

Rate Charts and Settings Imperial (U.S.) Units



DCY

OPERATOR'S MANUAL Rate Charts and Settings, Imperial (U.S.) Units

OMA84620 Issue F6 (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
North American Edition
LITHO IN U.S.A.



OMA84620

Introduction

Foreword

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on your machine may also be available in other languages. (See your John Deere dealer to order.)

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and should remain with the machine when you sell it.

MEASUREMENTS in this manual are given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners may require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by facing in the direction the implement will travel when going forward.

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I.N.) in the Specification section. Accurately record all the numbers to help in tracing the machine should it

be stolen. Your dealer also needs these numbers when you order parts. File the identification numbers in a secure place off the machine.

WARRANTY is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate which you should have received from your dealer

This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and field improvements may be denied. Setting fuel delivery above specifications or otherwise overpowering machines will result in such action.

THE TIRE MANUFACTURER'S warranty applicable to your machine may not apply outside the U.S.

DX,IFC2 -19-17SEP92-1/1

A Message to Our Customers

We appreciate the confidence placed in us by your purchase of this machine. Before this machine was brought to market, countless hours were spent designing and testing to ensure that its performance would be at the highest level. To achieve maximum performance, it is imperative this machine be operated in accordance with the procedures outlined in this manual.

Information in this manual is divided into sections. These sections are identified at the top of each page. Specific information within each section is organized into modules.

These modules are encased in boxes with principle modules identified with a heading at the top left side of the box. Two-part page numbers identify both the section and page of that section.

By reviewing this manual often, one will quickly learn which section to go to for specific information. For instance, machine adjustments would be found in the Operating Machine section, lubrication intervals in the Lubrication section, opener maintenance in the Service section, etc. A detailed Table of Contents is found immediately behind this page, and an Index is provided at the back of the manual.

Thanks again for purchasing this machine.

AG,OUO6074,1160 -19-04AUG00-1/1

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.

OUO6074,0000E59 -19-19JAN06-1/3

Introduction

Rates and Settings Record Sheet

See first column for example.

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					

Introduction

Rates and Settings Record Sheet

Seed						
Transmission Range						
Driver Sprocket						
Driven Sprocket						
Rate						
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						
User Notes						

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A John Deere ILLUSTRATION Manual

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Safety

Recognize Safety Information

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 -19-29SEP98-1/1

T81389 -UN-07DEC88

Understand Signal Words

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 -19-03MAR93-1/1

TS187 -19-30SEP88

Follow Safety Instructions

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.

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 -19-03MAR93-1/1

TS201 -UN-23AUG88

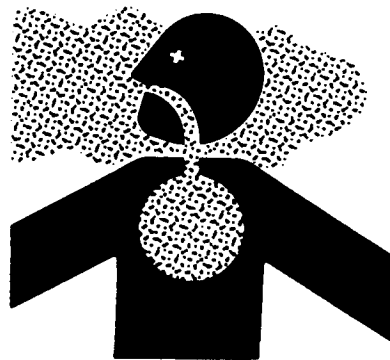
Handle Agricultural Chemicals Safely

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.

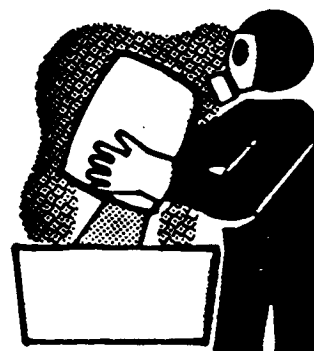
Always follow all label directions for effective, safe, and legal use of agricultural chemicals.

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 spray or dusts.
- 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 way 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.



A34471



TS220 -UN-23AUG88

A34471 -UN-11OCT88

Use of Talc and Graphite Lubricants

Use of Talc Lubricant



CAUTION: Follow chemical manufacturers precautions when handling parts coated with seed treatments. Use proper skin, eye and respiratory protection.

Talc lubricant is required for optimum performance of the vacuum meter and CCS system. Seed properly treated with talc releases from the seed disk more consistently, leading to more accurate spacing when the seed is placed in the ground.

A34471



A34471 -UN-11OCT88

FARMER APPLIED SEED TREATMENT

For best performance, use of farmer-applied seed treatments is **not** recommended. If they must be used, apply any seed treatment to seed and allow to fully dry before placing in tanks.

Apply seed treatment to seed **BEFORE** applying talc lubricant to insure that treatment adheres to seed properly while minimizing buildup on meter components. If buildup of treatment still occurs, contact the chemical manufacturer for assistance.

When using seed treatments, meters and seed disks should be cleaned as needed. Seed disks can be cleaned with warm, soapy water. Reapply spray on graphite as needed to vacuum seal side of disk.

IMPORTANT: If farmer-applied treatments are used, follow chemical manufacturers recommendations carefully. **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.

Seed and treatment mixes must be free of clumps.

IMPORTANT: Talc needs to be thoroughly incorporated in tanks and hoppers, so all seeds are evenly coated.

COMMERCIALLY TREATED SEED

Refer to the following talc application rate charts for planting commercially-treated seeds with no farmer-applied seed treatments.

Some insecticide-treated seed is coated with commercially applied talc. Even if talc is commercially applied, the required amount of talc shown in the following tables must be added to maintain metering performance.

Use this table when using CCS system to deliver seed to seed meters:

CCS Talc Application Rate	
<i>Note: Talc should be mixed proportionately and thoroughly with seed to ensure movement through the CCS system and proper metering.</i>	
CCS Tank Size	Amount of Talc
1233 L (35 bu.) Bulk Tank	2.6 L (11 cups)
1762 L (50 bu.) Bulk Tank	3.8 L (16 cups)
Per 80,000 kernel seed corn unit	74 mL (5 Tbls.) (2.5 oz)

Use this table when using 1.6 or 3.0 bushel hoppers (without CCS tanks) to deliver seed to seed meters:

MaxEmerge Hopper Talc Application Rate	
<i>Note: Talc should be sprinkled over top of seeds in hoppers and thoroughly incorporated, so all seeds have talc coating.</i>	
Hopper Size	Amount of Talc
58 L (1.6 bu.)	120 ml (1/2 cup)
106 L (3 bu.)	240 ml (1 cup)

Adjust these rates as necessary so all seeds become coated with talc, while avoiding an accumulation of talc in bottom of tank.

Double talc application is required for small seed, very large seed, seeds with heavy treatment, or humid planting conditions.

In certain situations, combinations of extremely sticky seed treatments, large or small seed, and high humidity, it may be necessary to add up to three times the amount of talc shown in the tables above.

IMPORTANT: It may be necessary to clean any build-up of seed treatments and talc out of hoppers between fills.

If talc builds up in bottom of hopper and vacuum manifolds require frequent cleanout, reduce talc rate accordingly. If a coating of seed treatment is found on seed disks, increase the amount of talc.

When using seed treatments, meters and seed disks should be cleaned as needed. Seed disks can be cleaned with warm, soapy water. Reapply spray on graphite as needed to vacuum seal side of disk.

OUO6045,00006CD -19-15JUN06-3/3

Use of Powdered Graphite with Radial Bean Meter

IMPORTANT: Some insecticide-treated seed is coated with commercially applied graphite. It is important that the recommended amount of graphite be added in addition to graphite already on the seed.

IMPORTANT: Regular use of powdered graphite reduces wear of metering components and prolongs life of meter. Graphite will filter down into radial bean meter and insure proper lubrication. John Deere Graphite provides a dry lubrication. Some types have an oil base and will form a gummy residue on parts. Graphite does not eliminate need for proper and regular lubrication indicated in lubrication charts.

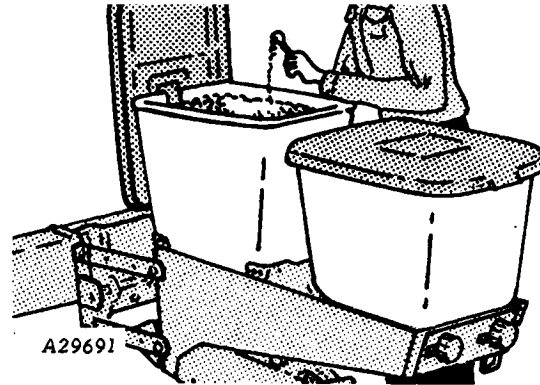
NOTE: Any additives other than John Deere powdered graphite in radial bean meters may leave residue on parts that could affect planting rates.

NOTE: If graphite is building up in bottom of hopper, reduce amount accordingly.

Add powdered graphite into each hopper of soybeans at the following rate per fill.

Max Emerge Hopper Graphite Application Rate	
Hopper Size	Amount of Graphite
58 L (1.6 bu.)	15 mL (1 Tbls.)
106 L (3 bu.)	30 mL (2 Tbls.)
22.7 kg (50 lb) Soybean Bag	15 mL (1 Tbls.) or (0.5 oz)

With rough-textured soybeans or treated soybeans, extra graphite added regularly with seed will improve seed flow into meter.



A29691 -JUN-13OCT88

Continued on next page

OUO6045,00006CE -19-12JAN06-1/2

IMPORTANT: When using the meters the first time each season, in addition to adding graphite to CCS tanks, add 9 mL (0.6 Tbls.) or (0.3 oz) to each row unit.

Add powdered graphite to each bulk hopper of soybeans at the following rate per fill:

CCS Graphite Application Rate	
CCS Tank Size	Amount of Graphite Per Fill
1233 L (35 bu.) Bulk Tank	328 mL (22 Tbls.) or (11 oz)
1762 L (50 bu.) Bulk Tank	470 mL (32 Tbls.) or (16 oz)
22.7 kg (50 lb) Soybean Bag	9 mL (0.6 Tbls.) or (0.3 oz)

NOTE: Every seed should be visibly grey when coated properly.

OUO6045,00006CE -19-12JAN06-2/2

Use of Powdered Graphite with Finger Pick-Up

IMPORTANT: Some insecticide-treated seed is coated with commercially applied graphite. It is important that the recommended amount of graphite be added in addition to graphite already on the seed.

IMPORTANT: Graphite will filter down into finger pick-up mechanism and insure proper lubrication. John Deere Graphite provides a dry lubrication. Some types have an oil base and will form a gummy residue on parts. Graphite does not eliminate need for proper and regular lubrication indicated in lubrication charts.

IMPORTANT: When using the meters the first time each season, in addition to adding graphite to CCS tanks, add 9 mL (0.6 Tbls.) or (0.3 oz) to each row unit.

Add powdered graphite to each bulk hopper at the following rate per fill:

CCS Graphite Application Rate	
CCS Tank Size	Amount of Graphite Per Fill
1233 L (35 bu.) Bulk Tank	328 mL (22 Tbls.) or (11 oz)
1762 L (50 bu.) Bulk Tank	470 mL (32 Tbls.) or (16 oz)
80,000 Kernel Seed Corn Unit	15 mL (1 Tbls.) or (0.5 oz)

CCS Insecticide Treated Seed	
CCS Tank Size	Amount of Graphite Per Fill
1233 L (35 bu.) Bulk Tank	500 mL (2 Cups) or (17 oz)
1762 L (50 bu.) Bulk Tank	740 mL (3 cups) or (25 oz)
80,000 Kernel Seed Corn Unit	15 mL (1 Tbls.) or (0.5 oz)

NOTE: If graphite is building up in bottom of hopper, reduce amount accordingly.

Add powdered graphite into each hopper at the following rate per fill.

Use of Talc and Graphite Lubricants

Max Emerge Hopper Graphite Application Rate	
Hopper Size	Amount of Graphite
58 L (1.6 bu.)	15 mL (1 Tbls.)
106 L (3 bu.)	30 mL (2 Tbls.)
80,000 Kernel Seed Corn Unit	15 mL (1 Tbls.) or (0.5 oz)
Insecticide Treated Seed	
80,000 Kernel Seed Corn Unit	15 mL (1 Tbls.) or (0.5 oz)

NOTE: Every seed should be visibly gray when coated properly.

OUO6045.00006D0 -19-12JAN06-2/2

MaxEmerge *XP* Vacuum Meter Setup

Vacuum Meter Operating Characteristics

The operating band (gray area) illustrates how vacuum meter performs in relation to desired population (indicated by horizontal line).

Width of band is due to:

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

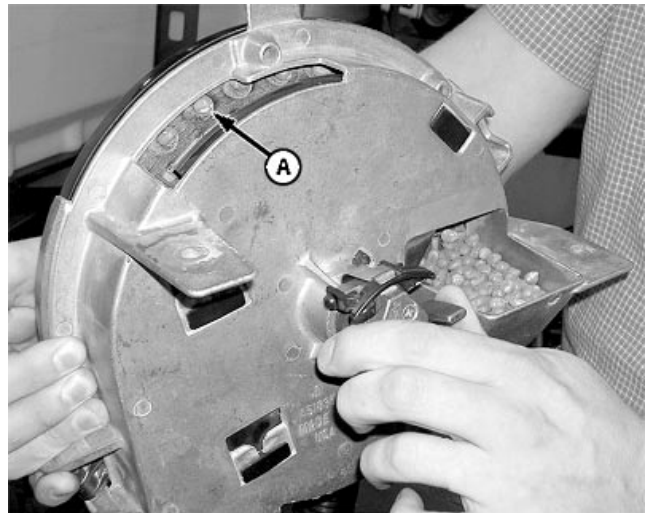
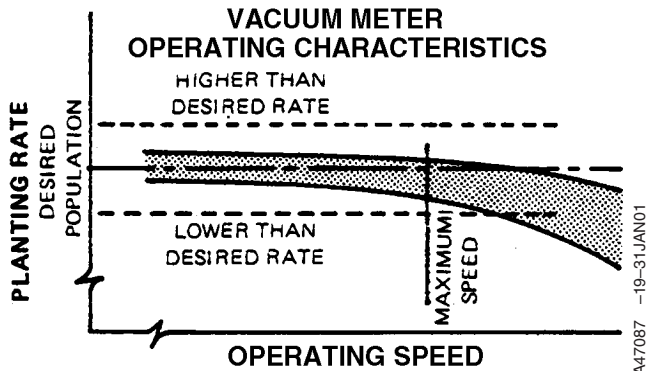
In most cases, vacuum meter planting accuracy does not decline unless maximum planting speed is exceeded.

On the vacuum meter, maximum speed is often a result of field conditions. Rough field conditions can knock seed off seed disks and can cause row unit bounce which can severely affect seed placement. Adding attachments like pneumatic down-force can improve seed placement in rough field conditions.

Always verify the correct seed disk is used for seed being planted. If the seed is unusually sized or shaped, a disk for a different crop may work better. See **SEED DISK RECOMMENDATIONS** in this Section or your John Deere dealer.

If seed varies widely in size and shape, a flat disk and doubles eliminator may provide better population control.

A good way to check for proper seed disk is to remove meter from seed hopper, place seed in meter, connect vacuum hose to meter dome, activate vacuum to recommended level for crop, and turn meter by hand to verify only one seed (A) fits into each cell.



A—Seed

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

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

Meter Settings

This table can be used as a quick reference for some common settings. For additional recommendations and adjustment information, see recommendations and adjustment procedures outlined in this section.

Crop	Disk	Brush	Baffle Position	Doubles Eliminator Initial Setting	Knockout Wheel
Corn	Corn	Long	Upper	See Footnote ^a	No
Corn	Sweet Corn	Long	Upper	Use inner cam slot. See Footnote ^b	Yes
Sweet Corn	Sweet Corn	Long	Upper	Use inner cam slot. See Footnote ^a	Yes
Oil Sunflower	Sunflower / Popcorn	Long	Lower	See Footnote ^a	No
Confectionary Sunflower	Sweet Corn	Long	Upper	Use inner cam slot. See Footnote ^a	Yes
Low Rate Cotton	Cotton 32 Cell	Long	Upper	See Footnote ^a	No
Cotton	Cotton 64 Cell	Long	Upper	See Footnote ^a	No
Cotton	Edible Bean Flat Type	Long	Upper	Use outer cam slot. See Footnote ^a	Yes
Four Seed Cotton Hilldrop	Cotton 48 Cell (4 seed drop)	Short	Upper	See Footnote ^a	No
Two Seed Cotton Hilldrop	Cotton 64 Cell (2 seed drop)	Long	Upper	See Footnote ^a	No
Low Rate Sorghum	Sorghum 45 Cell	Long	Lower	See Footnote ^a	Yes
High Rate Sorghum	Sorghum 90 Cell	Long	Lower	See Footnote ^a	Yes
Sorghum	Sugar Beet	Long	Lower	See Footnote ^a	Yes
Soybean	Soybean	Long	Upper	See Footnote ^a	No
Soybean	Cotton 64 Cell	Long	Upper	See Footnote ^a	No
Sugar Beet	Sugar Beet	Long	lower	See Footnote ^a	Yes
Small Edible Bean	Small Edible Bean Cell Type	Long	Upper	See Footnote ^a	No
Medium Edible Bean	Medium Edible Bean Cell Type	Short	Upper	See Footnote ^a	No
Large Edible Bean	Large Edible Bean Cell Type	Short	Upper	See Footnote ^a	No
Small, Medium and Large Edible Beans	Edible Bean Flat Type	Long	Upper	Use outer cam slot. See Footnote ^a	Yes
Runner and Spanish Peanut	Large Edible Bean Cell Type	Short	Upper	See Footnote ^a	No
Virginia Peanut	Virginia Peanut	Short	Upper	See Footnote ^a	No

^aDouble eliminator not used with this disk. If installed, move tip of eliminator away from center of meter as far as possible.

^bSet eliminator with far right tooth (the one under adjusting screw) covering hole as follows. For seeds between 1980-4400 seeds/kg (900-2000 seeds/lb), set eliminator with tooth covering one quarter of hole. For seeds between 4400-7040 seeds/kg (2000-3200 seeds/lb), set eliminator with tooth covering one half of hole.

Seed Disk Selection Guidelines

IMPORTANT: These seed disk recommendations are based on seed testing from a variety of sources. Because seed size and shape changes from year to year, there is always a possibility that an alternative disk will provide better performance. Consult your John Deere dealer 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 the majority of seed sizes to be planted.

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

The easiest way to determine the proper disk is to place a sample of the seed into the cells of the seed disk. If two seeds easily fit in the cell, a smaller disk should be used. If one seed does not fit properly in the cell, a larger disk should be used. If two disks work well for a particular seed size, always use the smaller disk. It's much easier to increase vacuum to compensate for skips (and rough fields) than to lower vacuum to eliminate doubles as sometimes this can result in doubles and skips.

For seed sizes outside the ranges listed, seed disks for other crops can be used. As with any seed disk change, population and spacing should always be checked in the field.

OUO6074,0000ECD -19-19JUN06-1/1

OPTIMIZING SEED SPACING

Choosing the correct seed disk for the seed being planted is the first step in optimal meter performance. Seed spacing is also dependent on ground conditions, meter speed and ground speed.

IMPORTANT: The row unit can meter seeds in rough ground conditions, at higher metering speeds and higher ground speeds, but at a reduced rate of seed spacing performance. The operator needs to determine if the planting timeline for getting the seed in the ground is more important than achieving optimal spacing.

GROUND CONDITIONS

The rougher the ground conditions during planting, the more seed spacing will vary. Slow down in rougher ground conditions to achieve optimal spacing.

METER SPEED

The higher the meter speed, the more difficult it is to meter the seed at optimal spacing. For higher populations, reduce ground speed to reduce meter speed.

GROUND SPEED

Ground speed directly affects in-ground seed spacing performance. As ground speeds are increased above 8 km/h (5 mph), seed spacing performance will decrease.

OUC6074,0000ED1 -19-20JUN06-1/1

CHECKING METER PERFORMANCE

IMPORTANT: After a Seed Disk is selected, seed singulation checks in the meter and in ground spacing checks are required for determining the level of metering performance. See Checking Seed Population section.

The seed disk selection guidelines are recommendations based on seed testing from a variety of sources. Because of the changes in shape and size from year to year, there is always the possibility that an alternative disk will provide better performance.

OUO6074,0000ED0 -19-21JUN06-1/1

SELECTING THE CORRECT FIELD CORN SEED DISK FOR OPTIMUM PERFORMANCE

Corn Seed Disk Selection Guide					
Seed Shape	Seed/kg (Seed/lb)	Disk Name	Part Number	Number of Cells (Hole Diameter (mm))	If population is hard to control
Non-Uniform (mixed shapes)	Mixed Sizes (Mixed Sizes)	Large Sweet Corn With Double Eliminator	A52391	40 (4.5)	If over or under populating with starting disk, adjust double eliminator
Uniform Flat	Less than 3308 (1500)	Large Sweet Corn With Double Eliminator	A52391	40 (4.5)	If over or under populating with starting disk, adjust double eliminator
Uniform Flat	3308-6175 (1500-2800)	Small Corn Disk	A43215	30 (3.6)	Adjust vacuum first, if unsuccessful, switch to overlapping disk shown in vacuum level chart ^a
Uniform Flat	Greater than 6175 (2800)	Sunflower/ Popcorn	H136478	30 (2.6)	Adjust vacuum first, if unsuccessful, switch to Small Corn Disk (A43215)
Uniform Round	Less than 3308 (1500)	Standard Corn Disk	A52391	30 (3.6)	Adjust vacuum
Uniform Round	3308-6175 (1500-2800)	Small Corn Disk	A43215	30 (3.6)	Adjust vacuum first. if unsuccessful, switch to Standard Corn Disk (A50617)
Uniform Round	Greater than 6175 (2800)	Sunflower/ Popcorn	H136478	30 (2.6)	Adjust vacuum first, if unsuccessful, switch to Small Corn Disk (A43215)

^aFor larger seed sizes that are less than 3970 seeds/kg (1800 seeds/lb), switch to Standard Corn Disk (A50617). If population control problems persists, switch to Large Sweet Corn Disk (A52391) with double eliminator. For smaller seed sizes that are greater than 5072 seeds/kg (2300 seeds/lb), switch to Sunflower/Popcorn Disk (H136478). If population control problem persists, switch to Large Sweet Corn Disk (A52391) with double eliminator.

Use the above **Corn Seed Disk Selection Guide** to determine the recommended seed disk first, and then refer to vacuum level chart for initial vacuum setting.

Most corn seed can be planted near 100 percent of desired population when using small corn or standard corn seed disks (WHICH HAVE SEED CELLS) and properly adjusted vacuum level.

Using cell-type disks (Small and Standard Corn Seed Disks) requires careful selection for proper performance.

Metering performance is directly dependent on the consistency of seed sizing. Seeds that are mixed in shape and size will not perform optimally with cell-type disks. The Large Sweet Corn Disk (A52391) with double eliminator will be required for optimum seed singulation and seed release for seed sizing that is variable.

For seed sizes that overlap the Small Corn Disk (A43215) and the Standard Corn Disk (A50617), choose the Small Corn Disk for initial setting. If population is difficult to control, switch to Standard Corn Disk.

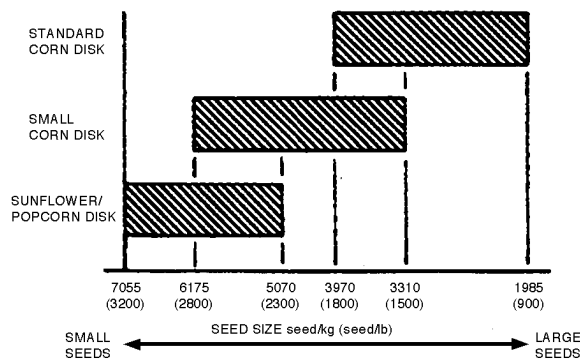
DIFFICULT TO PLANT SEEDS

- Difficult seeds to plant include varieties with mixed sizes, mixed shapes, combinations of sizes and shapes, long and slender seeds, seeds with a sharp point (germ) and others.
- Large Sweet Corn disk and Small Sweet Corn disk are two flat-seed disks which can be used for improved seed singulation with difficult to plant seeds. Sweet corn disks require higher vacuum levels than cell type disks and require the installation of a double eliminator and knockout wheel in each meter assembly.
- Sweet corn disks have 40 holes per revolution. Set seed transmission according to population rate charts for Sweet Corn when using either Sweet Corn Disk. Overpopulating will result if cell-type corn charts are used, as those disks have 30 cells.
- Well graded seed also requires proper seed disk selection for optimal performance.

PLANTING CORN IN HILLSIDE CONDITIONS

In hillside conditions, changing direction of planting can affect performance. Planting with the left side of the machine on the downhill can result in skips due to the seeds being pulled away from the seed disk and a smaller seed puddle next to the seed disk. With the right side of the machine downhill, overpopulation can result due to the seed being pushed against the seed disk and a larger seed puddle next to the seed disk. To maximize vacuum meter performance on hillsides, follow these steps:

- Use the smallest seed disk possible. By using a smaller seed disk there is less opportunity for doubles.
- Use round seed. By using round seed instead of flats, there is a better chance for seed to stay in the cell and reduced chances for doubles.



Overlapping Seed Disk Chart

A58156 -19-13JUN06

- Use a flat disk with double eliminator. In some cases, round seed may not be available for the preferred seed variety or hillsides may be steep enough to require a flat type seed disk. The flat disk HAS NO SEED CELLS and requires the use of higher vacuum levels, a double eliminator and a knockout wheel. The double eliminator is used to knock off excess seed while knockout wheel is used to keep vacuum holes free of debris.
- Set seed transmission according to population rate charts for Sweet Corn when using the Sweet Corn disk. Overpopulating will result if cell-type corn charts are used as those disks have 30 cells.

OUO6074,0000ECE -19-22JUN06-3/3

Seed Disk Recommendations For Crops Other Than Field Corn

SWEET CORN (Flat Disk)

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
Large Sweet Corn	A52391	<8600	<3900	40	4.5
Small Sweet Corn	A52390	>7700	>3500	40	3.75

POPCORN

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
Sunflower/ Popcorn	H136478	5500 to 9900	2500 to 4500	30	2.6
Sorghum	A43066	>9900	>4500	45	1.5

On difficult to plant seeds use of the Small Sweet Corn disk (Part No. A52390) may improve performance.

In some cases a Small Corn (Part No. A43215) or Sunflower (Part No. H136478) cell type disk may provide satisfactory performance depending upon seed size and shape.

CONFECTIONARY SUNFLOWER

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
Large Sweet Corn Flat Type with Double Eliminator	A52391	5000 to 7200	2250 to 3250	40	4.5
Small Sweet Corn Flat Type with Double Eliminator	A52390	7200 to 11 600	3250 to 5250	40	3.75

OIL SUNFLOWER

Disk Name	Part Number	Seed Sizes	Number of Cells	Hole Diameter (mm)
Sunflower/ Popcorn	H136478	4 (Small) 3 (Medium) 2 (Large)	30	2.6

For oil sunflower seed sizes 1 (Extra Large) and 5 (Extra Small) see the recommendations above for confectionary sunflowers. Part No. H136478 is recommended for oil sunflower seed sizes 4 (small), 3 (medium) and 2 (large). This disk is NOT recommended for oil sunflower seed sizes 1 (extra large) and 5 (extra small) or confectionary sunflower seeds.

DRILLED COTTON

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
Acid Delinted Cotton	A56251	8800 to 13 200	4000 to 6000	64	2.5

For small seeds that result in doubles on the Acid-Delinted Cotton disk, using a Small Edible Bean Disk (Part No. A52903) with Double Eliminator is recommended.

4-CELL HILLDROP COTTON

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
4-Cell Hilldrop	A65622	8800 to 13 200	4000 to 6000	48	2.5

For small seeds that result in dropping more than four seeds, use of the 2-Cell Hilldrop Cotton disk is recommended.

Continued on next page

OUO6074,0000ECF -19-22JUN06-2/8

2-CELL HILLDROP COTTON

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
2-Cell Hilldrop	A74961	8800 to 13 200	4000 to 6000	64	2.5

COTTON USING EDIBLE BEAN - Flat Disk A52903 Small

Cotton Seed	Seeds/kg	Seeds/lb	Number of Cells	Hole Diameter (mm)
Small	3520 to 7260	1600 to 3300	50	3.75

Small cotton seed can also be planted using this disk when cotton disks result in doubles (double eliminator is recommended).

SOYBEANS

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
Soybean	A42586	Below 7700	Below 3500	108	4.4
Cotton	A56251	Above 7700	Above 3500	64	2.5

For smaller seed sizes that result in doubles, a Cotton Seed disk (Part No. A56251) can provide improved performance.

LOW-RATE SORGHUM

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
Low-Rate Sorghum	A43066	22 000 to 35 300	10 000 to 16 000	45	1.5

For smaller seed sizes that result in doubles, a Medium Sugar Beet disk (Part No. H136445) or a Small Sugar Beet disk (Part No. A51712) can provide improved performance.

HIGH-RATE SORGHUM

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
High-Rate Sorghum	A52802	22 000 to 35 300	10 000 to 16 000	90	1.5

MONO-GERM SUGAR BEETS

Disk Name	Part Number	Seed Size	Number of Cells	Hole Diameter (mm)
Small Sugar Beet	A51712	2.6—3.2 mm Seed	45	1.5
Small and Medium Sugar Beet	H136445	3.0—3.6 mm Seed	45	1.5
Large Sugar Beet	A51713	3.4—4.0 mm Seed	45	1.6

PELLETED SUGAR BEETS

Disk Name	Part Number	Seed Size	Number of Cells	Hole Diameter (mm)
Small and Medium Sugar Beet	H136445	3.2—4.0 mm Seed	45	1.5
Large Sugar Beet	A51713	3.6—4.6 mm Seed	45	1.5
Sorghum	A43066	3.6—4.6 mm Seed	45	1.5

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OUC6074,0000ECF -19-22JUN06-4/8

SMALL EDIBLE BEAN - Cell Disk H136468

Seed	Seeds/kg	Seeds/lb	Number of Cells	Hole Diameter (mm)
Black Turtle	4180 to 5720	1900 to 2600	108	3.5
Navy	3960 to 5500	1800 to 2500	108	3.5
Pink Viva	3740 to 4290	1700 to 1950	108	3.5
Small White	5280 to 6600	2400 to 3000	108	3.5
Smooth Pea	6160 to 7040	2800 to 3200	108	3.5

MEDIUM EDIBLE BEAN - Cell Disk A51696

Seed	Seeds/kg	Seeds/lb	Number of Cells	Hole Diameter (mm)
Blackeyed Pea	3520 to 4400	1600 to 2000	56	4
Green Beans (Garden)	2200 to 4840	1000 to 2200	56	4
Kidney (Small)	2530 to 3080	1150 to 1400	56	4
Pinto	1760 to 3080	800 to 1400	56	4
Red Mexican (Small)	2640 to 3300	1200 to 1500	56	4
Wrinkle Pea	3960 to 5060	1800 to 2300	56	4

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OUO6074,0000ECF -19-22JUN06-5/8

LARGE EDIBLE BEAN - Cell Disk H136092

Seed	Seeds/kg	Seeds/lb	Number of Cells	Hole Diameter (mm)
Cranberry Bean	1760 to 2640	800 to 1200	50	4.8
Kidney (Medium)	2090 to 2530	950 to 1150	50	4.8
Great Northern	1980 to 2860	900 to 1300	50	4.8
Garbanzo	1650 to 1980	750 to 900	50	4.8
Peanuts (Runner)	1430 to 1760	650 to 800	50	4.8
Peanuts (Spanish)	2200 to 2750	1000 to 1250	50	4.8

EDIBLE BEAN - Flat Disk A52903 Small

Edible Bean Seed - Small	Seeds/kg	Seeds/lb	Number of Cells	Hole Diameter (mm)
Green Garden, Small	3520 to 5280	1600 to 2400	50	3.75
Black Turtle	4180 to 5720	1900 to 2600	50	3.75
Navy	3960 to 5720	1800 to 2600	50	3.75
Small White	5280 to 7260	2400 to 3300	50	3.75
Edible Peas	Seeds/kg	Seeds/lb	Number of Cells	Hole Diameter (mm)
Wrinkle	3740 to 5060	1700 to 2300	50	4.75

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EDIBLE BEAN - Flat Disk A52904 Medium

Edible Bean Seed - Medium	Seeds/kg	Seeds/lb	Number of Cells	Hole Diameter (mm)
Green Garden, Medium	2640 to 3520	1200 to 1600	50	4.5
Small Red	2640 to 3300	1200 to 1500	50	4.5
Pinto	All Sizes		50	4.5
Medium Kidney	2530 to 3080	1150 to 1400	50	4.5
Lima	2640 to 3520	1200 to 1600	50	4.5
Corn Seed	3300 to 7040	1500 to 3200	50	4.5
Pink Viva	3740 to 4180	1700 to 1900	50	4.5
Edible Peas	Seeds/kg	Seeds/lb	Number of Cells	Hole Diameter (mm)
Blackeyed	3520 to 4400	1600 to 2000	50	4.5
Smooth	6160 to 7040	2800 to 3200	50	4.5

EDIBLE BEAN - Flat Disk A52878 Large

Edible Bean Seed - Large	Seeds/kg	Seeds/lb	Number of Cells	Hole Diameter (mm)
Green Garden, Large	1540 to 2640	700 to 1200	50	5.0
Cranberry	1760 to 2640	800 to 1200	50	5.0
Large Kidney	1870 to 2530	850 to 1150	50	5.0
Great Northern	1980 to 2860	900 to 1300	50	5.0
Garbanzo	1650 to 1980	750 to 900	50	5.0

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OUO6074,0000ECF -19-22JUN06-7/8

VIRGINIA PEANUT

Part No. H138722 is recommended for seed sizes ranging from 1100 seeds/kg to 1760 seeds/kg (500 seeds/lb to 800 seeds/lb). It has 46 cells with 5.3 mm diameter holes.

BLANK SEED DISK

Part No. A52554

The blank seed disk allows custom drilling of specific hole sizes for specialty crops. See your John Deere dealer for details.

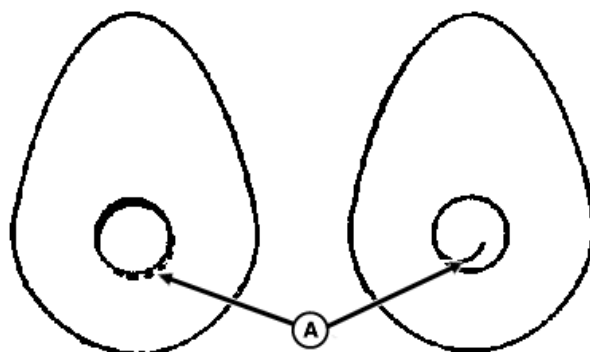
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Checking Seed Disk Cell

NOTE: Perform a field check to determine seed meter accuracy. It is not necessary to replace any seed disk if metering performance is satisfactory.

