range table. The input sprocket on seed transmission must be set to this range.
5. Scan left of target population to find number of teeth on Driver and Driven sprockets. The Planting Rate Sprockets must be set to this combination.
6. Scan right of target population to find recommended speed range. The top of the speed range is for optimum field conditions. If planting in rough conditions, reduce speed and increase unit down force.
7. See Seed Transmission section for this planter to set transmission.

OUO6074,0000065-19-10MAR09

Soybeans—38 cm to 48 cm Rows

Rates are approximate. Perform a rate check before planting.
See Finger Pick-Up and Radial Bean Meter Setup section to configure the meter.
See HOW TO USE RATE CHARTS in this section for assistance with chart.

HIGH RANGE INPUT SPROCKET						
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare				Recommended Speed Range in Km/H
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	46 cm Rows	48 cm Rows	
35	24	20	1 294 893	1 079 079	1 022 284	3.2 - 9.7
35	25	21	1 243 097	1 035 916	981 393	3.2 - 9.7
35	26	22	1 195 287	996 072	943 646	3.2 - 9.7
35	27	23	1 151 018	959 180	908 698	3.2 - 9.7
35	28	24	1 109 909	924 924	876 245	3.2 - 9.7
29	24	24	1 072 911	894 093	847 035	3.2 - 11.3
29	25	25	1 029 995	858 330	813 154	3.2 - 11.3
29	26	26	990 381	825 316	781 879	3.2 - 11.3
29	27	27	953 699	794 750	752 920	3.2 - 11.3
29	28	28	919 638	766 364	726 032	3.2 - 12.9
24	24	29	887 928	739 940	700 996	3.2 - 12.9
24	25	31	852 409	710 342	672 956	3.2 - 12.9
24	26	32	819 625	683 022	647 073	3.2 - 12.9
24	27	33	789 269	657 724	623 107	3.2 - 12.9
24	28	35	761 081	634 234	600 852	3.2 - 12.9
20	24	36	739 940	616 616	584 162	3.2 - 12.9
20	25	37	710 342	591 950	560 796	3.2 - 12.9
20	26	38	683 022	569 184	539 228	3.2 - 12.9
20	27	40	657 724	548 103	519 256	3.2 - 12.9
20	28	41	634 234	528 528	500 711	3.2 - 12.9
16	24	44	591 950	493 294	467 329	3.2 - 12.9
16	25	46	568 273	473 561	448 636	3.2 - 12.9
16	26	48	546 416	455 347	431 381	3.2 - 12.9
16	27	50	526 179	438 482	415 405	3.2 - 12.9
16	28	52	507 387	422 822	400 570	3.2 - 12.9

LOW RANGE INPUT SPROCKET						
Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare				Recommended Speed Range in Km/H
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	46 cm Rows	48 cm Rows	
35	24	54	486 585	404 655	383 356	3.2 - 12.9
35	25	56	466 161	388 469	368 023	3.2 - 12.9
35	26	58	448 233	373 528	353 867	3.2 - 12.9
35	27	61	431 630	359 694	340 761	3.2 - 12.9
35	28	63	416 215	346 393	328 592	3.2 - 12.9
29	24	65	402 341	335 285	317 640	3.2 - 12.9
29	25	68	386 249	321 873	304 934	3.2 - 12.9
29	26	71	371 392	309 493	293 204	3.2 - 12.9
29	27	73	357 636	298 030	282 345	3.2 - 12.9
29	28	76	344 864	287 387	272 261	3.2 - 12.9
24	24	79	332 973	277 477	262 872	3.2 - 12.9
24	25	82	319 653	266 377	252 357	3.2 - 12.9
24	26	85	307 359	256 132	242 653	3.2 - 12.9

Radial Bean Meter Rate Charts

LOW RANGE INPUT SPROCKET						
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare			
Driver	Driven	Average Seed Spacing (mm)	38 cm Rows	46 cm Rows	48 cm Rows	Recommended Speed Range in Km/H
24	27	89	295 975	246 647	233 664	3.2 - 12.9
24	28	92	285 406	237 839	225 321	3.2 - 12.9
20	24	94	277 477	231 232	219 062	3.2 - 12.9
20	25	99	266 377	221 981	210 298	3.2 - 12.9
20	26	102	256 132	213 445	202 209	3.2 - 12.9
20	27	106	246 647	205 539	194 720	3.2 - 12.9
20	28	110	237 839	198 198	187 767	3.2 - 12.9
16	24	118	221 981	184 986	175 249	3.2 - 12.9
16	25	123	213 102	177 586	168 239	3.2 - 12.9
16	26	128	204 906	170 756	161 768	3.2 - 12.9
16	27	133	197 316	164 430	155 775	3.2 - 12.9
16	28	138	190 269	158 559	150 213	3.2 - 12.9

OUO6074.0000091-19-07APR09

Soybeans—51 cm to 76 cm Rows

Rates are approximate. Perform a rate check before planting. See Finger Pick-Up and Radial Bean Meter Setup section to configure the meter. See HOW TO USE RATE CHARTS in this section for assistance with chart.						
HIGH RANGE INPUT SPROCKET						
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare			
Driver	Driven	Average Seed Spacing (mm)	51 cm Rows	56 cm Rows	76 cm Rows	Recommended Speed Range in Km/H
35	24	20	971 169	882 882	647 446	3 - 10
35	25	21	932 324	847 566	621 548	3 - 10
35	26	22	896 464	814 969	597 644	3 - 10
35	27	23	863 263	784 783	575 507	3 - 10
35	28	24	832 432	756 756	554 955	3 - 10
29	24	24	804 684	731 530	536 457	3 - 11
29	25	25	772 497	702 270	514 997	3 - 11
29	26	26	742 786	675 258	495 191	3 - 11
29	27	27	715 275	650 250	476 851	3 - 11
29	28	28	689 730	627 027	469 820	3 - 13
24	24	29	665 944	605 404	443 963	3 - 13
24	25	31	639 308	581 189	426 206	3 - 13
24	26	32	614 719	558 835	409 813	3 - 13
24	27	33	591 950	538 136	394 634	3 - 13
24	28	35	570 810	518 917	380 541	3 - 13
20	24	36	554 955	504 505	369 969	3 - 13
20	25	37	532 757	484 325	355 171	3 - 13
20	26	38	512 266	465 696	341 510	3 - 13
20	27	40	493 294	448 448	328 861	3 - 13
20	28	41	475 675	432 433	317 116	3 - 13
16	24	44	443 963	403 603	295 975	3 - 13
16	25	46	426 206	387 459	284 136	3 - 13
16	26	48	409 813	372 558	273 209	3 - 13
16	27	50	394 634	358 758	263 090	3 - 13

Radial Bean Meter Rate Charts

Rates are approximate. Perform a rate check before planting.
See Finger Pick-Up and Radial Bean Meter Setup section to configure the meter.
See HOW TO USE RATE CHARTS in this section for assistance with chart.

HIGH RANGE INPUT SPROCKET

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare				Recommended Speed Range in Km/H
Driver	Driven	Average Seed Spacing (mm)	51 cm Rows	56 cm Rows	76 cm Rows	
16	28	52	380 541	345 946	253 694	3 - 13

LOW RANGE INPUT SPROCKET

Planting Rate Sprockets Number of Teeth		Approximate Seed Population per Hectare				Recommended Speed Range in Km/H
Driver	Driven	Average Seed Spacing (mm)	51 cm Rows	56 cm Rows	76 cm Rows	
35	24	54	364 189	331 081	242 794	3 - 13
35	25	56	349 621	317 837	233 082	3 - 13
35	26	58	336 174	305 613	224 115	3 - 13
35	27	61	323 723	294 293	215 816	3 - 13
35	28	63	312 161	283 783	208 107	3 - 13
29	24	65	301 757	274 323	201 172	3 - 13
29	25	68	289 687	263 351	193 124	3 - 13
29	26	71	278 544	253 222	185 697	3 - 13
29	27	73	268 227	243 843	178 818	3 - 13
29	28	76	258 649	235 134	172 433	3 - 13
24	24	79	249 729	227 028	166 485	3 - 13
24	25	82	239 741	217 945	159 826	3 - 13
24	26	85	230 520	209 562	153 678	3 - 13
24	27	89	221 981	201 801	147 988	3 - 13
24	28	92	214 053	194 594	142 702	3 - 13
20	24	94	208 107	189 190	138 737	3 - 13
20	25	99	199 783	181 622	133 190	3 - 13
20	26	102	192 099	174 636	128 067	3 - 13
20	27	106	184 986	168 167	123 322	3 - 13
20	28	110	178 378	162 163	118 918	3 - 13
16	24	118	166 485	151 352	110 992	3 - 13
16	25	123	159 826	145 298	106 551	3 - 13
16	26	128	153 678	139 708	102 463	3 - 13
16	27	133	147 988	134 533	98 659	3 - 13
16	28	138	142 702	129 729	95 135	3 - 13

OUC6074,0000092-19-20MAR09

Soybeans—91 cm to 102 cm Rows

Rates are approximate. Perform a rate check before planting. See Finger Pick-Up and Radial Bean Meter Setup section to configure the meter. See HOW TO USE RATE CHARTS in this section for assistance with chart.						
HIGH RANGE INPUT SPROCKET						
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare			
Driver	Driven	Average Seed Spacing (mm)	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in Km/H
35	24	20	539 539	511 142	485 585	3 - 10
35	25	21	517 957	490 898	466 161	3 - 10
35	26	22	498 036	471 824	448 233	3 - 10
35	27	23	479 590	454 349	431 630	3 - 10
35	28	24	462 463	438 121	418 215	3 - 10
29	24	24	447 048	423 519	402 341	3 - 11
29	25	25	429 165	406 577	386 249	3 - 11
29	26	26	412 658	390 939	371 392	3 - 11
29	27	27	397 374	376 460	367 636	3 - 11
29	28	28	383 183	363 016	344 864	3 - 13
24	24	29	369 960	350 498	332 973	3 - 13
24	25	31	355 171	336 478	319 653	3 - 13
24	26	32	341 510	323 535	307 560	3 - 13
24	27	33	328 851	311 553	295 975	3 - 13
24	28	35	317 116	300 426	285 405	3 - 13
20	24	36	308 308	292 082	277 477	3 - 13
20	25	37	295 975	280 397	268 377	3 - 13
20	26	38	284 591	269 613	256 132	3 - 13
20	27	40	274 051	259 627	246 647	3 - 13
20	28	41	264 263	250 354	237 839	3 - 13
16	24	44	248 647	233 664	221 981	3 - 13
16	25	46	236 782	224 318	213 102	3 - 13
16	26	48	227 675	215 690	204 908	3 - 13
16	27	50	219 242	207 702	197 316	3 - 13
16	28	52	211 412	200 285	190 268	3 - 13

LOW RANGE INPUT SPROCKET						
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare			
Driver	Driven	Average Seed Spacing (mm)	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in Km/H
35	24	20	202 328	191 679	182 093	3 - 10
35	25	21	194 233	184 010	174 812	3 - 10
35	26	22	186 764	176 934	168 086	3 - 10
35	27	23	179 949	170 381	161 862	3 - 10
35	28	24	173 424	164 285	156 082	3 - 10
29	24	24	167 641	158 819	150 877	3 - 11
29	25	25	160 838	152 466	144 843	3 - 11
29	26	26	154 748	146 602	139 273	3 - 11
29	27	27	149 015	141 173	134 114	3 - 11
29	28	28	143 695	136 132	129 324	3 - 13
24	24	29	138 737	131 436	124 866	3 - 13
24	25	31	133 190	126 180	119 869	3 - 13
24	26	32	128 067	121 326	115 260	3 - 13

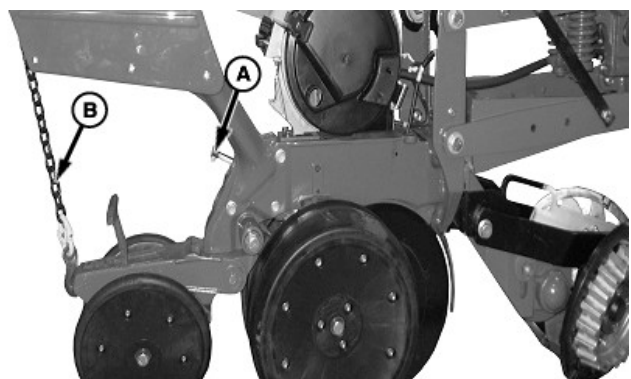
Radial Bean Meter Rate Charts

LOW RANGE INPUT SPROCKET						
Planting Rate Sprockets Number of Teeth			Approximate Seed Population per Hectare			
Driver	Driven	Average Seed Spacing (mm)	91 cm Rows	97 cm Rows	102 cm Rows	Recommended Speed Range in Km/H
24	27	33	123 322	116 833	110 992	3 - 13
24	28	35	118 918	112 659	107 028	3 - 13
20	24	36	115 616	109 530	104 054	3 - 13
20	25	37	110 992	105 150	99 892	3 - 13
20	26	38	106 721	101 105	96 051	3 - 13
20	27	40	102 769	97 360	92 492	3 - 13
20	28	41	99 099	93 882	89 189	3 - 13
16	24	44	92 492	87 623	83 244	3 - 13
16	25	46	88 792	84 116	79 514	3 - 13
16	26	48	85 378	80 885	75 839	3 - 13
16	27	50	82 216	77 889	73 994	3 - 13
16	28	52	79 280	75 108	71 351	3 - 13

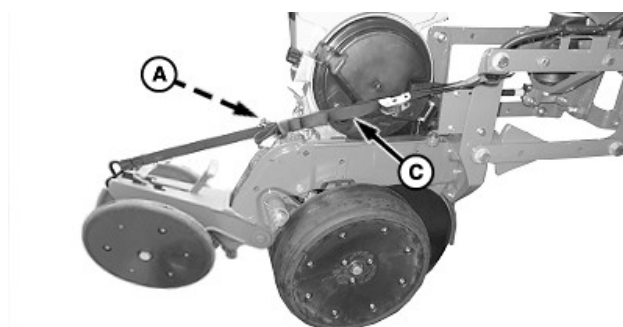
OUO6074,0000093-19-23MAR09

Check Seed Population

Check the Seed Population



A78826—UN—04OCT13



A78827—UN—04OCT13

A—Depth Handle
B—Chain
C—Ratchet Strap

NOTE: Disregard the seed spacing when planting at a shallow depth with the closing wheels raised. Seeds roll or bounce under these conditions, which affects seed spacing.