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 can not be easily removed, disk should be replaced.

A—Flash



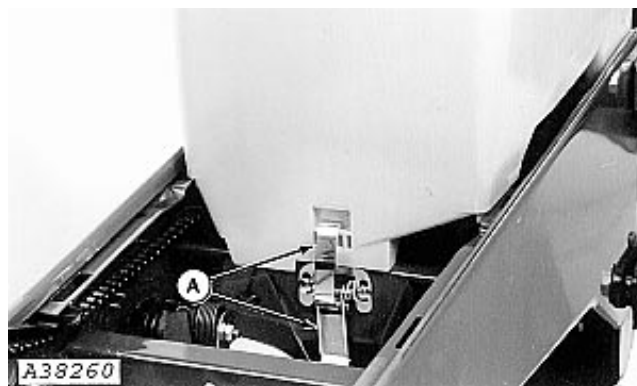
A46242 -UN-27JUL00

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Accessing The Vacuum Meter

1. Disengage hopper latch (A). Lift hopper upward then rearward to remove from planting unit.

A—Hopper Latch



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2. Remove vacuum hose (A) from metering unit.

A—Vacuum Hose

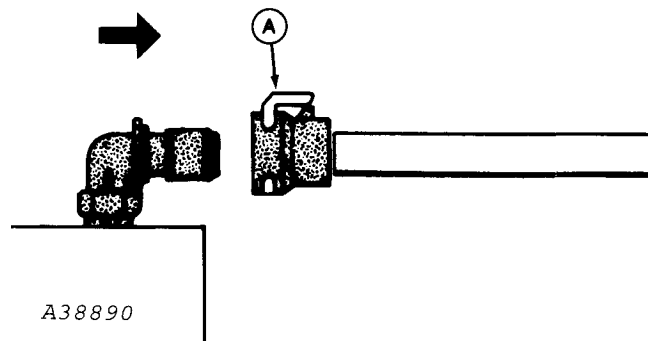


A54242 -UN-08APR04

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3. Squeeze retainer (A) and pull vacuum monitoring hose out of connector on units attached to monitor.

A—Retainer



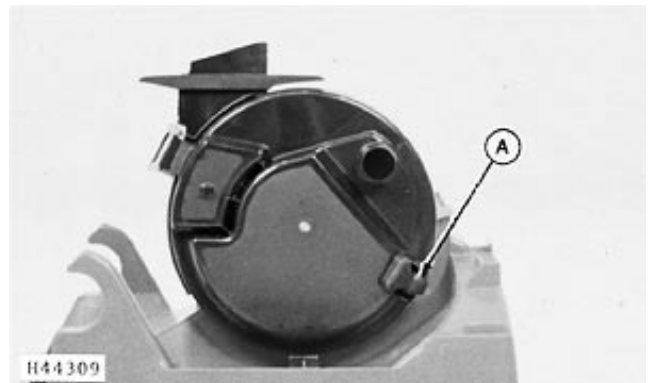
A38890 -UN-12JAN96

AG,OUO6074,1177 -19-26JUN06-3/4

IMPORTANT: Use precautions as recommended by chemical manufacturers when handling parts coated with seed treatments. Use proper skin, eye and respiratory protection.

4. Disengage handle (A) and swing vacuum chamber open.

A—Handle



H44309 -UN-14APR92

AG,OUO6074,1177 -19-26JUN06-4/4

Adjusting Vacuum Meter Baffle

1. Open vacuum meter. See ACCESSING THE VACUUM METER in this section.

NOTE: Lower position (B) is recommended for smaller seeded crops such as: sugar beets, sorghum, oil sunflower and popcorn.

Upper position (C) is recommended for larger seeded crops such as: corn, soybeans, cotton, edible beans, peanuts, sweet corn and confectionary sunflower.

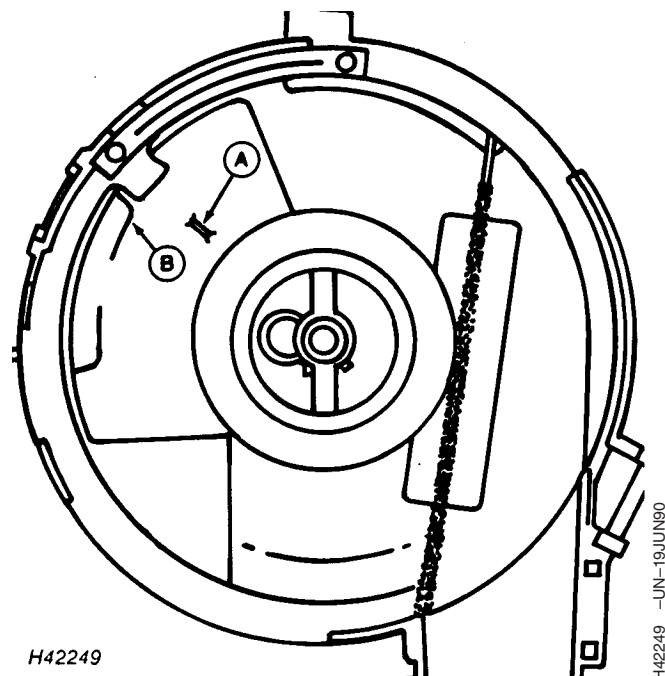
2. Move tab (A) to the position recommended in the Vacuum Meter Rate Charts section.

Seed bridging at meter inlet can result in long skips when planting. If this condition should occur, adjust baffle to upper position (C) and add talc lubricant generously.

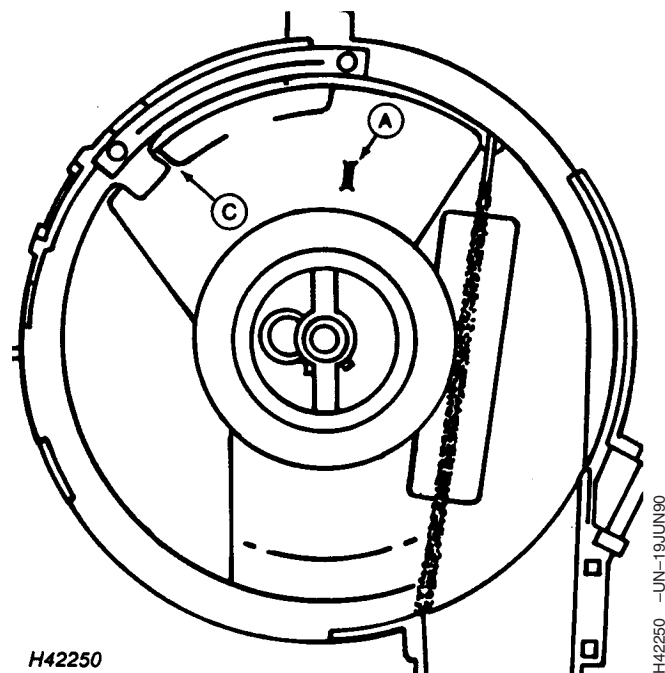
NOTE: Lowering the baffle will NOT eliminate overfilling of vacuum meter caused by extremely rough field conditions. Increase down force on row unit and reduce planting speed.

Overfilling of meter may occur if planting on hillsides. This may cause seed disk fins to carry seed over brush into seed tube and result in high population. When planting in hillside conditions, use of round seeds and in some cases flat disks will provide the best performance. If these conditions occur, reduce planting speed.

A—Tab
B—Lower Position
C—Upper Position



Lower Baffle Position



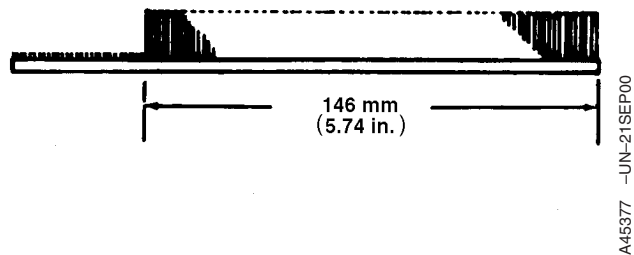
Upper Baffle Position

Selecting Correct Vacuum Meter Brush

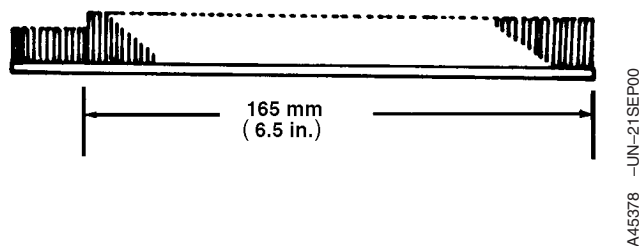
An incorrect vacuum meter brush will cause under population of edible beans, peanuts and hilddrop cotton.

Two vacuum meter brushes are available:

- Use short brush for medium and large edible beans, peanuts and four cell hilddrop cotton disks.
- Use regular (long) brush for all other crops.



Short Brush



Regular (Long) Brush

OUO6074,0000C02 -19-12JAN06-1/1

Changing Vacuum Meter Brush

1. Open vacuum meter. See ACCESSING THE VACUUM METER in this section.
2. Remove existing brush.
3. Install either the long or short brush as recommended in the Vacuum Meter Rate Charts section.

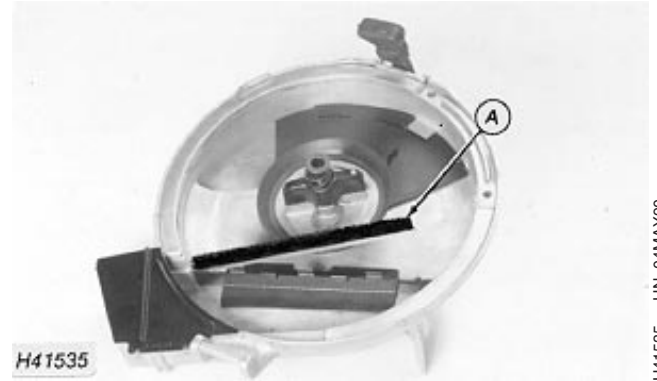
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AG,OUO6074,1186 -19-12JAN06-1/2

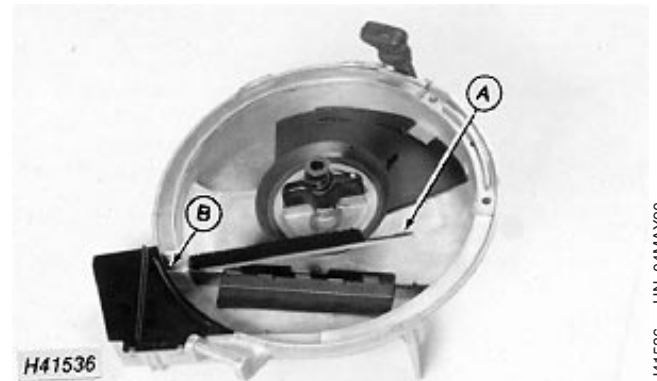
NOTE: Brush must be installed with notch (A) on side shown for proper operation.

4. Snap brush into slot until it contacts side of meter housing (B).

A—Notch
B—Meter Housing



Long Brush Shown



Short Brush Shown

AG.OUO6074,1186 -19-12JAN06-2/2

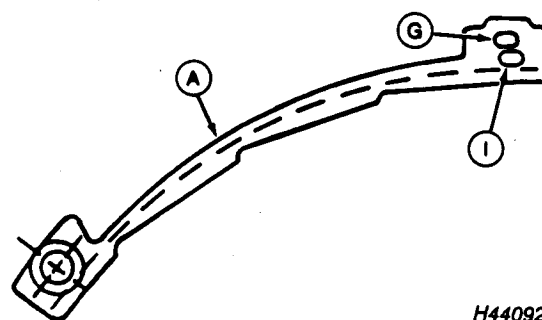
Installing Double Eliminator for Sweet Corn and Edible-Bean—Flat Type Seed Disks

NOTE: Double eliminator (A) is used to displace any extra seeds carried in vacuum hole. "Saw-tooth design" gradually covers part of vacuum hole.

Hole (I) is used for sweet corn disk. Hole (G) is used for the edible bean disk.

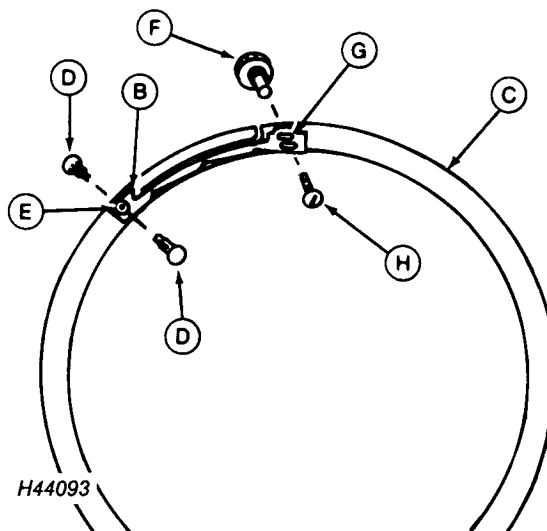
1. Open vacuum meter. See ACCESSING THE VACUUM METER in this section.
2. Remove meter from hopper. Save wing nuts for reassembly of meter.
3. Install double eliminator (B) in housing (C).
4. Insert dual-lock fasteners (D) through housing and hole (E) of double eliminator (B).
5. Insert cam nut (F) and screw (H) through hole (I) or (G) (depending on seed disk). DO NOT tighten.

A—Double Eliminator
B—Double Eliminator
C—Housing
D—Fasteners
E—Hole, Dual-Lock Fastener
F—Cam Nut
G—Hole
H—Screw
I—Hole, Sweet Corn



H44092

H44092 -UN-27APR93



H44093

H44093 -UN-27APR93

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OUC6074,000083C -19-12JAN06-1/2

6. Install sweet corn or edible-bean disk (A) and attach with hub handle.

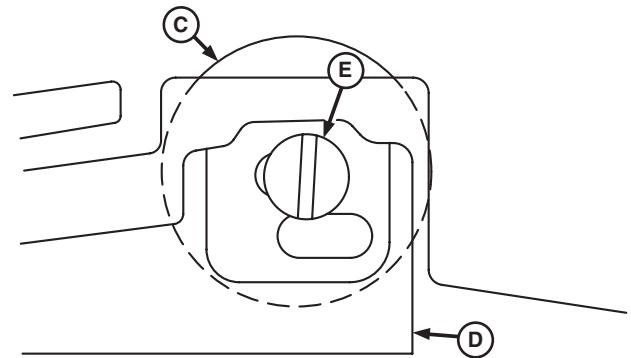
NOTE: Seed disk should turn smoothly with light contact or small gap between seed disk and housing. Turn seed disk by hand and check gap between seed disk and housing. Seed should NOT leak around circumference of meter.

7. Turn seed disk by hand and check gap between seed disk and meter housing in section (B). If disk turns too hard or if seed leaks through gap, adjust hub position. See ADJUSTING METER HUB in this section.
8. Turn cam nut (C) to increase or decrease vacuum hole coverage. The object is to cause double eliminator (D) to knock doubles off disk but not knock singles off. When double eliminator is in position, tighten screw (E). Set all rows the same.
9. Close meter and attach to hopper using wing nuts previously removed.

A—Disk
B—Gap
C—Cam Nut
D—Double Eliminator
E—Screw



A51174 -UN-19NOV02



A47075 -UN-31JAN01

OUO6074,000083C -19-12JAN06-2/2

Seed Knockout Wheel

The seed knockout wheel (A) is used to ensure that certain seed types are fully released from seed cell. Wheel projections engage seed cell holes, forcing all seeds and foreign material to be ejected.

The seed knockout wheel is required when planting sorghum, mono-germ sugar beet and seed planted with flat type seed disks. Sugar beet and sweet corn seed can have sharp edges and is typically irregular in shape, creating a potential for seeds to become lodged in the seed cell. Some sorghum seed contains large amounts of foreign material which can also become trapped in cell or cell holes.



A51650 -UN-04FEB03

A—Seed Knockout Wheel

AG,OUO6074,1180 -19-12JAN06-1/1

Installing Knockout Wheel Assembly

NOTE: The knockout wheel (A) is used to insure that irregular shaped seeds are fully released from vacuum hole. Wheel projections engage vacuum holes, forcing all seeds and foreign material to be ejected.

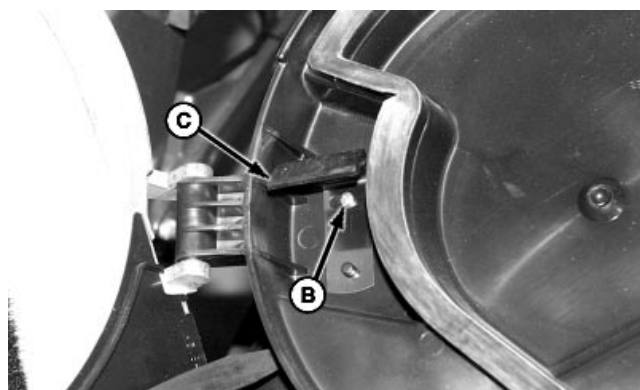
1. Open vacuum meter. See ACCESSING THE VACUUM METER in this section.
2. Loosen screw (B) and remove wiper assembly (C).
3. Install knockout assembly (D) with screw (B).

NOTE: When closing dome, verify wheel is running in the track on seed disk.

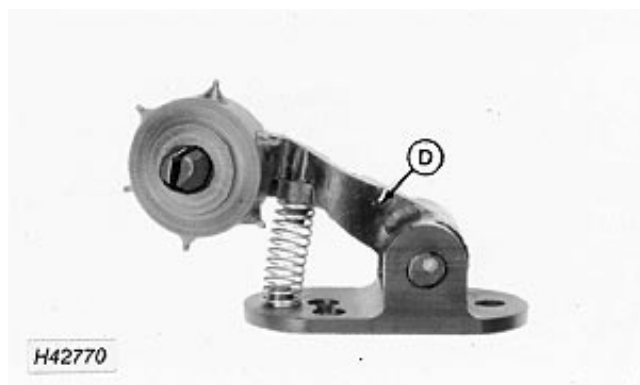
- A—Knockout Wheel
- B—Screw
- C—Wiper Assembly
- D—Knockout Assembly



A51650 -UN-04FEB03

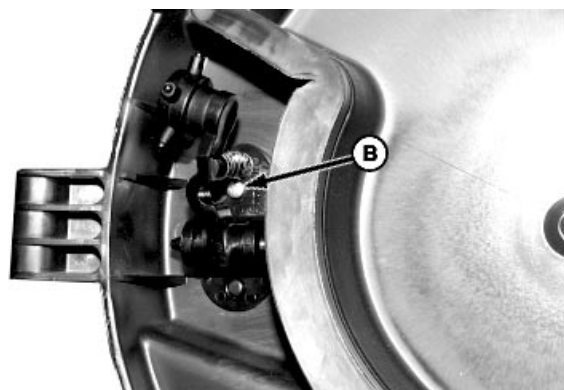


A51175 -UN-19NOV02



H42770 -UN-27NOV90

Knockout Assembly For Corn and Sorghum Shown



A51651 -UN-04FEB03

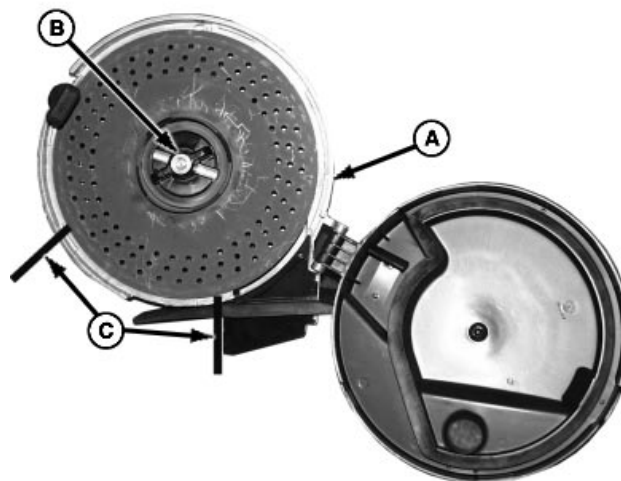
Installing Seed Disk

1. Open vacuum meter. See ACCESSING THE VACUUM METER in this section.
2. Fit seed disk into housing (A). Hold seed disk stationary and rotate hub handle (B).

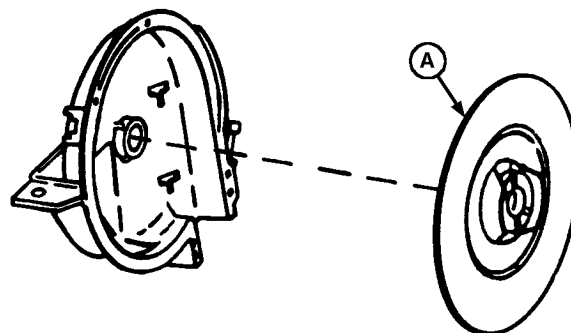
NOTE: Seed disk should turn smoothly with little or light contact between seed disk (A) and meter housing. Seed should not leak around circumference of meter. When planting small seed, such as sorghum, seed disk must lightly contact housing to prevent seed leakage.

3. Turn seed disk by hand and check gap between seed disk and meter housing in section (C). If disk rubs too hard against housing or if seed leaks through gap, adjust hub position. See ADJUSTING METER HUB in this section.

A—Housing
B—Hub Handle
C—Section



A51177 -UN-19NOV02



A46247 -UN-13JUN00

OUC6074,0000C2E -19-12JAN06-1/1

Adjusting Meter Hub

If gap is too large or disk turns too hard, adjust meter hub as follows:

1. Open vacuum meter. See ACCESSING THE VACUUM METER in this section.
2. Turn hub handle (A) counterclockwise. Remove seed disk from housing (B).

A—Hub Handle
B—Housing



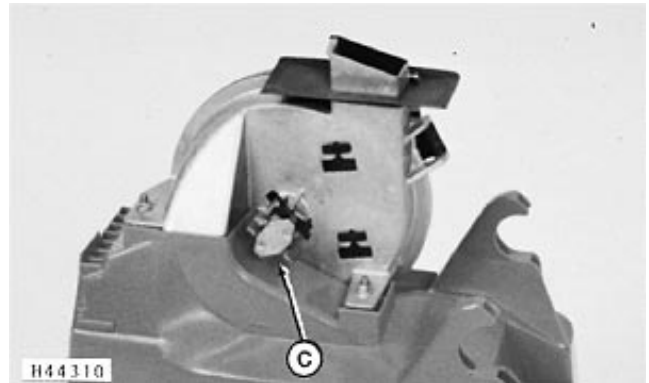
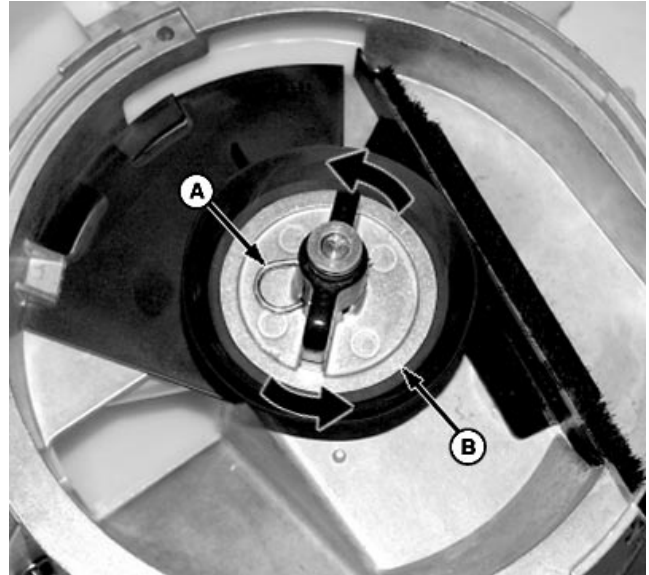
A51176 -UN-19NOV02

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OUC6074,00008A0 -19-12JAN06-1/3

3. Remove spring locking pin (A).
4. Adjust hub (B) as follows:
 - a. Hold meter drive (C).
 - b. Turn hub clockwise to move seed disk closer to meter housing or counterclockwise to move seed disk further from meter housing.
5. Turn hub until slot aligns with hole in shaft and install spring locking pin (A).

A—Pin
B—Hub
C—Meter Drive



Continued on next page

OUC6074,00008A0 -19-12JAN06-2/3

6. Fit seed disk into housing (A). Hold seed disk stationary and rotate hub handle (B).

NOTE: Seed disk should turn smoothly with light contact between seed disk and meter housing (A). Seed should not leak around circumference of meter. When planting small seed such as sorghum or sugar beets, seed disk must lightly contact meter housing to prevent seed leakage.

7. Turn seed disk by hand and check gap between seed disk and meter housing in section (C). If disk turns too hard or if seed leaks through gap, repeat procedure.

A—Meter Housing
B—Hub Handle
C—Section



A51177 -UN-19NOV02

OUO6074.00008A0 -19-12JAN06-3/3

Pro-Series *XP* Vacuum Meter Setup

Vacuum Meter Operating Characteristics

The operating band (gray area) illustrates how vacuum meter performs in relation to desired population (indicated by horizontal line).

Width of band is due to:

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

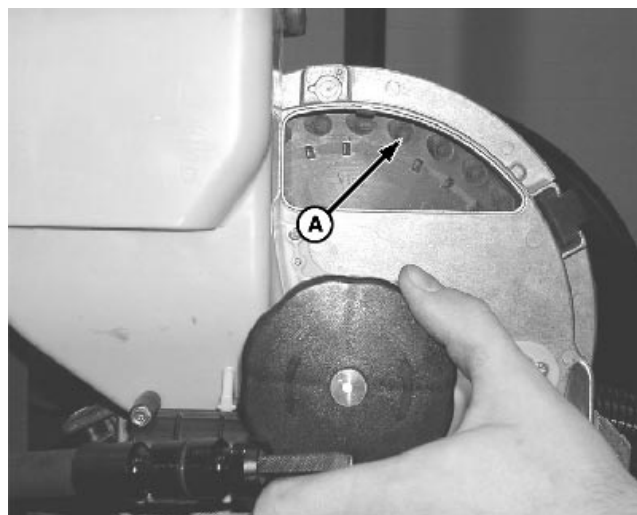
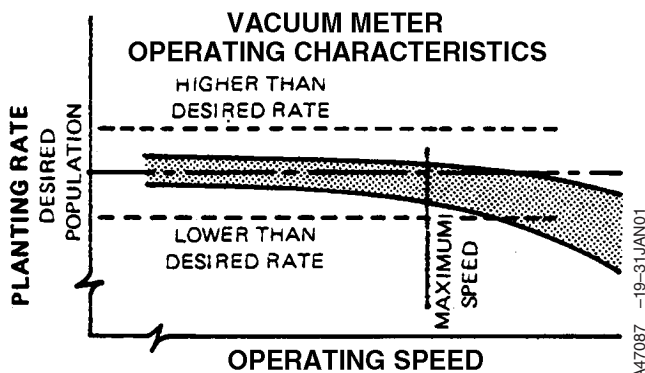
In most cases, vacuum meter planting accuracy does not decline unless maximum planting speed is exceeded.

On the vacuum meter, maximum speed is often a result of field conditions. Rough field conditions can knock seed off seed disks and can cause row unit bounce which can severely affect seed placement. Adding attachments like pneumatic down-force can improve seed placement in rough field conditions.

Always verify the correct seed disk is used for seed being planted. If the seed is unusually sized or shaped, a disk for a different crop may work better. See **SEED DISK RECOMMENDATIONS** in this Section or your John Deere dealer.

If seed varies widely in size and shape, a flat disk and doubles eliminator may provide better population control.

A good way to check for proper seed disk is to remove meter from seed hopper, place seed in meter, connect vacuum hose to meter dome, activate vacuum to recommended level for crop, and turn meter by hand to verify only one seed (A) fits into each cell.



A—Seed

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

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

Meter Settings

Crop and disk variations require different brush and double eliminator setup. See following table and

USING DOUBLE ELIMINATOR or CHANGING VACUMETER BRUSH in this section.

Crop	Disk	Single Notch Brush	Double Notch Brush	Double Eliminator Used
Corn	Corn	Yes	No	No
Corn	Sweet Corn	No	Yes	Yes
Sweet Corn	Sweet Corn	No	Yes	Yes
Popcorn	Sunflower /Popcorn or Sorghum	Yes	No	No
Oil Sunflower	Sunflower /Popcorn	Yes	No	No
Confectionary Sunflower	Sweet Corn	No	Yes	Yes
Cotton	Delinted or Hilldrop Cotton	Yes	No	No
Cotton	Edible Bean	No	Yes	Yes
Soybeans	Soybean or Cotton	Yes	No	No
Sorghum or Sugar Beet	Sorghum or Sugar Beet	Yes	No	No

OUO6045,0000708 -19-12JAN06-1/1

Seed Disk Selection Guidelines

IMPORTANT: These seed disk recommendations are based on seed testing from a variety of sources. Because seed size and shape changes from year to year, there is always a possibility that an alternative disk will provide better performance. Consult your John Deere dealer 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 the majority of seed sizes to be planted.

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

The easiest way to determine the proper disk is to place a sample of the seed into the cells of the seed disk. If two seeds easily fit in the cell, a smaller disk should be used. If one seed does not fit properly in the cell, a larger disk should be used. If two disks work well for a particular seed size, always use the smaller disk. It's much easier to increase vacuum to compensate for skips (and rough fields) than to lower vacuum to eliminate doubles as sometimes this can result in doubles and skips.

For seed sizes outside the ranges listed, seed disks for other crops can be used. As with any seed disk change, population and spacing should always be checked in the field.

OUO6074,0000ECD -19-19JUN06-1/1

OPTIMIZING SEED SPACING

Choosing the correct seed disk for the seed being planted is the first step in optimal meter performance. Seed spacing is also dependent on ground conditions, meter speed and ground speed.

IMPORTANT: The row unit can meter seeds in rough ground conditions, at higher metering speeds and higher ground speeds, but at a reduced rate of seed spacing performance. The operator needs to determine if the planting timeline for getting the seed in the ground is more important than achieving optimal spacing.

GROUND CONDITIONS

The rougher the ground conditions during planting, the more seed spacing will vary. Slow down in rougher ground conditions to achieve optimal spacing.

METER SPEED

The higher the meter speed, the more difficult it is to meter the seed at optimal spacing. For higher populations, reduce ground speed to reduce meter speed.

GROUND SPEED

Ground speed directly affects in-ground seed spacing performance. As ground speeds are increased above 8 km/h (5 mph), seed spacing performance will decrease.

OUC6074,0000ED1 -19-20JUN06-1/1

CHECKING METER PERFORMANCE

IMPORTANT: After a Seed Disk is selected, seed singulation checks in the meter and in ground spacing checks are required for determining the level of metering performance. See Checking Seed Population section.

The seed disk selection guidelines are recommendations based on seed testing from a variety of sources. Because of the changes in shape and size from year to year, there is always the possibility that an alternative disk will provide better performance.

OUO6074,0000ED0 -19-21JUN06-1/1

SELECTING THE CORRECT FIELD CORN SEED DISK FOR OPTIMUM PERFORMANCE

Corn Seed Disk Selection Guide					
Seed Shape	Seed/kg (Seed/lb)	Disk Name	Part Number	Number of Cells (Hole Diameter (mm))	If population is hard to control
Non-Uniform (mixed shapes)	Mixed Sizes (Mixed Sizes)	Large Sweet Corn With Double Eliminator	A52391	40 (4.5)	If over or under populating with starting disk, adjust double eliminator
Uniform Flat	Less than 3308 (1500)	Large Sweet Corn With Double Eliminator	A52391	40 (4.5)	If over or under populating with starting disk, adjust double eliminator
Uniform Flat	3308-6175 (1500-2800)	Small Corn Disk	A43215	30 (3.6)	Adjust vacuum first, if unsuccessful, switch to overlapping disk shown in vacuum level chart ^a
Uniform Flat	Greater than 6175 (2800)	Sunflower/ Popcorn	H136478	30 (2.6)	Adjust vacuum first, if unsuccessful, switch to Small Corn Disk (A43215)
Uniform Round	Less than 3308 (1500)	Standard Corn Disk	A52391	30 (3.6)	Adjust vacuum
Uniform Round	3308-6175 (1500-2800)	Small Corn Disk	A43215	30 (3.6)	Adjust vacuum first. if unsuccessful, switch to Standard Corn Disk (A50617)
Uniform Round	Greater than 6175 (2800)	Sunflower/ Popcorn	H136478	30 (2.6)	Adjust vacuum first, if unsuccessful, switch to Small Corn Disk (A43215)

^aFor larger seed sizes that are less than 3970 seeds/kg (1800 seeds/lb), switch to Standard Corn Disk (A50617). If population control problems persists, switch to Large Sweet Corn Disk (A52391) with double eliminator. For smaller seed sizes that are greater than 5072 seeds/kg (2300 seeds/lb), switch to Sunflower/Popcorn Disk (H136478). If population control problem persists, switch to Large Sweet Corn Disk (A52391) with double eliminator.

Use the above **Corn Seed Disk Selection Guide** to determine the recommended seed disk first, and then refer to vacuum level chart for initial vacuum setting.

Most corn seed can be planted near 100 percent of desired population when using small corn or standard corn seed disks (WHICH HAVE SEED CELLS) and properly adjusted vacuum level.

Using cell-type disks (Small and Standard Corn Seed Disks) requires careful selection for proper performance.

Metering performance is directly dependent on the consistency of seed sizing. Seeds that are mixed in shape and size will not perform optimally with cell-type disks. The Large Sweet Corn Disk (A52391) with double eliminator will be required for optimum seed singulation and seed release for seed sizing that is variable.

For seed sizes that overlap the Small Corn Disk (A43215) and the Standard Corn Disk (A50617), choose the Small Corn Disk for initial setting. If population is difficult to control, switch to Standard Corn Disk.

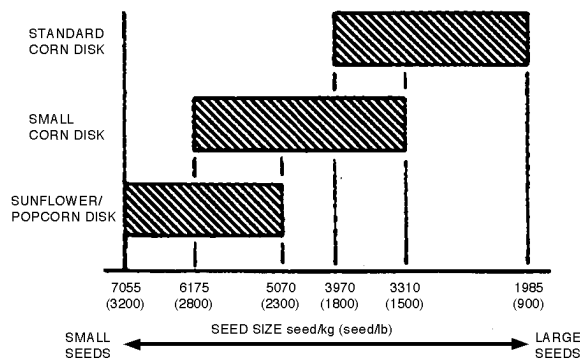
DIFFICULT TO PLANT SEEDS

- Difficult seeds to plant include varieties with mixed sizes, mixed shapes, combinations of sizes and shapes, long and slender seeds, seeds with a sharp point (germ) and others.
- Large Sweet Corn disk and Small Sweet Corn disk are two flat-seed disks which can be used for improved seed singulation with difficult to plant seeds. Sweet corn disks require higher vacuum levels than cell type disks and require the installation of a double eliminator and knockout wheel in each meter assembly.
- Sweet corn disks have 40 holes per revolution. Set seed transmission according to population rate charts for Sweet Corn when using either Sweet Corn Disk. Overpopulating will result if cell-type corn charts are used, as those disks have 30 cells.
- Well graded seed also requires proper seed disk selection for optimal performance.

PLANTING CORN IN HILLSIDE CONDITIONS

In hillside conditions, changing direction of planting can affect performance. Planting with the left side of the machine on the downhill can result in skips due to the seeds being pulled away from the seed disk and a smaller seed puddle next to the seed disk. With the right side of the machine downhill, overpopulation can result due to the seed being pushed against the seed disk and a larger seed puddle next to the seed disk. To maximize vacuum meter performance on hillsides, follow these steps:

- Use the smallest seed disk possible. By using a smaller seed disk there is less opportunity for doubles.
- Use round seed. By using round seed instead of flats, there is a better chance for seed to stay in the cell and reduced chances for doubles.



Overlapping Seed Disk Chart

A58156 -19-13JUN06

- Use a flat disk with double eliminator. In some cases, round seed may not be available for the preferred seed variety or hillsides may be steep enough to require a flat type seed disk. The flat disk HAS NO SEED CELLS and requires the use of higher vacuum levels, a double eliminator and a knockout wheel. The double eliminator is used to knock off excess seed while knockout wheel is used to keep vacuum holes free of debris.
- Set seed transmission according to population rate charts for Sweet Corn when using the Sweet Corn disk. Overpopulating will result if cell-type corn charts are used as those disks have 30 cells.

OUO6074,0000ECE -19-22JUN06-3/3

Seed Disk Recommendations For Crops Other Than Field Corn

SWEET CORN (Flat Disk)

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
Large Sweet Corn	A52391	<8600	<3900	40	4.5
Small Sweet Corn	A52390	>7700	>3500	40	3.75

POPCORN

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
Sunflower/ Popcorn	H136478	5500 to 9900	2500 to 4500	30	2.6
Sorghum	A43066	>9900	>4500	45	1.5

On difficult to plant seeds use of the Small Sweet Corn disk (Part No. A52390) may improve performance.

In some cases a Small Corn (Part No. A43215) or Sunflower (Part No. H136478) cell type disk may provide satisfactory performance depending upon seed size and shape.

CONFECTIONARY SUNFLOWER

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
Large Sweet Corn Flat Type with Double Eliminator	A52391	5000 to 7200	2250 to 3250	40	4.5
Small Sweet Corn Flat Type with Double Eliminator	A52390	7200 to 11 600	3250 to 5250	40	3.75

OIL SUNFLOWER

Disk Name	Part Number	Seed Sizes	Number of Cells	Hole Diameter (mm)
Sunflower/ Popcorn	H136478	4 (Small) 3 (Medium) 2 (Large)	30	2.6

For oil sunflower seed sizes 1 (Extra Large) and 5 (Extra Small) see the recommendations above for confectionary sunflowers. Part No. H136478 is recommended for oil sunflower seed sizes 4 (small), 3 (medium) and 2 (large). This disk is NOT recommended for oil sunflower seed sizes 1 (extra large) and 5 (extra small) or confectionary sunflower seeds.

DRILLED COTTON

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
Acid Delinted Cotton	A56251	8800 to 13 200	4000 to 6000	64	2.5

For small seeds that result in doubles on the Acid-Delinted Cotton disk, using a Small Edible Bean Disk (Part No. A52903) with Double Eliminator is recommended.

4-CELL HILLDROP COTTON

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
4-Cell Hilldrop	A65622	8800 to 13 200	4000 to 6000	48	2.5

For small seeds that result in dropping more than four seeds, use of the 2-Cell Hilldrop Cotton disk is recommended.

Continued on next page

OUO6074,0000C40 -19-22JUN06-2/4

2-CELL HILLDROP COTTON

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
2-Cell Hilldrop	A74961	8800 to 13 200	4000 to 6000	64	2.5

COTTON USING EDIBLE BEAN - Flat Disk A52903 Small

Cotton Seed	Seeds/kg	Seeds/lb	Number of Cells	Hole Diameter (mm)
Small	3520 to 7260	1600 to 3300	50	3.75

Small cotton seed can also be planted using this disk when cotton disks result in doubles (double eliminator is recommended).

SOYBEANS

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
Soybean	A42586	Below 7700	Below 3500	108	4.4
Cotton	A56251	Above 7700	Above 3500	64	2.5

For smaller seed sizes that result in doubles, a Cotton Seed disk (Part No. A56251) can provide improved performance.

LOW-RATE SORGHUM

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
Low-Rate Sorghum	A43066	22 000 to 35 300	10 000 to 16 000	45	1.5

For smaller seed sizes that result in doubles, a Medium Sugar Beet disk (Part No. H136445) or a Small Sugar Beet disk (Part No. A51712) can provide improved performance.

HIGH-RATE SORGHUM

Disk Name	Part Number	Seed/kg	Seed/lb	Number of Cells	Hole Diameter (mm)
High-Rate Sorghum	A52802	22 000 to 35 300	10 000 to 16 000	90	1.5

SORGHUM USING SUGAR BEET DISK

Disk Name	Part Number	Seed Size	Number of Cells	Hole Diameter (mm)
Small Sugar Beet	A51712	2.6—3.2 mm Seed	45	1.5
Small and Medium Sugar Beet	H136445	3.0—4.0 mm Seed	45	1.5

BLANK SEED DISK

Part No. A52554

The blank seed disk allows custom drilling of specific hole sizes for specialty crops. See your John Deere dealer for details.

OUO6074,0000C40 -19-22JUN06-4/4

Install Hopper Extensions

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

Disable CCS fan when using the mini-hopper.

1. Turn CCS fan flow control valve handle (A) (clockwise) to disable CCS fan.

A—Flow Control Valve Handle



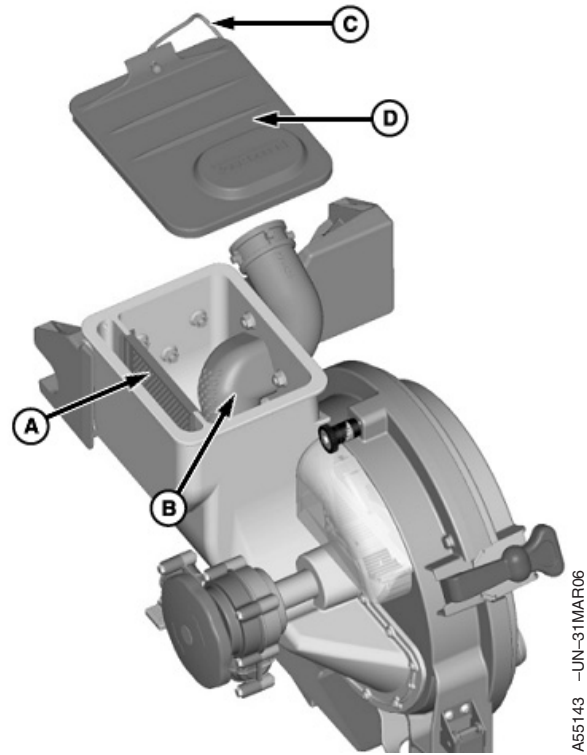
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OUO6435,0001DC1 -19-10MAR06-1/3

2. Remove screened divider (A), discharge elbow (B) and tether (C) from lid (D).

A—Screened Divider
B—Discharge Elbow
C—Tether
D—Lid



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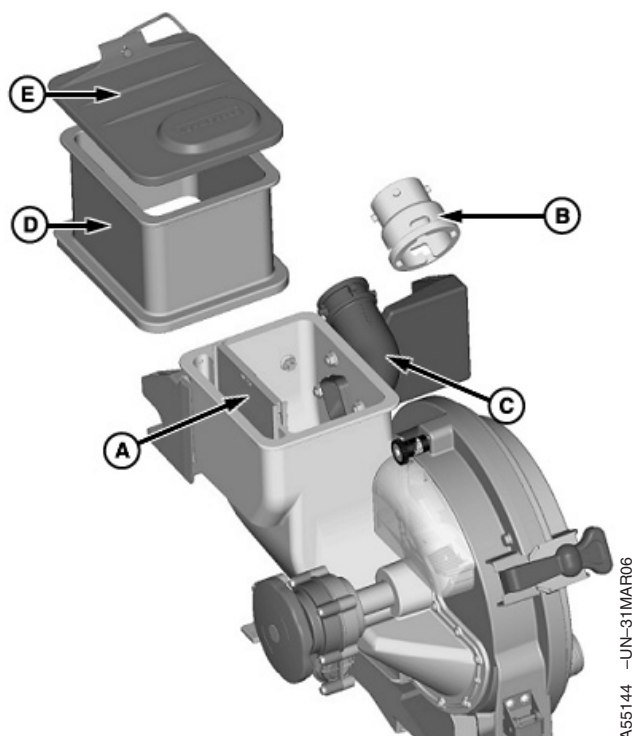
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NOTE: Do not install more than two extensions onto a mini-hopper. If two extensions are added, cap (B) should be ordered from parts and installed onto the CCS elbow (C). The cap will prevent seed from flowing back into the CCS hose.

3. Install non-screened divider (A), one or two extensions (D) onto the mini-hopper, and lid (E) onto the upper extension.

NOTE: Hopper extensions can be left on the mini-hopper when using CCS delivery system. To use the CCS system, install vented screen removed in step 2 and reset CCS fan speed. If solid screen is not replaced, the mini-hopper will be overfilled by the CCS system and seed will spill out of the mini-hopper.

A—Non-Screened Divider
B—Cap
C—Elbow
D—Extension
E—Lid



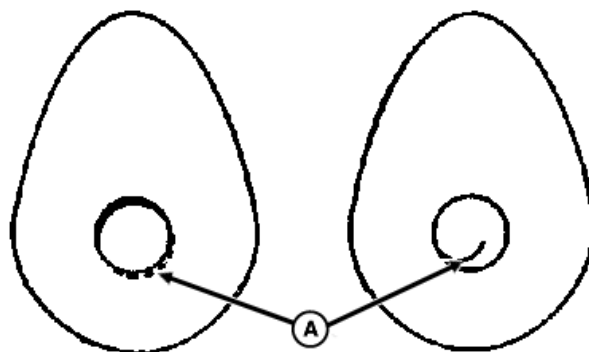
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Checking Seed Disk Cell

NOTE: Perform a field check to determine seed meter accuracy. It is not necessary to replace any seed disk if metering performance is satisfactory.

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 can not be easily removed, disk should be replaced.

A—Flash

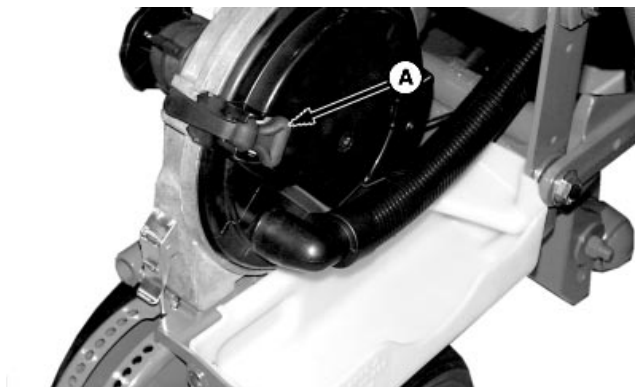


OUO6045,00006D2 -19-12JAN06-1/1

Accessing The Vacuum Meter

With PRO-SERIES XP Row Units, the vacuum meter is already exposed. Unhook rubber strap (A) and open meter door.

A—Rubber Strap



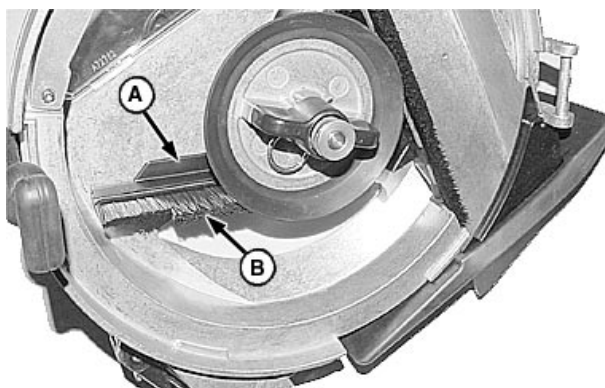
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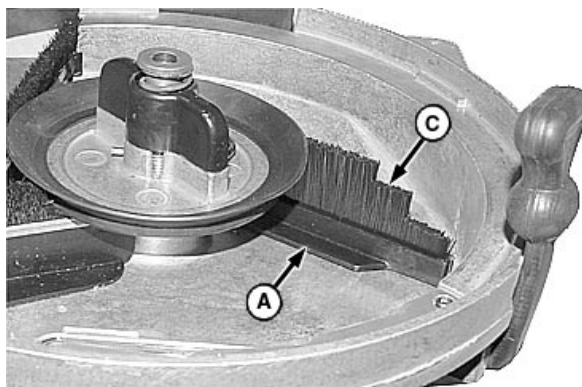
Changing Vacuum Meter Brush

1. Open vacuum meter and remove seed disk.
2. Firmly hold brush holder (A) against meter housing with one hand while pulling brush from holder with other hand.
3. Install appropriate brush.
 - Install single notch brush (B) when double eliminator is NOT used.
 - Install double notch brush (C) when double eliminator IS used.

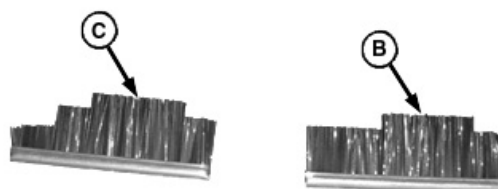
A—Brush Holder
B—Single Notch Brush
C—Double Notch Brush



A53448 —UN-05DEC03



A53449 —UN-05DEC03



A53450 —UN-05DEC03

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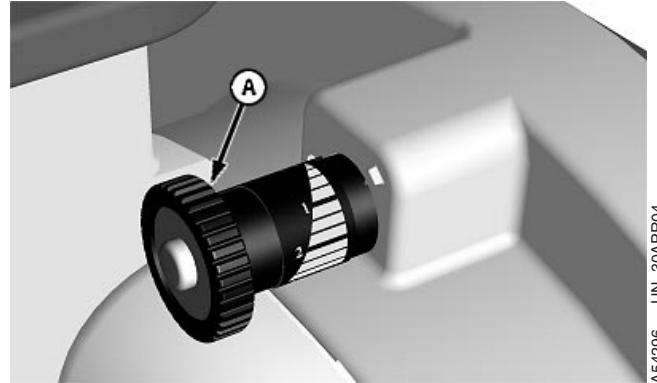
Using Double Eliminator

NOTE: When using the Double Eliminator, set vacuum level to approximately 15 and install double notch brush (B). See *CHANGING VACUUM METER BRUSH* in this section.

The double eliminator “saw-tooth design” gradually covers part of hole and removes any extra seeds (doubles) on the seed disk. Double eliminator should be used with flat-type seed disks. There are two classifications of flat type seed disks, Sweet Corn and Edible Bean disks. Use the following table for initial dial (A) setting.

Double Eliminator Initial Setting	
Seed Disk Classification	Double Eliminator Initial Setting
Sweet Corn Disks: A52390 A52391	1
Edible Bean Disks: A52878 A52904 A52903	2

A—Dial
B—Double Notch Brush



Double Eliminator Dial

A54296 –UN–30APR04



Double Notch Brush

A54299 –UN–30APR04

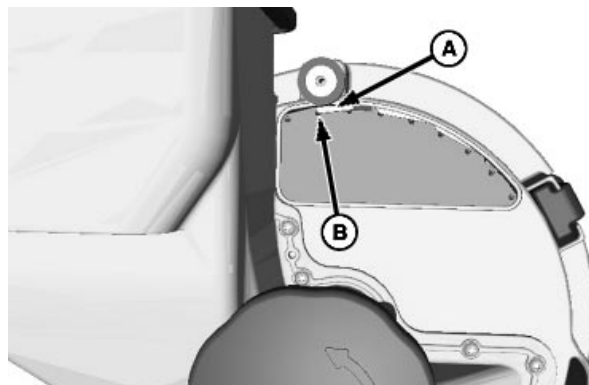
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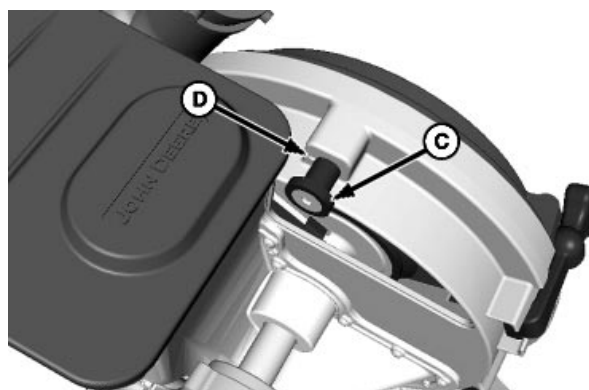
1. Verify that double eliminator (A) is covering 50 percent of seed disk hole (B).

NOTE: Make initial adjustments to one row and adjust all other rows the same.

2. To adjust double eliminator, apply outward pressure and turn double eliminator adjusting knob (C) until double eliminator is covering 50 percent of seed disk hole.
3. With vacuum running, disconnect the pro shaft drive cable and rotate the meter by hand. Verify only one seed remains on each hole of the seed disk after passing the double eliminator. Adjust accordingly.
4. Note decal setting (D) and adjust other rows accordingly.
5. Using a seed monitor, plant a distance long enough to get an average row population for every row.
6. If there is a row with a high population, adjust double eliminator to cover a little more of seed disk hole. If there is a row with a low population, adjust double eliminator to cover a little less of seed disk hole.
7. Repeat process until row population is relatively even across rows.



A52494 -UN-29JUL03



A52493 -UN-29JUL03

A—Double Eliminator
B—Seed Disk Hole
C—Adjusting Knob
D—Decal Setting

OUO6045,00006D5 -19-12JAN06-2/2

Seed Knockout Wheel

The seed knockout wheel (A) is used to ensure that certain seed types are fully released from seed cell. Wheel projections engage seed cell holes, forcing all seeds and foreign material to be ejected.

The seed knockout wheel is required when planting sorghum. Some sorghum seed contains large amounts of foreign material which can also become trapped in cell or cell holes.

A—Seed Knockout Wheel



A51650 -UN-04FEB03

OUO6045,00006D6 -19-12JAN06-1/1

Installing Knockout Wheel Assembly

NOTE: The knockout wheel (A) is used to insure that irregular shaped seeds are fully released from vacuum hole. Wheel projections engage vacuum holes, forcing all seeds and foreign material to be ejected.

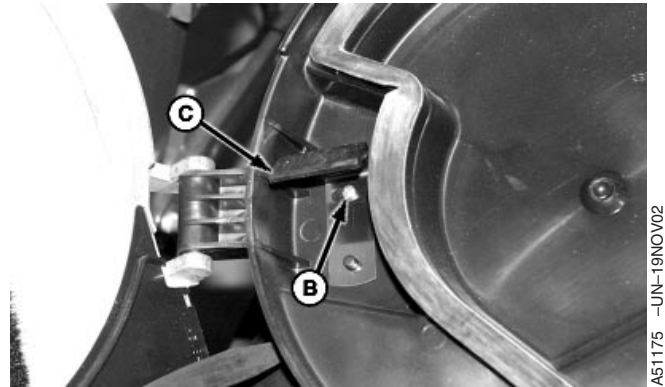
1. Open vacuum meter. See ACCESSING THE VACUUM METER in this section.
2. Loosen screw (B) and remove wiper assembly (C).
3. Install knockout assembly (D) with screw (B).

NOTE: When closing dome, verify wheel is running in the track on seed disk.

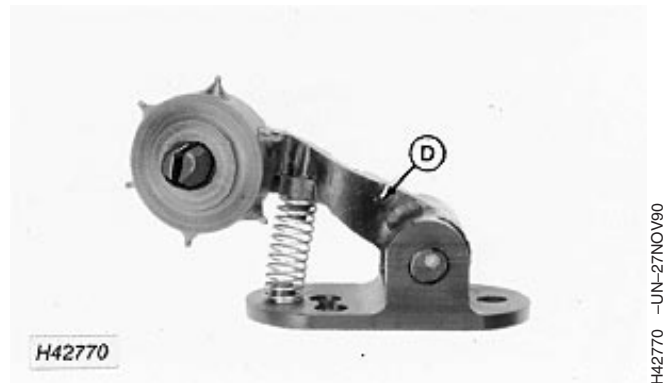
A—Knockout Wheel
B—Screw
C—Wiper Assembly
D—Knockout Assembly



A51650 -UN-04FEB03



A51175 -UN-19NOV02



H42770 -UN-27NOV90

Knockout Assembly For Corn and Sorghum Shown



A51651 -UN-04FEB03

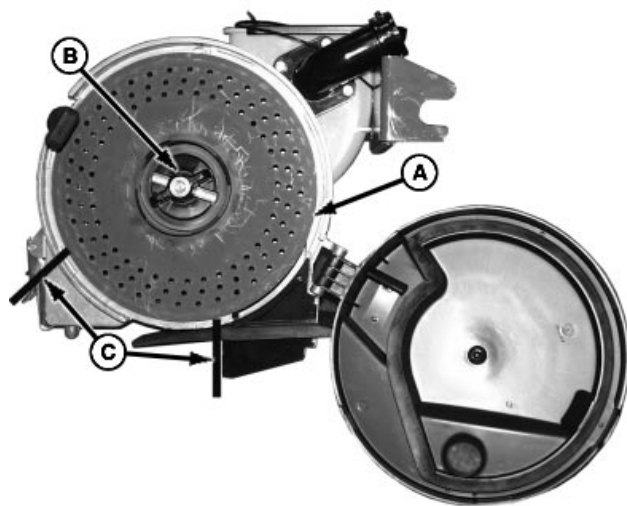
Installing Seed Disk

1. Open vacuum meter.
2. Fit seed disk (A) into housing. Hold seed disk stationary and rotate hub handle (B).

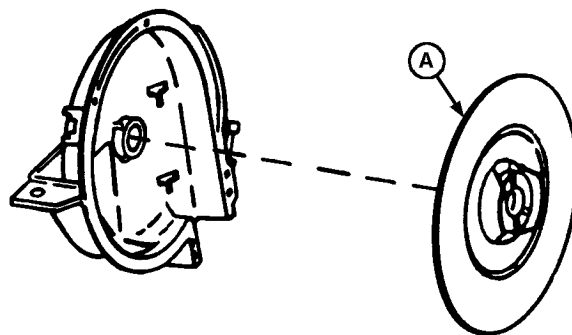
NOTE: Seed disk should turn smoothly with light contact between seed disk (A) and meter housing. Seed should not leak around circumference of meter. When planting small seed, such as sorghum, seed disk must lightly contact housing to prevent seed leakage.

3. Turn seed disk by hand and check gap between seed disk and meter housing in section (C). If disk rubs too hard against housing, or if seed leaks through gap, adjust hub position. See ADJUSTING METER HUB in this section.

A—Seed Disk
B—Hub Handle
C—Section



A50297 -UN-11OCT02



A46247 -UN-13JUN00

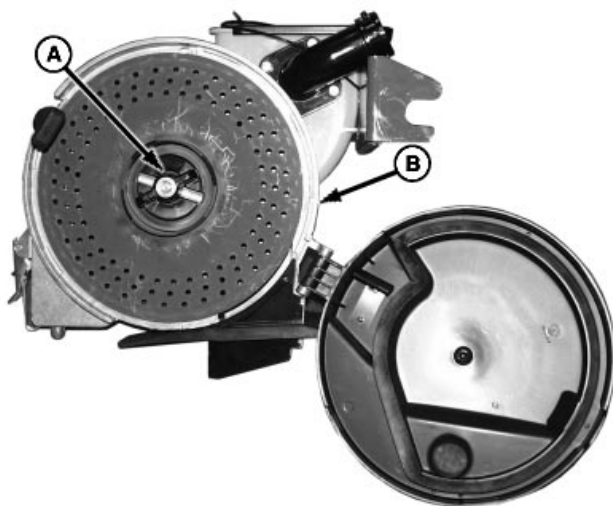
OUO6045,00006D8 -19-12JAN06-1/1

Adjusting Meter Hub

If gap is too large or disk turns too hard, adjust meter hub as follows:

1. Open vacuum meter.
2. Turn hub handle (A) counterclockwise. Remove seed disk (B) from housing.

A—Hub Handle
B—Seed Disk



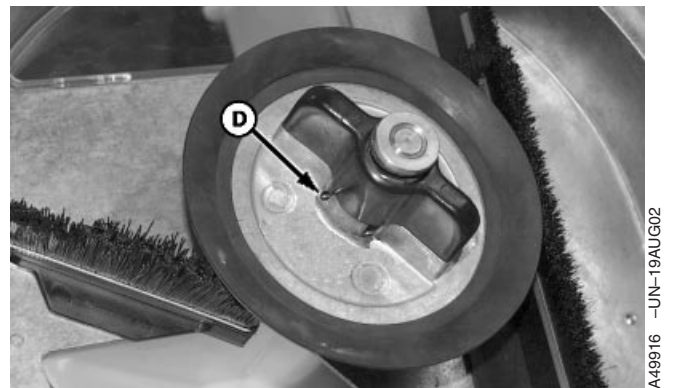
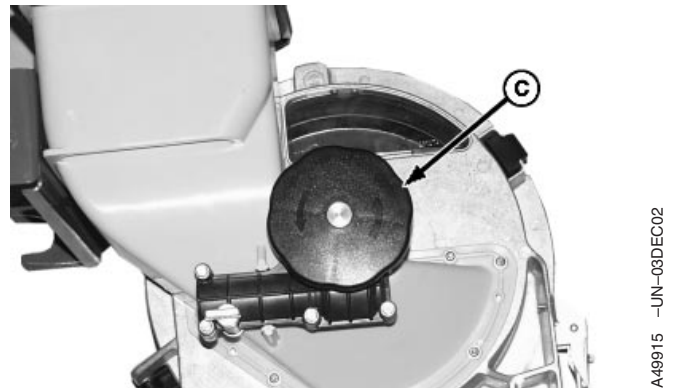
A50298 -UN-11OCT02

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OUO6045,00006D9 -19-12JAN06-1/3

3. Remove spring locking pin (A).
4. Adjust hub (B) as follows:
 - a. Hold meter hub handle (C).
 - b. Turn hub (B) clockwise to move seed disk closer to meter housing or counterclockwise to move seed disk further from meter housing.
5. Turn hub until slot (D) aligns with hole in shaft and install spring locking pin (A).

A—Spring Locking Pin
B—Hub
C—Meter Hub Handle
D—Slot



Continued on next page

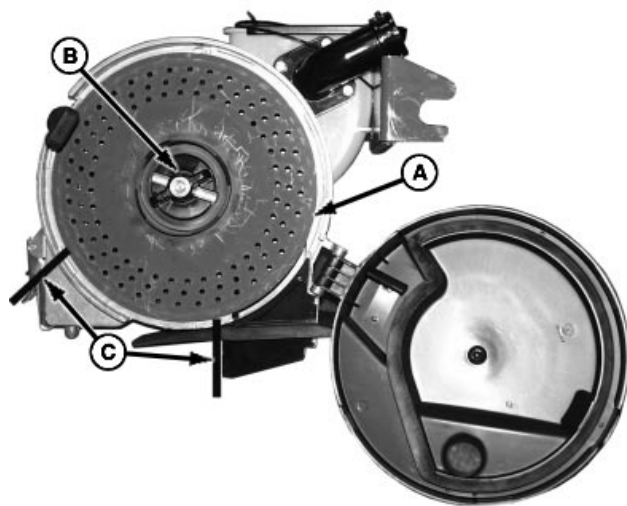
OUO6045.00006D9 -19-12JAN06-2/3

6. Fit seed disk (A) into housing. Hold seed disk stationary and rotate hub handle (B).

NOTE: Seed disk should turn smoothly with light contact between seed disk (A) and meter housing. Seed should not leak around circumference of meter. When planting small seed such as sorghum or sugar beets, seed disk must lightly contact meter housing to prevent seed leakage.

7. Turn seed disk by hand and check gap between seed disk and meter housing in section (C). If disk turns too hard or if seed leaks through gap, repeat procedure.

A—Seed Disk
B—Hub Handle
C—Section



A50297 -JUN-11OCT02

OUO6045,00006D9 -19-12JAN06-3/3

Setting Vacuum Levels

Use of Talc Lubricant

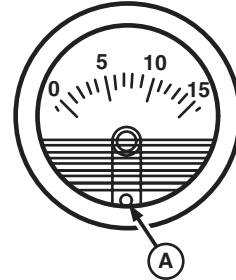
See Use Of Talc and Graphite Lubricants section.

OUO6045,0000705 -19-06JAN06-1/1

Zeroing Vacuum Gauge

NOTE: To zero monitor vacuum gauge, see your monitor's operator's manual.

With vacuum pump system shut off and vacuum gauge in a vertical position, disconnect vacuum gauge hose to vent gauge to atmosphere. Use the zero adjusting screw (A) to set the gauge pointer exactly on zero mark. Connect gauge hose, activate vacuum pump hydraulics, fill seed-disk cells with seed by driving forward with planter lowered and adjust vacuum level to recommended setting.



A—Zero Adjusting Screw

A53396 -UN-26NOV03

OUO6074,00009C3 -19-05JAN06-1/1

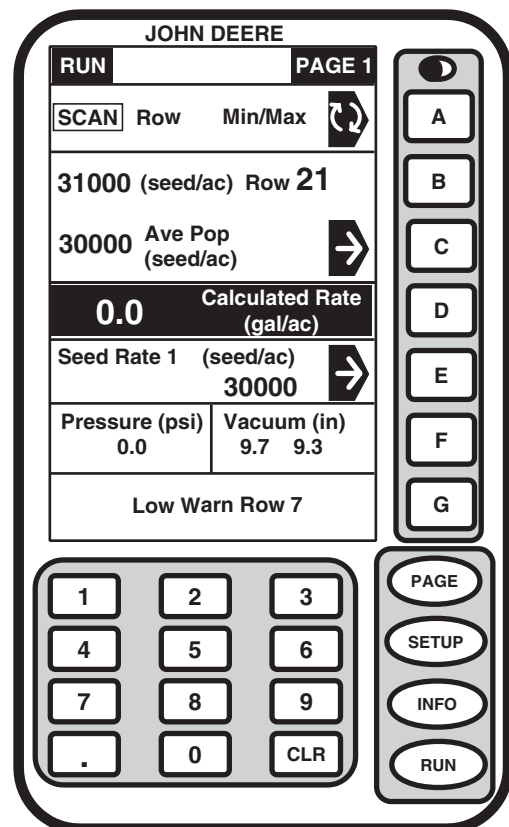
Setting Vacuum Level

IMPORTANT: For some very small or large seed sizes and shapes, it may be necessary to adjust vacuum levels up or down slightly from settings shown. Always verify vacuum level with field check. The charts provided in this section are intended to be used as a guide and are accurate in most conditions. Some situations may warrant a higher or lower vacuum setting.

IMPORTANT: When using CCS Seed Delivery system, the only crops that can be delivered are corn, soybeans, sorghum, sunflower and cotton.

Vacuum level is indicated on vacuum gauge or on monitor display if equipped.

Vacuum (in) — Vacuum (in)



Continued on next page

OUO6074,00009CC -19-25APR06-1/3

A57873 -UN-25APR06

VACUUM LEVEL CHART

Crop	Vacuum Level
Sugar Beets	See Chart
Corn	See Chart
Sweet Corn	See Chart
Popcorn	See Chart
Small, Medium and Large Edible Beans—Cell Type Seed Disk	8 in. ^a
Small, Medium and Large Edible Beans—Flat-Type Seed Disk	See Chart
Cotton	8 in.
Cotton Hilldrop	8 in.
Cotton Using Flat Edible Bean Disk	See Chart
Peanuts (Runner, Spanish and Virginia)	See Chart
Sorghum	8 in.
High Rate Sorghum	8 in.
Oil Sunflower	See Chart
Confectionary Sunflower	See Chart
Soybeans	8 in.
Soybeans Using Cotton Disk	5 to 7 in.
Acid-Delinted Cotton	8 in.

^aSmall edible beans—For seeds that have 6160 seeds/kg (2800 seeds/lb) or more, set vacuum level at 6 in. Medium edible beans—for garden beans that have 3960 seeds/kg (1800 seeds/lb) or more, set vacuum level at 6 in.

Gauge indicator¹ should point to vacuum level listed above, AT PLANTING SPEED.

NOTE: The vacuum level will be slightly lower during tractor and pump start-up.

Set vacuum level as follows:

1. Electro/Hydraulic SCV's: Push SCV lever to forward detent position to start blower. Let oil warm up for 15 minutes.

¹ Order Sugar Beet Vacuum Gauge through service parts only.

Mechanical SCV's: Pull lever back against rubber stop.
Let oil warm up for 15 minutes.

2. Fill hoppers or CCS bulk tanks with seed.
3. With machine lowered in plant position, drive tractor forward approximately 5 m (15 ft) to fill seed cells.