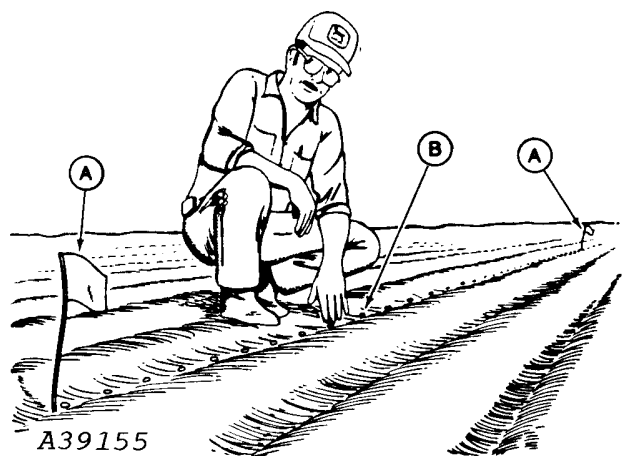
1. Set the depth handle (A) two settings from the minimum.
2. Attach a chain (B) or a ratchet strap (C) to one or more closing wheels so the seed furrow remains open.
3. Plant a short distance and verify that the seeds are visible in the furrow. Adjust the depth handle as needed.
4. Plant approximately 91 m (100 yd) at the target ground speed.
5. Consult the following table. Determine what distance equals 1/1000 of a hectare, 1/1000 of an acre, or 1/200 of an acre for the row width.

	Row Width (in)								
	15	18	19	20	22	30	36	38	40
Fraction of an Acre	Distance (ft) to Count for Population Check								
1/1000 ^a	34 ft 10 in	24 ft	27 ft 7 in	26 ft 1 in	23 ft 10 in	17 ft 5 in	14 ft 6 in	13 ft 10 in	13 ft 1 in
1/200 ^b	174 ft	145 ft	138 ft	131 ft	119 ft	87 ft	72.5 ft	69 ft	66 ft
Distance Calculation for Row Width (in) Not Shown									
1/1000	$(522\,722 \div \text{Row Width}) \div 1000 = \text{Feet to Count}$								
1/200	$(522\,722 \div \text{Row Width}) \div 200 = \text{Feet to Count}$								

^aUsed when the population is 100 000 seeds/acre or more.

^bUsed when the population is less than 100 000 seeds/acre.

	Row Width (cm)										
	38	46	48	51	56	70	76	80	91	97	101
Fraction of a Hectare	Distance (m) to Count for Population Check										
1/1000	26.24	21.88	20.72	19.68	17.90	14.29	13.12	12.5	10.94	10.36	9.84
Distance Calculation for Row Width (cm) Not Shown											
1/1000	$(1\,000\,000 \div \text{Row Width}) \div 1000 = \text{Meters to Count}$										



A39155—UN—13FEB96

A—Flag
B—Seeds

6. Mark the distance with flags (A).
7. Count the seeds (B) between the flags.
8. Calculate the population.

If 1/1000 of an area was counted, multiply the number of seeds by 1000.

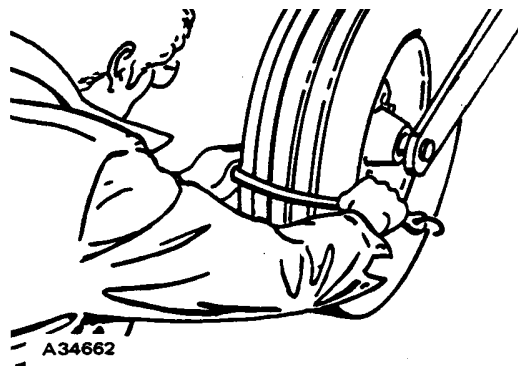
If 1/200 of an area was counted, multiply the number of seeds by 200.

If the in-field checks are different from the target population, investigate the following in the order listed:

1. Check the monitor setup and settings.
2. Check the meter setup and condition. Adjust or repair the meters as needed.
3. Adjust the vacuum in 25 mm (1 in) increments. To reduce skips, increase the vacuum. To reduce doubles, decrease the vacuum.
4. Avoid excessive bounce of the row units. Increase the row unit downforce or reduce the ground speed.

WP29706,0000B9E-19-20MAR19

Drive Wheel Slippage (Machines with Seed Transmission)



A34662—UN—10OCT88

Drive wheel slippage can cause a different rate than what is listed in the rate charts.

Some wheel slippage is normal. Rates listed in the charts are based on approximately 12 percent drive wheel slippage.

Binding or poorly lubricated parts, misaligned bearings, or packed material in pesticide or fertilizer hoppers can cause drive wheel slippage.

Down pressure springs, coulters, fertilizer openers, or other attachments can remove weight from drive wheels and cause slippage.

The amount of drive wheel slippage can be calculated.

1. Mark the transmission drive wheel so the mark is visible from the tractor seat.
2. Place a flag next to the drive wheel.
3. Raise the planter and drive until the wheel rotates 30 times. Stop and place another flag next to the drive wheel.
4. Turn around and lower the planter with the drive wheel next to the flag.
5. Actually plant as intended, to the other flag, while counting wheel revolutions.

Wheel Slippage Calculation

30 - Counted Revolutions While Planting ÷ 30 x 100 = Percent Wheel Slippage

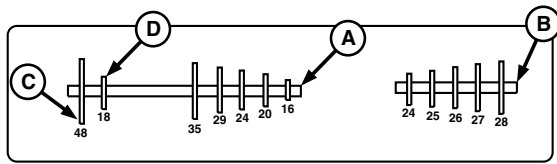
Example: 30 - 28 = 2 ÷ 30 = 0.066 x 100 = 6.6 percent slippage

6. If calculated slippage is greater or less than the 12 percent baseline slippage, adjust transmission accordingly.

OOU6074,0000CBE-19-26APR13

Seed Transmission 1705-1715-1725-1735-1755

Changing Input Sprocket Combinations

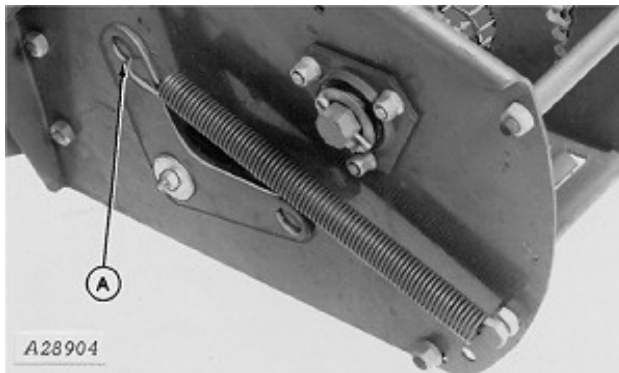


A56188—UN—12APR05

Number of Sprocket Teeth

- A—Rear Shaft (Driver)
- B—Front Shaft (Driven)
- C—Low Range
- D—High Range

1. Consult planting rate chart to determine desired sprocket combinations.

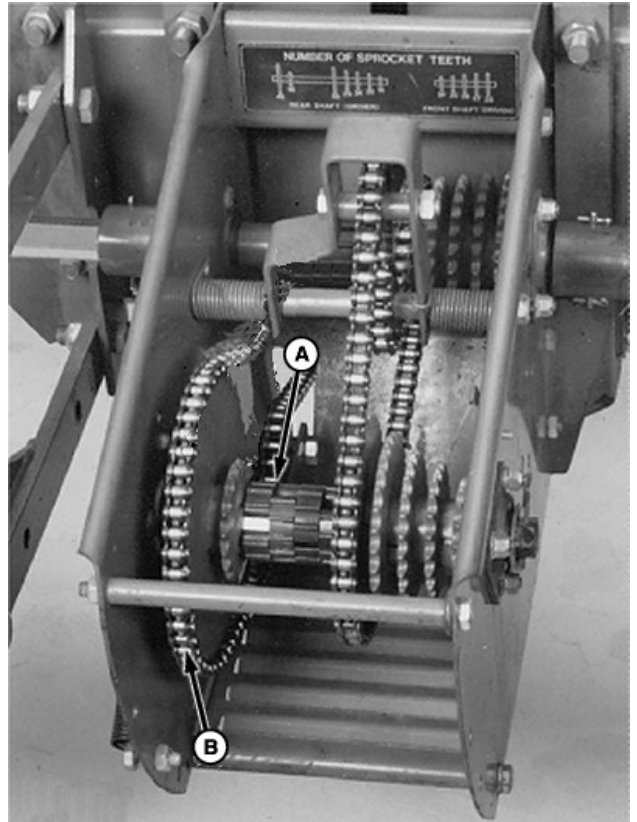


A28904

A28904—UN—14OCT88

- A—Spring

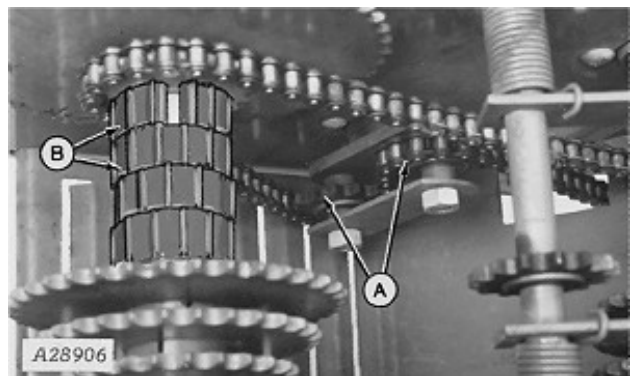
2. Remove spring (A) from chain tightener.



A47173—UN—16MAR01

- A—Rubber Sprocket Spacers
- B—Chain

3. Remove required number of rubber sprocket spacers (A).
4. Remove chain (B) from input sprocket.

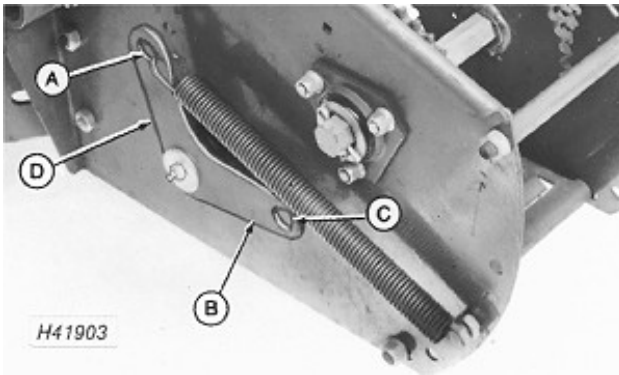


A28906

A28906—UN—14OCT88

- A—Sprockets
- B—Rubber Sprocket Spacers

5. Align desired input sprocket with chain tightener sprockets (A).
6. Install chain on sprocket and rubber sprocket spacers (B) on shaft.



H41903—UN—03MAY90

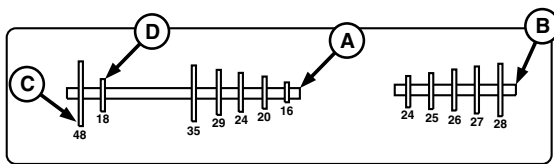
A—Hole
B—Arm
C—Hole
D—Arm

7. If chain is aligned on high-range input sprocket, locate spring in hole (A) of chain tightener. Arm (B) must point rearward.
8. If chain is installed on low-range input sprocket, locate spring in hole (C) of chain tightener. Arm (D) must point forward.

OUO1074,00001B6-19-12APR05

Changing Planting Rate Sprocket Combinations

NOTE: Rate charts are based on average planter wheel slip in tilled soil conditions. No-till conditions will likely result in a higher population than what is shown in rate charts. Adjust accordingly. Always verify population and spacing with a field check.

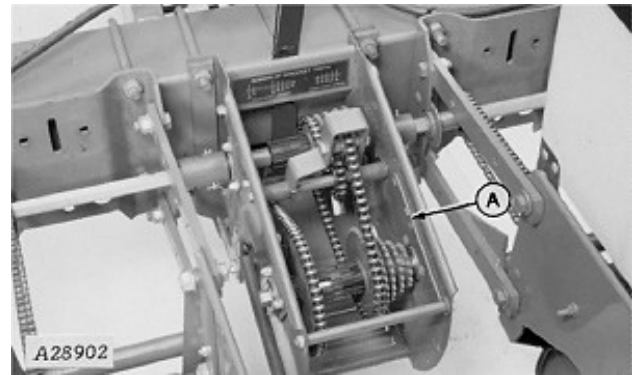


A56188—UN—12APR05

Number of Sprocket Teeth

A—Rear Shaft (Driver)
B—Front Shaft (Driven)
C—Low Range
D—High Range

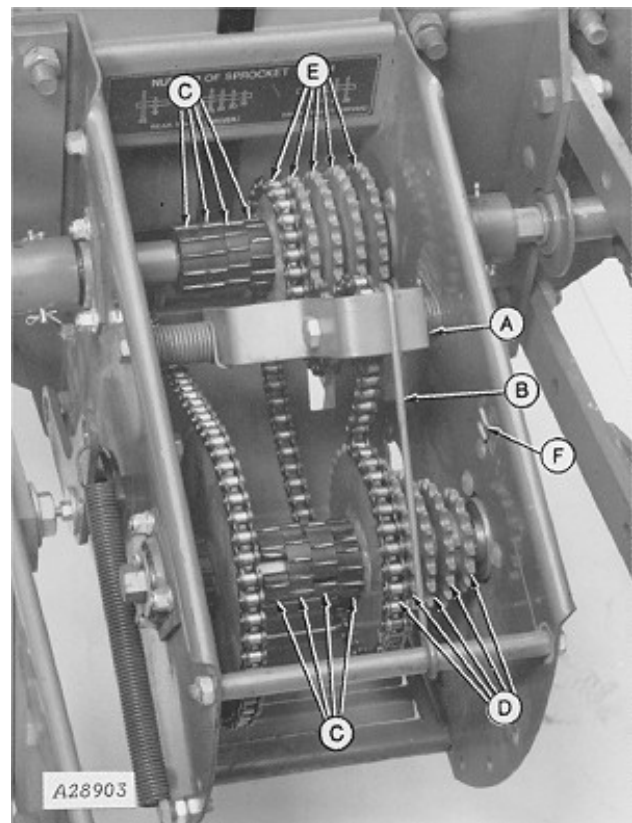
1. Consult planting rate chart to determine desired sprocket combinations.



A28902—UN—14OCT88

A—Hook

2. Remove retaining hook (A) from storage position.



A28903—UN—14OCT88

A—Chain Tightener
B—Retaining Hook
C—Rubber Sprocket Spacers
D—Driver Sprockets
E—Driven Sprockets
F—Clip

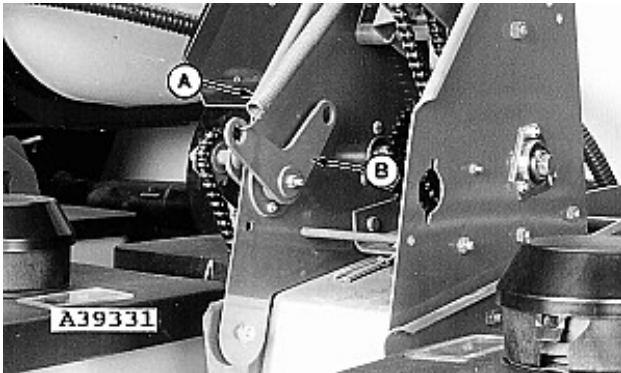
3. Pull chain tightener (A) downward and attach hook (B) to tightener.
4. Remove required number of rubber sprocket spacers (C).
5. Remove chain from sprockets. Slide desired driver and driven sprockets (D) and (E) into alignment with chain tightener and replace chain.