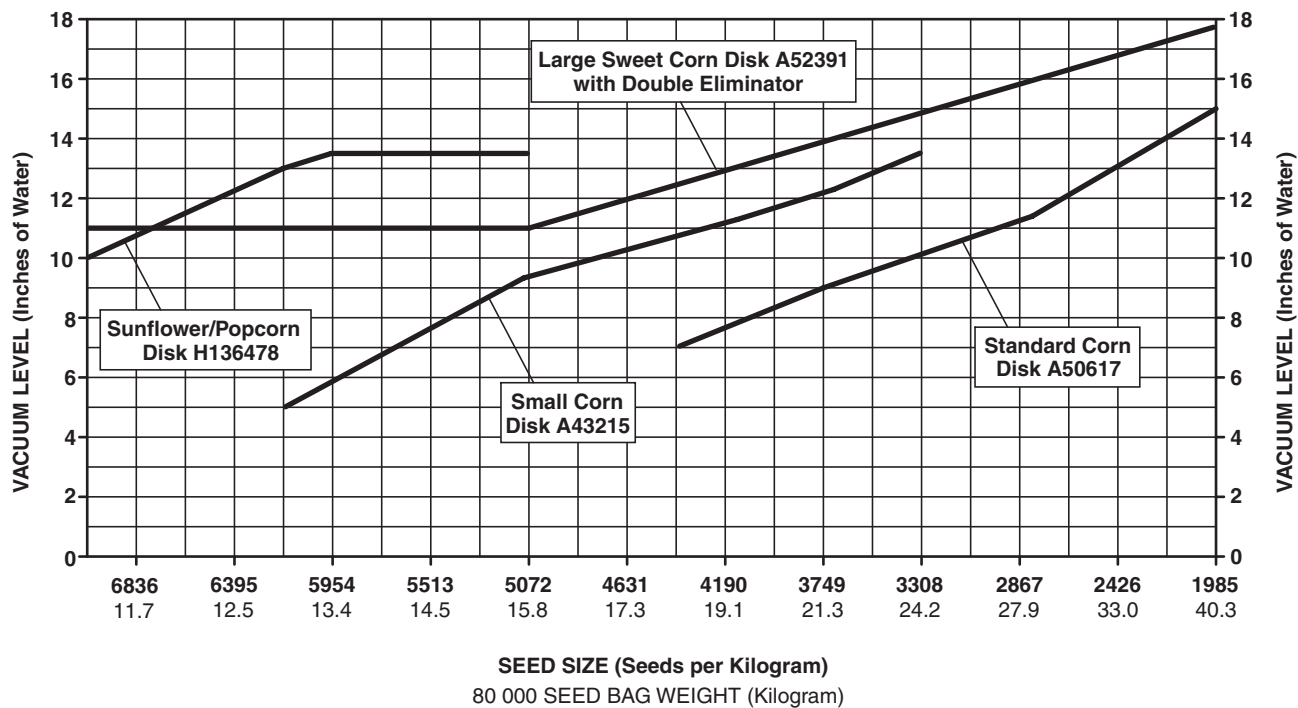
IMPORTANT: The hydraulic hook-up procedure will determine whether the tractor flow control valve or planter flow control valve will be used to control vacuum level. See Attaching Machine section in machine operator's manual.

4. Turn hydraulic control knob to adjust oil flow until vacuum-gauge indicator points to vacuum level listed in chart above, AT CHOSEN PLANTING SPEED.

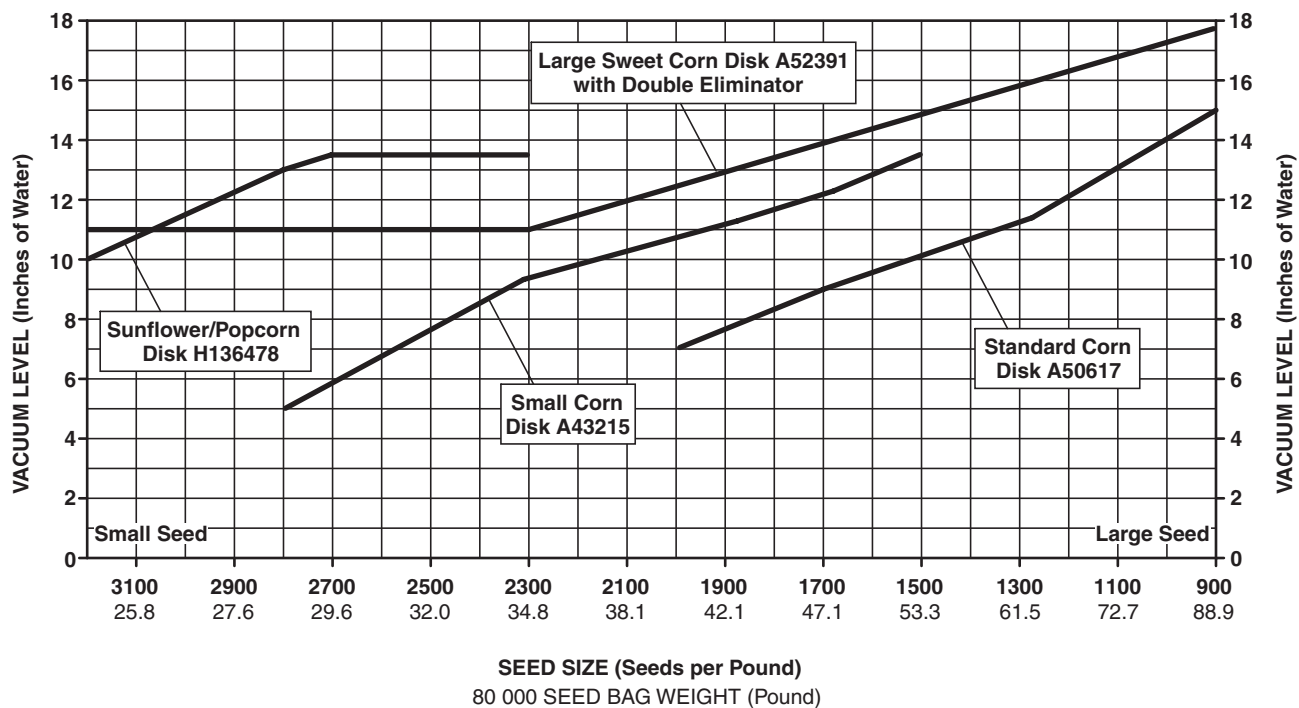
See Attaching Machine section in machine operator's manual for more information.

OUO6074,00009CC -19-25APR06-3/3

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



A57463 -19-15FEB06



A57464 -19-15FEB06

Continued on next page

OQO6045,000076E -19-15FEB06-1/2

Use seed supplier's information to calculate seed size in seeds/kg or seeds/lb.

IMPORTANT: The proper vacuum level must be calculated for each corn variety. Obtain size in seeds/kg or seeds/lb by dividing number of seeds in the bag by the weight of the bag.

EXAMPLE: If there are 4156 seeds/kg (1889 seeds/lb), according to the chart, vacuum level should be set at 7 in. when using a Standard Corn Disk or 10 in. when using a Small Corn Disk.

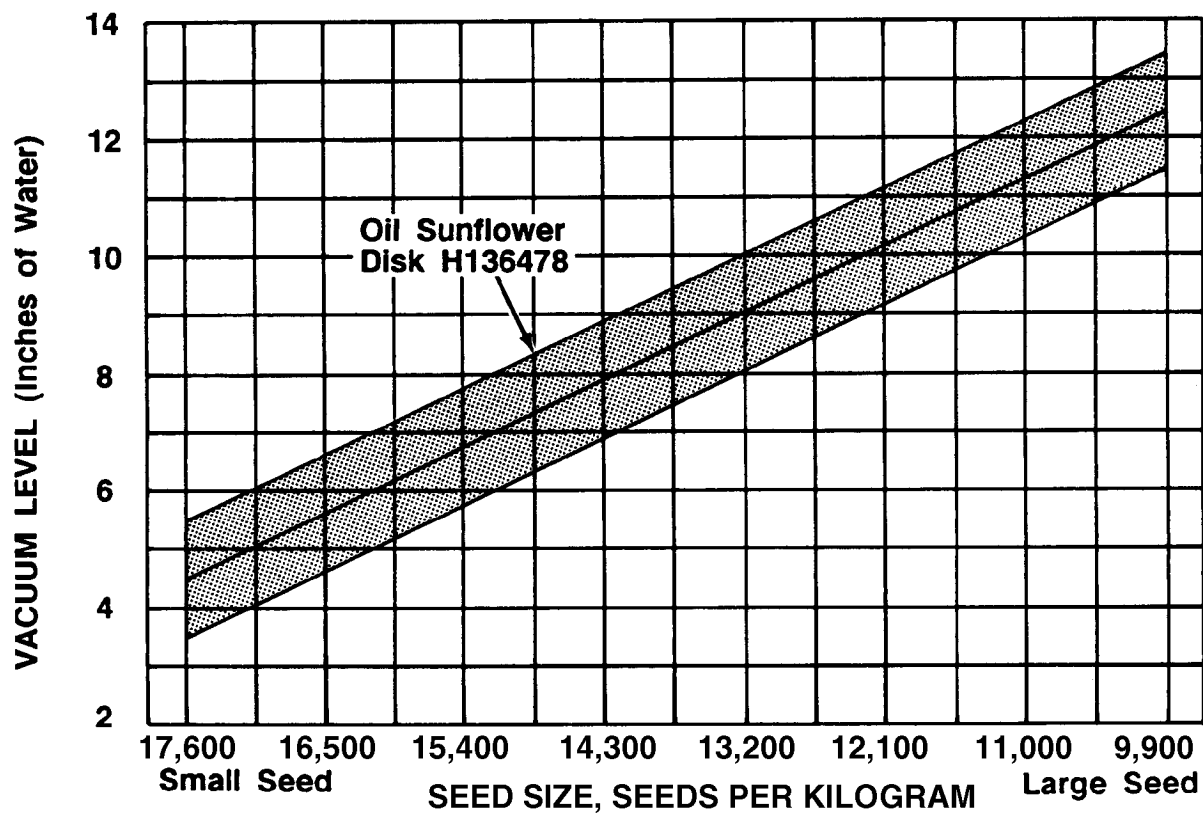
EXAMPLE: If there are 5637 seeds/kg (2556 seeds/lb), according to the chart, vacuum level should be set at 10 in. when using Large Sweet Corn Disk.

IMPORTANT: Vacuum levels are a starting point for setting the meters and may require adjustment to obtain proper population.

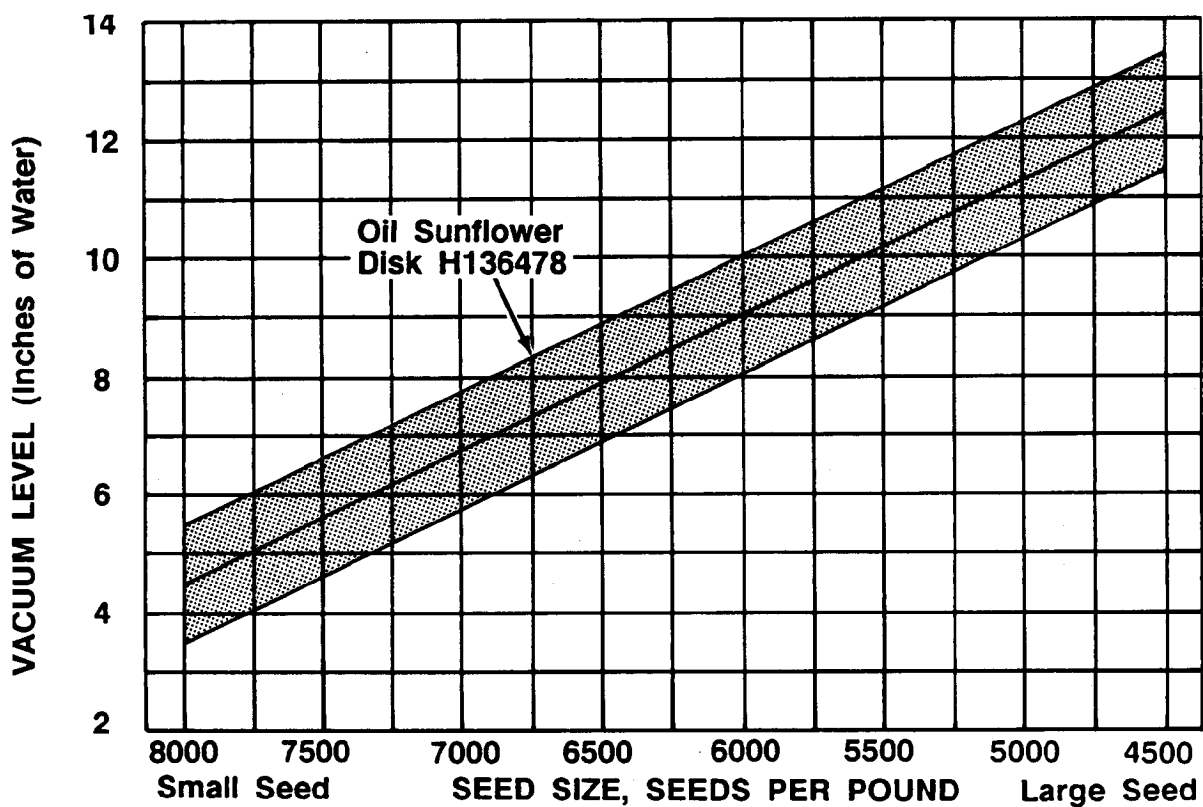
Sticky seed treatments, rougher ground conditions and high ground speeds will require vacuum level to be increased.

For seed sizes that overlap the Small Corn Disk (A43215) and the Standard Corn Disk (A50617), choose the Small Corn Disk for initial setting. If population is difficult to control, switch to Standard Corn Disk.

Vacuum Level for Oil Sunflower



A47028 -19-25JAN01



A47027 -19-25JAN01

Continued on next page

AG,OUO6074,1217 -19-05JAN06-1/2

Setting Vacuum Levels

Use seed supplier's information to calculate seed size in seeds/kg or seeds/lb.

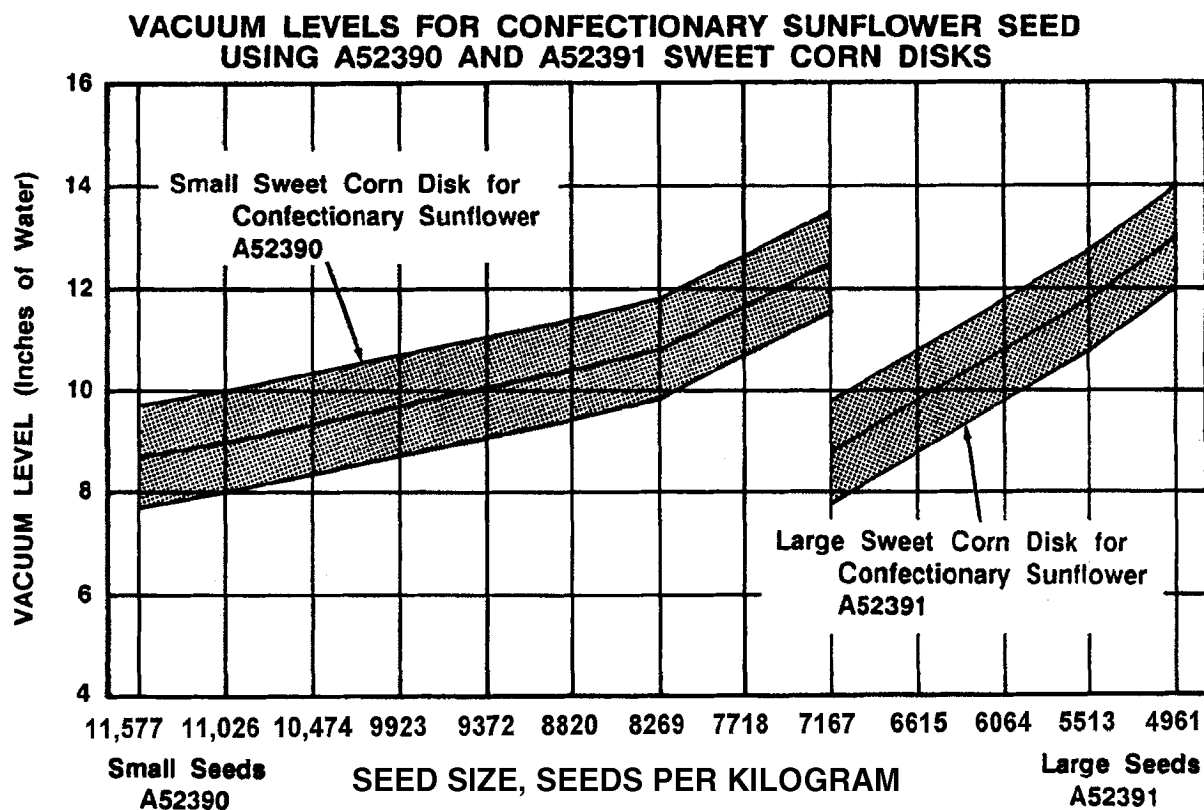
IMPORTANT: The proper vacuum level must be calculated for each sunflower variety. Obtain size in seeds/kg or seeds/lb by dividing number of

seeds in the bag by the weight of the bag.

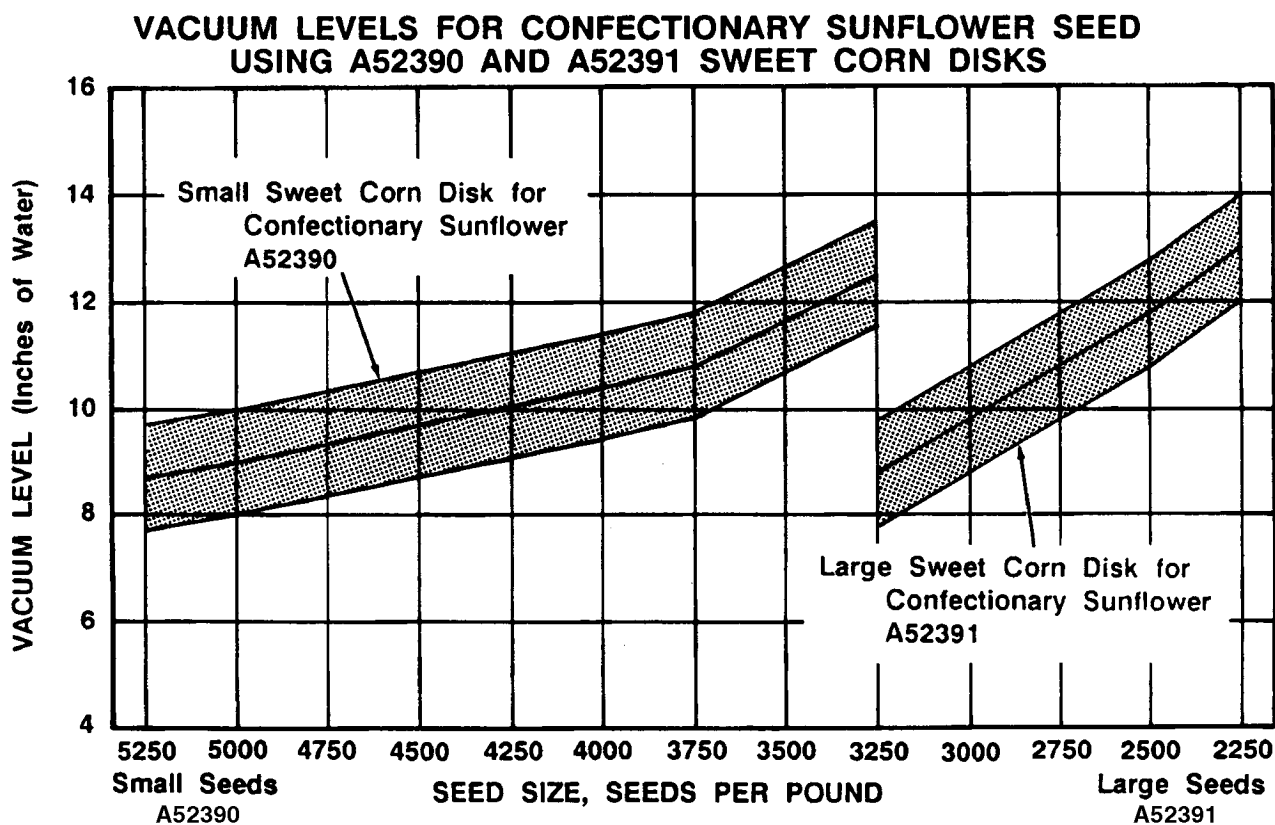
EXAMPLE: If there are 12 100 seeds/kg (5500 seeds/lb), according to the chart, vacuum level should be set at 10 in. when using oil sunflower disk.

AG,OUO6074,1217 -19-05JAN06-2/2

Vacuum Level for Confectionary Sunflower



A47030 -19-25JAN01



A47029 -19-25JAN01

Continued on next page

AG,OUO6074,1218 -19-05JAN06-1/2

Setting Vacuum Levels

Use seed supplier's information to calculate seed size in seeds/kg or seeds/lb.

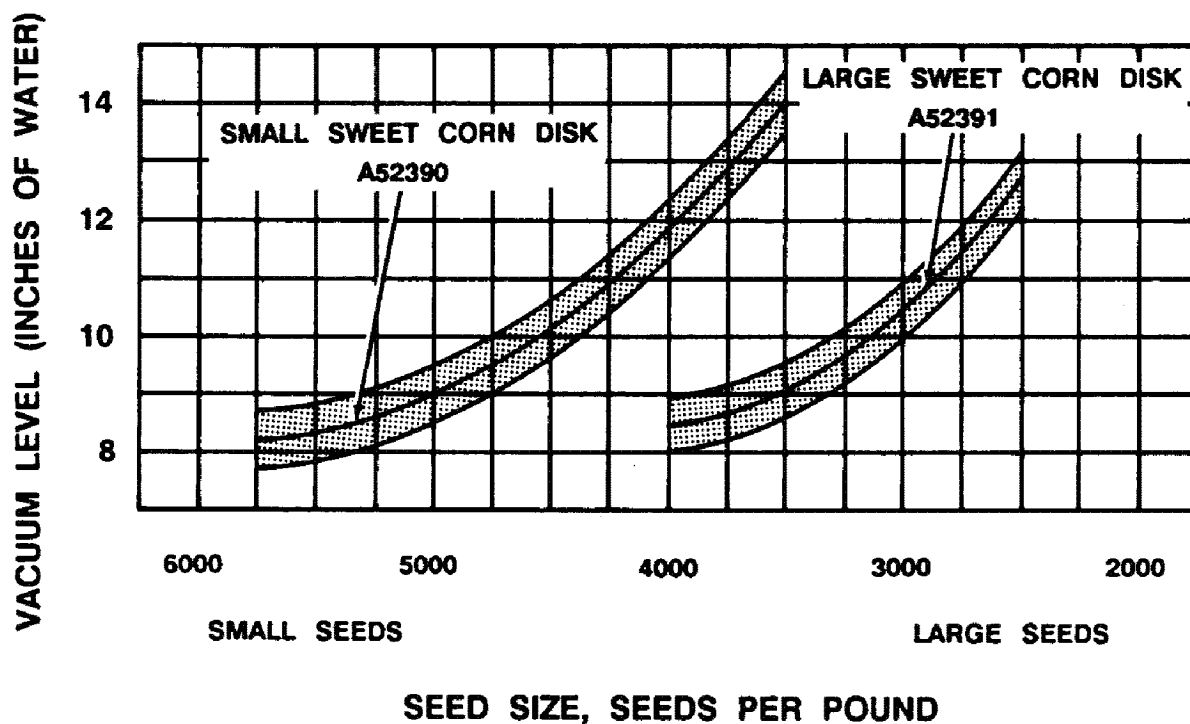
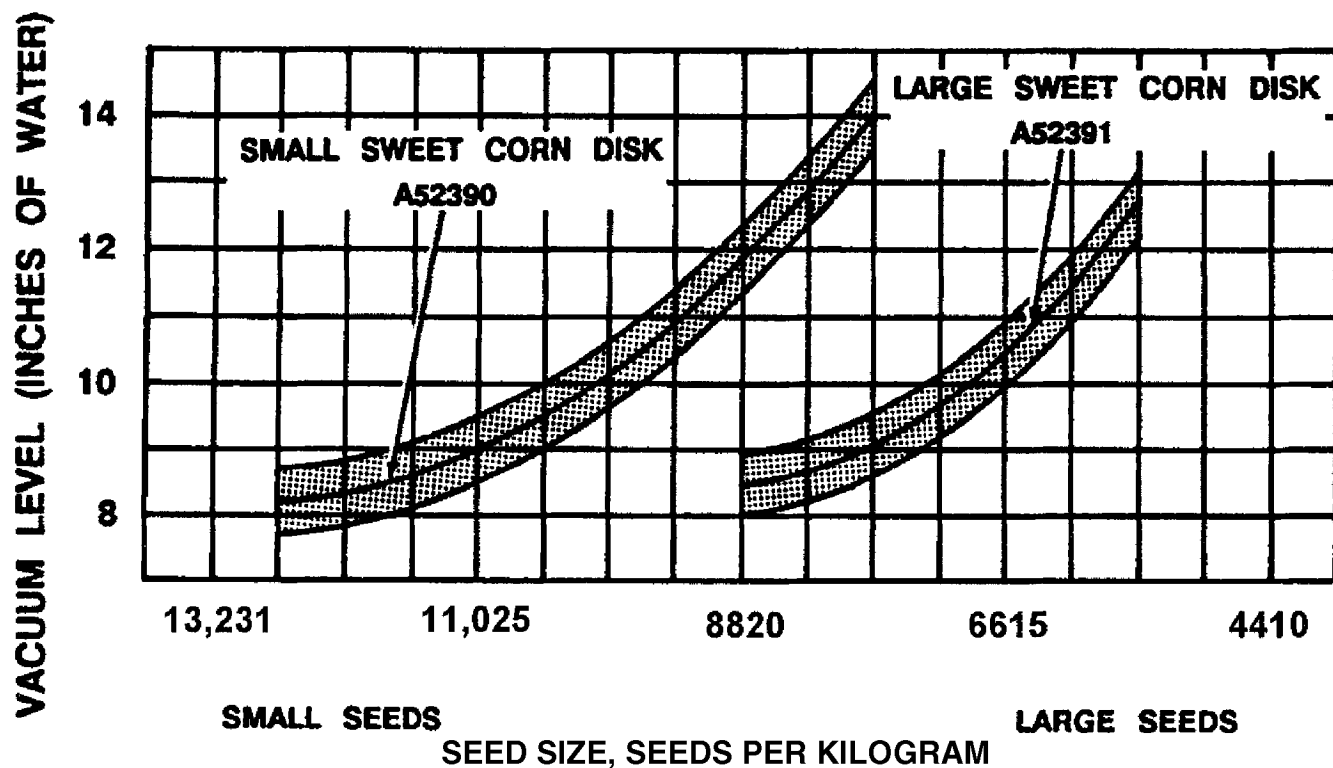
IMPORTANT: The proper vacuum level must be calculated for each sunflower variety. Obtain size in seeds/kg or seeds/lb by dividing number of

seeds in the bag by the weight of the bag.

EXAMPLE: If there are 9350 seeds/kg (4250 seeds/lb), according to the chart, vacuum level should be set at 10 in. when using sweet corn seed disk with confectionary sunflower.

AG,OUO6074,1218 -19-05JAN06-2/2

Vacuum Level for Sweet Corn



Setting Vacuum Levels

Use seed supplier's information to calculate seed size in seeds/kg or seeds/lb.

by dividing the number of seeds in the bag by the weight of the bag.

IMPORTANT: The proper vacuum level must be calculated for each corn variety. Obtain size in seeds/kg or seeds/lb

EXAMPLE: If there are 9350 seeds/kg (4250 seeds/lb), according to the chart, vacuum level should be set at 11 in. when using small sweet corn disk.

AG,OUO6074,1219 -19-05JAN06-2/2

Vacuum Level Seed Chart—Flat Edible-Bean Disk

	Vacuum Seed Chart Using Flat Edible Bean Disk					
	Edible Bean Flat Type Disks			Vacuum	Doubles Eliminator	Seed Size
Crop Types	Small A52903	Medium A52904	Large A52878	Inches of Water	% of Hole Covered	Recommendations
Small Edible Beans						
Small Green Garden	X			16 - 18	0 - 50	3528 - 5292 Seeds/kg (1600 - 2400 Seeds/lb)
Black Turtle	X			16 - 18	0 - 50	4190 - 5733 Seeds/kg (1900 - 2600 Seeds/lb)
Navy	X			16 - 18	0 - 50	3969 - 5733 Seeds/kg (1800 - 2600 Seeds/lb)
Small Whites	X			12 - 14	0 - 50	5292 - 7277 Seeds/kg (2400 - 3300 Seeds/lb)
Pink Viva		X		18 - 20	0 - 50	3749 - 4190 Seeds/kg (1700 - 1900 Seeds/lb)
Medium Edible Beans						
Medium Green Garden		X		18 - 20	0 - 50	2649 - 3528 Seeds/kg (1200 - 1600 Seeds/lb)
Small Red		X		18 - 20	0 - 50	2649 - 3308 Seeds/kg (1200 - 1500 Seeds/lb)
Pinto		X		20 - 22	0 - 50	All Sizes
Medium Kidney		X		14 - 16	0 - 50	2536 - 3087 Seeds/kg (1150 - 1400 Seeds/lb)
Lima		X		18 - 20	0 - 50	2649 - 3528 Seeds/kg (1200 - 1600 Seeds/lb)
Large Edible Beans						
Large Green Garden			X	20 - 22	0 - 25	1544 - 2649 Seeds/kg (700 - 1200 Seeds/lb)
Cranberry			X	20 - 22	0 - 50	1764 - 2649 Seeds/kg (800 - 1200 Seeds/lb)
Large Kidney			X	18 - 20	0 - 50	1874 - 2536 Seeds/kg (850 - 1150 Seeds/lb)
Great Northern			X	18 - 20	0 - 50	1985 - 2867 Seeds/kg (900 - 1300 Seeds/lb)
Garbanzo			X	16 - 18	0 - 50	1654 - 1985 Seeds/kg (750 - 900 Seeds/lb)
Edible Peas						
Blackeye		X		16 - 18	0 - 50	3528 - 4410 Seeds/kg (1600 - 2000 Seeds/lb)
Smooth		X		14 - 16	0 - 50	6174 - 7056 Seeds/kg (2800 - 3200 Seeds/lb)

Setting Vacuum Levels

Vacuum Seed Chart Using Flat Edible Bean Disk						
	Edible Bean Flat Type Disks			Vacuum	Doubles Eliminator	Seed Size
Crop Types	Small A52903	Medium A52904	Large A52878	Inches of Water	% of Hole Covered	Recommendations
Wrinkle	X			12 - 14	0 - 50	3749 - 5072 Seeds/kg (1700 - 2300 Seeds/lb)
Small Cotton	X			12 - 18	0 - 50	3520 - 7260 Seeds/kg (1600 - 3300 Seeds/lb)

NOTE: To maintain vacuum levels when using flat edible-bean disk, do not exceed eight row units per blower motor.

Due to differences in seed sizes and shapes within a seed variety, actual populations will vary at the same vacuum level. Vacuum levels in the Vacuum Level Seed Chart—Flat Edible Bean Disk, are a starting point and may be adjusted up or down to improve population.

Order the Flat Edible-Bean Vacuum Gauge (AA38407) through your John Deere dealer.

AG,OUO6074,1222 -19-05JAN06-2/2

Vacuum Level for Cotton, Using Flat Edible-Bean Disk

Vacuum Seed Chart Using Flat Edible Bean Disk						
	Edible Bean Flat Type Disks			Vacuum	Doubles Eliminator	Seed Size
Crop Types	Small A52903	Medium A52904	Large A52878	Inches of Water	% of Hole Covered	Recommendations
Small Cotton	X			12 - 18	0 - 50	3520 - 7260 Seeds/kg (1600 - 3300 Seeds/lb)

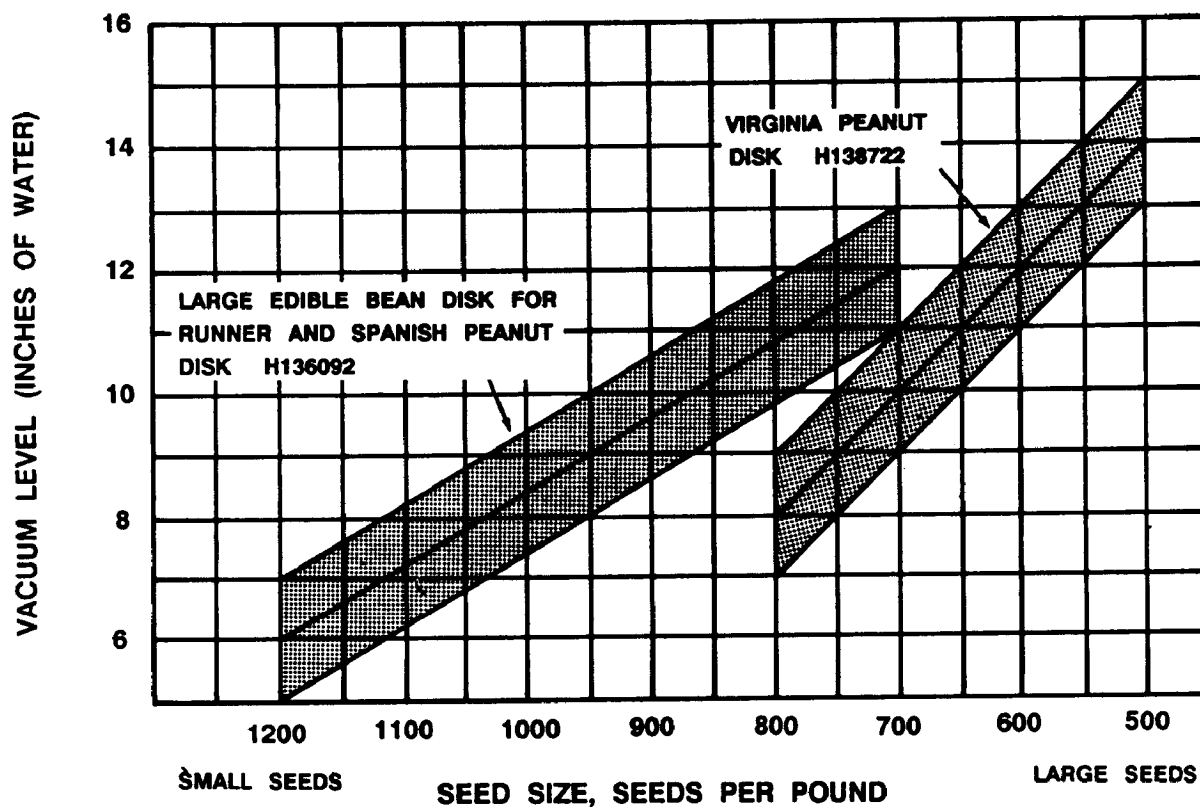
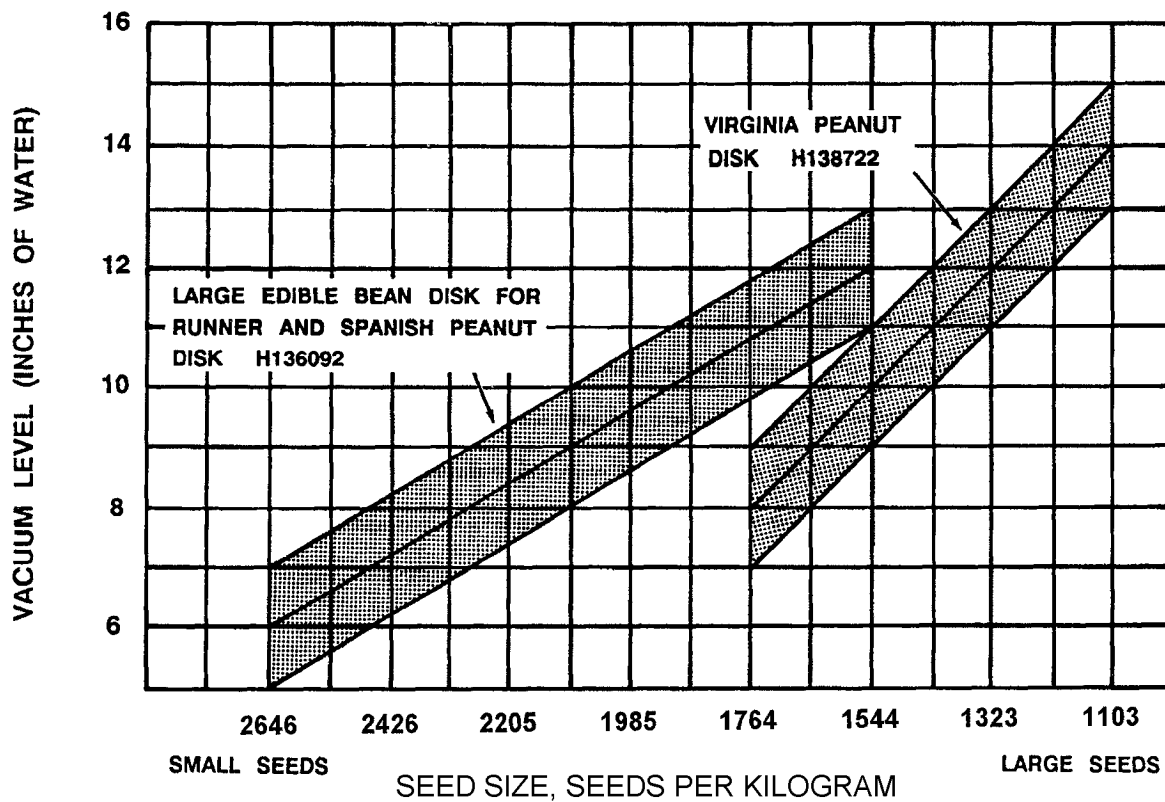
NOTE: To maintain vacuum levels when using flat edible-bean disk, do not exceed eight row units per blower motor.

When planting cotton, use seed size recommendation column to determine settings. Due to differences in seed sizes and shapes within a seed variety, actual populations will vary at the same vacuum level. Vacuum levels in the Vacuum Level Seed Chart—Flat Edible Bean Disk, are a starting point and may be adjusted up or down to improve population.

Order the Flat Edible-Bean Vacuum Gauge (AA38407) through your John Deere dealer.

OUO6074,0000B3F -19-05JAN06-1/1

Vacuum Level for Peanuts



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AG,OUO6074,1220 -19-05JAN06-1/2

Setting Vacuum Levels

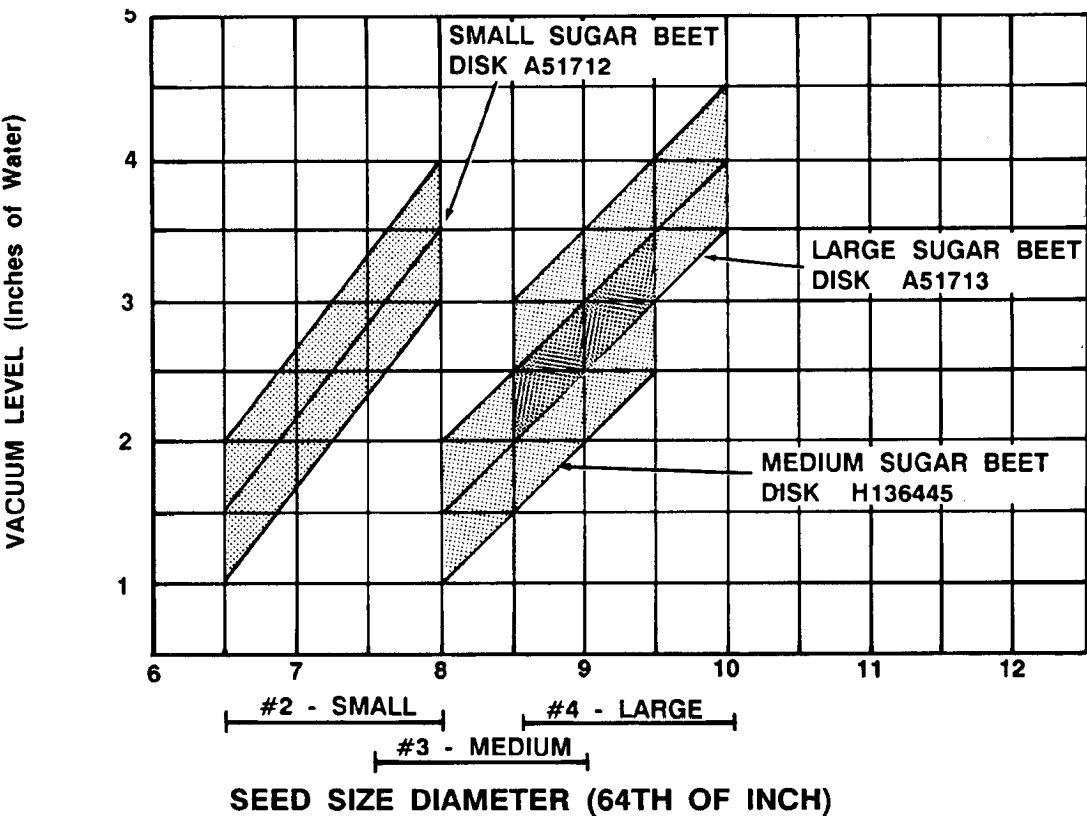
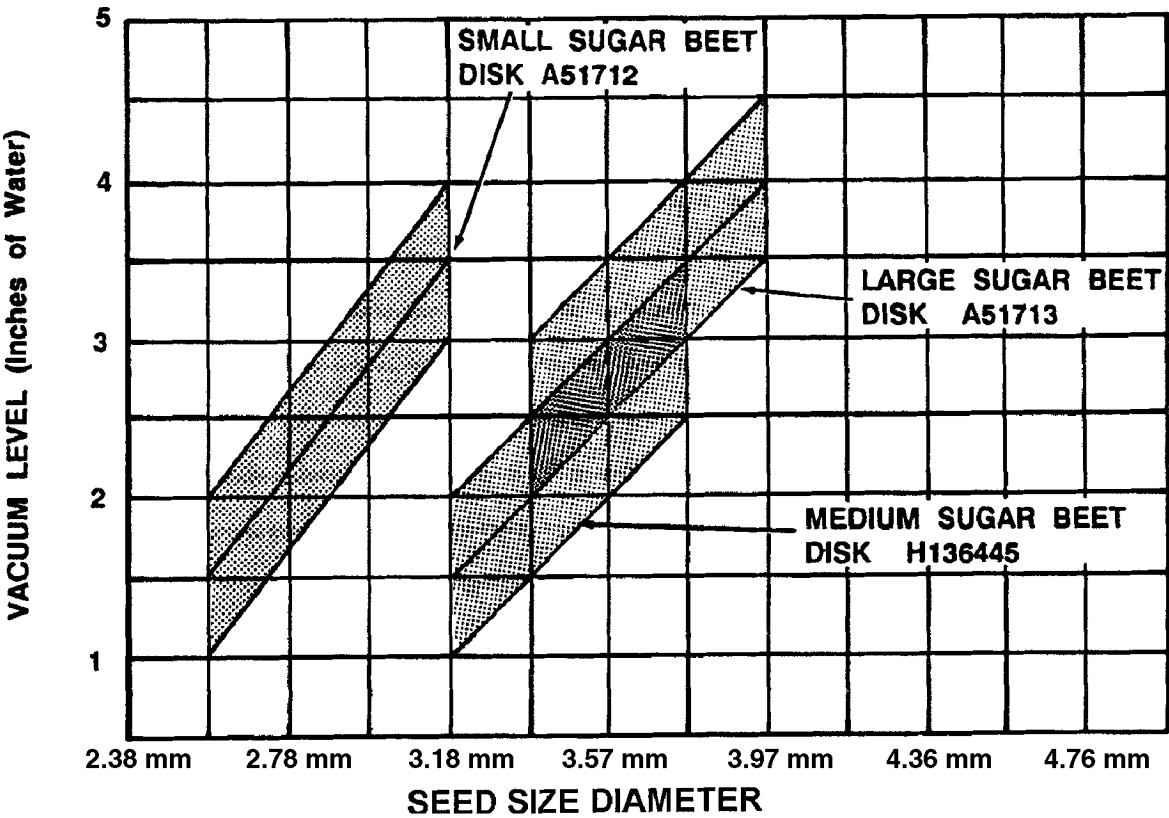
Use seed supplier's information to calculate seed size in seeds/kg or seeds/lb.

IMPORTANT: The proper vacuum level must be calculated for each peanut variety. Obtain size in seeds/kg or seeds/lb by dividing the number of seeds in the bag by the weight of the bag.

EXAMPLE: If there are 1760 seeds/kg (800 seeds/lb), according to the chart, vacuum level should be set at 11 in. when using Large Edible-Bean Disk for Runner Peanuts or 8 in. when using Virginia Peanut Disk.

AG,OUO6074,1220 -19-05JAN06-2/2

Vacuum Level for Sugar Beet Seed



Continued on next page

AG,OUO6074,1221 -19-05JAN06-1/2

Setting Vacuum Levels

IMPORTANT: The proper vacuum level must be calculated for each sugar-beet seed size.

mm in diameter). Vacuum level should be a range of between 1.5 in. to 2.5 in. when using Medium Sugar Beet Disk.

EXAMPLE: If bag label indicates medium seed (size 7.5/64 in. to 9/64 in. diameter) (size 2.98 mm to 3.57

AG,OUO6074,1221 -19-05JAN06-2/2

Vacuum Meter Rate Charts

How to Use Planting Rate Charts

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

NOTE: All rates in the following charts are based on typical drive wheel slippage. Drive wheel slippage is affected by crop residue, unit downforce, tire pressure and/or soil conditions.

1. Select desired row spacing and seed population under proper column.
2. Choose proper input sprocket:

A higher population will require the use of the high-range input sprocket and HIGH RANGE chart for that particular seed.

A lower population will require the use of the low range input sprocket and LOW RANGE chart for that particular seed.

3. Determine correct seed drive transmission sprocket combination.
4. Determine recommended planting speed range. The faster speed, in the speed range, is for optimum field conditions. Reduce speed and increase unit downforce if planting in rough conditions.

AG,OUO6074,1224 -19-12JAN06-1/1

Finding Transmission Sprocket Settings for Row Widths Not Shown in Operator's Manual

When desired population is known, use the following formula to find transmission sprocket settings for row widths not shown in seed charts.

FORMULA:

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

A = Desired row width in inches.

B = Row width column in the seed chart (for crop being planted) nearest to desired row width.

C = Seed population desired.

D = Calculated comparison population value.

The following example assumes corn will be planted (using vacuum meters with corn-30 cell disks) with

planting units set on 28 in. rows and a desired seed population of 28 000. Using seed chart for corn-30 cells, the row width nearest the desired row width is 30 in.

EXAMPLE:

$$(28 \div 30) \times 28\,000 = 26\,133$$

Find population value in chart nearest to calculated comparison population value (26 318 for this example).

Use the sprocket combinations in the corresponding rows (29-tooth driver and 27-tooth driven for this example) to achieve desired population (28 000 for this example).

Continued on next page

AG,OUO6074,1207 -19-12JAN06-1/2

{Decal No. DB1083}

CORN - 30 CELLS

**AVERAGE SEED SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
CORN SEED PLANTED WITH VACUUM METER**

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	2-3/16	95,288	79,406	75,227	71,466	2 to 3
35	25	2-5/16	91,476	76,230	72,218	68,607	2 to 3
35	26	2-3/8	87,958	73,298	69,440	65,968	2 to 3
35	27	2-1/2	84,700	70,583	66,868	63,525	2 to 3-1/2
35	28	2-9/16	81,675	68,063	64,480	61,256	2 to 3-1/2
29	24	2-5/8	78,593	65,794	62,331	59,214	2 to 3-1/2
29	25	2-3/4	75,794	63,162	59,383	56,846	2 to 3-1/2
29	26	2-7/8	72,879	60,733	57,536	54,659	2 to 4
29	27	3-1/16	70,180	58,483	55,405	52,635	2 to 4
29	28	3-1/8	67,674	56,395	53,427	50,755	2 to 4
24	24	3-1/4	65,340	54,450	51,584	49,005	2 to 4-1/2
24	25	3-5/16	62,726	52,272	49,521	47,045	2 to 4-1/2
24	26	3-1/2	60,314	50,262	47,616	45,235	2 to 4-1/2
24	27	3-5/8	58,080	48,400	45,853	43,560	2 to 5
24	28	3-3/4	56,006	46,671	44,215	42,004	2 to 5
20	24	3-13/16	54,450	45,375	42,987	40,838	2 to 5-1/2
20	25	4	52,272	43,560	41,267	39,204	2 to 5-1/2
20	26	4-3/16	50,262	41,885	39,680	37,696	2 to 6
20	27	4-5/16	48,400	40,333	38,211	36,300	2 to 6
20	28	4-1/2	46,671	38,893	36,846	35,004	2 to 6-1/2
16	24	4-7/8	43,560	36,300	34,389	32,670	2 to 6-1/2
16	25	5	41,818	34,484	33,014	31,363	2 to 7
16	26	5-3/16	40,209	33,508	31,744	30,157	2 to 7
16	27	5-3/8	38,720	32,267	30,568	29,040	2 to 7-1/2
16	28	5-5/8	37,337	31,114	29,477	28,003	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	5-13/16	35,733	29,777	28,210	26,800	3 to 8
35	25	6-1/8	34,304	28,586	27,082	25,728	3 to 8
35	26	6-3/8	32,984	27,487	26,040	24,738	3 to 8
35	27	6-9/16	31,763	26,469	25,076	23,822	3 to 8
35	28	6-13/16	30,628	25,523	24,180	22,971	3 to 8
29	24	7-1/16	29,607	24,673	23,374	22,205	4 to 8
29	25	7-3/8	28,423	23,686	22,439	21,317	4 to 8
29	26	7-5/8	27,330	22,775	21,576	20,497	4 to 8
29	27	7-15/16	26,318	21,931	20,777	19,738	4 to 8
29	28	8-1/4	25,378	21,148	20,035	19,033	4 to 8
24	24	8-9/16	24,503	20,419	19,344	18,377	4 to 8
24	25	8-7/8	23,522	19,602	18,570	17,642	4 to 8
24	26	9-1/4	22,618	18,848	17,856	16,963	4 to 8
24	27	9-5/8	21,780	18,150	17,195	16,335	4 to 8
24	28	9-15/16	21,002	17,502	16,581	15,752	4 to 8
20	24	10-1/4	20,419	17,016	16,120	15,314	4 to 8
20	25	10-11/16	19,602	16,335	15,475	14,702	4 to 8
20	26	11-1/16	18,848	15,707	14,880	14,136	4 to 8
20	27	11-1/2	18,150	15,125	14,329	13,613	4 to 8
20	28	11-15/16	17,502	14,585	13,817	13,126	4 to 8
16	24	12-13/16	16,335	13,613	12,896	12,251	4 to 8
16	25	13-5/16	15,682	13,068	12,380	11,761	4 to 8
16	26	13-7/8	15,078	12,565	11,904	11,309	4 to 8
16	27	14-3/8	14,520	12,100	11,463	10,890	4 to 8
16	28	14-15/16	14,001	11,668	11,054	10,501	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Corn—15 in. to 22 in. Rows

{Decal No. DB 1417}

CORN - 30 CELLS

AVERAGE SEED SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
CORN SEED PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed spacing (in.)	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Driver	Driven		15 in. Rows	20 in. Rows	22 in. Rows	
35	24	2-3/16	190 575	142 931	129 938	2 to 3
35	25	2-5/16	182 952	137 214	124 740	2 to 3
35	26	2-3/8	175 915	131 937	119 942	2 to 3
35	27	2-1/2	169 400	127 050	115 500	2 to 3-1/2
35	28	2-9/16	163 350	122 513	111 375	2 to 3-1/2
29	24	2-5/8	157 905	118 429	107 663	2 to 3-1/2
29	25	2-3/4	151 589	113 692	103 356	2 to 3-1/2
29	26	2-7/8	145 758	109 319	99 381	2 to 4
29	27	3-1/16	140 360	105 270	95 700	2 to 4
29	28	3-1/8	135 347	101 510	92 282	2 to 4
24	24	3-1/4	130 680	98 010	89 100	2 to 4-1/2
24	25	3-5/16	125 453	94 090	85 536	2 to 4-1/2
24	26	3-1/2	120 628	90 471	82 246	2 to 4-1/2
24	27	3-5/8	116 160	87 120	79 200	2 to 5
24	28	3-3/4	112 011	84 009	76 371	2 to 5
20	24	3-13/16	108 900	81 675	74 250	2 to 5-1/2
20	25	4	104 544	78 408	71 280	2 to 5-1/2
20	26	1-3/16	100 523	75 392	68 538	2 to 6
20	27	4-5/16	96 800	72 600	66 000	2 to 6
20	28	4-1/2	93 343	70 007	63 643	2 to 6-1/2
16	24	4-7/8	87 120	65 340	59 400	2 to 6-1/2
16	25	5	83 635	62 726	57 024	2 to 7
16	26	5-3/16	80 418	60 314	54 831	2 to 7
16	27	5-3/8	77 440	58 080	52 800	2 to 7-1/2
16	28	5-5/8	74 674	56 006	50 914	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing (in.)	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Driver	Driven		15 in. Rows	20 in. Rows	22 in. Rows	
35	24	5-13/16	71 466	53 599	48 727	3 to 8
35	25	6-1/8	68 607	51 455	46 778	3 to 8
35	26	6-3/8	65 968	49 476	44 978	3 to 8
35	27	6-9/16	63 525	47 644	43 313	3 to 8
35	28	6-13/16	61 256	45 942	41 766	3 to 8
29	24	7-1/16	59 214	44 411	40 373	4 to 8
29	25	7-3/8	56 846	42 634	38 759	4 to 8
29	26	7-5/8	54 659	40 995	37 268	4 to 8
29	27	7-15/16	52 635	39 476	35 888	4 to 8
29	28	8-1/4	50 755	38 066	34 606	4 to 8
24	24	8-9/16	49 005	36 754	33 413	4 to 8
24	25	8-7/8	47 045	35 284	32 076	4 to 8
24	26	9-1/4	45 235	33 927	30 842	4 to 8
24	27	9-5/8	43 560	32 670	29 700	4 to 8
24	28	9-15/16	42 004	31 503	28 639	4 to 8
20	24	10-1/4	40 838	30 628	27 844	4 to 8
20	25	10-11/16	39 204	29 403	26 730	4 to 8
20	26	11-1/16	37 696	28 272	25 702	4 to 8
20	27	11-1/2	36 300	27 225	24 750	4 to 8
20	28	11-15/16	35 004	26 253	23 866	4 to 8
16	24	12-13/16	32 670	24 503	22 275	4 to 8
16	25	13-5/16	31 363	23 522	21 384	4 to 8
16	26	13-7/8	30 157	22 618	20 562	4 to 8
16	27	14-3/8	29 040	21 780	19 800	4 to 8
16	28	14-15/16	28 003	21 002	19 093	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50400 -19-02OCT02

Corn—30 in. to 40 in. Rows

{Decal No. DB1083}

CORN - 30 CELLS

AVERAGE SEED SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
CORN SEED PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS"

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	2-3/16	95,288	79,406	75,227	71,466	2 to 3
35	25	2-5/16	91,476	76,230	72,218	68,607	2 to 3
35	26	2-3/8	87,958	73,298	69,440	65,968	2 to 3
35	27	2-1/2	84,700	70,583	66,868	63,525	2 to 3-1/2
35	28	2-9/16	81,675	68,063	64,480	61,256	2 to 3-1/2
29	24	2-5/8	78,593	65,794	62,331	59,214	2 to 3-1/2
29	25	2-3/4	75,794	63,162	59,383	56,846	2 to 3-1/2
29	26	2-7/8	72,879	60,733	57,536	54,659	2 to 4
29	27	3-1/16	70,180	58,483	55,405	52,635	2 to 4
29	28	3-1/8	67,674	56,395	53,427	50,755	2 to 4
24	24	3-1/4	65,340	54,450	51,584	49,005	2 to 4-1/2
24	25	3-5/16	62,726	52,272	49,521	47,045	2 to 4-1/2
24	26	3-1/2	60,314	50,262	47,616	45,235	2 to 4-1/2
24	27	3-5/8	58,080	48,400	45,853	43,560	2 to 5
24	28	3-3/4	56,006	46,671	44,215	42,004	2 to 5
20	24	3-13/16	54,450	45,375	42,987	40,838	2 to 5-1/2
20	25	4	52,272	43,560	41,267	39,204	2 to 5-1/2
20	26	4-3/16	50,262	41,885	39,680	37,696	2 to 6
20	27	4-5/16	48,400	40,333	38,211	36,300	2 to 6
20	28	4-1/2	46,671	38,893	36,846	35,004	2 to 6-1/2
16	24	4-7/8	43,560	36,300	34,389	32,670	2 to 6-1/2
16	25	5	41,818	34,484	33,014	31,363	2 to 7
16	26	5-3/16	40,209	33,508	31,744	30,157	2 to 7
16	27	5-3/8	38,720	32,267	30,568	29,040	2 to 7-1/2
16	28	5-5/8	37,337	31,114	29,477	28,003	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	5-13/16	35,733	29,777	28,210	26,800	3 to 8
35	25	6-1/8	34,304	28,586	27,082	25,728	3 to 8
35	26	6-3/8	32,984	27,487	26,040	24,738	3 to 8
35	27	6-9/16	31,763	26,469	25,076	23,822	3 to 8
35	28	6-13/16	30,628	25,523	24,180	22,971	3 to 8
29	24	7-1/16	29,607	24,673	23,374	22,205	4 to 8
29	25	7-3/8	28,423	23,686	22,439	21,317	4 to 8
29	26	7-5/8	27,330	22,775	21,576	20,497	4 to 8
29	27	7-15/16	26,318	21,931	20,777	19,738	4 to 8
29	28	8-1/4	25,378	21,148	20,035	19,033	4 to 8
24	24	8-9/16	24,503	20,419	19,344	18,377	4 to 8
24	25	8-7/8	23,522	19,602	18,570	17,642	4 to 8
24	26	9-1/4	22,618	18,848	17,856	16,963	4 to 8
24	27	9-5/8	21,780	18,150	17,195	16,335	4 to 8
24	28	9-15/16	21,002	17,502	16,581	15,752	4 to 8
20	24	10-1/4	20,419	17,016	16,120	15,314	4 to 8
20	25	10-11/16	19,602	16,335	15,475	14,702	4 to 8
20	26	11-1/16	18,848	15,707	14,880	14,136	4 to 8
20	27	11-1/2	18,150	15,125	14,329	13,613	4 to 8
20	28	11-15/16	17,502	14,585	13,817	13,126	4 to 8
16	24	12-13/16	16,335	13,613	12,896	12,251	4 to 8
16	25	13-5/16	15,682	13,068	12,380	11,761	4 to 8
16	26	13-7/8	15,078	12,565	11,904	11,309	4 to 8
16	27	14-3/8	14,520	12,100	11,463	10,890	4 to 8
16	28	14-15/16	14,001	11,668	11,054	10,501	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Corn Using Sweet Corn Disk—30 in. to 40 in. Rows

CORN SEED USING THE SWEET CORN DISK - 40 CELLS

AVERAGE SEED SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
CORN SEED PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Seeds per Acre Row Spacing in Inches				Min. mph	Max. mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows		
35	24	1.6	127,050	105,875	100,303	95,288	0.5	1.5
35	25	1.7	121,968	101,640	96,291	91,476	0.5	1.5
35	26	1.8	117,277	97,731	92,587	87,958	0.5	1.5
35	27	1.9	112,933	94,111	89,158	84,700	0.5	1.5
35	28	1.9	108,900	90,750	85,974	81,675	0.5	1.5
29	24	2.0	105,270	87,725	83,108	78,953	0.5	2.0
29	25	2.1	101,059	84,216	79,784	75,794	0.5	2.0
29	26	2.2	97,172	80,977	76,715	72,879	0.5	2.0
29	27	2.2	93,573	77,978	73,874	70,180	0.5	2.0
29	28	2.3	90,231	75,193	71,235	67,674	0.5	2.0
24	24	2.4	87,120	72,600	68,779	65,340	0.5	2.0
24	25	2.5	83,635	69,696	66,028	62,726	0.5	2.5
24	26	2.6	80,418	67,015	63,488	60,314	0.5	2.5
24	27	2.7	77,440	64,533	61,137	58,080	1.0	2.5
24	28	2.8	74,674	62,229	58,953	56,006	1.0	2.5
20	24	2.9	72,600	60,500	57,316	54,450	1.0	2.5
20	25	3.0	69,696	58,080	55,023	52,272	1.0	3.0
20	26	3.1	67,015	55,846	52,907	50,262	1.0	3.0
20	27	3.2	64,533	53,778	50,947	48,400	1.0	3.0
20	28	3.4	62,229	51,857	49,128	46,671	1.0	3.0
16	24	3.6	58,080	48,400	45,853	43,560	1.0	3.5
16	25	3.8	55,757	46,464	44,019	41,818	1.0	3.5
16	26	3.9	53,612	44,677	42,326	40,209	1.0	3.5
16	27	4.1	51,627	43,022	40,758	38,720	1.5	4.0
16	28	4.2	49,783	41,486	39,302	37,337	1.5	4.0

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Seeds per Acre Row Spacing in Inches				Min. mph	Max. mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows		
35	24	4.4	47,644	39,703	37,613	35,733	1.5	4.0
35	25	4.6	45,738	38,115	36,109	34,304	1.5	4.5
35	26	4.8	43,979	36,649	34,720	32,984	1.5	4.5
35	27	4.9	42,350	35,292	33,434	31,763	1.5	5.0
35	28	5.1	40,838	34,031	32,240	30,628	1.5	5.0
29	24	5.3	39,476	32,897	31,165	29,607	2.0	5.0
29	25	5.5	37,897	31,581	29,919	28,423	2.0	5.5
29	26	5.7	36,440	30,366	28,768	27,330	2.0	5.5
29	27	6.0	35,090	29,242	27,703	26,317	2.0	6.0
29	28	6.2	33,837	28,197	26,713	25,378	2.0	6.0
24	24	6.4	32,670	27,225	25,792	24,503	2.0	6.5
24	25	6.7	31,363	26,136	24,760	23,522	2.5	6.5
24	26	6.9	30,157	25,131	23,808	22,618	2.5	6.5
24	27	7.2	29,040	24,200	22,926	21,780	2.5	6.5
24	28	7.5	28,003	23,336	22,108	21,002	2.5	6.5
20	24	7.7	27,225	22,688	21,493	20,419	2.5	6.5
20	25	8.0	26,136	21,780	20,634	19,602	3.0	6.5
20	26	8.3	25,131	20,942	19,840	18,848	3.0	6.5
20	27	8.6	24,200	20,167	19,105	18,150	3.0	6.5
20	28	9.0	23,336	19,446	18,423	17,502	3.0	6.5
16	24	9.6	21,780	18,150	17,195	16,335	3.5	6.5
16	25	10.0	20,909	17,424	16,507	15,682	3.5	6.5
16	26	10.4	20,105	16,754	15,872	15,078	3.5	6.5
16	27	10.8	19,360	16,133	15,284	14,520	4.0	6.5
16	28	11.2	18,669	15,557	14,738	14,001	4.0	6.5

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50406 -19-02OCT02

Sweet Corn—15 in. to 22 in. Rows

{Decal No. DB 1382}

SWEET CORN - 40 CELLS

AVERAGE SEEDS SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
SWEET CORN SEED PLANTED WITH VACUUM METERUSING THE LONG BRUSH AND AA37348 KNOCKOUT AND A52152 DOUBLE ELIMINATOR
BAFFLE IN UP POSITION EXCEPT FOR 5000 SEEDS PER POUND AND SMALLER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing (in.)	Seeds per Acre Row Spacing in Inches			Min. mph	Max. mph
Driver	Driven		15 In. Rows	20 In. Rows	22 In. Rows		
35	24	1.6	254 100	190 575	173 250	0.5	1.5
35	25	1.7	243 336	182 962	166 320	0.5	1.5
35	26	1.8	234 554	175 915	159 923	0.5	1.5
35	27	1.9	225 867	169 400	154 000	0.5	1.5
35	28	1.9	217 800	163 350	148 500	0.5	1.5
29	24	2.0	210 540	157 905	143 550	0.5	2.0
29	25	2.1	202 118	151 589	137 808	0.5	2.0
29	26	2.2	194 345	145 758	132 508	0.5	2.0
29	27	2.2	187 147	140 360	127 600	0.5	2.0
29	28	2.3	183 463	135 347	123 043	0.5	2.0
24	24	2.4	174 240	130 680	116 800	0.5	2.0
24	25	2.5	167 270	125 453	114 048	0.5	2.5
24	26	2.6	160 837	120 628	109 662	0.5	2.5
24	27	2.7	154 380	116 160	105 600	1.0	2.5
24	28	2.8	149 349	112 011	101 829	1.0	2.5
20	24	2.9	145 200	108 900	99 000	1.0	2.5
20	25	3.0	139 392	104 544	95 040	1.0	3.0
20	26	3.1	134 031	100 523	91 385	1.0	3.0
20	27	3.2	129 067	96 800	88 600	1.0	3.0
20	28	3.4	124 457	93 343	84 867	1.0	3.0
16	24	3.6	116 160	87 120	79 200	1.0	3.5
16	25	3.8	111 514	83 635	76 032	1.0	3.5
16	26	3.9	107 225	80 418	73 068	1.0	3.5
16	27	4.1	103 253	77 440	70 400	1.5	4.0
16	28	4.2	99 566	74 674	67 886	1.5	4.0

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing (in.)	Seeds per Acre Row Spacing in Inches			Min. mph	Max. mph
Driver	Driven		15 In. Rows	20 In. Rows	22 In. Rows		
35	24	4.4	95 288	71 466	64 969	1.5	4.0
35	25	4.6	91 476	68 607	62 370	1.5	4.5
35	26	4.8	87 958	65 988	59 971	1.5	4.5
35	27	4.9	84 700	63 525	57 750	1.5	5.0
35	28	5.1	81 676	61 256	55 583	1.5	5.0
29	24	5.3	78 963	59 214	63 831	2.0	5.0
29	25	5.5	75 794	56 846	51 678	2.0	5.5
29	26	5.7	72 879	54 659	49 690	2.0	5.5
29	27	6.0	70 180	52 636	47 850	2.0	6.0
29	28	6.2	67 674	50 765	46 141	2.0	6.0
24	24	6.4	65 340	49 005	44 560	2.0	6.5
24	25	6.7	62 726	47 045	42 768	2.5	6.5
24	26	6.9	60 314	45 235	41 123	2.5	6.5
24	27	7.2	58 080	43 560	39 600	2.5	6.5
24	28	7.5	56 006	42 004	38 186	2.5	6.5
20	24	7.7	54 450	40 838	37 126	2.5	6.5
20	25	8.0	52 272	39 204	35 640	3.0	6.5
20	26	8.3	50 262	37 696	34 269	3.0	6.5
20	27	8.6	48 400	36 380	33 000	3.0	6.5
20	28	9.0	46 871	35 004	31 821	3.0	6.5
16	24	9.6	43 580	32 670	29 700	3.5	6.5
16	25	10.0	41 818	31 363	28 512	3.5	6.5
16	26	10.4	40 209	30 157	27 415	3.5	6.5
16	27	10.8	38 720	29 040	26 400	4.0	6.5
16	28	11.2	37 337	28 003	25 457	4.0	6.5

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Sweet Corn—30 in. to 40 in. Rows

{Decal No. DB1133}

SWEET CORN - 40 CELLS

AVERAGE SEED SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
SWEET CORN SEED PLANTED WITH VACUUM METER
USING THE LONG BRUSH AND AA37348 KNOCKOUT AND A52162 DOUBLE ELIMINATOR
BAFFLE IN UP POSITION EXCEPT FOR 5000 SEEDS PER POUND AND SMALLER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Seeds per Acre Row Spacing in Inches				Min. mph	Max. mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows		
35	24	1.6	127,050	105,875	100,303	95,288	0.5	1.5
35	25	1.7	121,968	101,640	96,291	91,476	0.5	1.5
35	26	1.8	117,277	97,731	92,587	87,958	0.5	1.5
35	27	1.9	112,933	94,111	89,158	84,700	0.5	1.5
35	28	1.9	108,900	90,750	85,974	81,675	0.5	1.5
29	24	2.0	105,270	87,725	83,108	78,953	0.5	2.0
29	25	2.1	101,059	84,216	79,784	75,794	0.5	2.0
29	26	2.2	97,172	80,977	76,715	72,879	0.5	2.0
29	27	2.2	93,573	77,978	73,874	70,180	0.5	2.0
29	28	2.3	90,231	75,193	71,235	67,674	0.5	2.0
24	24	2.4	87,120	72,600	68,779	65,340	0.5	2.0
24	25	2.5	83,635	69,696	66,028	62,726	0.5	2.5
24	26	2.6	80,418	67,015	63,488	60,314	0.5	2.5
24	27	2.7	77,440	64,533	61,137	58,080	1.0	2.5
24	28	2.8	74,674	62,229	58,953	56,006	1.0	2.5
20	24	2.9	72,600	60,500	57,316	54,450	1.0	2.5
20	25	3.0	69,696	58,080	55,023	52,272	1.0	3.0
20	26	3.1	67,015	55,846	52,907	50,262	1.0	3.0
20	27	3.2	64,533	53,778	50,947	48,400	1.0	3.0
20	28	3.4	62,229	51,857	49,128	46,671	1.0	3.0
16	24	3.6	58,080	48,400	45,853	43,560	1.0	3.5
16	25	3.8	55,757	46,464	44,019	41,818	1.0	3.5
16	26	3.9	53,612	44,677	42,326	40,209	1.0	3.5
16	27	4.1	51,627	43,022	40,758	38,720	1.5	4.0
16	28	4.2	49,783	41,486	39,302	37,337	1.5	4.0