6. Remove hook from chain tightener. Reposition hook in storage position by pressing it into clip (F).
7. Replace rubber sprocket spacers on upper and lower shafts.

OUO1074,00001B7-19-09SEP05

Seed Transmission 1765-1765NT-1775 12 Row

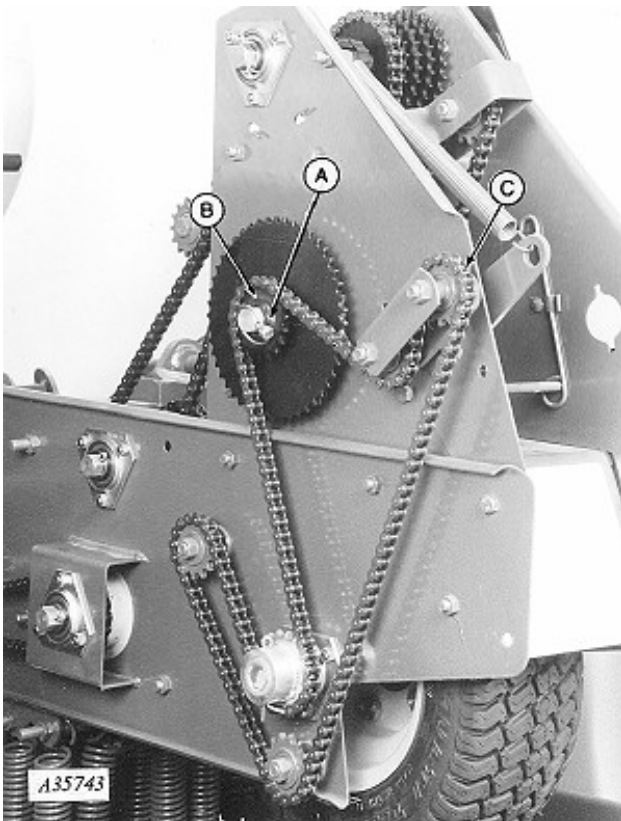
Change Input Sprocket Combinations—Seed Transmission



A39331—UN—13MAR96

A—Spring
B—Chain Tightener

1. Consult appropriate planting rate chart to determine desired sprocket combinations.
2. Remove spring (A) from chain tightener (B).

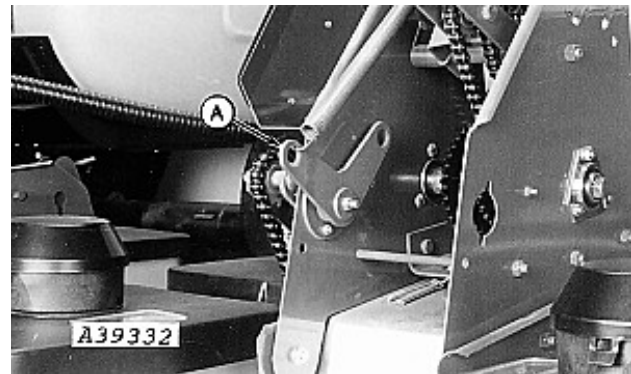


A35743—UN—15NOV94

A—Quick-Lock Pin
B—Input Sprocket
C—Chain Tightener Sprockets

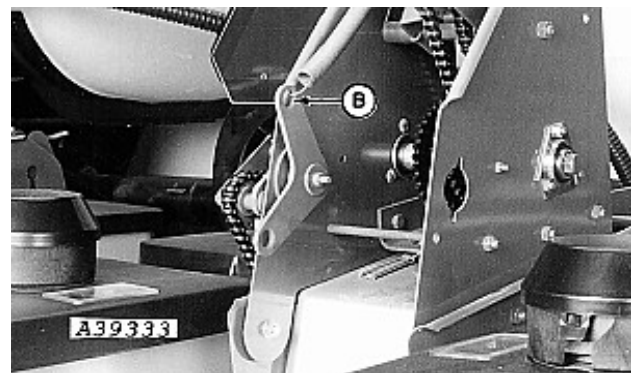
3. Remove quick-lock pin (A) from input shaft.
4. Remove chain from input sprocket (B).
5. Install input sprocket until desired sprocket is aligned with chain tightener sprockets (C).

6. Replace chain on sprocket.



A39332—UN—13MAR96

High-Range



A39333—UN—10APR96

Low-Range

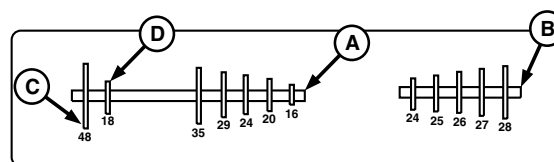
A—Hole
B—Hole

7. If chain is installed on high range input sprocket, install spring in hole (A) of chain tightener.
8. If chain is installed on low range input sprocket, locate spring in hole (B) of chain tightener.

OUO1011,000500F-19-23FEB16

Changing Planting Rate Sprocket Combinations

NOTE: Rate charts are based on average planter wheel slip in tilled soil conditions. No-till conditions will likely result in a higher population than what is shown in rate charts. Adjust accordingly. Always verify population and spacing with a field check.

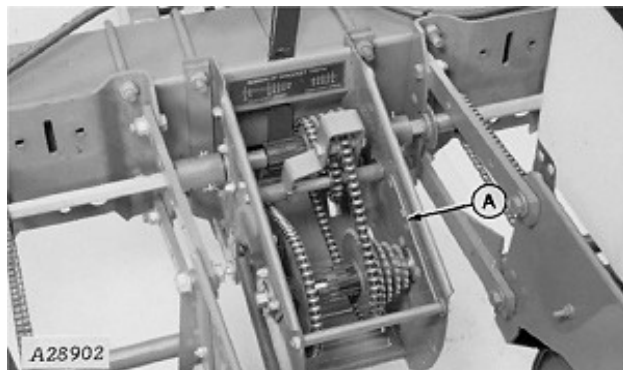


A56188—UN—12APR05

Number of Sprocket Teeth

A—Rear Shaft (Driver)
B—Front Shaft (Driven)
C—Low Range
D—High Range

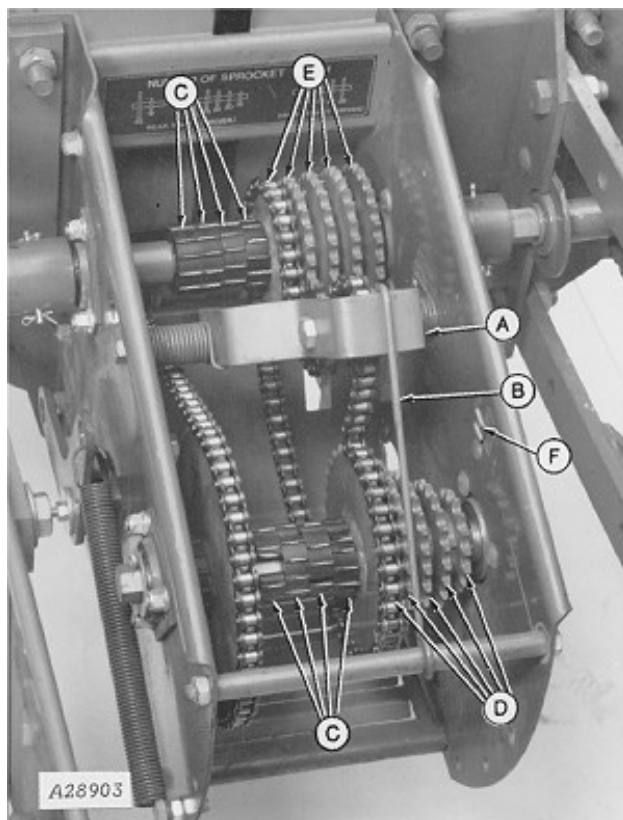
1. Consult planting rate chart to determine desired sprocket combinations.



A28902—UN—14OCT88

A—Hook

2. Remove retaining hook (A) from storage position.



A28903—UN—14OCT88

A—Chain Tightener
B—Retaining Hook
C—Rubber Sprocket Spacers
D—Driver Sprockets
E—Driven Sprockets
F—Clip

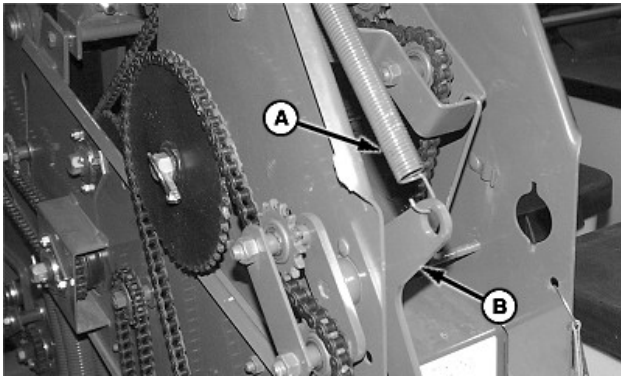
3. Pull chain tightener (A) downward and attach hook (B) to tightener.

4. Remove required number of rubber sprocket spacers (C).
5. Remove chain from sprockets. Slide desired driver and driven sprockets (D) and (E) into alignment with chain tightener and replace chain.
6. Remove hook from chain tightener. Reposition hook in storage position by pressing it into clip (F).
7. Replace rubber sprocket spacers on upper and lower shafts.

OUO1074,00001B7-19-09SEP05

Seed Transmission 1775NT 12/16 Row

Changing Input Sprocket Combinations—Seed Transmission

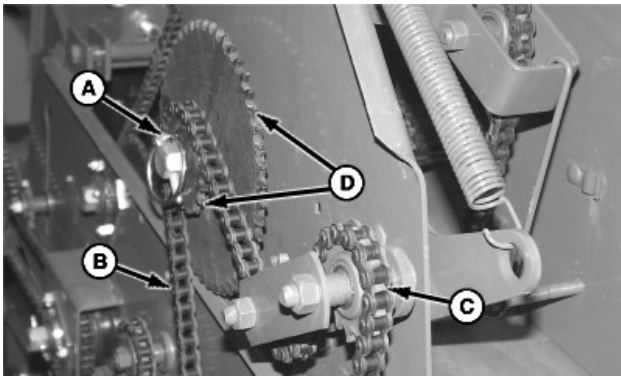


Low Range

A47807—UN—02AUG01

A—Spring
B—Chain Tightener

1. Consult appropriate planting rate chart to determine desired sprocket combinations.
2. Remove spring (A) from chain tightener (B).

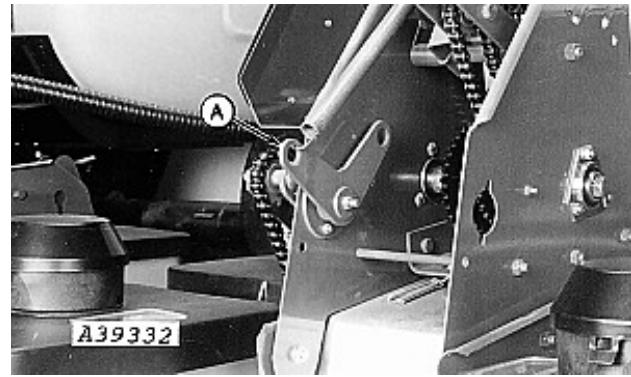


High Range

A47808—UN—02AUG01

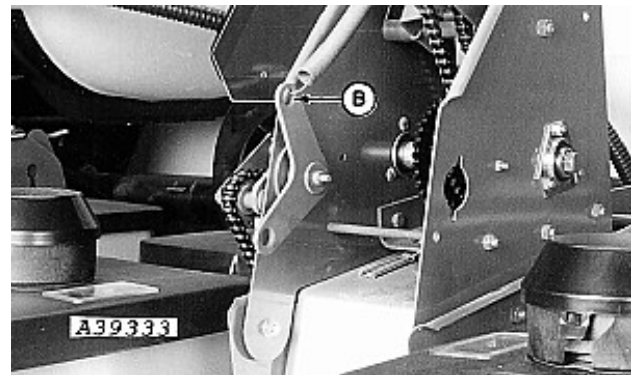
A—Quick-Lock Pin
B—Chain
C—Chain Tightener Sprockets
D—Input Sprocket

3. Remove quick-lock pin (A) from input shaft.
4. Remove chain (B) from input sprocket (D).
5. Flip input sprocket until desired side is aligned with chain tightener sprockets (C). Small sprocket is high range and large sprocket is low range.
6. Replace chain on sprocket.



High-Range

A39332—UN—13MAR96



Low-Range

A39333—UN—10APR96

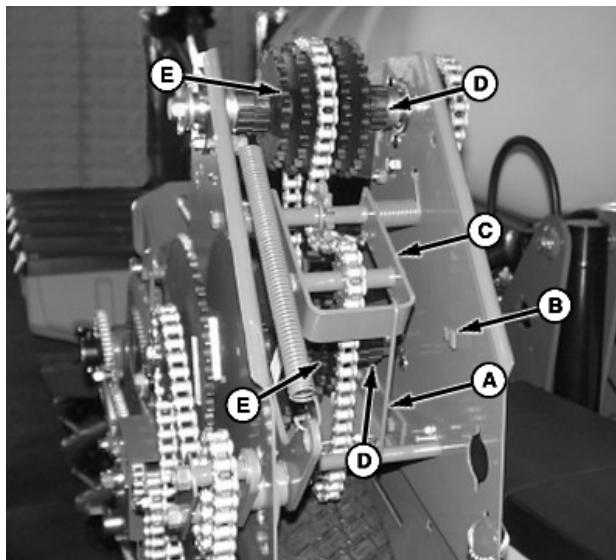
A—Hole
B—Hole

7. If chain is installed on (small) high-range input sprocket, install spring in hole (A) on chain tightener.
8. If chain is installed on (large) low-range input sprocket, locate spring in hole (B) on chain tightener.

OUC6074,0000816-19-05NOV03

Changing Planting Rate Sprocket Combinations—Seed Transmission

NOTE: Rate charts are based on average planter wheel slip in tilled soil conditions. No-till conditions will likely result in a higher population than what is shown in rate charts. Adjust accordingly. Always verify population and spacing with a field check.