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Seeds per Acre Row Spacing in Inches				Min. mph	Max. mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows		
35	24	4.4	47,644	39,703	37,613	35,733	1.5	4.0
35	25	4.6	45,738	38,115	36,109	34,304	1.5	4.5
35	26	4.8	43,979	36,649	34,720	32,984	1.5	4.5
35	27	4.9	42,350	35,292	33,434	31,763	1.5	5.0
35	28	5.1	40,838	34,031	32,240	30,628	1.5	5.0
29	24	5.3	39,476	32,897	31,165	29,607	2.0	5.0
29	25	5.5	37,897	31,581	29,919	28,423	2.0	5.5
29	26	5.7	36,440	30,366	28,768	27,330	2.0	5.5
29	27	6.0	35,090	29,242	27,703	26,317	2.0	6.0
29	28	6.2	33,837	28,197	26,713	25,378	2.0	6.0
24	24	6.4	32,670	27,225	25,792	24,503	2.0	6.5
24	25	6.7	31,363	26,136	24,760	23,522	2.5	6.5
24	26	6.9	30,157	25,131	23,808	22,618	2.5	6.5
24	27	7.2	29,040	24,200	22,926	21,780	2.5	6.5
24	28	7.5	28,003	23,336	22,108	21,002	2.5	6.5
20	24	7.7	27,225	22,688	21,493	20,419	2.5	6.5
20	25	8.0	26,136	21,780	20,634	19,602	3.0	6.5
20	26	8.3	25,131	20,942	19,840	18,848	3.0	6.5
20	27	8.6	24,200	20,167	19,105	18,150	3.0	6.5
20	28	9.0	23,336	19,446	18,423	17,502	3.0	6.5
16	24	9.6	21,780	18,150	17,195	16,335	3.5	6.5
16	25	10.0	20,909	17,424	16,507	15,682	3.5	6.5
16	26	10.4	20,105	16,754	15,872	15,078	3.5	6.5
16	27	10.8	19,360	16,133	15,284	14,520	4.0	6.5
16	28	11.2	18,669	15,557	14,738	14,001	4.0	6.5

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50418 -19-02OCT02

Oil Sunflower—15 in. to 22 in. Rows

{Decal No. DB 1384}

OIL SUNFLOWER - 30 CELLS

AVERAGE SEED SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
OIL SUNFLOWER SEED PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed spacing (in.)	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Driver	Driven		15 In. Rows	20 In. Rows	22 In. Rows	
35	24	2-3/16	190 575	142 931	129 938	2 to 3
35	25	2-5/16	182 952	137 214	124 740	2 to 3
35	26	2-3/8	175 915	131 937	119 942	2 to 3
35	27	2-1/2	169 400	127 050	115 500	2 to 3-1/2
35	28	2-9/16	163 350	122 513	111 375	2 to 3-1/2
29	24	2-5/8	157 905	118 429	107 663	2 to 3-1/2
29	25	2-3/4	151 589	113 692	103 356	2 to 3-1/2
29	26	2-7/8	145 758	109 319	99 381	2 to 4
29	27	3-1/16	140 360	105 270	95 700	2 to 4
29	28	3-1/8	135 347	101 510	92 282	2 to 4
24	24	3-1/4	130 680	98 010	89 100	2 to 4-1/2
24	25	3-5/16	125 453	94 090	85 536	2 to 4-1/2
24	26	3-1/2	120 628	90 471	82 246	2 to 4-1/2
24	27	3-5/8	116 160	87 120	79 200	2 to 5
24	28	3-3/4	112 011	84 009	76 371	2 to 5
20	24	3-13/16	108 900	81 675	74 250	2 to 5-1/2
20	25	4	104 544	78 408	71 280	2 to 5-1/2
20	26	1-3/16	100 523	75 392	68 538	2 to 6
20	27	4-5/16	96 800	72 600	66 000	2 to 6
20	28	4-1/2	93 343	70 007	63 643	2 to 6-1/2
16	24	4-7/8	87 120	65 340	59 400	2 to 6-1/2
16	25	5	83 635	62 726	57 024	2 to 7
16	26	5-3/16	80 418	60 314	54 831	2 to 7
16	27	5-3/8	77 440	58 080	52 800	2 to 7-1/2
16	28	3-5/8	74 674	56 006	50 914	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing (in.)	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Driver	Driven		15 In. Rows	20 In. Rows	22 In. Rows	
35	24	5-13/16	71 466	53 599	48 727	3 to 8
35	25	6-1/8	68 607	51 455	46 778	3 to 8
35	26	6-3/8	65 968	49 476	44 978	3 to 8
35	27	6-9/16	63 525	47 644	43 313	3 to 8
35	28	6-13/16	61 256	45 942	41 766	3 to 8
29	24	7-1/16	59 214	44 411	40 373	4 to 8
29	25	7-3/8	56 846	42 634	38 759	4 to 8
29	26	7-5/8	54 659	40 995	37 268	4 to 8
29	27	7-15/16	52 635	39 476	35 888	4 to 8
29	28	8-1/4	50 755	38 066	34 606	4 to 8
24	24	8-9/16	49 005	36 754	33 413	4 to 8
24	25	8-7/8	47 045	35 284	32 076	4 to 8
24	26	9-1/4	45 235	33 927	30 842	4 to 8
24	27	9-5/8	43 560	32 670	29 700	4 to 8
24	28	9-15/16	42 004	31 503	28 639	4 to 8
20	24	10-1/4	40 838	30 628	27 844	4 to 8
20	25	10-11/16	39 204	29 403	26 730	4 to 8
20	26	11-1/16	37 696	28 272	25 702	4 to 8
20	27	11-1/2	36 300	27 225	24 750	4 to 8
20	28	11-15/16	35 004	26 253	23 866	4 to 8
16	24	12-13/16	32 670	24 503	22 275	4 to 8
16	25	13-5/16	31 363	23 522	21 384	4 to 8
16	26	13-7/8	30 157	22 618	20 562	4 to 8
16	27	14-3/8	29 040	21 780	19 800	4 to 8
16	28	14-15/16	28 003	21 002	19 093	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Oil Sunflower—30 in. to 40 in. Rows

{Decal No. DB1138}

OIL SUNFLOWER - 30 CELLS

AVERAGE SEED SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
OIL SUNFLOWER SEED PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	2-3/16	95,288	79,406	75,227	71,466	2 to 3
35	25	2-5/16	91,476	76,230	72,218	68,607	2 to 3
35	26	2-3/8	87,958	73,298	69,440	65,968	2 to 3
35	27	2-1/2	84,700	70,583	66,868	63,525	2 to 3-1/2
35	28	2-9/16	81,675	68,063	64,480	61,256	2 to 3-1/2
29	24	2-5/8	78,593	65,794	62,331	59,214	2 to 3-1/2
29	25	2-3/4	75,794	63,162	59,383	56,846	2 to 3-1/2
29	26	2-7/8	72,879	60,733	57,536	54,659	2 to 4
29	27	3-1/16	70,180	58,483	55,405	52,635	2 to 4
29	28	3-1/8	67,674	56,395	53,427	50,755	2 to 4
24	24	3-1/4	65,340	54,450	51,584	49,005	2 to 4-1/2
24	25	3-5/16	62,726	52,272	49,521	47,045	2 to 4-1/2
24	26	3-1/2	60,314	50,262	47,616	45,235	2 to 4-1/2
24	27	3-5/8	58,080	48,400	45,853	43,560	2 to 5
24	28	3-3/4	56,006	46,671	44,215	42,004	2 to 5
20	24	3-13/16	54,450	45,375	42,987	40,838	2 to 5-1/2
20	25	4	52,272	43,560	41,267	39,204	2 to 5-1/2
20	26	4-3/16	50,262	41,885	39,680	37,696	2 to 6
20	27	4-5/16	48,400	40,333	38,211	36,300	2 to 6
20	28	4-1/2	46,671	38,893	36,846	35,004	2 to 6-1/2
16	24	4-7/8	43,560	36,300	34,389	32,670	2 to 6-1/2
16	25	5	41,818	34,484	33,014	31,363	2 to 7
16	26	5-3/16	40,209	33,508	31,744	30,157	2 to 7
16	27	5-3/8	38,720	32,267	30,568	29,040	2 to 7-1/2
16	28	5-5/8	37,337	31,114	29,477	28,003	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	5-13/16	35,733	29,777	28,210	26,800	3 to 8
35	25	6-1/8	34,304	28,586	27,082	25,728	3 to 8
35	26	6-3/8	32,984	27,487	26,040	24,738	3 to 8
35	27	6-9/16	31,763	26,469	25,076	23,822	3 to 8
35	28	6-13/16	30,628	25,523	24,180	22,971	3 to 8
29	24	7-1/16	29,607	24,673	23,374	22,205	4 to 8
29	25	7-3/8	28,423	23,686	22,439	21,317	4 to 8
29	26	7-5/8	27,330	22,775	21,576	20,497	4 to 8
29	27	7-15/16	26,318	21,931	20,777	19,738	4 to 8
29	28	8-1/4	25,378	21,148	20,035	19,033	4 to 8
24	24	8-9/16	24,503	20,419	19,344	18,377	4 to 8
24	25	8-7/8	23,522	19,602	18,570	17,642	4 to 8
24	26	9-1/4	22,618	18,848	17,856	16,963	4 to 8
24	27	9-5/8	21,780	18,150	17,195	16,335	4 to 8
24	28	9-15/16	21,002	17,502	16,581	15,752	4 to 8
20	24	10-1/4	20,419	17,016	16,120	15,314	4 to 8
20	25	10-11/16	19,602	16,335	15,475	14,702	4 to 8
20	26	11-1/16	18,848	15,707	14,880	14,136	4 to 8
20	27	11-1/2	18,150	15,125	14,329	13,613	4 to 8
20	28	11-15/16	17,502	14,585	13,817	13,126	4 to 8
16	24	12-13/16	16,335	13,613	12,896	12,251	4 to 8
16	25	13-5/16	15,682	13,068	12,380	11,761	4 to 8
16	26	13-7/8	15,078	12,565	11,904	11,309	4 to 8
16	27	14-3/8	14,520	12,100	11,463	10,890	4 to 8
16	28	14-15/16	14,001	11,668	11,054	10,501	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50410 -19-04OCT02

Confectionary Sunflower—15 in. to 22 in. Rows

{Decal No. DB 1383}

CONFECTIONARY SUNFLOWER - 40 CELLS

AVERAGE SEEDS SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
CONFECTIONARY SUNFLOWER SEED PLANTED WITH VACUUM METER
USING THE LONG BRUSH AND AA37348 KNOCKOUT AND AS2152 DOUBLE ELIMINATOR
BAFFLE IN UP POSITION EXCEPT FOR 5000 SEEDS PER POUND AND SMALLER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing (in.)	Seeds per Acre Row Spacing in Inches			Min. mph	Max. mph
Driver	Driven		15 In. Rows	20 In. Rows	22 In. Rows		
35	24	1.6	254 100	190 575	173 250	0.5	1.5
35	25	1.7	243 336	182 962	166 320	0.5	1.5
35	26	1.8	234 554	175 915	159 923	0.5	1.5
35	27	1.9	225 867	169 400	154 000	0.5	1.5
35	28	1.9	217 800	163 350	148 500	0.5	1.5
29	24	2.0	210 540	157 905	143 550	0.5	2.0
29	25	2.1	202 118	151 589	137 808	0.5	2.0
29	26	2.2	194 345	145 758	132 508	0.5	2.0
29	27	2.2	187 147	140 360	127 600	0.5	2.0
29	28	2.3	183 463	135 347	123 043	0.5	2.0
24	24	2.4	174 240	130 680	116 800	0.5	2.0
24	25	2.5	167 270	125 453	114 048	0.5	2.5
24	26	2.6	160 837	120 628	109 662	0.5	2.5
24	27	2.7	154 380	116 160	105 600	1.0	2.5
24	28	2.8	149 349	112 011	101 829	1.0	2.5
20	24	2.9	145 200	108 900	99 000	1.0	2.5
20	25	3.0	139 392	104 544	95 040	1.0	3.0
20	26	3.1	134 031	100 523	91 385	1.0	3.0
20	27	3.2	129 067	96 800	88 600	1.0	3.0
20	28	3.4	124 457	93 343	84 867	1.0	3.0
16	24	3.6	116 160	87 120	79 200	1.0	3.5
16	25	3.8	111 514	83 635	76 032	1.0	3.5
16	26	3.9	107 225	80 418	73 068	1.0	3.5
16	27	4.1	103 253	77 440	70 400	1.5	4.0
16	28	4.2	99 566	74 674	67 886	1.5	4.0

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing (in.)	Seeds per Acre Row Spacing in Inches			Min. mph	Max. mph
Driver	Driven		15 In. Rows	20 In. Rows	22 In. Rows		
35	24	4.4	95 288	71 466	64 969	1.5	4.0
35	25	4.6	91 476	68 607	62 370	1.5	4.5
35	26	4.8	87 958	65 988	59 971	1.5	4.5
35	27	4.9	84 700	63 525	57 750	1.5	5.0
35	28	5.1	81 676	61 256	55 583	1.5	5.0
29	24	5.3	78 963	59 214	63 831	2.0	5.0
29	25	5.5	75 794	56 846	51 678	2.0	5.5
29	26	5.7	72 879	54 659	49 690	2.0	5.5
29	27	6.0	70 180	52 636	47 850	2.0	6.0
29	28	6.2	67 674	50 765	46 141	2.0	6.0
24	24	6.4	65 340	49 005	44 560	2.0	6.5
24	25	6.7	62 726	47 045	42 768	2.5	6.5
24	26	6.9	60 314	45 235	41 123	2.5	6.5
24	27	7.2	58 080	43 560	39 600	2.5	6.5
24	28	7.5	56 006	42 004	38 186	2.5	6.5
20	24	7.7	54 450	40 838	37 126	2.5	6.5
20	25	8.0	52 272	39 204	35 640	3.0	6.5
20	26	8.3	50 262	37 696	34 269	3.0	6.5
20	27	8.6	48 400	36 380	33 000	3.0	6.5
20	28	9.0	46 871	35 004	31 821	3.0	6.5
16	24	9.6	43 580	32 670	29 700	3.5	6.5
16	25	10.0	41 818	31 363	28 512	3.5	6.5
16	26	10.4	40 209	30 157	27 415	3.5	6.5
16	27	10.8	38 720	29 040	26 400	4.0	6.5
16	28	11.2	37 337	28 003	25 457	4.0	6.5

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Confectionary Sunflower—30 in. to 40 in. Rows

{Decal No. DB1143}

CONFECTIONARY SUNFLOWER - 40 CELLS

AVERAGE SEED SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
CONFECTIONARY SUNFLOWER SEED PLANTED WITH VACUUM METER
USING THE LONG BRUSH AND AA37348 KNOCKOUT AND A52152 DOUBLE ELIMINATOR
BAFFLE IN UP POSITION EXCEPT FOR 5000 SEEDS PER POUND AND SMALLER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing in In.	Seeds per Acre Row Spacing in Inches				Min. mph	Max. mph
Driver	Driven		30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows		
35	24	1.6	127,050	105,875	100,303	95,288	0.5	1.5
35	25	1.7	121,968	101,640	96,291	91,476	0.5	1.5
35	26	1.8	117,277	97,731	92,587	87,958	0.5	1.5
35	27	1.9	112,933	94,111	89,158	84,700	0.5	1.5
35	28	1.9	108,900	90,750	85,974	81,675	0.5	1.5
29	24	2.0	105,270	87,725	83,108	78,953	0.5	2.0
29	25	2.1	101,059	84,216	79,784	75,794	0.5	2.0
29	26	2.2	97,172	80,977	76,715	72,879	0.5	2.0
29	27	2.2	93,573	77,978	73,874	70,180	0.5	2.0
29	28	2.3	90,231	75,193	71,235	67,674	0.5	2.0
24	24	2.4	87,120	72,600	68,779	65,340	0.5	2.0
24	25	2.5	83,635	69,696	66,028	62,726	0.5	2.5
24	26	2.6	80,418	67,015	63,488	60,314	0.5	2.5
24	27	2.7	77,440	64,533	61,137	58,080	1.0	2.5
24	28	2.8	74,674	62,229	58,953	56,006	1.0	2.5
20	24	2.9	72,600	60,500	57,316	54,450	1.0	2.5
20	25	3.0	69,696	58,080	55,023	52,272	1.0	3.0
20	26	3.1	67,015	55,846	52,907	50,262	1.0	3.0
20	27	3.2	64,533	53,778	50,947	48,400	1.0	3.0
20	28	3.4	62,229	51,857	49,128	46,671	1.0	3.0
16	24	3.6	58,080	48,400	45,853	43,560	1.0	3.5
16	25	3.8	55,757	46,464	44,019	41,818	1.0	3.5
16	26	3.9	53,612	44,677	42,326	40,209	1.0	3.5
16	27	4.1	51,627	43,022	40,758	38,720	1.5	4.0
16	28	4.2	49,783	41,486	39,302	37,337	1.5	4.0

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing in In.	Seeds per Acre Row Spacing in Inches				Min. mph	Max. mph
Driver	Driven		30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows		
35	24	4.4	47,644	39,703	37,613	35,733	1.5	4.0
35	25	4.6	45,738	38,115	36,109	34,304	1.5	4.5
35	26	4.8	43,979	36,649	34,720	32,984	1.5	4.5
35	27	4.9	42,350	35,292	33,434	31,763	1.5	5.0
35	28	5.1	40,838	34,031	32,240	30,628	1.5	5.0
29	24	5.3	39,476	32,897	31,165	29,607	2.0	5.0
29	25	5.5	37,897	31,581	29,919	28,423	2.0	5.5
29	26	5.7	36,440	30,366	28,768	27,330	2.0	5.5
29	27	6.0	35,090	29,242	27,703	26,317	2.0	6.0
29	28	6.2	33,837	28,197	26,713	25,378	2.0	6.0
24	24	6.4	32,670	27,225	25,792	24,503	2.0	6.5
24	25	6.7	31,363	26,136	24,760	23,522	2.5	6.5
24	26	6.9	30,157	25,131	23,808	22,618	2.5	6.5
24	27	7.2	29,040	24,200	22,926	21,780	2.5	6.5
24	28	7.5	28,003	23,336	22,108	21,002	2.5	6.5
20	24	7.7	27,225	22,688	21,493	20,419	2.5	6.5
20	25	8.0	26,136	21,780	20,634	19,602	3.0	6.5
20	26	8.3	25,131	20,942	19,840	18,848	3.0	6.5
20	27	8.6	24,200	20,167	19,105	18,150	3.0	6.5
20	28	9.0	23,336	19,446	18,423	17,502	3.0	6.5
16	24	9.6	21,780	18,150	17,195	16,335	3.5	6.5
16	25	10.0	20,909	17,424	16,507	15,682	3.5	6.5
16	26	10.4	20,105	16,754	15,872	15,078	3.5	6.5
16	27	10.8	19,360	16,133	15,284	14,520	4.0	6.5
16	28	11.2	18,669	15,557	14,738	14,001	4.0	6.5

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50414 -19-02OCT02

Low-Rate Cotton—15 in. to 40 in. Rows

COTTON - 32 CELLS

AVERAGE SEED SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF COTTON PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING CHARTS."

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Approximate Seed Population Per Acre						Recommended Speed Range in MPH
			15 In. Rows	30 In. Rows	32 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	2.06	203280	101640	95288	84700	80242	76230	2 to 8
35	25	2.14	195149	97574	91476	81312	77032	73181	2 to 8
35	26	2.23	187643	93822	87958	78185	74070	70366	2 to 8
35	27	2.31	180693	90347	84700	75289	71326	67760	2 to 8
35	28	2.40	174240	87120	81675	72600	68779	65340	2 to 8
29	24	2.48	168432	84216	78953	70180	66486	63162	2 to 8
29	25	2.59	161695	80847	75794	67373	63827	60636	2 to 8
29	26	2.69	155476	77738	72879	64782	61372	58303	2 to 8
29	27	2.79	149717	74859	70180	62382	59099	56144	2 to 8
29	28	2.90	144370	72185	67674	60154	56988	54139	2 to 8
24	24	3.00	139392	69696	65340	58080	55023	52272	2 to 8
24	25	3.13	133816	66908	62726	55757	52822	50181	2 to 8
24	26	3.25	128670	64335	60314	53612	50791	48251	2 to 8
24	27	3.38	123904	61952	58080	51627	48909	46464	2 to 8
24	28	3.50	119479	59739	56006	49783	47163	44805	2 to 8
20	24	3.60	116160	58080	54450	48400	45853	43560	2 to 8
20	25	3.75	111514	55757	52272	46464	44019	41818	2 to 8
20	26	3.90	107225	53612	50262	44677	42326	40209	2 to 8
20	27	4.05	103253	51627	48400	43022	40758	38720	2 to 8
20	28	4.20	99566	49783	46671	41486	39302	37337	2 to 8
16	24	4.50	92928	46464	43560	38720	36682	34848	3 to 8
16	25	4.69	89211	44605	41818	37171	35215	33454	3 to 8
16	26	4.88	85780	42890	40209	35742	33860	32167	3 to 8
16	27	5.06	82603	41301	38720	34418	32606	30976	3 to 8
16	28	5.25	79653	39826	37337	33189	31442	29870	3 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Approximate Seed Population Per Acre						Recommended Speed Range in MPH
			15 In. Rows	30 In. Rows	32 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	5.49	76230	38115	35733	31763	30091	28586	3 to 8
35	25	5.71	73181	36590	34304	30492	28887	27443	3 to 8
35	26	5.94	70366	35183	32984	29319	27776	26387	3 to 8
35	27	6.17	67760	33880	31763	28233	26747	25410	3 to 8
35	28	6.40	65340	32670	30628	27225	25792	24503	3 to 8
29	24	6.62	63162	31581	29607	26318	24932	23686	3 to 8
29	25	6.90	60636	30318	28423	25265	23935	22738	4 to 8
29	26	7.17	58303	29152	27330	24293	23014	21864	4 to 8
29	27	7.45	56144	28072	26318	23393	22162	21054	4 to 8
29	28	7.72	54139	27069	25378	22558	21371	20302	4 to 8
24	24	8.00	52272	26136	24503	21780	20634	19602	4 to 8
24	25	8.33	50181	25091	23522	20909	19808	18818	4 to 8
24	26	8.67	48251	24126	22618	20105	19046	18094	4 to 8
24	27	9.00	46464	23232	21780	19360	18341	17424	4 to 8
24	28	9.33	44805	22402	21002	18669	17686	16802	4 to 8
20	24	9.60	43560	21780	20419	18150	17195	16335	4 to 8
20	25	10.00	41818	20909	19602	17424	16507	15682	4 to 8
20	26	10.40	40209	20105	18848	16754	15872	15078	4 to 8
20	27	10.80	38720	19360	18150	16133	15284	14520	4 to 8
20	28	11.20	37337	18669	17502	15557	14738	14001	4 to 8
16	24	12.00	34848	17424	16335	14520	13756	13068	4 to 8
16	25	12.50	33454	16727	15682	13939	13206	12545	4 to 8
16	26	13.00	32167	16084	15078	13403	12698	12063	4 to 8
16	27	13.50	30976	15488	14520	12907	12227	11616	4 to 8
16	28	14.00	29870	14935	14001	12446	11791	11201	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A57366 -19-06JAN06

Cotton—30 in. to 40 in. Rows

{Decal No. DB1084}

COTTON - 64 CELLS

AVERAGE SEED SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF COTTON PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	1	203,280	169,400	160,484	152,460	2 to 5-1/2
35	25	1-1/16	195,149	162,624	154,065	146,362	2 to 5-1/2
35	26	1-1/8	187,643	156,369	148,139	140,732	2 to 6
35	27	1-1/8	180,693	150,578	142,653	135,520	2 to 6
35	28	1-3/16	174,240	145,200	137,558	130,680	2 to 6-1/2
29	24	1-1/4	168,432	140,360	132,973	126,324	2 to 6-1/2
29	25	1-5/16	161,695	134,746	127,654	121,271	2 to 7
29	26	1-3/8	155,476	129,563	122,744	116,607	2 to 7
29	27	1-7/16	149,717	124,764	118,198	112,288	2 to 7-1/2
29	28	1-7/16	144,370	120,309	113,977	108,278	2 to 7-1/2
24	24	1-1/2	139,392	116,160	110,046	104,544	2 to 8
24	25	1-9/16	133,816	111,514	105,644	100,362	2 to 8
24	26	1-5/8	128,670	107,225	101,581	96,502	2 to 8
24	27	1-11/16	123,904	103,253	97,819	92,928	2 to 8
24	28	1-3/4	119,479	99,566	94,325	89,609	2 to 8
20	24	1-13/16	116,160	96,800	91,705	87,120	2 to 8
20	25	1-7/8	111,514	92,928	88,037	83,635	2 to 8
20	26	1-15/16	107,225	89,354	84,651	80,418	2 to 8
20	27	2	103,253	86,044	81,516	77,440	2 to 8
20	28	2-1/8	99,566	82,971	78,605	74,674	2 to 8
16	24	2-1/4	92,928	77,440	73,364	69,696	3 to 8
16	25	2-5/16	89,211	74,342	70,430	66,908	3 to 8
16	26	2-7/16	85,780	71,483	67,721	64,335	3 to 8
16	27	2-1/2	82,603	68,836	65,213	61,952	3 to 8
16	28	2-5/8	79,653	66,377	62,884	59,739	3 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	2-3/4	76,230	63,525	60,182	57,173	3 to 8
35	25	2-7/8	73,181	60,984	57,774	54,886	3 to 8
35	26	2-15/16	70,366	58,638	55,552	52,775	3 to 8
35	27	3-1/16	67,760	56,467	53,495	50,820	3 to 8
35	28	3-3/16	65,340	54,450	51,584	49,005	3 to 8
29	24	3-5/16	63,162	52,635	49,865	47,372	3 to 8
29	25	3-7/16	60,636	50,530	47,870	45,477	4 to 8
29	26	3-9/16	58,303	48,586	46,029	43,728	4 to 8
29	27	3-3/4	56,144	46,787	44,324	42,108	4 to 8
29	28	3-7/8	54,139	45,116	42,741	40,604	4 to 8
24	24	4	52,272	43,560	41,267	39,204	4 to 8
24	25	4-3/16	50,181	41,818	39,617	37,636	4 to 8
24	26	4-5/16	48,251	40,209	38,093	36,188	4 to 8
24	27	4-1/2	46,464	38,720	36,682	34,848	4 to 8
24	28	4-11/16	44,805	37,337	35,372	33,603	4 to 8
20	24	4-13/16	43,560	36,300	34,389	32,670	4 to 8
20	25	5	41,818	34,848	33,014	31,363	4 to 8
20	26	5-3/16	40,209	33,508	31,744	30,157	4 to 8
20	27	5-7/16	38,720	32,267	30,568	29,040	4 to 8
20	28	5-5/8	37,337	31,114	29,477	28,003	4 to 8
16	24	6	34,848	29,040	27,512	26,136	4 to 8
16	25	6-1/4	33,454	27,878	26,411	25,091	4 to 8
16	26	6-1/2	32,167	26,806	25,395	24,126	4 to 8
16	27	6-3/4	30,976	25,813	24,455	23,232	4 to 8
16	28	7	29,870	24,891	23,581	22,402	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Cotton Using Edible Bean Flat-Type Seed Disk and Double Eliminator—30 in. to 40 in. Rows

{Decal No. DB1232} EDIBLE BEANS - FLAT TYPE DISK - 50 HOLES

AVERAGE SEED SPACING, AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION PER ACRE
OF EDIBLE BEANS PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS"

HIGH RANGE INPUT SPROCKET

Approximate Seed Population Per Acre

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing In Inches	Average Seeds Per Foot	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	Recommended Speed Range in mph
35	24	1-5/16	9.11	158,813	132,344	125,378	119,109	3 to 4
35	25	1-3/8	8.75	152,460	127,050	120,363	114,345	3 to 4
35	26	1-7/16	8.41	146,596	122,163	115,734	109,947	3 to 4
35	27	1-1/2	8.10	141,167	117,639	111,447	108,875	3 to 4
35	28	1-1/2	7.81	136,125	113,438	109,467	102,094	3 to 4.5
29	24	1-5/8	7.55	131,588	109,656	103,885	98,691	3 to 4.5
29	25	1-11/16	7.25	126,324	105,270	99,729	94,743	3 to 4.5
29	26	1-3/4	6.97	121,465	101,221	95,894	91,099	3 to 4.5
29	27	1-3/4	6.71	116,967	97,472	92,342	87,725	3 to 4.5
29	28	1-13/16	6.49	112,789	93,991	89,044	84,592	3 to 4.5
24	24	1-7/8	6.25	108,900	90,750	85,974	81,675	3 to 4.5
24	25	2	6.00	104,544	87,120	82,535	78,408	3 to 4.5
24	26	2	5.77	100,523	83,769	79,360	75,392	4 to 5
24	27	2-1/8	5.56	96,800	80,667	76,421	72,600	4 to 5
24	28	2-1/4	5.36	93,343	77,786	73,692	70,007	4 to 5
20	24	2-3/8	5.21	90,750	75,625	71,645	68,063	4 to 5
20	25	2-7/16	5.00	87,120	72,600	68,779	65,340	4 to 5
20	26	2-1/2	4.81	83,769	69,808	66,134	62,827	4 to 5
20	27	2-1/2	4.62	80,667	67,222	63,684	60,500	4 to 6
20	28	2-9/16	4.46	77,786	64,821	61,410	58,339	4 to 6
16	24	2-7/8	4.17	72,600	60,500	57,316	54,450	4 to 6
16	25	3	4.00	69,696	58,080	55,023	52,272	4 to 6
16	26	3-1/8	3.85	67,015	55,846	52,907	50,262	4 to 6
16	27	3-1/4	3.70	64,533	53,778	50,947	48,400	4 to 6
16	28	3-3/8	3.50	62,229	51,857	49,128	46,671	4 to 6

LOW RANGE INPUT SPROCKET

Approximate Seed Population Per Acre

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing In Inches	Average Seeds Per Foot	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	Recommended Speed Range in mph
35	24	3-1/2	3.42	59,555	49,629	47,017	44,666	4 to 6
35	25	3-5/8	3.26	57,173	47,644	45,136	42,879	4 to 6
35	26	3-3/4	3.16	54,974	45,811	43,400	41,230	4 to 6
35	27	4	3.04	52,938	44,115	41,793	39,703	4 to 6
35	28	4-1/8	2.93	51,047	42,539	40,300	38,285	4 to 6
29	24	4-1/2	2.83	49,345	41,121	38,957	37,009	4 to 6
29	25	4-3/8	2.72	47,372	39,476	37,399	35,529	4 to 6
29	26	4-5/8	2.61	45,550	37,958	35,960	34,162	4 to 6
29	27	4-3/4	2.52	43,863	36,552	34,638	32,897	4 to 6
29	28	4-15/16	2.43	42,296	35,247	33,392	31,722	4 to 6
24	24	5-1/8	2.34	40,838	34,031	32,240	30,628	4 to 6
24	25	5-5/16	2.25	39,204	32,670	30,951	29,403	4 to 6
24	26	5-1/2	2.16	37,696	31,413	29,760	28,272	4 to 6
24	27	5-3/4	2.08	36,300	30,250	28,658	27,225	4 to 6
24	28	5-15/16	2.01	35,004	29,170	27,634	26,253	4 to 6
20	24	6-1/8	1.95	34,031	28,359	26,867	25,523	4 to 6
20	25	6-3/8	1.88	32,670	27,225	25,792	24,503	4 to 6
20	26	6-5/8	1.80	31,413	26,178	24,800	23,560	4 to 6
20	27	6-15/16	1.74	30,250	25,208	23,882	22,688	4 to 6
20	28	7-1/8	1.67	29,170	24,308	23,029	21,877	4 to 6
16	24	7-5/8	1.56	27,225	22,688	21,493	20,419	4 to 6
16	25	8	1.50	26,136	21,780	20,634	19,602	4 to 6
16	26	8-3/8	1.44	25,131	20,942	19,840	18,848	4 to 6
16	27	8-5/8	1.39	24,200	20,167	19,105	18,150	4 to 6
16	28	9	1.34	23,336	19,446	18,423	17,502	4 to 6

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at the desired rate.