A47981—UN—14SEP01

- A—Retaining Hook
- B—Storage Clip
- C—Chain Tightener
- D—Rubber Sprocket Spacers
- E—Sprockets

1. Consult appropriate planting rate chart to determine desired sprocket combinations.
2. Remove retaining hook (A) from storage clip (B).
3. Pull chain tightener (C) downward and fasten with hook (A).
4. Remove required number of rubber sprocket spacers (D).
5. Remove chain from sprockets. Slide desired driver and driven sprockets (E) into alignment with chain tightener and replace chain.
6. Remove hook from chain tightener and reposition in storage clip.
7. Replace all rubber sprocket spacers on upper and lower shafts.

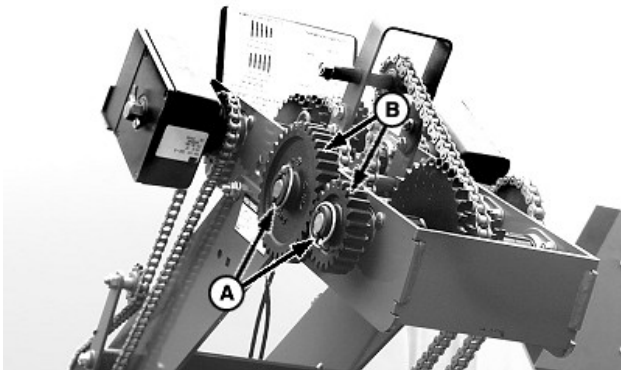
OUO6074.0000817-19-03JUN05

Seed Transmission 1775NT 24 Row

Changing To High or Low Range—Seed Transmission

IMPORTANT: Apply a small amount of grease to spur gear teeth daily to ensure smooth operation.

NOTE: Consult appropriate planting rate chart to determine desired sprocket combinations.



A53412—UN—02DEC03

High Range Setting Shown

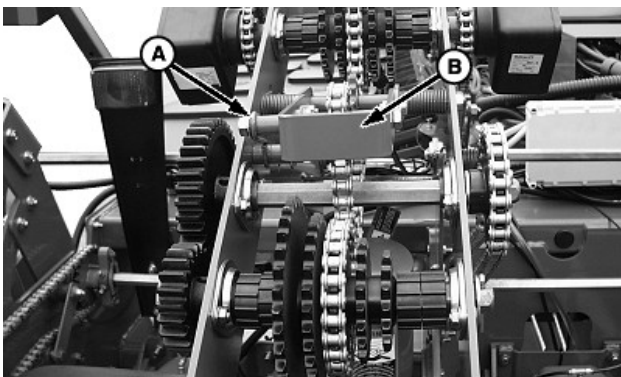
A—Pins
B—Spur Gears

1. Remove pins (A).
2. Switch spur gears (B) to change from high range to low range settings as necessary.

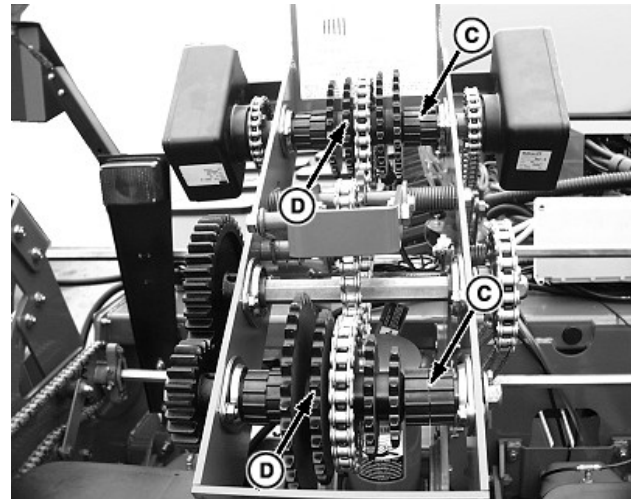
OUO6074,00003D4-19-26JUN06

Changing Planting Rate Sprocket Combinations—Seed Transmission

NOTE: Rate charts are based on average planter wheel slip in tilled soil conditions. No-till conditions will likely result in a higher population than what is shown in rate charts. Adjust accordingly. Always verify population and spacing with a field check.



A53410—UN—02DEC03



A53416—UN—02DEC03

A—Retaining Hook
B—Chain Tightener
C—Rubber Sprocket Spacers
D—Sprockets

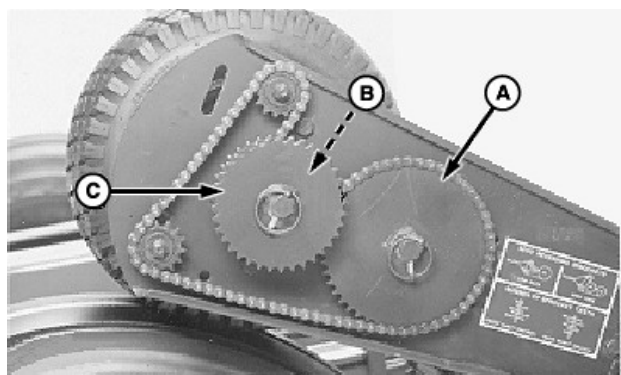
Consult appropriate planting rate chart to determine desired sprocket combinations.

1. Remove retaining hook (A) from storage position.
2. Pull chain tightener (B) downward and fasten with hook (A).
3. Remove required number of rubber sprocket spacers (C).
4. Remove chain from sprockets. Slide desired driver and driven sprockets (D) into alignment with chain tightener and replace chain.
5. Replace all rubber sprocket spacers on upper and lower shafts.
6. Remove hook from chain tightener and reposition in storage clip.

OUO6074,00003D5-19-03JUN05

Seed Transmission 1785

Changing Input Sprocket Combinations—Seed Transmission



A56221—UN—22APR05

- A—Sprocket, Driven
- B—Sprocket, Drive
- C—Sprocket, Storage

Consult appropriate planting rate chart to determine desired input sprocket combinations.

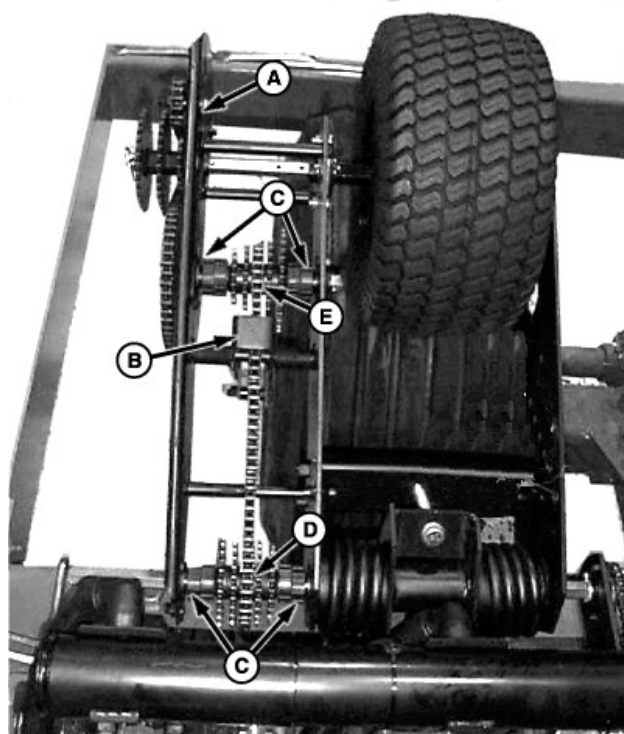
1. Install sprockets (A and B) per table and attach with quick-lock pin .
2. Install chain around sprockets and tighten idlers.
3. Store non-used sprockets (C) in front of drive sprocket and attach with quick-lock pin.

Sprocket Combinations				
Meters	Low Range		High Range	
	Drive Sprocket (B)	Driven Sprocket (A)	Drive Sprocket (B)	Driven Sprocket (A)
Chain Driven	18-Tooth Sprocket	48-Tooth Sprocket	36-Tooth Sprocket	36-Tooth Sprocket
Proshaft Driven Vacuum	18-Tooth Sprocket	48-Tooth Sprocket	36-Tooth Sprocket	36-Tooth Sprocket
Proshaft Driven Mechanical	21-Tooth Sprocket	36-Tooth Sprocket	29-Tooth Sprocket	19-Tooth Sprocket

OUO6074,000021C-19-22APR05

Changing Planting Rate Sprocket Combinations—Seed Transmission

NOTE: Rate charts are based on average planter wheel slip in tilled soil conditions. No-till conditions will likely result in a higher population than what is shown in rate charts. Adjust accordingly. Always verify population and spacing with a field check.



A47329—UN—12APR01

- A—Hook
- B—Chain Tightener
- C—Spacers
- D—Driven Sprocket
- E—Driver Sprocket

Consult appropriate planting rate chart to determine desired sprocket combinations.

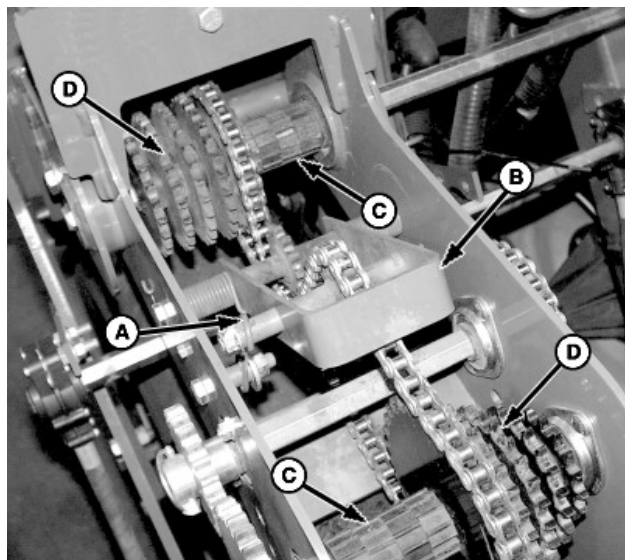
1. Remove retaining hook (A) from storage position.
2. Pull chain tightener (B) downward and place hook (A) on tightener.
3. Remove required number of rubber sprocket spacers (C).
4. Remove chain from sprockets. Slide desired driver sprocket (E) and driven sprockets (D) into alignment with chain tightener and replace chain.
5. Remove hook from chain tightener. Reposition hook in storage position by pressing into clip.
6. Replace rubber sprocket spacers on upper and lower shafts.

AG,OUO6076,129-19-03JUN05

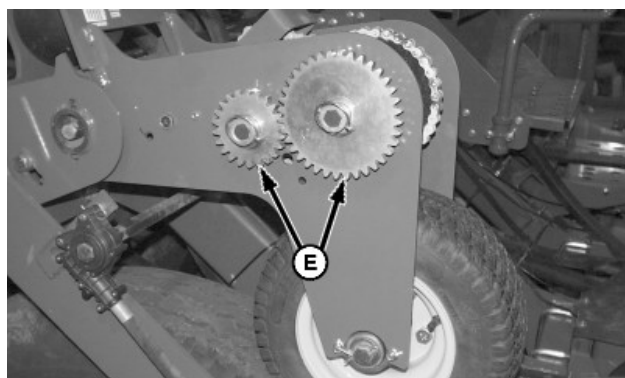
Seed Transmission 1795

Changing Population Settings— Mechanical Transmission

NOTE: Rate charts are based on average planter wheel slip in tilled soil conditions. No-till conditions will likely result in a higher population than what is shown in rate charts. Adjust accordingly. Always verify population and spacing with a field check.



A52499—UN—30JUL03



A52500—UN—30JUL03

Low Range Shown

- A—Hook
- B—Tightener
- C—Spacers
- D—Sprocket
- E—High/Low Range Spur Gears

Consult appropriate planting rate chart to determine desired sprocket combinations.

1. Remove retaining hook (A) from storage clip.
2. Pull chain tightener (B) downward and fasten with hook (A).
3. Remove required number of rubber sprocket spacers (C).
4. Remove chain from sprockets. Slide desired driver

and driven sprockets (D) into alignment with chain tightener and replace chain.

5. Replace all rubber sprocket spacers on upper and lower shafts.
6. Remove hook from chain tightener and reposition in storage clip.

IMPORTANT: Apply a small amount of grease to spur gear teeth daily to ensure smooth operation.

7. Switch spur gears (E) to change from high range or low range settings as necessary.

OUO6023,000149F-19-27JUN06

Granular Chemical Attachment

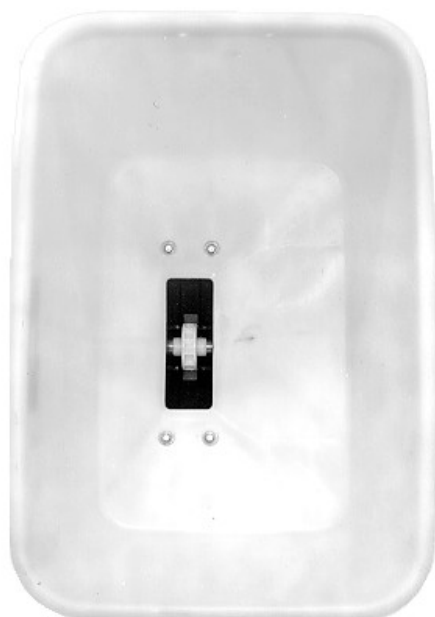
Granular Chemical Attachment



A78517—UN—02AUG13

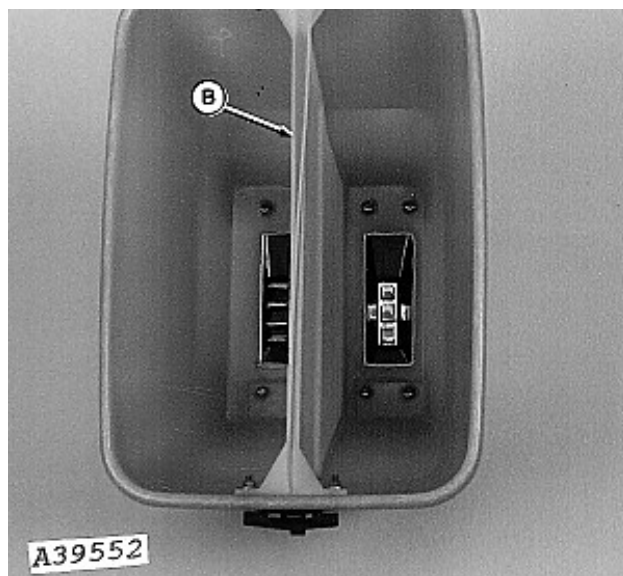


A78501—UN—02AUG13



A41131—UN—17APR97

Single Chemical Hopper



A39552—UN—29MAR96

Dual Chemical Hopper

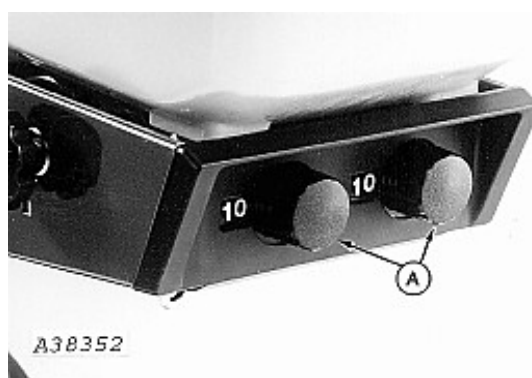
A—Granular Hopper
B—Divider

The granular chemical attachment can be used to deliver one or two different granular chemicals.