Four Seed Cotton Hilldrop—30 in. to 40 in. Rows

COTTON HILLDROP - 48 CELLS
HILL SPACING IN IN. AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
COTTON HILLDROP PLANTED WITH VACUUM METER AND USING AA37206 BRUSH

[Decal No. DB1085]

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET
APPROXIMATE SEED POPULATION PER ACRE

Sprocket Combinations (Number of Teeth) Driver Driven		Hill Spacing in In.	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	Recommended Speed Range in mph
35	24	5.49	152,460	127,052	120,364	114,344	2 to 3
35	25	5.71	146,360	121,968	115,548	109,772	2 to 3
35	26	5.94	140,732	117,276	111,104	105,548	2 to 3.5
35	27	6.17	135,520	112,932	106,888	101,640	2 to 3.5
35	28	6.40	130,680	108,900	103,168	98,012	2 to 4
29	24	6.62	126,324	105,272	99,728	94,744	2 to 4
29	25	6.90	121,272	101,060	95,740	90,952	2 to 4
29	26	7.17	116,608	97,172	92,056	87,456	2 to 4.5
29	27	7.45	112,288	93,572	88,648	84,216	2 to 4.5
29	28	7.72	108,276	90,232	85,484	81,208	2 to 4.5
24	24	8.00	104,544	87,120	82,536	78,408	2 to 5
24	25	8.33	100,364	83,636	79,232	75,272	2 to 5
24	26	8.67	96,504	80,420	76,184	72,376	2 to 5.5
24	27	9.00	92,928	77,440	73,364	69,696	2 to 5.5
24	28	9.33	89,608	74,676	70,744	67,208	2 to 5.5
20	24	9.60	87,120	72,600	68,760	65,340	2 to 6
20	25	10.00	83,636	69,696	66,028	62,728	2 to 6
20	26	10.40	80,420	67,016	63,488	60,312	2 to 6.5
20	27	10.80	77,440	64,532	61,136	58,080	2 to 6.5
20	28	11.20	74,676	62,228	58,952	56,004	2 to 7
16	24	12.00	69,696	58,080	55,024	52,272	3 to 7.5
16	25	12.50	66,908	55,756	52,824	50,180	3 to 8
16	26	13.00	64,336	53,612	50,792	48,252	3 to 8
16	27	13.50	61,952	51,628	48,908	46,464	3 to 8
16	28	14.00	59,740	49,784	47,164	44,804	3 to 8

LOW RANGE INPUT SPROCKET
Approximate Seed Population Per Acre

Sprocket Combinations (Number of Teeth) Driver Driven		Hill Spacing in In.	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	Recommended Speed Range in mph
35	24	14.63	57,172	47,644	45,136	42,880	3 to 8
35	25	15.24	54,884	45,740	43,332	41,164	3 to 8
35	26	15.85	52,776	43,980	41,664	39,580	3 to 8
35	27	16.46	50,820	42,352	40,120	38,116	3 to 8
35	28	17.07	49,004	40,836	38,688	36,752	3 to 8
29	24	17.66	47,372	39,476	37,400	35,528	3 to 8
29	25	18.39	45,476	37,896	35,904	34,108	4 to 8
29	26	19.13	43,728	36,440	34,520	32,796	4 to 8
29	27	19.86	42,108	35,092	33,244	31,580	4 to 8
29	28	20.60	40,604	33,836	32,056	30,452	4 to 8
24	24	21.33	39,204	32,672	30,952	29,404	4 to 8
24	25	22.22	37,636	31,364	29,712	28,208	4 to 8
24	26	23.11	36,188	30,156	28,568	27,140	4 to 8
24	27	24.00	34,848	29,040	27,512	26,136	4 to 8
24	28	24.89	33,604	28,004	26,528	25,204	4 to 8
20	24	25.60	32,632	27,224	25,792	24,504	4 to 8
20	25	26.67	31,364	26,136	24,760	23,524	4 to 8
20	26	27.73	30,156	25,132	23,808	22,616	4 to 8
20	27	28.80	29,040	24,200	22,928	21,780	4 to 8
20	28	29.87	28,004	23,336	22,108	21,004	4 to 8
16	24	32.00	26,136	21,780	20,632	19,604	4 to 8
16	25	33.33	25,092	20,908	19,808	18,816	4 to 8
16	26	34.67	24,124	20,104	19,048	18,096	4 to 8
16	27	36.00	23,232	19,360	18,340	17,424	4 to 8
16	28	37.33	22,404	18,668	17,688	16,800	4 to 8

A50424 -19-04OCT02

Two Seed Cotton Hilldrop—30 in. to 40 in. Rows

TWO SEED HILLDROP COTTON - 64 CELLS
HILL SPACING IN IN. AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
HILLDROP COTTON PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET
APPROXIMATE SEED POPULATION PER ACRE

Sprocket Combinations (Number of Teeth) Driver Driven		Hill Spacing in In.	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	Recommended Speed Range in mph
35	24	2.00	203,280	169,400	160,484	152,460	2 to 5-1/2
35	25	2.13	195,149	162,624	154,065	146,362	2 to 5-1/2
35	26	2.25	187,643	156,369	148,139	140,732	2 to 6
35	27	2.25	180,693	150,578	142,653	135,520	2 to 6
35	28	2.38	174,240	145,200	137,558	130,680	2 to 6-1/2
29	24	2.50	168,432	140,360	132,973	126,324	2 to 6-1/2
29	25	2.63	161,695	134,746	127,654	121,271	2 to 7
29	26	2.75	155,476	129,563	122,744	116,607	2 to 7
29	27	2.88	149,717	124,764	118,198	112,288	2 to 7-1/2
29	28	2.88	144,370	120,309	113,977	108,278	2 to 7-1/2
24	24	3.00	139,392	116,160	110,046	104,544	2 to 8
24	25	3.13	133,816	111,514	105,644	100,362	2 to 8
24	26	3.25	128,670	107,225	101,581	96,502	2 to 8
24	27	3.38	123,904	103,253	97,819	92,928	2 to 8
24	28	3.50	119,479	99,566	94,325	89,609	2 to 8
20	24	3.63	116,160	96,800	91,705	87,120	2 to 8
20	25	3.75	111,514	92,928	88,037	83,635	2 to 8
20	26	3.88	107,225	89,354	84,651	80,418	2 to 8
20	27	4.00	103,253	86,044	81,516	77,440	2 to 8
20	28	4.25	99,566	82,971	78,605	74,674	2 to 8
16	24	4.50	92,928	77,440	73,364	69,696	3 to 8
16	25	4.63	89,211	74,342	70,430	66,908	3 to 8
16	26	4.88	85,780	71,483	67,721	64,335	3 to 8
16	27	5.00	82,603	68,836	65,213	61,952	3 to 8
16	28	5.25	79,653	66,377	62,884	59,739	3 to 8

LOW RANGE INPUT SPROCKET
APPROXIMATE SEED POPULATION PER ACRE

Sprocket Combinations (Number of Teeth) Driver Driven		Hill Spacing in In.	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	Recommended Speed Range in mph
35	24	5.50	76,230	63,525	60,182	57,173	3 to 8
35	25	5.75	73,181	60,984	57,774	54,886	3 to 8
35	26	5.88	70,366	58,636	55,552	52,775	3 to 8
35	27	6.13	67,760	56,467	53,495	50,820	3 to 8
35	28	6.13	65,340	54,450	51,584	49,005	3 to 8
29	24	6.63	63,162	52,635	49,865	47,372	3 to 8
29	25	6.88	60,636	50,530	47,870	45,477	4 to 8
29	26	7.13	58,303	48,586	46,029	43,728	4 to 8
29	27	7.50	56,144	46,787	44,324	42,108	4 to 8
29	28	7.75	54,139	45,116	42,741	40,604	4 to 8
24	24	8.00	52,272	43,560	41,267	39,204	4 to 8
24	25	8.38	50,181	41,818	39,617	37,636	4 to 8
24	26	8.63	48,251	40,209	38,093	36,188	4 to 8
24	27	9.00	46,464	38,720	36,682	34,848	4 to 8
24	28	9.38	44,805	37,337	35,372	33,603	4 to 8
20	24	9.63	43,560	36,300	34,389	32,670	4 to 8
20	25	10.00	41,818	34,848	33,014	31,363	4 to 8
20	26	10.38	40,209	33,508	31,744	30,157	4 to 8
20	27	10.88	38,720	32,267	30,568	29,040	4 to 8
20	28	11.25	37,337	31,114	29,477	28,003	4 to 8
16	24	12.00	34,848	29,040	27,512	26,136	4 to 8
16	25	12.50	33,454	27,878	26,411	25,091	4 to 8
16	26	13.00	32,167	26,806	25,395	24,126	4 to 8
16	27	13.50	30,976	25,813	24,455	23,232	4 to 8
16	28	14.00	29,870	24,891	23,581	22,402	4 to 8

A50185 -19-16SEP02

Sorghum—15 in. to 22 in. Rows

SORGHUM - 45 CELLS

AVERAGE SEED SPACING, AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION
PER ACRE OF SORGHUM PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing (in.)	Average Seeds Per Ft.	Approximate Seed Population Per Acre			Recommended Speed Range in mph
				15 In. Rows	20 In. Rows	22 In. Rows	
35	24	1-1/2	8.2	285 863	214 397	194 906	2 to 5-1/2
35	25	1-1/2	7.9	274 428	205 821	187 110	2 to 5-1/2
35	26	1-9/16	7.6	263 873	197 985	179 913	2 to 6
35	27	1-11/16	7.2	254 100	190 575	173 250	2 to 6
35	28	1-3/4	7.0	245 025	183 769	167 063	2 to 6-1/2
29	24	1-3/4	6.8	236 858	177 643	161 494	2 to 6-1/2
29	25	1-13/16	6.5	227 383	170 537	156 034	2 to 7
29	26	1-7/8	6.3	218 638	163 978	149 071	2 to 7
29	27	2	6.0	210 640	157 905	143 650	2 to 7-1/2
29	28	2	5.8	203 021	152 266	138 423	2 to 7-1/2
24	24	2-1/8	5.6	196 020	147 015	133 860	2 to 8
24	25	2-1/4	5.4	188 179	141 134	128 304	2 to 8
24	26	2-3/8	5.2	180 942	135 706	123 369	2 to 8
24	27	2-7/16	5.0	174 240	130 680	118 860	2 to 8
24	28	2-1/2	4.8	168 017	126 013	114 557	2 to 8
20	24	2-1/2	4.7	163 360	122 513	111 375	2 to 8
20	25	2-9/16	4.5	158 316	117 612	106 920	2 to 8
20	26	2-3/4	4.3	150 785	113 088	102 808	2 to 8
20	27	2-7/8	4.2	145 200	108 900	99 000	2 to 8
20	28	3	4.0	140 014	105 011	95 464	2 to 8
16	24	3-3/16	3.8	130 680	98 010	89 100	3 to 8
16	25	3-5/16	3.6	125 453	94 090	85 536	3 to 8
16	26	3-1/2	3.5	120 628	90 471	82 246	3 to 8
16	27	3-5/8	3.3	116 160	87 120	79 200	3 to 8
16	28	3-3/4	3.2	112 011	84 089	76 371	3 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing (in.)	Average Seeds Per Ft.	Approximate Seed Population Per Acre			Recommended Speed Range in mph
				15 In. Rows	20 In. Rows	22 In. Rows	
35	24	3-15/16	3.1	107 198	80 399	73 090	3 to 8
35	25	4-1/16	3.0	102 911	77 183	70 166	3 to 8
35	26	4-1/4	2.8	98 952	74 214	67 468	3 to 8
35	27	4-3/8	2.7	95 288	71 466	64 969	3 to 8
35	28	4-9/16	2.6	91 884	68 913	62 648	3 to 8
29	24	4-3/4	2.5	88 822	66 616	60 560	4 to 8
29	25	4-15/16	2.4	85 269	63 952	58 138	4 to 8
29	26	5-1/8	2.3	81 989	61 492	55 902	4 to 8
29	27	5-5/16	2.3	78 953	59 214	53 831	4 to 8
29	28	5-1/2	2.2	75 133	57 100	51 909	4 to 8
24	24	5-11/16	2.1	73 508	55 131	50 119	4 to 8
24	25	5-15/16	2.0	70 567	52 925	48 114	4 to 8
24	26	6-3/16	1.9	67 853	50 890	46 263	4 to 8
24	27	6-3/8	1.9	65 340	49 006	44 560	4 to 8
24	28	6-5/8	1.8	63 006	47 255	42 959	4 to 8
20	24	6-13/16	1.8	61 256	45 942	41 766	4 to 8
20	25	7-1/8	1.7	58 806	44 105	40 095	4 to 8
20	26	7-3/8	1.6	56 544	42 408	38 553	4 to 8
20	27	7-11/16	1.6	54 450	40 838	37 125	4 to 8
20	28	8-15/16	1.5	52 605	39 379	35 799	4 to 8
16	24	8-9/16	1.4	49 805	36 754	33 413	4 to 8
16	25	8-7/8	1.3	47 045	35 284	32 076	4 to 8
16	26	9-1/4	1.3	45 235	33 927	30 842	4 to 8
16	27	9-5/8	1.2	43 560	32 670	29 700	4 to 8
16	28	10	1.2	42 094	31 503	28 639	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50426 -19-04OCT02

Sorghum—30 in. to 40 in. Rows

{Decal No. DB1086}

SORGHUM - 45 CELLS

AVERAGE SEED SPACING, AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION
PER ACRE OF SORGHUM PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing in In.	Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
Driver	Driven			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	1-1/2	8.2	142,931	119,109	112,840	107,198	2 to 5-1/2
35	25	1-1/2	7.9	137,214	114,345	108,327	102,911	2 to 5-1/2
35	26	1-9/16	7.6	131,937	109,947	104,160	98,952	2 to 6
35	27	1-11/16	7.2	127,050	105,875	100,303	95,288	2 to 6
35	28	1-3/4	7.0	122,512	102,094	96,720	91,884	2 to 6-1/2
29	24	1-3/4	6.8	118,429	98,691	93,496	88,822	2 to 6-1/2
29	25	1-13/16	6.5	113,692	94,743	89,757	85,269	2 to 7
29	26	1-7/8	6.3	109,319	91,099	86,304	81,989	2 to 7
29	27	2	6.0	105,270	87,725	83,108	78,953	2 to 7-1/2
29	28	2	5.8	101,510	84,592	80,140	76,133	2 to 7-1/2
24	24	2-1/8	5.6	98,010	81,675	77,376	73,508	2 to 8
24	25	2-1/4	5.4	94,090	78,408	74,281	70,567	2 to 8
24	26	2-3/8	5.2	90,471	75,392	71,424	67,853	2 to 8
24	27	2-7/16	5.0	87,120	72,600	68,779	65,340	2 to 8
24	28	2-1/2	4.8	84,009	70,007	66,323	63,006	2 to 8
20	24	2-1/2	4.7	81,675	68,063	64,480	61,256	2 to 8
20	25	2-9/16	4.5	78,408	65,340	61,901	58,806	2 to 8
20	26	2-3/4	4.3	75,392	62,827	59,520	56,544	2 to 8
20	27	2-7/8	4.2	72,600	60,500	57,316	54,450	2 to 8
20	28	3	4.0	70,007	58,339	55,269	52,505	2 to 8
16	24	3-3/16	3.8	65,340	54,450	51,584	49,005	3 to 8
16	25	3-5/16	3.6	62,726	52,272	49,521	47,045	3 to 8
16	26	3-1/2	3.5	60,314	50,262	47,616	45,235	3 to 8
16	27	3-5/8	3.3	58,080	48,400	45,853	43,560	3 to 8
16	28	3-3/4	3.2	56,006	46,671	44,215	42,004	3 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing in In.	Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
Driver	Driven			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	3-15/16	3.1	53,599	44,666	42,315	40,199	3 to 8
35	25	4-1/16	3.0	51,455	42,879	40,623	38,591	3 to 8
35	26	4-1/4	2.8	49,476	41,230	39,060	37,107	3 to 8
35	27	4-3/8	2.7	47,644	39,703	37,613	35,733	3 to 8
35	28	4-9/16	2.6	45,942	38,285	36,270	34,457	3 to 8
29	24	4-3/4	2.5	44,411	37,009	35,061	33,308	4 to 8
29	25	4-15/16	2.4	42,634	35,529	33,659	31,976	4 to 8
29	26	5-1/8	2.3	40,995	34,162	32,364	30,746	4 to 8
29	27	5-5/16	2.3	39,476	32,897	31,165	29,607	4 to 8
29	28	5-1/2	2.2	38,066	31,722	30,052	28,550	4 to 8
24	24	5-11/16	2.1	36,754	30,628	29,016	27,565	4 to 8
24	25	5-15/16	2.0	35,284	29,403	27,855	26,463	4 to 8
24	26	6-3/16	1.9	33,927	28,272	26,784	25,445	4 to 8
24	27	6-3/8	1.9	32,670	27,225	25,792	24,503	4 to 8
24	28	6-5/8	1.8	31,503	26,253	24,871	23,627	4 to 8
20	24	6-13/16	1.8	30,628	25,523	24,180	22,971	4 to 8
20	25	7-1/8	1.7	29,403	24,503	23,213	22,052	4 to 8
20	26	7-3/8	1.6	28,272	23,560	22,320	21,204	4 to 8
20	27	7-11/16	1.6	27,225	22,688	21,493	20,419	4 to 8
20	28	8-15/16	1.5	26,253	21,877	20,726	19,690	4 to 8
16	24	8-9/16	1.4	24,503	20,419	19,344	18,377	4 to 8
16	25	8-7/8	1.3	23,522	19,602	18,570	17,642	4 to 8
16	26	9-1/4	1.3	22,618	18,848	17,856	16,963	4 to 8
16	27	9-5/8	1.2	21,780	18,150	17,195	16,335	4 to 8
16	28	10	1.2	21,002	17,502	16,581	15,752	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Sorghum Using Sugar Beet Disk—22 in. to 38 in. Rows

{Decal No. DB1089}

SUGAR BEETS - 45 CELLS

AVERAGE SEED SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
SUGAR BEETS PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing in in.	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Driver	Driven		22 in. Rows	30 in. Rows	38 in. Rows	
35	24	1-1 2	194 906	142 931	112 840	2 to 3
35	25	1-1 2	187 110	137 214	108 327	2 to 3
35	26	1-9 16	179 913	131 937	104 160	2 to 3.5
35	27	1-5 8	173 250	127 050	100 303	2 to 3.5
35	28	1-11 16	167 063	122 513	96 720	2 to 4
29	24	1-3 4	161 494	118 429	93 496	2 to 4
29	25	1-13 16	155 034	113 692	89 757	2 to 4
29	26	1-15 16	149 071	109 319	86 304	2 to 4.5
29	27	2	143 550	105 270	83 108	2 to 4.5
29	28	2-1 16	138 423	101 510	80 140	2 to 4.5
24	24	2-1 8	133 650	98 010	77 376	2 to 5
24	25	2-1 4	128 304	94 090	74 281	2 to 5
24	26	2-5 16	123 369	90 471	71 424	2 to 5
24	27	2-3 8	118 800	87 120	68 779	2 to 5.5
24	28	2-1 2	114 557	84 009	66 323	2 to 5.5
20	24	2-9 16	111 375	81 675	64 480	2 to 6
20	25	2-11 16	106 920	78 408	61 901	2 to 6
20	26	2-3 4	102 808	75 392	59 520	2 to 6.5
20	27	2-7 8	99 000	72 600	57 316	2 to 6.5
20	28	3	95 464	70 007	55 269	2 to 7
16	24	3-1 4	89 100	65 340	51 584	3 to 7.5
16	25	3-5 16	85 536	62 726	49 521	3 to 7.5
16	26	3-1 2	82 246	60 314	47 616	3 to 8
16	27	3-5 8	79 200	58 080	45 853	3 to 8
16	28	3-3 4	76 371	56 006	44 215	3 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing in in.	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Driver	Driven		22 in. Rows	30 in. Rows	38 in. Rows	
35	24	3-7 8	73 090	53 599	42 315	3 to 8
35	25	4-1 16	70 166	51 455	40 623	3 to 8
35	26	4-1 4	67 468	49 476	39 060	3 to 8
35	27	4-3 8	64 969	47 644	37 613	3 to 8
35	28	4-9 16	62 648	45 942	36 270	3 to 8
29	24	4-11 16	60 560	44 411	35 061	4 to 8
29	25	4-7 8	58 138	42 634	33 659	4 to 8
29	26	5-1 8	55 902	40 995	32 364	4 to 8
29	27	5-5 16	53 831	39 476	31 165	4 to 8
29	28	5-1 2	51 909	38 066	30 052	4 to 8
24	24	5-11 16	50 119	36 754	29 016	4 to 8
24	25	5-15 16	48 114	35 284	27 855	4 to 8
24	26	6-3 16	46 263	33 927	26 784	4 to 8
24	27	6-3 8	44 550	32 670	25 792	4 to 8
24	28	6-5 8	42 959	31 503	24 871	4 to 8
20	24	6-13 16	41 766	30 628	24 180	4 to 8
20	25	7-1 8	40 095	29 403	23 213	4 to 8
20	26	7-3 8	38 553	28 272	22 320	4 to 8
20	27	7-11 16	37 125	27 225	21 493	4 to 8
20	28	7-15 16	35 799	26 253	20 726	4 to 8
16	24	8-1 2	33 413	24 503	19 344	4 to 8
16	25	8-7 8	32 076	23 522	18 570	4 to 8
16	26	9-1 4	30 842	22 618	17 856	4 to 8
16	27	9-15 16	29 700	21 780	17 195	4 to 8
16	28	10	28 639	21 002	16 581	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

High-Rate Sorghum—15 in. to 22 in. Rows

{Decal No. DB 1380}

HIGH RATE SORGHUM - 90 CELLS

AVERAGE SEED SPACING, AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION
PER ACRE OF HIGH RATE SORGHUM PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing (in.)	Average Seeds Per Ft.	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Driver	Driven			15 In. Rows	20 In. Rows	22 In. Rows	
35	24	3/4	16.4	571 725	428 794	389 813	2 to 5
35	25	3/4	15.8	548 856	411 642	374 220	2 to 5
35	26	13/16	15.2	527 746	395 810	358 827	2 to 5-1/2
35	27	13/16	14.6	508 200	381 150	346 500	2 to 5-1/2
35	28	7/8	14.1	490 060	367 533	334 126	2 to 5-1/2
29	24	7/8	13.6	473 715	355 286	322 988	2 to 5-1/2
29	25	15/16	13.0	454 768	341 075	310 968	2 to 6
29	26	15/16	12.5	437 275	327 957	296 142	2 to 6-1/2
29	27	1	12.1	421 080	315 810	287 100	2 to 6-1/2
29	28	1	11.6	406 041	304 531	276 846	2 to 7
24	24	1-1/16	11.2	392 040	294 030	267 300	2 to 7
24	25	1-1/8	10.8	378 358	282 269	258 608	2 to 7-1/2
24	26	1-3/16	10.3	361 883	271 412	246 738	2 to 7-1/2
24	27	1-3/16	10.0	348 480	261 360	237 680	2 to 8
24	28	1-1/4	9.6	336 034	252 026	229 114	2 to 8
20	24	1-1/4	9.3	326 700	245 025	222 750	2 to 8
20	25	1-5/16	9.0	313 632	235 224	213 840	3 to 8
20	26	1-3/8	8.6	301 569	226 177	205 615	3 to 8
20	27	1-7/16	8.3	290 400	217 800	198 000	3 to 8
20	28	1-1/2	8.0	280 029	210 021	190 929	3 to 8
16	24	1-5/8	7.5	261 360	196 020	178 200	3 to 8
16	25	1-11/16	7.1	250 306	188 179	171 072	3 to 8
16	26	1-3/4	6.9	241 235	180 942	164 492	3 to 8
16	27	1-13/16	6.6	232 320	174 240	158 400	3 to 8
16	28	1-7/8	6.4	224 023	168 017	152 743	3 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing (in.)	Average Seeds Per Ft.	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Driver	Driven			15 In. Rows	20 In. Rows	22 In. Rows	
35	24	2	6.1	214 397	160 798	146 180	3 to 8
35	25	2	5.9	206 821	154 366	140 333	3 to 8
35	26	2-1/8	5.6	197 905	148 429	134 936	3 to 8
35	27	2-3/16	5.4	190 575	142 931	129 338	3 to 8
35	28	2-1/4	5.2	183 769	137 827	125 297	3 to 8
29	24	2-3/8	5.1	177 643	133 232	121 120	3 to 8
29	25	2-7/16	4.9	170 537	127 903	116 276	3 to 8
29	26	2-9/16	4.7	163 978	122 984	111 803	3 to 8
29	27	2-5/8	4.5	157 905	118 429	107 663	3 to 8
29	28	2-3/4	4.3	152 266	114 199	103 817	3 to 8
24	24	2-7/8	4.2	147 015	110 261	100 233	3 to 8
24	25	2-15/16	4.0	141 134	105 851	96 228	3 to 8
24	26	3-1/16	3.9	135 706	101 780	92 527	3 to 8
24	27	3-3/16	3.7	130 680	98 010	89 100	3 to 8
24	28	3-5/16	3.6	126 013	94 510	85 918	3 to 8
20	24	3-7/16	3.5	122 513	91 884	83 631	3 to 8
20	25	3-9/16	3.3	117 612	88 209	80 190	3 to 8
20	26	3-11/16	3.2	113 683	84 816	77 106	3 to 8
20	27	3-7/8	3.1	108 900	81 675	74 250	3 to 8
20	28	4	3.0	106 011	78 758	71 598	3 to 8
16	24	4-1/4	2.8	98 010	73 508	66 825	3 to 8
16	25	4-7/16	2.7	94 090	70 587	64 152	3 to 8
16	26	4-5/8	2.6	90 471	67 853	61 635	3 to 8
16	27	4-13/16	2.5	87 120	65 340	59 430	3 to 8
16	28	5	2.4	84 009	63 806	57 279	3 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

High-Rate Sorghum—30 in. to 40 in. Rows

{Decal No. DB1214}

HIGH RATE SORGHUM - 90 CELLS

AVERAGE SEED SPACING, AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION
PER ACRE OF HIGH RATE SORGHUM PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in in.	Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
				30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	3/4	16.4	285,863	238,219	225,681	214,397	2 to 5
35	25	3/4	15.8	274,428	228,690	216,654	205,821	2 to 5
35	26	13/16	15.2	263,873	219,894	208,321	197,905	2 to 5-1/2
35	27	13/16	14.6	254,100	211,750	200,605	190,575	2 to 5-1/2
35	28	7/8	14.1	245,025	204,188	193,441	183,769	2 to 5-1/2
29	24	7/8	13.6	236,858	197,381	186,993	177,643	2 to 5-1/2
29	25	15/16	13.0	227,383	189,486	179,513	170,537	2 to 6
29	26	15/16	12.5	218,638	182,198	172,609	163,978	2 to 6-1/2
29	27	1	12.1	210,540	175,450	166,216	157,905	2 to 6-1/2
29	28	1	11.6	203,021	169,184	160,280	152,266	2 to 7
24	24	1-1/16	11.2	196,020	163,350	154,753	147,015	2 to 7
24	25	1-1/8	10.8	188,179	156,816	148,563	141,134	2 to 7-1/2
24	26	1-3/16	10.3	180,942	150,785	142,849	135,706	2 to 7-1/2
24	27	1-3/16	10.0	174,240	145,200	137,558	130,680	2 to 8
24	28	1-1/4	9.6	168,017	140,014	132,645	126,013	2 to 8
20	24	1-1/4	9.3	163,350	136,125	128,961	122,513	2 to 8
20	25	1-5/16	9.0	156,816	130,680	123,802	117,612	3 to 8
20	26	1-3/8	8.6	150,785	125,654	119,040	113,088	3 to 8
20	27	1-7/16	8.3	145,200	121,000	114,632	108,900	3 to 8
20	28	1-1/2	8.0	140,014	116,679	110,538	105,011	3 to 8
16	24	1-5/8	7.5	130,680	108,900	103,168	90,010	3 to 8
16	25	1-11/16	7.1	125,453	104,544	99,042	94,090	3 to 8
16	26	1-3/4	6.9	120,628	100,523	95,232	90,471	3 to 8
16	27	1-13/16	6.6	116,160	96,800	91,705	87,120	3 to 8
16	28	1-7/8	6.4	112,011	93,343	88,430	84,009	3 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in in.	Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
				30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	2	6.1	107,198	89,332	84,630	80,399	3 to 8
35	25	2	5.9	102,911	85,759	81,245	77,183	3 to 8
35	26	2-1/8	5.6	98,952	82,460	78,120	74,214	3 to 8
35	27	2-3/16	5.4	95,288	79,406	75,227	71,466	3 to 8
35	28	2-1/4	5.2	91,884	76,570	72,540	68,913	3 to 8
29	24	2-3/8	5.1	88,822	74,018	70,122	66,616	3 to 8
29	25	2-7/16	4.9	85,269	71,057	67,317	63,952	3 to 8
29	26	2-9/16	4.7	81,989	68,324	64,728	61,492	3 to 8
29	27	2-5/8	4.5	78,953	65,794	62,331	59,214	3 to 8
29	28	2-3/4	4.3	76,133	63,444	60,105	57,100	3 to 8
24	24	2-7/8	4.2	73,508	61,256	58,032	55,131	3 to 8
24	25	2-15/16	4.0	70,567	58,806	55,711	52,925	3 to 8
24	26	3-1/16	3.9	67,853	56,544	53,568	50,890	3 to 8
24	27	3-3/16	3.7	65,340	54,450	51,584	49,005	3 to 8
24	28	3-5/16	3.6	63,006	52,505	49,742	47,255	3 to 8
20	24	3-7/16	3.5	61,256	51,047	48,360	45,942	3 to 8
20	25	3-9/16	3.3	58,806	49,005	46,426	44,105	3 to 8
20	26	3-11/16	3.2	56,544	47,120	44,640	42,408	3 to 8
20	27	3-7/8	3.1	54,450	45,375	42,987	40,838	3 to 8
20	28	4	3.0	52,505	43,754	41,452	39,379	3 to 8
16	24	4-1/4	2.8	49,005	40,838	38,688	36,754	3 to 8
16	25	4-7/16	2.7	47,045	39,204	37,141	35,284	3 to 8
16	26	4-5/8	2.6	45,235	37,696	35,712	33,927	3 to 8
16	27	4-13/16	2.5	43,560	36,300	34,389	32,670	3 to 8
16	28	5	2.4	42,004	35,004	33,161	31,503	3 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50432 -19-04OCT02

Soybeans—15 in. to 20 in. Rows

{Decal No. DB1087}

SOYBEANS - 108 CELLS

AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION PER ACRE OF SOYBEANS PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	19.6	686,070	571,725	541,634	514,552	2 to 8
35	25	19.0	658,627	548,856	519,969	493,970	2 to 8
35	26	18.2	633,295	527,746	499,970	474,972	2 to 8
35	27	17.4	609,840	508,200	481,453	457,380	2 to 8
35	28	16.9	588,060	490,050	464,258	441,045	2 to 8
29	24	16.2	568,458	473,715	448,783	426,344	2 to 8
29	25	15.6	545,720	454,766	430,831	409,290	2 to 8
29	26	15.0	524,730	437,275	414,261	393,548	2 to 8
29	27	14.5	505,296	421,080	398,918	378,972	2 to 8
29	28	14.0	487,250	406,041	384,671	365,437	2 to 8
24	24	13.5	470,448	392,040	371,406	352,836	2 to 8
24	25	12.9	451,630	376,358	356,550	338,723	2 to 8
24	26	12.5	434,260	361,883	342,837	325,695	2 to 8
24	27	12.0	418,176	348,480	330,139	313,632	2 to 8
24	28	11.5	403,241	336,034	318,348	302,431	2 to 8
20	24	11.2	392,040	326,700	309,505	294,030	2 to 8
20	25	10.8	376,358	313,632	297,125	282,269	2 to 8
20	26	10.4	361,883	301,569	285,697	271,412	2 to 8
20	27	10.0	348,480	290,400	275,116	261,360	2 to 8
20	28	9.7	336,034	280,029	265,290	252,026	2 to 8
16	24	9.0	313,632	261,360	247,604	235,224	3 to 8
16	25	8.6	301,087	250,906	237,700	225,815	3 to 8
16	26	8.3	289,506	241,255	228,558	217,130	3 to 8
16	27	8.0	278,784	232,320	220,093	209,088	3 to 8
16	28	7.7	268,827	224,023	212,232	201,621	3 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	7.4	257,276	214,397	203,113	192,957	3 to 8
35	25	7.1	246,985	205,821	194,988	185,239	3 to 8
35	26	6.8	237,486	197,905	187,489	178,114	3 to 8
35	27	6.6	228,690	190,575	180,545	171,518	3 to 8
35	28	6.3	220,523	183,769	174,097	165,392	4 to 8
29	24	6.1	213,172	177,643	168,293	159,879	4 to 8
29	25	5.9	204,645	170,537	161,562	153,484	4 to 8
29	26	5.6	196,774	163,978	155,348	147,580	4 to 8
29	27	5.4	189,486	157,905	149,594	142,115	4 to 8
29	28	5.2	182,719	152,266	144,252	137,039	4 to 8
24	24	5.1	176,418	147,015	139,277	132,314	4 to 8
24	25	4.9	169,361	141,134	133,706	127,021	4 to 8
24	26	4.7	162,847	135,706	128,564	122,136	4 to 8
24	27	4.5	156,816	130,680	123,802	117,612	4 to 8
24	28	4.3	151,215	126,013	119,381	113,412	4 to 8
20	24	4.2	147,015	122,513	116,064	110,261	4 to 8
20	25	4.1	141,134	117,612	111,422	105,851	4 to 8
20	26	3.9	135,706	113,088	107,136	101,780	4 to 8
20	27	3.8	130,680	108,900	103,168	98,010	4 to 8
20	28	3.6	126,013	105,011	99,484	94,510	4 to 8
16	24	3.4	117,612	98,010	92,852	88,209	4 to 8
16	25	3.2	112,908	94,090	89,138	84,681	4 to 8
16	26	3.1	108,565	90,471	85,709	81,424	4 to 8
16	27	3.0	104,544	87,120	82,535	78,408	4 to 8
16	28	2.9	100,810	84,009	79,587	75,608	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Soybeans—22 in. Rows

{Decal No. DB1110}

SOYBEANS - 108 CELLS

AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION PER ACRE OF SOYBEANS PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per Ft.	Approximate Seed Population Per Acre	Recommended Speed Range in mph
			22 In. Rows	
35	24	19.6	467,775	2 to 8
35	25	19.0	449,064	2 to 8
35	26	18.2	431,792	2 to 8
35	27	17.4	415,800	2 to 8
35	28	16.9	400,950	2 to 8
29	24	16.2	387,585	2 to 8
29	25	15.6	372,082	2 to 8
29	26	15.0	357,771	2 to 8
29	27	14.5	344,520	2 to 8
29	28	14.0	332,216	2 to 8
24	24	13.5	320,760	2 to 8
24	25	12.9	307,930	2 to 8
24	26	12.1	296,086	2 to 8
24	27	12.0	285,120	2 to 8
24	28	11.5	274,937	2 to 8
20	24	11.2	267,300	2 to 8
20	25	10.8	256,608	2 to 8
20	26	10.4	246,738	2 to 8
20	27	10.0	237,600	2 to 8
20	28	9.7	229,114	2 to 8
16	24	9.0	213,840	3 to 8
16	25	8.6	205,286	3 to 8
16	26	8.3	197,391	3 to 8
16	27	8.0	190,080	3 to 8
16	28	7.7	183,291	3 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seeds Per Ft.	Approximate Seed Population Per Acre		Recommended Speed Range in mph
Driver	Driven		22 In. Rows		
35	24	7.4	175,416	2 to 8	
35	25	7.1	168,399	2 to 8	
35	26	6.8	161,922	2 to 8	
35	27	6.6	155,925	2 to 8	
35	28	6.3	150,356	2 to 8	
29	24	6.1	145,344	3 to 8	
29	25	5.9	139,531	3 to 8	
29	26	5.6	134,164	3 to 8	
29	27	5.4	129,195	3 to 8	
29	28	5.2	124,581	4 to 8	
24	24	5.1	120,285	4 to 8	
24	25	4.9	115,474	4 to 8	
24	26	4.7	111,032	4 to 8	
24	27	4.5	106,920	4 to 8	
24	28	4.3	103,101	4 to 8	
20	24	4.2	100,238	4 to 8	
20	25	4.1	96,228	4 to 8	
20	26	3.9	92,527	4 to 8	
20	27	3.8	89,100	4 to 8	
20	28	3.6	85,918	4 to 8	
16	24	3.4	80,190	4 to 8	
16	25	3.2	76,982	4 to 8	
16	26	3.1	74,022	4 to 8	
16	27	3.0	71,280	4 to 8	
16	28	2.9	68,734	4 to 8	

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at the desired rate.