The granular hopper (A) holds 32 kg (70 lb) of one type of chemical or 16 kg (35 lb) of insecticide and herbicide using a dual chemical hopper with divider (B).

The application rate is determined by:

- Size of opening in meter housing assembly
- Planting speed



A38352—UN—19DEC95

A—Knobs

Turn knobs (A) on rear of granular meters to adjust the opening size. There are 80 increments which indicate the relative application rate. The delivery rate will increase from 1 through 79. Setting 00 closes the opening completely. A fluted roller or CHEMMIZER™ meter delivers the granular chemical to the adjustable opening.

The granular chemical flows through a given opening

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size at a nearly uniform rate regardless of rotor rpm. Therefore, SPEED has the greatest impact on application rate and resulting chemical concentration in the row.

EXAMPLE:

If planting speed is reduced from 10 km/h to 5 km/h (6 mph to 3 mph), chemical concentration will nearly double, since the delivery rate through the orifice remains nearly the same, while distance traveled in a given period of time has been cut in half. Therefore, twice as much chemical is placed on the ground due to the decrease in ground speed.

Rotor rpm will not change the chemical meter delivery rate unless the seed population is changed significantly (± 25 percent or more from the original setting).

The rate charts in this section are approximate and based on a planting speed of 8 km/h (5 mph). They are to be used only as a guide to determine a starting point for the meter dial setting.

Always check rate of application as outlined in this section to confirm desired rate.



A—Knob

A78511—UN—02AUG13

To engage insecticide and/or herbicide drive, rotate knob (A) until spring-loaded knob engages spring pin in insecticide/herbicide drive shaft.

CAUTION: Agricultural chemicals can be dangerous. Improper selection or use can injure persons, animals, plants, soils, or other property. **BE SAFE:** Select the right chemical for the job. Use rubber gloves and respirator and apply the chemical with care. Follow instructions of the chemical manufacturer.

Most insecticides and herbicides readily accumulate moisture and may damage the granular attachment if allowed to remain in the hopper when the machine is not in use. Even during periods of operation, deposits of insecticide may build up in the hopper and interfere with working parts. Therefore, the hoppers should be

checked every day for any material buildup and thoroughly cleaned if the machine is not to be used for a period greater than two days.

See Service and Adjustments section in machine operator's manual for cleaning instructions.

IMPORTANT: Because the available chemical materials vary widely in consistency and composition, their “flow-ability” is affected by temperature and humidity conditions. It is important to calibrate each individual meter to the particular chemical being used.

NOTE: Application rates greater than 227 gm (8 oz) per 305 m (1000 ft) at 10 km/h (6 mph) require installation of the high rate fluted roller in meter.

Follow chemical manufacturer's application rate and meter setting recommendations as a starting point for the meter dial setting.

If meter setting is not available from chemical manufacturer, use the charts in this section as a starting point for meter dial setting.

To determine application rate and initial meter setting, proceed to DETERMINING APPLICATION RATE AND INITIAL METER SETTING in this section.

MH69740,0000551-19-02AUG13

Determining Application Rate and Initial Meter Setting

The chemical manufacturer may recommend the rate of application for granular chemicals in the following ways:

- Grams per 305 linear row meters
- Ounces per 1000 linear row feet
- Kilograms per hectare for a given band width and row spacing
- Pounds per acre for a given band width and row spacing
- Kilograms per hectare for complete (broadcast) coverage
- Pounds per acre for complete (broadcast) coverage

When the chemical manufacturer recommends a rate (linear distance or area) for a given band width and row spacing, proceed to the chemical manufacturer's recommended meter setting or to the meter setting recommended in the rate charts in this section.

When the chemical manufacturer recommends a rate (area) for complete (broadcast) coverage only, it is necessary to calculate the appropriate rate for band width and row spacing being planted. This will give the same chemical concentration in the band area as the chemical manufacturer recommends for complete (broadcast) coverage.

NOTE: We recommend measuring the actual band width applied and using this width in application rate calculations.

Use the following formula to convert broadcast coverage into specific band width and row spacing coverage.

FORMULA:

$(A \times B) \div C$ = Delivery rate per area for a given band width and row spacing

A—Chemical manufacturers recommended rate in kilograms per hectare or pounds per acre for complete (broadcast) coverage

B—Band width in cm or in

C—Row spacing in cm or in

EXAMPLE:

The chemical manufacturer recommends 5 kg/ha (20 lb/acre) for complete broadcast coverage. The band width is 36 cm (14 in). The row spacing is 76 cm (30 in).

$(5 \text{ kg} \times 36 \text{ cm}) \div 76 \text{ cm} = 2.4 \text{ kg/ha}$

$(20 \text{ lb} \times 14 \text{ in}) \div 30 \text{ in.} = 9.3 \text{ lb/acre}$

The required delivery rate for 36 cm (14 in) bands and 76 cm (30 in) row spacings would be 2.4 kg/ha (9.3 lb/acre).

Delivery of 2.4 kg/ha (9.3 lb/acre) of chemical in a 36 cm (14 in) band area will provide the same chemical concentration on the soil surface as delivery of 5 kg/ha (20 lb/acre) broadcast coverage.

Proceed to chemical manufacturer's recommended meter setting or to meter setting recommended in the rate charts in this section which will deliver 2.4 kg/ha (9.3 lb/acre).

To check exact number of kilograms per hectare or pounds per acre of chemical that will be delivered, attach a plastic bag to each chemical diffuser, lower machine, and proceed as follows:

Drive 150 m (500 ft) at planting speed. Weigh chemical (in ounces) that was caught in one bag. Multiply amount caught by factor in table, to determine kilograms per hectare or pounds per acre.

Check the chemical caught in each bag in the same manner.

Pounds Per Acre Factor for Given Row Width	
Row Width	Factor
20 in	3.3
22 in	3.0
30 in	2.2
36 in	1.8
38 in	1.7

EXAMPLES:

- Assume row width is 76 cm and 160 grams are caught in one bag (one row). 160 grams times 0.086 (factor for 76 cm rows) equals 13.8 kg/ha.
- Assume row width is 30 in and 5.6 ounces is caught in one bag (one row). 5.6 ounces times 2.2 (factor for 30 in rows) equals 12.3 lb/acre.

NOTE: If a significant difference in rate is observed between rows, the meter dial mechanism may require recalibration. See **CALIBRATING INSECTICIDE/HERBICIDE METER** in this section.

If desired amount is not obtained for each row unit with the first setting, turn metering knob and repeat check until desired amount is delivered.

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Kilograms Per Hectare Factor for Given Row Width	
Row Width	Factor
51 cm	0.131
56 cm	0.119
70 cm	0.095
76 cm	0.086
91 cm	0.071
97 cm	0.067

Insecticide Rate Chart—Clay Granules—56 cm Rows

METRIC UNITS OF MEASURE - METER SETTING INSECTICIDE APPLICATION RATES (Clay Granules)						
	APPROXIMATE RATE IN kg/hectare 56 cm Rows			KILOGRAMS PER 305 Row M		
Meter Setting	6.4 km/h	9.6 km/h	12.8 km/h	6.4 km/h	9.6 km/h	12.8 km/h
10	3.8	2.6	1.9	.07	.04	.03
11	4.7	3.1	2.3	.08	.05	.04
12	5.5	3.6	2.8	.09	.06	.05
13	6.6	4.5	3.3	.10	.08	.06
14	8.0	5.4	4.0	.14	.09	.07
15	9.2	6.1	4.6	.16	.10	.08
16	10.4	6.9	5.3	.18	.12	.08
17	11.7	7.8	5.8	.20	.18	.10
18	12.5	8.4	6.3	.21	.14	.11
19	13.4	9.0	6.7	.23	.15	.12
20	14.2	9.5	7.2	.24	.16	.12
21	15.0	10.0	7.5	.26	.17	.13
22	15.7	10.4	7.8	.27	.18	.13
23	16.5	10.9	8.3	.28	.19	.18
24	17.1	16.5	8.6	.29	.19	.15
25	17.8	11.8	8.9	.30	.20	.15
26	18.3	12.1	9.2	.31	.20	.15
27	19.0	12.8	9.5	.32	.21	.16
28	19.5	13.0	9.9	.33	.22	.16
29	20.3	13.6	10.1	.34	.23	.17
30	20.7	13.8	10.4	.35	.24	.18
31	21.2	14.1	10.6	.36	.24	.18
32	21.8	14.6	10.9	.37	.25	.18
33	22.4	14.8	11.2	.38	.25	.19
34	23.2	15.5	11.7	.39	.26	.20
35	24.0	15.9	12.0	.41	.27	.20
36	24.8	16.5	12.3	.42	.28	.21
37	25.3	16.9	12.5	.43	.29	.22
38	26.1	17.4	13.0	.44	.30	.22
39	26.8	17.9	13.3	.46	.30	.23
40	27.7	18.4	13.8	.47	.31	.23
41	28.2	18.9	14.0	.48	.32	.24
42	28.3	19.5	14.8	.50	.33	.24
43	30.7	20.4	15.3	.52	.35	.26
44	32.3	21.5	16.1	.55	.37	.27
45	33.9	22.7	17.0	.58	.38	.29
46	36.0	24.0	17.9	.61	.41	.30
47	37.6	25.0	18.8	.64	.43	.32
48	39.3	26.2	19.6	.67	.45	.35
49	41.1	27.3	25.5	.70	.47	.35
50	42.8	28.6	21.3	.73	.49	.36
51	44.5	29.6	22.3	.75	.51	.38
52	46.5	32.4	24.2	.82	.55	.41
53	48.5	32.4	24.2	.82	.55	.41
54	50.6	33.7	25.3	.86	.57	.43
55	53.0	35.5	26.5	.90	.60	.45
56	55.2	36.9	27.7	.94	.62	.47

METRIC UNITS OF MEASURE - METER SETTING INSECTICIDE APPLICATION RATES (Clay Granules)						
Meter Setting	APPROXIMATE RATE IN kg/hectare 56 cm Rows			KILOGRAMS PER 305 Row M		
	6.4 km/h	9.6 km/h	12.8 km/h	6.4 km/h	9.6 km/h	12.8 km/h
57	57.3	38.2	28.7	.97	.65	.48
58	58.7	39.8	29.8	1.01	.68	.51
59	61.9	41.2	31.0	1.05	.70	.63
60	63.8	42.7	31.9	1.08	.72	.54

OUO1074,0001474-19-07APR09

Insecticide Rate Chart—Clay Granules—70 cm Rows

Metric Units of Measure - Meter Setting			
Insecticide Application Rates (Clay Granules)			
Approximate Rate in Kilograms/Hectare			
Meter Setting	70 cm ROWS		
	KM/HOUR		
	6.4	9.7	12.9
10	3.1	2.1	1.6
11	3.7	2.4	1.8
12	4.4	2.9	2.2
13	5.4	3.5	2.7
14	6.5	4.3	3.2
15	7.3	4.9	3.7
16	8.3	5.5	4.1
17	9.3	6.2	4.6
18	10.0	6.7	5.0
19	10.6	7.1	5.4
20	11.3	7.6	5.7
21	12.0	7.9	6.0
22	12.6	8.3	6.2
23	13.1	8.7	6.6
24	13.7	9.2	6.8
25	14.2	9.4	7.1
26	14.5	9.6	7.3
27	15.1	10.1	7.6
28	15.5	10.4	7.8
29	16.1	10.7	8.1
30	16.5	11.0	8.3
31	16.8	11.2	8.4
32	17.3	11.6	8.7
33	17.8	11.8	8.9
34	18.4	12.3	9.3
35	19.0	12.7	9.5
36	19.6	13.1	9.8
37	20.1	13.4	10.0
38	20.7	13.8	10.4
39	21.4	14.3	10.6
40	22.0	14.6	11.0
41	22.4	15.0	11.2
42	23.3	15.5	11.7

Granular Chemical Attachment

Metric Units of Measure - Meter Setting			
Insecticide Application Rates (Clay Granules)			
Approximate Rate in Kilograms/Hectare			
	70 cm ROWS		
	KM/HOUR		
Meter Setting	6.4	9.7	12.9
43	24.4	16.2	12.2
44	25.6	17.1	12.8
45	27.0	18.1	13.5
46	28.6	19.0	14.3
47	29.9	19.9	15.0
48	31.2	20.9	15.6
49	32.7	21.7	16.3
50	34.0	22.7	17.0
51	35.4	23.5	17.7
52	37.0	24.6	18.4
53	38.6	25.7	19.3
54	40.3	26.8	20.1
55	42.1	28.1	21.1
56	43.9	29.3	22.0
57	45.6	30.4	22.8
58	47.5	31.6	23.7
59	49.3	32.8	24.6
60	50.8	33.9	25.4

OUO1074,0000087-19-27JAN01

Insecticide Rate Chart—Sand Granules—56 cm Rows

METRIC UNITS OF MEASURE - METER SETTING INSECTICIDE APPLICATION RATES (Sand Granules)						
	APPROXIMATE RATE IN kg/hectare 56 cm Rows			GRAMS PER 305 M		
METER SETTING	6.4 km/h	9.7 km/h	12.9 km/h	6.4 km/h	9.7 km/h	12.9 km/h
6	2.3	1.7	1.2	42.5	28.3	19.8
7	3.6	2.4	1.8	59.5	39.7	31.2
8	4.7	3.2	2.5	79.4	53.9	39.7
9	5.9	4.0	3.0	102.1	68.0	51.0
10	7.4	4.9	3.7	124.7	82.2	62.4
11	8.7	5.8	4.5	147.4	99.2	73.7
12	10.3	6.9	5.3	175.8	116.2	87.9
13	11.8	7.8	5.9	201.3	133.2	99.2
14	13.5	9.1	6.7	229.6	153.1	113.4
15	15.1	10.0	7.5	255.1	170.1	127.6
16	16.5	10.9	8.3	277.8	187.1	138.9
17	17.8	11.8	8.8	303.3	201.3	150.3
18	19.1	12.8	9.6	326.0	218.3	161.6
19	20.4	13.7	10.3	345.9	229.6	172.9
20	21.8	14.6	10.9	368.5	246.6	184.3
21	23.2	15.5	11.6	394.1	260.8	195.6
22	24.5	16.5	12.3	416.7	277.8	207.0
23	26.0	17.4	13.0	439.4	292.0	221.1
24	27.3	18.3	13.7	462.1	309.0	232.5

METRIC UNITS OF MEASURE - METER SETTING INSECTICIDE APPLICATION RATES (Sand Granules)						
	APPROXIMATE RATE IN kg/hectare 56 cm Rows			GRAMS PER 305 M		
METER SETTING	6.4 km/h	9.7 km/h	12.9 km/h	6.4 km/h	9.7 km/h	12.9 km/h
25	28.7	19.1	14.4	487.6	323.2	243.8
26	30.2	20.1	15.2	513.1	343.0	255.1
27	31.6	21.1	15.8	535.8	357.2	269.3
28	33.1	22.1	16.6	561.3	374.2	280.7
29	34.7	23.2	17.4	589.7	391.2	294.8
30	36.1	24.1	18.1	615.2	408.2	306.2
31	37.8	25.3	19.0	643.5	428.1	320.3
32	34.4	26.2	19.8	669.0	445.1	334.5
33	41.1	27.4	20.6	697.4	464.9	348.7
34	42.8	28.6	21.5	725.7	484.8	362.9
35	44.5	29.6	22.3	754.1	504.6	377.0
36	46.2	30.8	23.2	785.3	524.5	394.1
37	48.2	32.0	24.1	816.5	544.3	408.2
38	50.1	33.3	25.0	847.7	567.0	425.2
39	51.8	34.5	26.0	878.8	586.8	439.4
40	53.6	35.7	26.9	910.0	606.7	456.4
41	55.7	37.2	27.9	944.0	629.4	473.4
42	57.7	38.2	28.9	978.1	652.0	490.4
43	59.7	39.8	29.9	1012.1	674.7	507.5
44	61.7	41.1	30.8	1046.1	697.4	524.5
45	63.8	42.4	31.9	1083.0	722.9	541.5
46	65.0	44.0	33.0	1119.8	745.6	558.5
47	68.1	45.5	34.0	1156.7	771.1	578.3
48	70.4	46.9	35.3	1193.5	796.6	598.2
49	72.6	48.4	36.4	1230.4	822.1	615.2
50	75.0	50.1	37.6	1272.9	847.7	637.9

OUO1074.0001478-19-28APR06

Insecticide Rate Chart—Sand Granules—70 cm Rows

Metric Units of Measure - Meter Setting			
Insecticide Application Rates (Sand Granules)			
Approximate Rate in Kilograms/Hectare			
	70 cm ROWS		
	KM/HOUR		
Meter Setting	6.4	9.7	12.9
6	2.0	1.3	1.0
7	2.8	1.8	1.5
8	3.8	2.6	2.0
9	4.8	3.2	2.4
10	5.9	3.9	2.9
11	7.0	4.6	3.5
12	8.2	5.5	4.1
13	9.4	6.2	4.8
14	10.7	7.2	5.4
15	12.0	7.9	6.0
16	13.1	8.7	6.6

Granular Chemical Attachment

Metric Units of Measure - Meter Setting			
Insecticide Application Rates (Sand Granules)			
Approximate Rate in Kilograms/Hectare			
	70 cm ROWS		
	KM/HOUR		
Meter Setting	6.4	9.7	12.9
17	14.2	9.4	7.1
18	15.3	10.1	7.7
19	16.2	10.9	8.2
20	17.3	11.6	8.7
21	18.4	12.3	9.3
22	19.5	13.1	9.8
23	20.6	13.8	10.4
24	21.7	14.5	10.9
25	22.8	15.3	11.5
26	24.0	16.0	12.1
27	25.1	16.7	12.6
28	26.4	17.6	13.2
29	27.6	18.4	13.8
30	28.8	19.2	14.4
31	30.1	20.1	15.1
32	31.4	20.9	15.7
33	32.7	21.8	16.3
34	34.0	22.7	17.1
35	35.4	23.5	17.7
36	36.8	24.5	18.4
37	38.3	25.5	19.2
38	39.8	26.5	19.9
39	41.2	27.5	20.6
40	42.7	28.4	21.4
41	44.3	29.5	22.2
42	45.9	30.6	22.9
43	47.5	31.6	23.8
44	49.0	32.7	24.5
45	50.8	33.8	25.4
46	52.5	35.0	26.2
47	54.2	36.1	27.1
48	56.0	37.3	28.1
49	57.7	38.4	28.9
50	59.7	39.8	29.9

OUO1074,000009F-19-08FEB01

Insecticide Rate Chart—Clay Granules—76 cm to 97 cm Rows

METRIC UNITS OF MEASURE - METER SETTING INSECTICIDE APPLICATION RATE Approximate Rate in kg/hectare												
	76 cm Rows			91 cm Rows			97 cm Rows			Kilograms Per 305 Row M		
Meter Setting	6.4 km/h	9.6 km/h	12.8 km/ h	6.4 km/h	9.6 km/h	12.8 km/ h	6.4 km/h	9.6 km/h	12.8 km/ h	6.4 km/h	9.6 km/h	12.8 km/ h
10	2.8	1.9	1.4	2.3	1.6	1.2	2.2	1.5	1.1	.07	.04	.03
11	3.4	2.2	1.7	2.8	1.9	1.4	2.7	1.8	1.3	.08	.05	.04
12	4.1	2.7	2.0	3.4	2.3	1.7	3.2	2.1	1.6	.09	.06	.05
13	4.9	3.3	2.5	4.1	2.7	2.0	3.9	2.6	1.9	.10	.08	.07
14	5.9	3.9	2.9	4.9	3.3	2.5	4.6	3.1	2.3	.14	.09	.07
15	6.7	4.5	3.4	5.6	3.7	2.8	5.3	3.5	2.7	.16	.10	.08
16	7.6	5.1	3.8	6.4	4.2	3.2	6.0	4.0	3.0	.18	.12	.08
17	8.5	5.7	4.3	7.1	4.7	3.6	6.7	4.5	3.4	.20	.18	.10
18	9.2	6.1	4.6	7.6	5.1	3.8	7.2	4.8	3.6	.21	.14	.11
19	9.8	6.5	4.9	8.1	5.4	4.1	7.7	5.1	3.9	.23	.15	.12
20	10.4	7.0	5.2	8.7	5.8	4.4	8.2	5.5	4.1	.24	.16	.12
21	11.0	7.3	5.5	9.1	6.1	4.6	8.7	5.8	4.3	.26	.17	.13
22	11.5	7.7	5.8	9.6	6.4	4.8	9.1	6.1	4.5	.27	.18	.13
23	12.0	8.0	6.0	10.0	6.7	5.0	9.5	6.3	4.7	.28	.19	.13
24	12.5	8.3	6.3	10.4	7.0	5.2	9.9	6.6	4.9	.29	.19	.15
25	12.9	8.6	6.5	10.8	7.2	5.4	10.2	6.8	5.1	.30	.20	.15
26	13.3	8.9	6.7	11.1	7.4	5.6	10.5	7.0	5.3	.31	.21	.16
27	13.9	9.2	6.9	11.6	7.7	5.8	10.9	7.3	5.5	.32	.21	.16
28	14.3	9.5	7.1	11.9	7.9	5.9	11.3	7.5	5.6	.33	.22	.16
29	14.8	9.9	7.4	12.3	8.2	6.2	11.7	7.8	5.8	.34	.23	.17
30	15.2	10.1	7.6	12.6	8.4	6.3	12.0	8.0	6.0	.35	.24	.18
31	15.4	10.3	7.7	12.9	8.6	6.4	12.2	8.1	6.1	.36	.24	.18
32	15.9	10.6	8.0	13.3	8.9	6.6	12.6	8.4	6.3	.37	.25	.18
33	16.4	10.9	8.2	13.6	9.1	6.8	12.9	8.6	6.5	.38	.25	.19
34	16.9	11.3	8.5	14.1	9.4	7.0	13.4	8.9	6.7	.39	.26	.20
35	17.5	11.6	8.7	14.6	9.7	7.3	13.8	9.2	6.9	.41	.27	.20
36	18.0	12.0	9.0	15.0	10.0	7.5	14.2	9.5	7.1	.42	.28	.21
37	18.5	12.3	9.2	15.4	10.3	7.7	14.6	9.7	7.3	.43	.29	.22
38	19.0	12.7	9.5	15.9	10.6	7.9	15.0	10.0	7.5	.44	.30	.22
39	19.6	13.1	9.8	16.3	10.9	8.2	15.5	10.3	7.7	.46	.30	.23
40	20.1	13.4	10.1	16.8	11.2	8.4	15.9	10.6	7.9	.47	.31	.23
41	20.6	13.7	10.3	17.2	11.4	8.6	16.3	10.8	8.1	.48	.32	.24
42	21.4	14.3	10.7	17.8	11.9	8.9	16.9	11.3	8.5	.50	.33	.25
43	22.4	14.9	11.2	18.7	12.4	9.3	17.7	11.8	8.8	.52	.35	.26
44	23.5	15.7	11.8	19.6	13.1	9.8	18.6	12.4	9.3	.55	.37	.27
45	24.8	16.5	12.4	20.7	13.8	10.3	19.6	13.0	9.8	.58	.38	.29
46	26.2	17.5	13.1	21.8	14.5	10.9	20.7	13.8	10.3	.61	.41	.30
47	27.4	18.3	13.7	22.9	15.2	11.4	21.7	14.4	10.8	.64	.43	.32
48	28.7	19.1	14.4	23.9	15.9	12.0	22.7	15.1	11.3	.67	.45	.33
49	30.0	20.0	15.0	25.0	16.6	12.5	23.7	15.8	11.8	.70	.47	.35
50	31.2	20.8	15.6	26.0	17.3	13.0	24.6	16.4	12.3	.73	.49	.36
51	32.5	21.7	16.2	27.1	18.0	13.5	25.6	17.1	12.8	.75	.51	.38
52	33.9	22.6	16.9	28.2	18.8	14.1	26.7	17.8	13.4	.79	.53	.39
53	35.4	23.6	17.7	29.5	19.7	14.8	28.0	18.6	14.0	.82	.55	.41
54	37.0	24.6	18.5	30.8	20.5	15.4	29.2	19.5	14.6	.86	.57	.43
55	38.6	25.8	19.3	32.2	21.5	16.1	30.5	20.3	15.3	.90	.60	.45

METRIC UNITS OF MEASURE - METER SETTING INSECTICIDE APPLICATION RATE Approximate Rate in kg/hectare												
	76 cm Rows			91 cm Rows			97 cm Rows			Kilograms Per 305 Row M		
Meter Setting	6.4 km/h	9.6 km/h	12.8 km/ h	6.4 km/h	9.6 km/h	12.8 km/ h	6.4 km/h	9.6 km/h	12.8 km/ h	6.4 km/h	9.6 km/h	12.8 km/ h
56	40.3	26.9	20.2	33.6	22.4	16.8	31.8	21.2	15.9	.94	.62	.47
57	41.9	27.9	20.9	34.9	23.3	17.4	33.0	22.0	16.5	.97	.65	.48
58	43.5	29.0	21.8	26.3	24.2	18.1	34.4	22.9	17.2	1.03	.68	.51
59	45.2	30.1	22.6	37.7	25.1	18.8	35.7	23.8	17.9	1.05	.70	.53
60	46.2	31.1	23.3	38.9	25.9	19.4	36.8	24.5	18.4	1.08	.72	.54

OUO1074.0000086-19-28APR06

Insecticide Rate Chart—Sand Granules—76 cm to 97 cm Rows

METRIC UNITS OF MEASURE - METER SETTING INSECTICIDE RATE CHART—(Sand Granules) APPLICATION RATE in kg/hectare												
	76 cm Rows			91 cm Rows			97 cm Rows			Kilograms Per 305 Row M		
Meter Setting	6.4 km/h	9.6 km/h	12.8 km/ h	6.4 km/h	9.6 km/h	12.8 km/ h	6.4 km/h	9.6 km/h	12.8 km/ h	6.4 km/h	9.6 km/h	12.8 km/ h
6	1.8	1.2	0.9	1.5	1.0	0.7	1.4	0.9	0.7	0.04	0.03	0.02
7	2.6	1.7	1.3	2.1	1.4	1.1	2.0	1.4	1.0	0.06	0.04	0.03
8	3.5	2.3	1.7	2.9	1.9	1.4	2.7	1.8	1.4	0.08	0.05	0.04
9	4.4	2.9	2.2	3.6	2.4	1.8	3.4	2.3	1.7	0.10	0.07	0.05
10	5.4	3.6	2.7	4.5	3.0	2.2	4.2	2.8	2.1	0.12	0.08	0.06
11	6.4	4.3	3.2	5.3	3.5	2.7	5.0	3.4	2.5	0.15	0.10	0.07
12	7.5	5.0	3.8	6.3	4.2	3.1	5.9	3.9	3.0	0.18	0.12	0.09
13	8.6	5.7	4.3	7.2	4.8	3.6	6.8	4.5	3.4	0.20	0.13	0.10
14	9.9	6.6	4.9	8.2	5.5	4.1	7.8	5.2	3.9	0.23	0.15	0.11
15	11.0	7.3	5.5	9.1	6.1	4.6	8.7	5.8	4.3	0.26	0.17	0.13
16	12.0	8.0	6.0	10.0	6.7	5.0	9.5	6.3	4.7	0.28	0.19	0.14
17	13.0	8.7	6.5	10.8	7.2	5.4	10.3	6.8	5.1	0.30	0.20	0.15
18	14.0	9.3	7.0	11.7	7.8	5.8	11.1	7.4	5.5	0.33	0.22	0.16
19	14.9	9.9	7.4	12.4	8.3	6.2	11.8	7.8	5.9	0.35	0.23	0.17
20	15.9	10.6	8.0	13.3	8.8	6.6	12.6	8.4	6.3	0.37	0.25	0.18
21	16.9	11.3	8.5	14.1	9.4	7.0	13.4	8.9	6.7	0.39	0.26	0.20
22	17.9	11.9	9.0	14.9	10.0	7.5	14.1	9.4	7.1	0.42	0.28	0.21
23	18.9	12.6	9.5	15.8	10.5	7.9	14.9	10.0	7.5	0.44	0.29	0.22
24	19.9	13.3	10.0	16.6	11.1	8.3	15.7	10.5	7.9	0.46	0.31	0.23
25	20.9	14.0	10.5	17.5	11.6	8.7	16.5	11.0	8.3	0.49	0.32	0.24
26	22.1	14.7	11.0	18.4	12.3	9.2	17.4	11.6	8.7	0.51	0.34	0.26
27	23.1	15.4	11.5	19.2	12.8	9.6	18.2	12.1	9.1	0.54	0.36	0.27
28	24.2	16.1	12.1	20.2	13.4	10.1	19.1	12.7	9.5	0.56	0.37	0.28
29	25.3	16.9	12.7	21.1	14.1	10.5	20.0	13.3	10.0	0.59	0.39	0.29
30	26.4	17.6	13.2	22.0	14.7	11.0	20.9	13.9	10.4	0.62	0.41	0.31
31	27.7	18.4	13.8	23.1	15.4	11.5	21.8	14.6	10.9	0.64	0.43	0.32
32	28.8	19.2	14.4	24.0	16.0	12.0	22.7	15.1	11.4	0.67	0.45	0.33
33	30.0	20.0	15.0	25.0	16.7	12.5	23.7	15.8	11.8	0.70	0.46	0.35
34	31.2	20.8	15.6	26.0	17.4	13.0	24.7	16.4	12.3	0.73	0.48	0.36
35	32.5	21.7	16.2	27.1	18.0	13.5	25.6	17.1	12.8	0.75	0.50	0.38

METRIC UNITS OF MEASURE - METER SETTING INSECTICIDE RATE CHART—(Sand Granules) APPLICATION RATE in kg/hectare												
	76 cm Rows			91 cm Rows			97 cm Rows			Kilograms Per 305 Row M		
Meter Setting	6.4 km/h	9.6 km/h	12.8 km/ h	6.4 km/h	9.6 km/h	12.8 km/ h	6.4 km/h	9.6 km/h	12.8 km/ h	6.4 km/h	9.6 km/h	12.8 km/ h
36	33.8	22.5	16.9	28.2	18.8	14.1	26.7	17.8	13.4	0.79	0.52	0.39
37	35.2	23.4	17.6	29.3	19.5	14.7	27.8	18.5	13.9	0.82	0.54	0.41
38	36.5	24.3	18.3	30.4	20.3	15.2	28.8	19.2	14.4	0.85	0.57	0.43
39	37.9	25.2	18.9	31.5	21.0	15.2	29.9	19.9	14.9	0.88	0.59	0.44
40	39.2	26.1	19.6	32.7	21.8	16.3	30.9	20.6	15.5	0.91	0.61	0.46
41	40.7	27.1	20.3	33.9	22.6	16.9	32.1	21.4	16.0	0.94	0.63	0.47
42	42.1	28.1	21.1	35.1	23.4	17.5	33.2	22.2	16.6	0.98	0.65	0.49
43	43.6	29.0	21.8	36.3	24.2	18.2	34.4	22.9	17.2	1.01	0.67	0.51
44	45.0	30.0	22.5	37.5	25.0	18.8	35.5	23.7	17.8	1.05	0.70	0.52
45	46.6	31.1	23.3	38.8	25.9	19.4	36.8	24.5	18.4	1.08	0.72	0.54
46	48.2	32.1	24.1	40.1	26.8	20.1	38.0	25.3	19.0	1.12	0.75	0.56
47	49.7	33.2	24.9	41.4	27.6	20.7	39.3	26.2	19.6	1.16	0.77	0.58
48	51.4	34.3	25.7	42.8	28.6	21.4	40.6	27.1	20.3	1.19	0.80	0.60
49	53.0	35.3	26.5	44.1	29.4	22.1	41.8	27.9	20.9	1.23	0.82	0.62
50	54.8	36.5	27.4	45.6	30.4	22.8	43.2	28.8	21.6	1.27	0.85	0.64

OUO1074,0000088-19-30SEP08

Herbicide Rate Chart—Clay Granules—56 cm Rows

METRIC UNITS OF MEASURE - METER SETTING HERBICIDE APPLICATION RATES (Clay Granules) Approximate rate in kg/hectare			
	56 cm Rows		
Meter Setting	6.4 km/h	9.6 km/h	12.8 km/h
10	3.3	2.1	1.7
11	3.8	2.4	1.9
12	4.5	2.9	2.3
13	5.4	3.5	2.6
14	6.1	4.0	3.0
15	7.5	4.7	3.5
16	8.5	5.4	4.0
17	9.5	6.2	4.5
18	10.2	6.8	4.8
19	11.1	7.1	5.2
20	12.1	7.8	5.4
21	12.8	8.3	6.1
22	13.7	8.8	6.6
23	14.6	9.4	6.9
24	15.4	9.9	7.1
25	16.3	10.4	7.6
26	17.0	10.9	8.0
27	18.0	11.4	8.3
28	18.7	11.8	8.7
29	19.6	12.3	8.8
30	20.3	12.8	9.4
31	20.6	13.2	9.5

Granular Chemical Attachment

METRIC UNITS OF MEASURE - METER SETTING HERBICIDE APPLICATION RATES (Clay Granules) Approximate rate in kg/hectare			
	56 cm Rows		
Meter Setting	6.4 km/h	9.6 km/h	12.8 km/h
32	21.5	13.7	10.0
33	22.3	14.0	10.2
34	23.2	14.7	10.6
35	24.1	15.2	10.9
36	24.8	15.6	11.3
37	25.5	16.1	11.9
38	26.5	16.1	12.0
39	27.0	17.0	12.3
40	27.5	17.5	12.6
41	28.2	17.7	12.8
42	29.1	18.2	13.3
43	30.3	19.1	13.7
44	31.2	19.6	14.2
45	32.9	20.6	14.8
46	34.3	21.7	15.8
47	36.6	23.2	16.8
48	38.5	24.6	17.8
49	40.5	26.2	18.9
50	43.1	28.1	20.6
51	45.6	30.0	22.0
52	48.2	31.9	23.6
53	50.6	33.8	25.3
54	53.5	35.9	27.0
55	56.5	38.1	29.1
56	58.2	39.7	30.8
57	61.3	41.9	32.9
58	63.9	44.0	34.5
59	65.8	45.6	36.0
60	68.2	47.5	37.9

OUO1074,0001475-19-28APR06

Herbicide Rate Chart—Clay Granules—76 cm to 97 cm Rows

METRIC UNITS OF MEASURE - METER SETTING HERBICIDE APPLICATION RATES Approximate Rate in kg/hectare									
	76 cm Rows			91 cm Rows			97 cm Rows		
Meter Setting	4.0 km/h	6.0 km/h	8.0 km/h	4.0 km/h	6.0 km/h	8.0 km/h	4.0 km/h	6.0 km/h	8.0 km/h
10	2.4	1.6	1.2	1.9	1.3	1.0	1.9	1.2	1.0
11	2.8	1.8	1.3	2.4	1.6	1.1	2.2	1.5	1.1
12	3.4	2.1	1.6	2.8	1.8	1.3	2.6	1.7	1.2
13	3.9	2.6	1.9	3.3	2.1	1.6	3.1	2.0	1.5
14	4.5	2.9	2.2	3.7	2.5	1.8	3.6	2.4	1.7
15	5.4	3.5	2.6	4.5	2.9	2.1	4.3	2.7	2.0
16	6.2	4.0	2.9	5.2	3.4	2.5	4.9	3.1	2.4
17	6.9	4.5	3.3	5.7	3.7	2.7	5.5	3.6	2.6
18	7.5	4.9	3.6	6.3	4.0	3.0	5.9	3.8	2.8

Granular Chemical Attachment

METRIC UNITS OF MEASURE - METER SETTING HERBICIDE APPLICATION RATES Approximate Rate in kg/hectare									
Meter Setting	76 cm Rows			91 cm Rows			97 cm Rows		
	4.0 km/h	6.0 km/h	8.0 km/h	4.0 km/h	6.0 km/h	8.0 km/h	4.0 km/h	6.0 km/h	8.0 km/h
19	8.1	5.3	3.8	6.7	4.4	3.1	6.4	4.1	3.0
20	8.9	5.7	4.1	7.4	4.7	3.5	6.9	4.5	3.3
21	9.4	6.1	4.5	7.8	5.0	3.7	7.4	4.8	3.5
22	10.1	6.5	4.7	8.4	5.4	3.9	8.0	5.2	3.8
23	10.6	6.8	5.0	8.9	5.7	4.1	8.4	5.4	3.9
24	11.3	7.3	5.3	9.4	6.1	4.4	9.0	5.7	4.1
25	11.9	7.5	5.5	9.9	6.3	4.6	9.4	5.9	4.4
26	12.4	8.0	5.8	10.3	6.6	4.8	9.8	6.3	4.6
27	13.1	8.3	6.1	11.0	6.9	5.0	10.3	6.6	4.8
28	13.8	8.7	6.3	11.5	7.3	5.2	10.8	6.9	4.9
29	14.3	9.1	6.5	12.0	7.5	5.4	11.3	7.2	5.2
30	14.8	9.4	6.8	12.3	7.8	5.7	11.7	7.4	5.4
31	15.1	9.6	7.1	12.7	8.1	5.8	12.0	7.6	5.5
32	15.8	10.0	7.3	13.1	8.4	6.1	12.4	8.0	5.7
33	16.3	10.3	7.5	13.6	8.6	6.3	12.9	8.2	5.9
34	16.9	10.8	7.7	14.1	9.0	6.5	13.3	8.5	6.2
35	17.6	11.1	8.0	14.7	9.3	6.7	13.9	8.7	6.3
36	18.2	11.4	8.3	15.1	9.5	6.9	14.3	9.1	6.5
37	18.6	11.8	8.6	15.6	9.8	7.2	14.7	9.3	6.7
38	19.4	12.2	8.9	16.1	10.1	7.3	15.4	9.6	6.9
39	19.7	12.4	9.0	16.5	10.3	7.5	15.6	9.8	7.1
40	20.2	12.8	9.2	16.8	10.6	7.7	15.9	10.1	7.3
41	20.6	12.9	9.4	17.3	10.8	7.8	16.3	10.2	7.4
42	21.3	13.3	9.8	17.7	11.1	8.1	16.8	10.5	7.6
43	22.2	13.9	10.1	18.5	11.7	8.4	17.5	11.0	8.0
44	22.8	14.3	10.4	18.9	11.9	8.6	17.9	11.3	8.2
45	24.1	15.1	10.9	20.1	12.6	9.1	18.9	12.0	8.6
46	25.1	15.9	11.5	21.0	13.2	9.6	19.8	12.6	9.2
47	26.8	17.0	12.3	22.3	14.2	10.3	21.2	13.5	9.8
48	28.1	17.9	13.1	23.4	14.9	10.9	22.2	14.1	10.3
49	29.7	19.1	13.7	24.8	15.9	11.5	23.4	15.1	10.9
50	31.5	20.5	15.0	26.3	17.1	12.6	24.9	16.1	11.9
51	33.3	21.5	16.1	27.7	18.3	13.5	26.2	17.3	12.7
52	35.2	23.3	17.3	29.4	19.4	14.5	27.8	18.4	13.7
53	37.0	24.7	18.5	30.8	20.6	15.3	29.1	19.5	14.6
54	39.1	26.2	19.7	32.6	21.6	16.5	30.9	20.7	15.6
55	41.2	27.8	21.3	34.4	23.2	17.8	32.6	22.0	16.8
56	42.6	29.0	22.6	35.5	24.2	18.8	33.6	23.0	17.8
57	44.8	30.7	24.1	37.4	25.6	20.1	35.4	24.2	19.1
58	46.7	32.2	25.2	38.9	27.0	21.0	36.9	25.4	19.8
59	48.2	33.3	26.3	40.1	27.8	22.0	38.0	26.2	20.8
60	50.0	34.7	27.7	41.6	29.0	23.1	39.5	27.5	21.9

OUO1074.0000093-19-27APR06

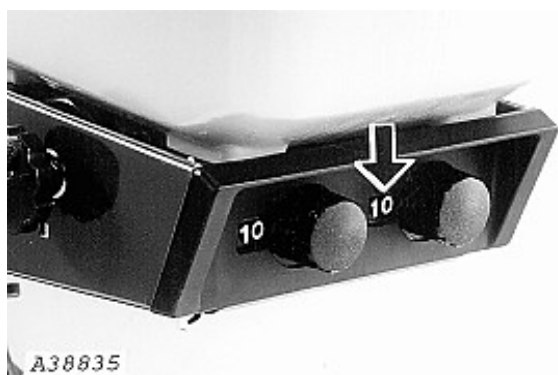
Herbicide Rate Chart—Clay Granules—70 cm Rows

Metric Units of Measure - Meter Setting			
Herbicide Application Rates (Clay Granules)			
Approximate Rate in Kilograms/Hectare			
	70 CM ROWS		
	KM/HOUR		
Meter Settings	6.4	9.7	12.9
10	2.6	1.7	1.3
11	3.1	2.0	1.5
12	3.7	2.3	1.7
13	4.3	2.8	2.1
14	4.9	3.2	2.4
15	5.9	3.8	2.8
16	6.7	4.4	3.2
17	7.6	4.9	3.5
18	8.2	5.4	3.9
19	8.8	5.7	4.1
20	9.6	6.2	4.5
21	10.2	6.6	4.9
22	11.0	7.1	5.1
23	11.6	7.4	5.5
24	12.3	7.9	5.7
25	12.9	8.2	6.0
26	13.5	8.7	6.3
27	14.3	9.0	6.6
28	14.9	9.5	6.8
29	15.6	9.9	7.1
30	16.1	10.2	7.4
31	16.5	10.5	7.7
32	17.2	10.9	7.9
33	17.8	11.2	8.2
34	18.4	11.7	8.4
35	19.2	12.1	8.7
36	19.8	12.4	9.0
37	20.3	12.8	9.4
38	21.1	13.3	9.6
39	21.5	13.5	9.8
40	22.0	13.9	10.0
41	22.4	14.0	10.2
42	23.2	14.5	10.6
43	24.2	15.1	11.0
44	24.8	15.6	11.3
45	26.2	16.5	11.8
46	27.3	17.3	12.6
47	29.2	18.5	13.4
48	30.6	19.5	14.3
49	32.3	20.7	15.0
50	34.3	22.3	16.3
51	36.2	23.8	17.6
52	38.3	25.4	18.8
53	40.3	26.8	20.1
54	42.6	28.6	21.5
55	44.9	30.3	23.2

Metric Units of Measure - Meter Setting			
Herbicide Application Rates (Clay Granules)			
Approximate Rate in Kilograms/Hectare			
	70 CM ROWS		
	KM/HOUR		
Meter Settings	6.4	9.7	12.9
56	46.4	31.6	24.6
57	48.8	33.4	26.2
58	50.9	35.0	27.5
59	52.5	36.2	28.7
60	54.4	37.8	30.1

OUO1074,0000090-19-29JAN01

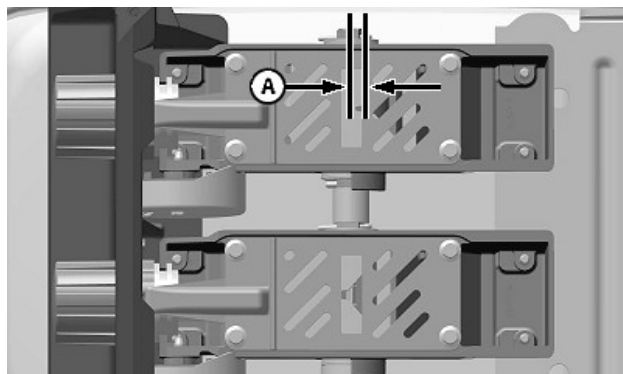
Calibrate the Granular Chemical Meter



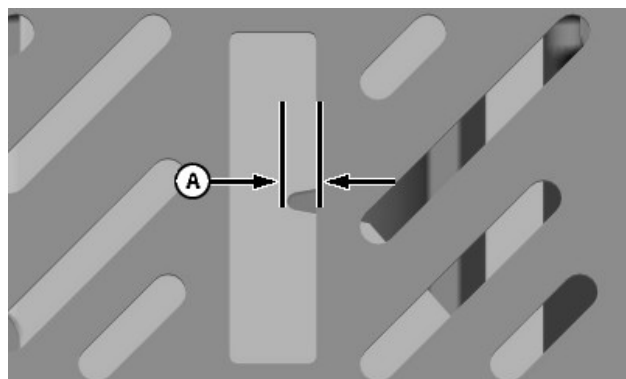
A38835—UN—19DEC95

CAUTION: Avoid contact with parts that have chemical residue. Wear the appropriate personal protective equipment as recommended by the chemical manufacturer.

1. Turn the knob to a setting of 10.
2. Remove the hopper and turn it upside down on a flat surface.



A100565—UN—14MAY18



A100566—UN—14MAY18

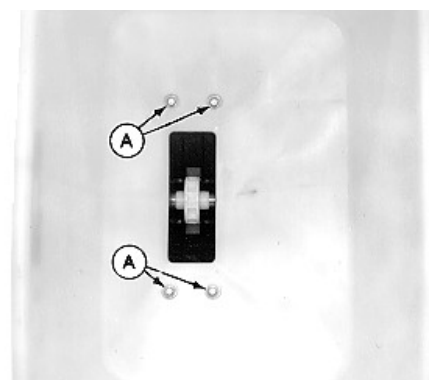
A—V-Notch Opening

3. Measure the V-notch opening (A).

If the opening is to specification, the meter is calibrated correctly. If the opening is not to specification, the meter must be calibrated.

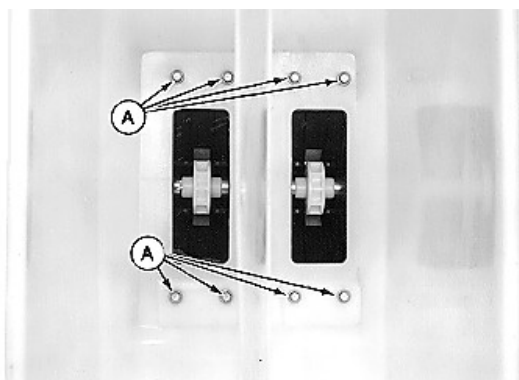
Specification

Calibrated Opening (A)—Width. 4 mm
(1/64 in)



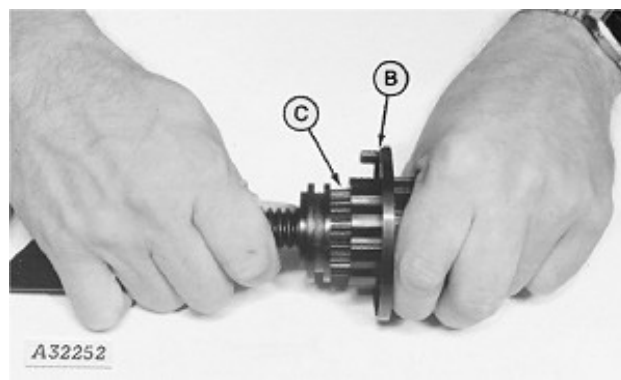
A41132—UN—21APR97

Single Meter



Dual Meter

A41129—UN—17APR97

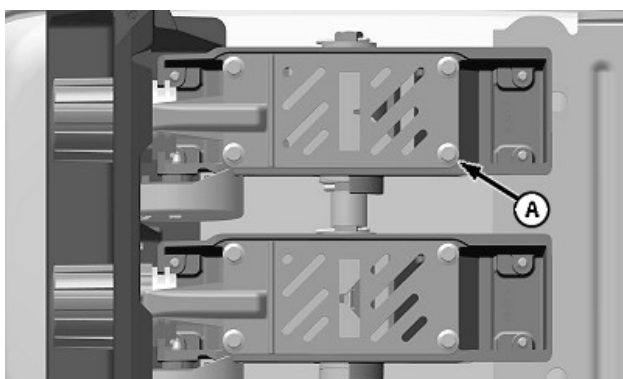


A32252

A32252—UN—12OCT88

A—Cap Screws, M6 x 20

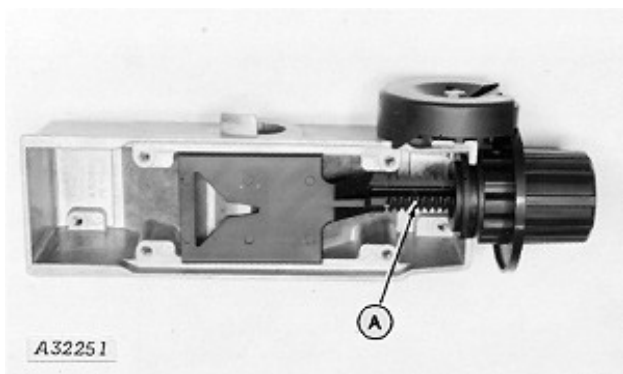
4. Remove the cap screws (A) from inside the hopper. Remove the meters from the bottom of the hopper.



A100567—UN—14MAY18

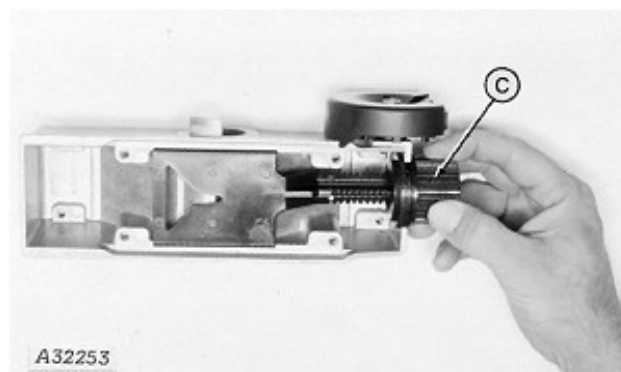
A—Cap Screws, M6 x 16

5. Remove the cap screws (A) and the gate cover.



A32251

A32251—UN—12OCT88



A32253

A32253—UN—12OCT88

- A—Plastic Gate Assembly**
B—Knob
C—Nut

6. Remove the entire gate assembly (A) from the aluminum housing.
7. To remove the knob from the splined nut (C), move the knob (B) back and forth while pulling apart.

NOTE: Install the gate assembly and gate cover when measuring the opening.

8. Turn the nut (C) until the V-notch opening is to specification.

Specification

V-Notch Opening—Width. 4 mm
 (1/64 in)



A32254

A32254—UN—12OCT88

9. Align the number 0 on the knob and the number 1 on the dial so the meter setting is 10.

10. Seat the knob on the nut.
11. Install the gate cover.
12. Install the meter on the hopper.

AG,OUO6074,1305-19-14MAY18

Idler Options

Slide-type idlers are standard equipment.

Sprocket-type are available as optional equipment through Service Parts.

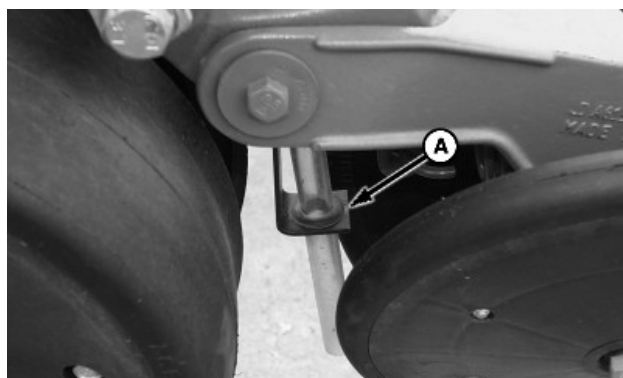
The Slide Type idler is recommended for use with unit-mounted coulters, row cleaners or in fields that have high levels of residue. They can also be used in conventional or mulch-till.

Sprocket-Type idler is recommended for conventional tilled fields where residue levels are low.

AG,OUO6074,1307-19-04AUG00

Insecticide Seed-Furrow Placement Bracket

IMPORTANT: Some insecticides are toxic if they come into direct contact with the seed. Consult the chemical supplier for the proper location to apply the chemical.



A48632—UN—29JAN02

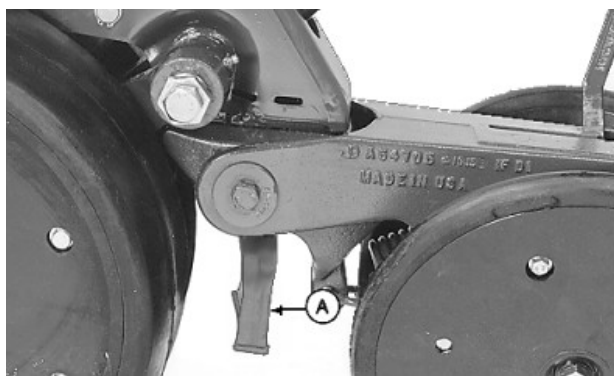
A—Bracket

Placement bracket (A) holds granular insecticide tube for placement of material in seed-furrow.

AG,OUO6074,1308-19-26JUN08

Insecticide Band Spreader (Front Mounted)

IMPORTANT: Some insecticides are toxic if they come into direct contact with the seed. Consult the chemical supplier for the proper location to apply the chemical.



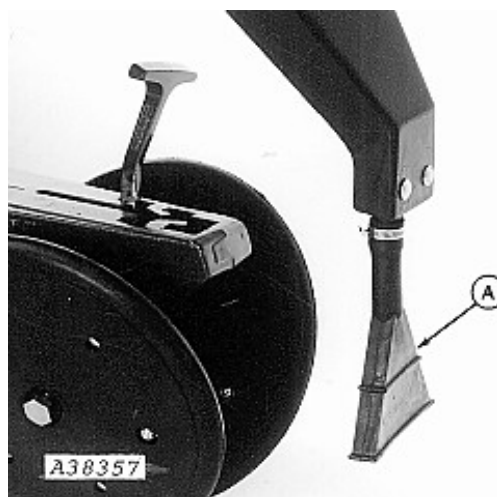
A44859—UN—21APR98

A—Insecticide Band Spreader

The insecticide band spreader (A) is designed to apply a band of granular insecticide approximately 18 cm (7 in) wide on top of ground when planting.

AG,OUO6074,1309-19-27MAR23

Insecticide Band Spreader (Rear Mounted)



A38357—UN—27NOV95

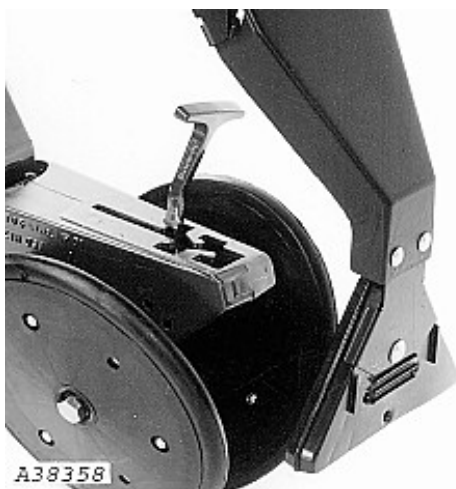
A—Insecticide Band Spreader

The rear mount insecticide band spreader (A) is designed to apply a band of granular insecticide approximately 18 cm (7 in.) wide behind closing wheels.

AG,OUO6074,1310-19-04AUG00

Herbicide Diffuser

NOTE: We recommend measuring the actual band width applied and using this width in application rate calculations.



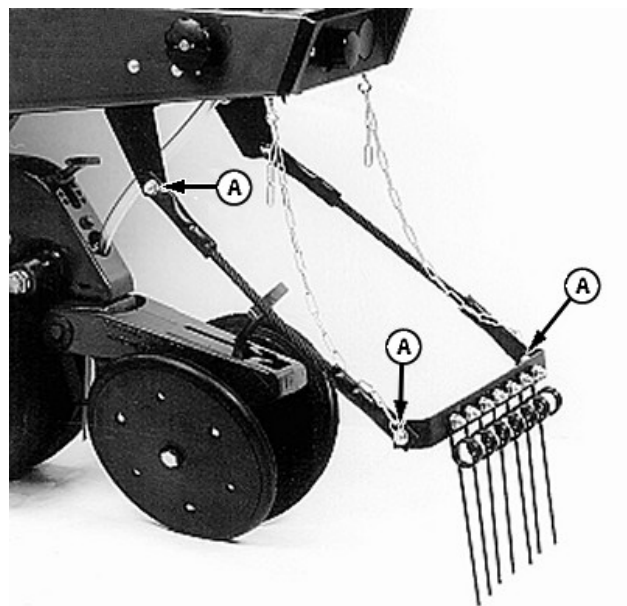
A38358

A38358—UN—27NOV95

The herbicide diffuser is designed to, under normal conditions, apply a band of granular herbicide approximately 36 cm (14 in) wide behind closing wheels.

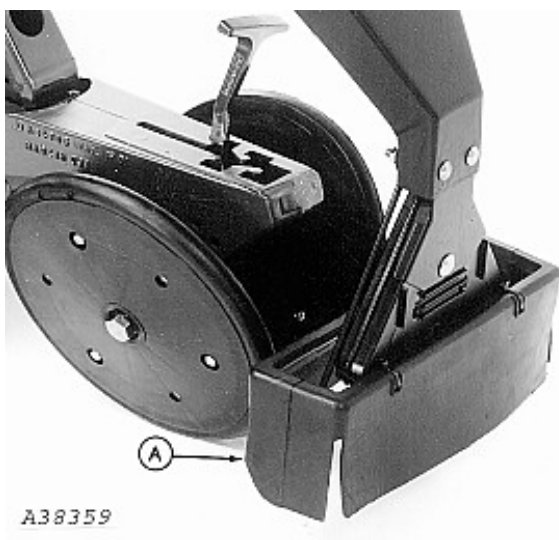
AG,OUO6074,1311-19-27MAR23

NOTE: Adjust support chains to allow tines to both contact soil and raise with machine without sagging.



A78648—UN—19AUG13

Windshield



A38359

A38359—UN—27NOV95

A—Windshield

The windshield (A) helps maintain distribution pattern of herbicide diffuser and/or rear mount insecticide spreader in windy conditions.

AG,OUO6074,1312-19-04AUG00

A—Nuts

Loosen nuts (A) to raise or lower cable supports and adjust spring angle and down pressure. Tighten nuts.

OUO6074,00009DD-19-19AUG13

Tine-Tooth Incorporator

The tine-tooth incorporator attachment provides an efficient means of mixing insecticide and herbicide into the soil and leaves a smooth ground surface behind planting unit.

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