A52099 -19-26MAR03

Soybeans—30 in. to 40 in. Rows

{Decal No. DB1088}

SOYBEANS - 108 CELLS

AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION PER ACRE OF SOYBEANS PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	19.6	343,035	285,863	270,817	257,276	2 to 8
35	25	19.0	329,314	274,428	259,984	246,985	2 to 8
35	26	18.2	316,648	263,873	249,985	237,486	2 to 8
35	27	17.4	304,920	254,100	240,726	228,690	2 to 8
35	28	16.9	294,030	245,025	232,129	220,523	2 to 8
29	24	16.2	284,229	236,858	224,391	213,172	2 to 8
29	25	15.6	272,860	227,383	215,416	204,645	2 to 8
29	26	15.0	262,365	218,638	207,130	196,774	2 to 8
29	27	14.5	252,648	210,540	199,459	189,486	2 to 8
29	28	14.0	243,625	203,021	192,335	182,719	2 to 8
24	24	13.5	235,224	196,020	185,703	176,418	2 to 8
24	25	12.9	225,815	188,179	178,275	169,361	2 to 8
24	26	12.5	217,130	180,942	171,418	162,847	2 to 8
24	27	12.0	209,088	174,240	165,069	156,816	2 to 8
24	28	11.5	201,621	168,017	159,174	151,215	2 to 8
20	24	11.2	196,020	163,350	154,753	147,015	2 to 8
20	25	10.8	188,179	156,816	148,563	141,134	2 to 8
20	26	10.4	180,942	150,785	142,849	135,706	2 to 8
20	27	10.0	174,240	145,200	137,558	130,680	2 to 8
20	28	9.7	168,017	140,014	132,645	126,013	2 to 8
16	24	9.0	156,816	130,680	123,802	117,612	3 to 8
16	25	8.6	150,543	125,453	118,850	112,908	3 to 8
16	26	8.3	144,753	120,628	114,279	108,565	3 to 8
16	27	8.0	139,392	116,160	110,046	104,544	3 to 8
16	28	7.7	134,414	112,011	106,116	100,810	3 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	7.4	128,638	107,198	101,556	96,479	3 to 8
35	25	7.1	123,493	102,911	97,494	92,619	3 to 8
35	26	6.8	118,743	98,952	93,744	89,057	3 to 8
35	27	6.6	114,345	95,288	90,272	85,759	3 to 8
35	28	6.3	110,261	91,884	87,048	82,696	4 to 8
29	24	6.1	106,586	88,822	84,147	79,939	4 to 8
29	25	5.9	102,322	85,269	80,781	76,742	4 to 8
29	26	5.6	98,387	81,989	77,674	73,790	4 to 8
29	27	5.4	94,743	78,953	74,797	71,057	4 to 8
29	28	5.2	91,359	76,133	72,126	68,519	4 to 8
24	24	5.1	88,209	73,508	69,639	66,157	4 to 8
24	25	4.9	84,681	70,567	66,853	63,510	4 to 8
24	26	4.7	81,424	67,853	64,282	61,068	4 to 8
24	27	4.5	78,408	65,340	61,901	58,806	4 to 8
24	28	4.3	75,608	63,006	59,690	56,706	4 to 8
20	24	4.2	73,508	61,256	58,032	55,131	4 to 8
20	25	4.1	70,567	58,806	55,711	52,925	4 to 8
20	26	3.9	67,853	56,544	53,568	50,890	4 to 8
20	27	3.8	65,340	54,450	51,584	49,005	4 to 8
20	28	3.6	63,006	52,505	49,742	47,255	4 to 8
16	24	3.4	58,806	49,005	46,426	44,105	4 to 8
16	25	3.2	56,454	47,045	44,569	42,340	4 to 8
16	26	3.1	54,282	45,235	42,855	40,712	4 to 8
16	27	3.0	52,272	43,560	41,267	39,204	4 to 8
16	28	2.9	50,405	42,004	39,794	37,804	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50436 -19-04OCT02

Soybeans Using Cotton Disk—15 in. to 22 in. Rows

SOYBEANS USING COTTON DISK - 64 CELLS

AVERAGE SEED SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
SOYBEAN SEED PLANTED WITH VACUUM METER.

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in Inches	Approximate Seed Population Per Acre			Recommended Speed Range in mph
			15 In. Rows	20 In. Rows	22 In. Rows	
35	24	1	406,560	304,920	277,200	2 to 5
35	25	1-1/16	390,297	292,723	266,112	2 to 5
35	26	1-1/8	375,286	281,465	255,877	2 to 5
35	27	1-1/8	361,386	271,040	246,400	2 to 5
35	28	1-3/16	348,480	261,360	237,600	2 to 5
29	24	1-1/4	336,864	252,648	229,680	2 to 6
29	25	1-5/16	323,390	242,542	220,493	2 to 6
29	26	1-3/8	311,637	233,214	212,013	2 to 6
29	27	1-7/16	300,463	224,576	204,160	2 to 6
29	28	1-7/16	288,741	216,558	196,869	2 to 6
24	24	1-1/2	278,786	209,099	190,080	2 to 7
24	25	1-9/16	267,633	200,725	181,357	2 to 7
24	26	1-5/8	257,339	193,005	186,887	2 to 7
24	27	1-11/16	247,808	185,856	168,731	2 to 7
24	28	1-3/4	238,949	179,218	162,926	2 to 7
20	24	1-13/16	232,320	174,240	158,400	2 to 7-1/2
20	25	1-7/8	224,170	167,271	152,064	2 to 7-1/2
20	26	1-15/16	214,449	160,837	146,215	2 to 8
20	27	2	206,506	154,994	140,800	2 to 8
20	28	2-1/8	199,131	149,349	135,771	2 to 8
16	24	2-1/4	185,856	139,392	126,720	3 to 8
16	25	2-5/16	178,422	133,816	121,651	3 to 8
16	26	2-7/16	171,559	128,670	116,973	3 to 8
16	27	2-1/2	165,217	123,904	112,640	3 to 8
16	28	2-5/8	159,305	119,479	108,960	3 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in Inches	Approximate Seed Population Per Acre			Recommended Speed Range in mph
			15 In. Rows	20 In. Rows	22 In. Rows	
35	24	2-3/4	152,461	114,345	103,950	3 to 8
35	25	2-7/8	146,361	109,771	99,792	3 to 8
35	26	2-15/16	140,733	105,550	95,954	3 to 8
35	27	3-1/16	135,520	101,640	92,400	3 to 8
35	28	3-3/16	130,680	98,022	89,101	3 to 8
29	24	3-5/16	126,325	94,743	87,273	3 to 8
29	25	3-7/16	121,271	91,067	82,685	4 to 8
29	26	3-9/16	116,607	87,455	79,505	4 to 8
29	27	3-3/4	112,288	84,216	76,446	4 to 8
29	28	3-7/8	108,278	81,219	73,826	4 to 8
24	24	4	104,544	78,511	71,280	4 to 8
24	25	4-3/16	100,362	75,272	68,429	4 to 8
24	26	4-5/16	96,502	72,377	65,797	4 to 8
24	27	4-1/2	92,928	69,696	63,360	4 to 8
24	28	4-11/16	89,609	67,207	61,097	4 to 8
20	24	4-13/16	87,120	65,341	59,400	4 to 8
20	25	5	83,635	62,727	57,024	4 to 8
20	26	5-3/16	80,418	60,314	54,831	4 to 8
20	27	5-7/16	77,440	58,080	52,800	4 to 8
20	28	5-5/8	75,817	56,920	50,914	4 to 8
16	24	6	69,696	52,272	47,523	4 to 8
16	25	6-1/4	66,909	50,181	45,619	4 to 8
16	26	6-1/2	64,335	48,251	43,865	4 to 8
16	27	6-3/4	62,021	46,464	42,240	4 to 8
16	28	7	59,739	44,805	40,731	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A53818 -19-19DEC05

Soybeans Using Cotton Disk—30 in. to 40 in. Rows

{Decal No. DB1084}

COTTON - 64 CELLS

AVERAGE SEED SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF COTTON PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	1	203,280	169,400	160,484	152,460	2 to 5-1/2
35	25	1-1/16	195,149	162,624	154,065	146,362	2 to 5-1/2
35	26	1-1/8	187,643	156,369	148,139	140,732	2 to 6
35	27	1-1/8	180,693	150,578	142,653	135,520	2 to 6
35	28	1-3/16	174,240	145,200	137,558	130,680	2 to 6-1/2
29	24	1-1/4	168,432	140,360	132,973	126,324	2 to 6-1/2
29	25	1-5/16	161,695	134,746	127,654	121,271	2 to 7
29	26	1-3/8	155,476	129,563	122,744	116,607	2 to 7
29	27	1-7/16	149,717	124,764	118,198	112,288	2 to 7-1/2
29	28	1-7/16	144,370	120,309	113,977	108,278	2 to 7-1/2
24	24	1-1/2	139,392	116,160	110,046	104,544	2 to 8
24	25	1-9/16	133,816	111,514	105,644	100,362	2 to 8
24	26	1-5/8	128,670	107,225	101,581	96,502	2 to 8
24	27	1-11/16	123,904	103,253	97,819	92,928	2 to 8
24	28	1-3/4	119,479	99,566	94,325	89,609	2 to 8
20	24	1-13/16	116,160	96,800	91,705	87,120	2 to 8
20	25	1-7/8	111,514	92,928	88,037	83,635	2 to 8
20	26	1-15/16	107,225	89,354	84,651	80,418	2 to 8
20	27	2	103,253	86,044	81,516	77,440	2 to 8
20	28	2-1/8	99,566	82,971	78,605	74,674	2 to 8
16	24	2-1/4	92,928	77,440	73,364	69,696	3 to 8
16	25	2-5/16	89,211	74,342	70,430	66,908	3 to 8
16	26	2-7/16	85,780	71,483	67,721	64,335	3 to 8
16	27	2-1/2	82,603	68,836	65,213	61,952	3 to 8
16	28	2-5/8	79,653	66,377	62,884	59,739	3 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	2-3/4	76,230	63,525	60,182	57,173	3 to 8
35	25	2-7/8	73,181	60,984	57,774	54,886	3 to 8
35	26	2-15/16	70,366	58,638	55,552	52,775	3 to 8
35	27	3-1/16	67,760	56,467	53,495	50,820	3 to 8
35	28	3-3/16	65,340	54,450	51,584	49,005	3 to 8
29	24	3-5/16	63,162	52,635	49,865	47,372	3 to 8
29	25	3-7/16	60,636	50,530	47,870	45,477	4 to 8
29	26	3-9/16	58,303	48,586	46,029	43,728	4 to 8
29	27	3-3/4	56,144	46,787	44,324	42,108	4 to 8
29	28	3-7/8	54,139	45,116	42,741	40,604	4 to 8
24	24	4	52,272	43,560	41,267	39,204	4 to 8
24	25	4-3/16	50,181	41,818	39,617	37,636	4 to 8
24	26	4-5/16	48,251	40,209	38,093	36,188	4 to 8
24	27	4-1/2	46,464	38,720	36,682	34,848	4 to 8
24	28	4-11/16	44,805	37,337	35,372	33,603	4 to 8
20	24	4-13/16	43,560	36,300	34,389	32,670	4 to 8
20	25	5	41,818	34,848	33,014	31,363	4 to 8
20	26	5-3/16	40,209	33,508	31,744	30,157	4 to 8
20	27	5-7/16	38,720	32,267	30,568	29,040	4 to 8
20	28	5-5/8	37,337	31,114	29,477	28,003	4 to 8
16	24	6	34,848	29,040	27,512	26,136	4 to 8
16	25	6-1/4	33,454	27,878	26,411	25,091	4 to 8
16	26	6-1/2	32,167	26,806	25,395	24,126	4 to 8
16	27	6-3/4	30,976	25,813	24,455	23,232	4 to 8
16	28	7	29,870	24,891	23,581	22,402	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Sugar Beets—22 in. to 38 in. Rows

{Decal No. DB1089}

SUGAR BEETS - 45 CELLS

AVERAGE SEED SPACING AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
SUGAR BEETS PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing in in.	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Driver	Driven		22 in. Rows	30 in. Rows	38 in. Rows	
35	24	1-1 2	194 906	142 931	112 840	2 to 3
35	25	1-1 2	187 110	137 214	108 327	2 to 3
35	26	1-9 16	179 913	131 937	104 160	2 to 3.5
35	27	1-5 8	173 250	127 050	100 303	2 to 3.5
35	28	1-11 16	167 063	122 513	96 720	2 to 4
29	24	1-3 4	161 494	118 429	93 496	2 to 4
29	25	1-13 16	155 034	113 692	89 757	2 to 4
29	26	1-15 16	149 071	109 319	86 304	2 to 4.5
29	27	2	143 550	105 270	83 108	2 to 4.5
29	28	2-1 16	138 423	101 510	80 140	2 to 4.5
24	24	2-1 8	133 650	98 010	77 376	2 to 5
24	25	2-1 4	128 304	94 090	74 281	2 to 5
24	26	2-5 16	123 369	90 471	71 424	2 to 5
24	27	2-3 8	118 800	87 120	68 779	2 to 5.5
24	28	2-1 2	114 557	84 009	66 323	2 to 5.5
20	24	2-9 16	111 375	81 675	64 480	2 to 6
20	25	2-11 16	106 920	78 408	61 901	2 to 6
20	26	2-3 4	102 808	75 392	59 520	2 to 6.5
20	27	2-7 8	99 000	72 600	57 316	2 to 6.5
20	28	3	95 464	70 007	55 269	2 to 7
16	24	3-1 4	89 100	65 340	51 584	3 to 7.5
16	25	3-5 16	85 536	62 726	49 521	3 to 7.5
16	26	3-1 2	82 246	60 314	47 616	3 to 8
16	27	3-5 8	79 200	58 080	45 853	3 to 8
16	28	3-3 4	76 371	56 006	44 215	3 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing in in.	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Driver	Driven		22 in. Rows	30 in. Rows	38 in. Rows	
35	24	3-7 8	73 090	53 599	42 315	3 to 8
35	25	4-1 16	70 166	51 455	40 623	3 to 8
35	26	4-1 4	67 468	49 476	39 060	3 to 8
35	27	4-3 8	64 969	47 644	37 613	3 to 8
35	28	4-9 16	62 648	45 942	36 270	3 to 8
29	24	4-11 16	60 560	44 411	35 061	4 to 8
29	25	4-7 8	58 138	42 634	33 659	4 to 8
29	26	5-1 8	55 902	40 995	32 364	4 to 8
29	27	5-5 16	53 831	39 476	31 165	4 to 8
29	28	5-1 2	51 909	38 066	30 052	4 to 8
24	24	5-11 16	50 119	36 754	29 016	4 to 8
24	25	5-15 16	48 114	35 284	27 855	4 to 8
24	26	6-3 16	46 263	33 927	26 784	4 to 8
24	27	6-3 8	44 550	32 670	25 792	4 to 8
24	28	6-5 8	42 959	31 503	24 871	4 to 8
20	24	6-13 16	41 766	30 628	24 180	4 to 8
20	25	7-1 8	40 095	29 403	23 213	4 to 8
20	26	7-3 8	38 553	28 272	22 320	4 to 8
20	27	7-11 16	37 125	27 225	21 493	4 to 8
20	28	7-15 16	35 799	26 253	20 726	4 to 8
16	24	8-1 2	33 413	24 503	19 344	4 to 8
16	25	8-7 8	32 076	23 522	18 570	4 to 8
16	26	9-1 4	30 842	22 618	17 856	4 to 8
16	27	9-15 16	29 700	21 780	17 195	4 to 8
16	28	10	28 639	21 002	16 581	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50440 -19-04OCT02

Small Edible Beans (Cell Type Seed Disk)—15 in. to 22 in. Rows

{Decal No. DB 1379} SMALL EDIBLE BEANS, CELL TYPE - 108 CELLS

AVERAGE SEEDS [ER FT/ AN D/OR APPROXIMATE SEED POPULATION PER ACRE
OF SMALL EDIBLE BEANS PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per Ft.	Approximate Seed Population Per Acre			Recommended Speed Range in mph
			15 In. Rows	20 In. Rows	22 In. Rows	
35	24	19.6	686 080	514 552	467 775	2 to 4
35	25	19.0	658 627	493 970	449 064	2 to 4
35	26	18.2	633 295	474 972	431 792	2 to 4
35	27	17.4	609 840	457 380	415 800	2 to 4
35	28	16.9	588 060	441 045	400 950	2 to 4
29	24	16.2	568 458	426 344	387 585	2 to 4.5
29	25	15.6	545 720	409 290	372 082	2 to 4.5
29	26	15.0	524 730	393 548	357 771	2 to 5
29	27	14.5	505 296	378 972	344 520	2 to 5
29	28	14.0	487 250	365 437	332 216	2 to 5.5
24	24	13.5	470 448	352 836	320 760	2 to 5.5
24	25	12.9	451 630	338 723	307 930	3 to 6
24	26	12.5	434 260	325 695	296 086	3 to 6
24	27	12.0	418 176	313 632	285 120	3 to 6
24	28	11.5	403 241	302 431	274 937	3 to 6.5
20	24	11.2	392 040	294 030	267 300	3 to 6.5
20	25	10.8	376 358	282 269	256 608	4 to 7
20	26	10.4	361 883	271 412	246 738	4 to 7
20	27	10.0	348 480	261 360	237 600	4 to 7.5
20	28	9.7	336 034	252 026	229 114	4 to 7.5
16	24	9.0	313 632	235 224	213 840	4 to 8
16	25	8.6	301 087	225 815	205 286	4 to 8
16	26	8.3	289 506	217 130	197 391	4 to 8
16	27	8.0	278 784	209 088	190 080	4 to 8
16	28	7.7	268 827	201 621	183 291	4 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per Ft.	Approximate Seed Population Per Acre			Recommended Speed Range in mph
			15 In. Rows	20 In. Rows	22 In. Rows	
35	24	7.4	257 276	192 957	175 416	4 to 8
35	25	7.1	246 985	185 239	168 399	4 to 8
35	26	6.8	237 486	178 114	161 922	4 to 8
35	27	6.6	228 690	171 518	155 925	4 to 8
35	28	6.3	220 523	165 392	150 356	4 to 8
29	24	6.1	213 172	159 879	145 344	4 to 8
29	25	5.9	204 645	153 484	139 531	4 to 8
29	26	5.6	196 774	147 580	134 164	4 to 8
29	27	5.4	189 486	142 115	129 195	4 to 8
29	28	5.2	182 719	137 039	124 581	4 to 8
24	24	5.1	176 418	132 314	120 285	4 to 8
24	25	4.9	169 361	127 021	115 474	4 to 8
24	26	4.7	162 847	122 136	111 032	4 to 8
24	27	4.5	156 816	117 612	106 920	4 to 8
24	28	4.3	151 215	113 412	103 101	4 to 8
20	24	4.2	147 015	110 261	100 238	4 to 8
20	25	4.1	141 134	105 851	96 228	4 to 8
20	26	3.9	135 706	101 780	92 527	4 to 8
20	27	3.8	130 680	98 010	89 100	4 to 8
20	28	3.6	126 013	94 510	85 918	4 to 8
16	24	3.4	117 612	88 209	80 190	4 to 8
16	25	3.2	112 908	84 681	76 982	4 to 8
16	26	3.1	108 565	81 424	74 022	4 to 8
16	27	3.0	104 544	78 408	71 280	4 to 8
16	28	2.9	100 810	75 608	68 734	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Small Edible Beans (Cell Type Seed Disk)—30 in. to 40 in. Rows

{Decal No. DB1090}

SMALL EDIBLE BEANS, CELL TYPE - 108 CELLS

AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION PER ACRE OF
SMALL EDIBLE BEANS PLANTED WITH VACUUM METER AND USING AA37206 BRUSH

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
Driver	Driven		30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	19.6	343,035	285,863	270,817	257,276	2 to 4
35	25	19.0	329,314	274,428	259,984	246,985	2 to 4
35	26	18.2	316,648	263,873	249,985	237,486	2 to 4
35	27	17.4	304,920	254,100	240,726	228,690	2 to 4
35	28	16.9	294,030	245,025	232,129	220,523	2 to 4
29	24	16.2	284,229	236,858	224,391	213,172	2 to 4-1/2
29	25	15.6	272,860	227,383	215,416	204,645	2 to 4-1/2
29	26	15.0	262,365	218,638	207,130	196,774	2 to 5
29	27	14.5	252,648	210,540	199,459	189,486	2 to 5
29	28	14.0	243,625	203,021	192,335	182,719	2 to 5-1/2
24	24	13.5	235,224	196,020	185,703	176,418	2 to 5-1/2
24	25	12.9	225,815	188,179	178,275	169,361	3 to 6
24	26	12.5	217,130	180,942	171,418	162,847	3 to 6
24	27	12.0	209,088	174,240	165,069	156,816	3 to 6
24	28	11.5	201,621	168,017	159,174	151,215	3 to 6-1/2
20	24	11.2	196,020	163,350	154,753	147,015	3 to 6-1/2
20	25	10.8	188,179	156,816	148,563	141,134	4 to 7
20	26	10.4	180,942	150,785	142,849	135,706	4 to 7
20	27	10.0	174,240	145,200	137,558	130,680	4 to 7-1/2
20	28	9.7	168,017	140,014	132,645	126,013	4 to 7-1/2
16	24	9.0	156,816	130,680	123,802	117,612	4 to 8
16	25	8.6	150,543	125,453	118,850	112,908	4 to 8
16	26	8.3	144,753	120,628	114,279	108,565	4 to 8
16	27	8.0	139,392	116,160	110,046	104,544	4 to 8
16	28	7.7	134,414	112,011	106,116	100,810	4 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
Driver	Driven		30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	7.4	128,638	107,198	101,556	96,479	4 to 8
35	25	7.1	123,493	102,911	97,494	92,619	4 to 8
35	26	6.8	118,743	98,952	93,744	89,057	4 to 8
35	27	6.6	114,345	95,288	90,272	85,759	4 to 8
35	28	6.3	110,261	91,884	87,048	82,696	4 to 8
29	24	6.1	106,586	88,822	84,147	79,939	4 to 8
29	25	5.9	102,322	85,269	80,781	76,742	4 to 8
29	26	5.6	98,387	81,989	77,674	73,790	4 to 8
29	27	5.4	94,743	78,953	74,797	71,057	4 to 8
29	28	5.2	91,359	76,133	72,126	68,519	4 to 8
24	24	5.1	88,209	73,508	69,639	66,157	4 to 8
24	25	4.9	84,681	70,567	66,853	63,510	4 to 8
24	26	4.7	81,424	67,853	64,282	61,068	4 to 8
24	27	4.5	78,408	65,340	61,901	58,806	4 to 8
24	28	4.3	75,608	63,006	59,690	56,706	4 to 8
20	24	4.2	73,508	61,256	58,032	55,131	4 to 8
20	25	4.1	70,567	58,806	55,711	52,925	4 to 8
20	26	3.9	67,853	56,544	53,568	50,890	4 to 8
20	27	3.8	65,340	54,450	51,584	49,005	4 to 8
20	28	3.6	63,006	52,505	49,742	47,255	4 to 8
16	24	3.4	58,806	49,005	46,426	44,105	4 to 8
16	25	3.2	56,454	47,045	44,569	42,340	4 to 8
16	26	3.1	54,282	45,235	42,855	40,712	4 to 8
16	27	3.0	52,272	43,560	41,267	39,204	4 to 8
16	28	2.9	50,405	42,004	39,794	37,804	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50444 -19-04OCT02

Medium Edible Beans (Cell Type Seed Disk)—15 in. to 22 in. Rows

{Decal No. DB 1377}

MEDIUM EDIBLE BEANS, CELL TYPE - 56 CELLS

AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION PER ACRE OF MEDIUM EDIBLE BEANS
PLANTED WITH VACUUM METER AND USING AA37206 BRUSH

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per Ft.	Approximate Seed Population Per Acre			Recommended Speed Range in mph
			15 In. Rows	20 In. Rows	22 In. Rows	
35	24	10.21	355 740	266 805	242 550	4 to 4.5
35	25	9.80	341 510	256 133	232 848	4 to 4.5
35	26	9.42	328 375	246 282	223 892	4 to 5
35	27	9.07	316 213	237 160	215 600	4 to 5
35	28	8.75	304 920	228 690	207 900	4 to 5
29	24	8.46	294 756	221 067	200 970	4 to 5
29	25	8.12	282 966	212 224	192 931	4 to 5.5
29	26	7.80	272 682	204 062	185 511	4 to 4.5
29	27	7.52	262 905	196 504	178 640	4 to 6
29	28	7.25	252 648	189 488	172 260	4 to 6
24	24	7.00	243 938	182 962	166 320	4 to 6.5
24	25	6.72	234 179	175 634	158 687	4 to 6.5
24	26	6.46	225 172	168 879	163 526	4 to 7
24	27	6.22	216 832	162 624	147 640	4 to 7
24	28	6.00	209 080	156 816	142 560	4 to 7.5
20	24	5.83	203 280	152 460	138 600	4 to 8
20	25	5.60	196 149	146 362	133 056	4 to 8
20	26	5.38	187 643	140 732	127 938	4 to 8
20	27	5.19	180 693	135 620	123 200	4 to 8
20	28	5.00	174 240	130 680	118 800	4 to 8
16	24	4.67	162 624	121 968	110 880	4 to 8
16	25	4.48	156 119	117 089	106 445	4 to 8
16	26	4.31	150 114	112 586	102 351	4 to 8
16	27	4.15	144 565	108 416	98 560	4 to 8
16	28	4.00	139 392	104 544	95 340	4 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per Ft.	Approximate Seed Population Per Acre			Recommended Speed Range in mph
			15 In. Rows	20 In. Rows	22 In. Rows	
35	24	3.83	133 403	100 052	90 956	4 to 8
35	25	3.68	128 066	96 050	87 318	4 to 8
35	26	3.53	123 141	92 356	83 960	4 to 8
35	27	3.40	118 580	88 935	80 850	4 to 8
35	28	3.28	114 345	85 769	77 963	4 to 8
29	24	3.17	110 534	82 900	76 364	4 to 8
29	25	3.05	106 112	79 684	72 349	4 to 8
29	26	2.93	102 031	76 523	69 567	4 to 8
29	27	2.82	98 252	73 689	66 890	4 to 8
29	28	2.72	94 743	71 067	64 598	4 to 8
24	24	2.63	91 476	68 697	62 370	4 to 8
24	25	2.52	87 817	65 863	59 875	4 to 8
24	26	2.42	84 439	63 330	57 572	4 to 8
24	27	2.33	81 312	60 984	55 440	4 to 8
24	28	2.25	78 408	58 806	53 460	4 to 8
20	24	2.19	76 230	57 173	51 975	4 to 8
20	25	2.10	73 181	54 886	49 896	4 to 8
20	26	2.02	70 366	52 775	47 977	4 to 8
20	27	1.94	67 760	50 820	46 200	4 to 8
20	28	1.88	66 340	49 805	44 550	4 to 8
16	24	1.75	60 984	45 738	41 583	4 to 8
16	25	1.68	58 545	43 908	39 917	4 to 8
16	26	1.62	56 293	42 220	38 382	4 to 8
16	27	1.56	54 268	40 656	36 960	4 to 8
16	28	1.50	52 272	39 204	35 640	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Medium Edible Beans (Cell Type Seed Disk)—30 in. to 40 in. Rows

{Decal No. DB1091}

MEDIUM EDIBLE BEANS

AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION PER ACRE OF MEDIUM EDIBLE BEANS
PLANTED WITH VACUUM METER AND USING AH132233 BRUSH

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	10.21	177,870	148,225	140,424	133,403	4 to 4.5
35	25	9.80	170,755	142,296	134,807	128,066	4 to 4.5
35	26	9.42	164,188	136,823	129,622	123,141	4 to 5
35	27	9.07	158,107	131,756	124,821	118,580	4 to 5
35	28	8.75	152,460	127,050	120,363	114,345	4 to 5
29	24	8.46	147,378	122,815	116,351	110,534	4 to 5
29	25	8.12	141,483	117,902	111,697	106,112	4 to 5.5
29	26	7.81	136,041	113,368	107,401	102,031	4 to 5.5
29	27	7.52	131,003	109,169	103,423	98,252	4 to 6
29	28	7.25	126,324	105,270	99,729	94,743	4 to 6
24	24	7.00	121,968	101,640	96,291	91,476	4 to 6.5
24	25	6.72	117,089	97,574	92,439	87,817	4 to 6.5
24	26	6.46	112,586	93,822	88,884	84,439	4 to 7
24	27	6.22	108,416	90,347	85,592	81,312	4 to 7
24	28	6.00	104,544	87,120	82,535	78,408	4 to 7.5
20	24	5.83	101,640	84,700	80,242	76,230	4 to 8
20	25	5.60	97,574	81,312	77,032	73,181	4 to 8
20	26	5.38	93,822	78,185	74,070	70,366	4 to 8
20	27	5.19	90,347	75,289	71,326	67,760	4 to 8
20	28	5.00	87,120	72,600	68,779	65,340	4 to 8
16	24	4.67	81,312	67,760	64,194	60,984	4 to 8
16	25	4.48	78,060	65,050	61,626	58,545	4 to 8
16	26	4.31	75,057	62,548	59,256	56,293	4 to 8
16	27	4.15	72,277	60,231	57,061	54,208	4 to 8
16	28	4.00	69,696	58,080	55,023	52,272	4 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	3.83	66,701	55,584	52,659	50,026	4 to 8
35	25	3.68	64,033	53,361	50,553	48,025	4 to 8
35	26	3.53	61,570	51,309	48,608	46,178	4 to 8
35	27	3.40	59,290	49,408	46,808	44,468	4 to 8
35	28	3.28	57,173	47,644	45,136	42,879	4 to 8
29	24	3.17	55,265	46,056	43,632	41,450	4 to 8
29	25	3.05	53,056	44,213	41,886	39,792	4 to 8
29	26	2.93	51,015	42,513	40,275	38,262	4 to 8
29	27	2.82	49,126	40,938	38,784	36,845	4 to 8
29	28	2.72	47,372	39,476	37,399	35,529	4 to 8
24	24	2.63	45,738	38,115	36,109	34,304	4 to 8
24	25	2.52	43,908	36,590	34,665	32,931	4 to 8
24	26	2.42	42,220	35,183	33,331	31,665	4 to 8
24	27	2.33	40,656	33,880	32,097	30,492	4 to 8
24	28	2.25	39,204	32,670	30,951	29,403	4 to 8
20	24	2.19	38,115	31,763	30,091	28,586	4 to 8
20	25	2.10	36,590	30,492	28,887	27,443	4 to 8
20	26	2.02	35,183	29,319	27,776	26,387	4 to 8
20	27	1.94	33,880	28,233	26,747	25,410	4 to 8
20	28	1.88	32,670	27,225	25,792	24,503	4 to 8
16	24	1.75	30,492	25,410	24,073	22,869	4 to 8
16	25	1.68	29,272	24,394	23,110	21,954	4 to 8
16	26	1.62	28,146	23,455	22,221	21,110	4 to 8
16	27	1.56	27,104	22,587	21,398	20,328	4 to 8
16	28	1.50	26,136	21,780	20,634	19,602	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50448 -19-04OCT02

Large Edible Beans (Cell Type Seed Disk)—15 in. to 22 in. Rows

{Decal No. DB 1378} LARGE EDIBLE BEANS, CELL TYPE - 50 CELLS

AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION PER ACRE OF LARGE EDIBLE BEANS
PLANTED WITH VACUUM METER AND USING AA37206 BRUSH

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seeds Per Ft.	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Driver	Driven		15 In. Rows	20 In. Rows	22 In. Rows	
35	24	9.11	317 626	238 218	216 563	4 to 4.5
35	25	8.75	304 920	228 690	207 900	4 to 4.5
35	26	8.41	293 192	219 894	199 904	4 to 4.5
35	27	8.10	282 334	211 750	192 500	4 to 4.5
35	28	7.81	272 250	204 188	185 625	4 to 4.5
29	24	7.55	263 176	197 382	179 438	4 to 5
29	25	7.25	252 648	189 486	172 260	4 to 5.5
29	26	6.97	242 930	182 198	165 635	4 to 5.5
29	27	6.71	233 934	175 450	159 500	4 to 5.5
29	28	6.47	225 578	169 184	153 804	4 to 6
24	24	6.25	217 800	163 350	148 500	4 to 6
24	25	6.00	209 088	156 618	142 560	4 to 6.5
24	26	5.77	201 046	150 748	137 077	4 to 6.5
24	27	5.56	193 600	145 200	132 000	4 to 7
24	28	5.36	186 686	140 014	127 286	4 to 7
20	24	5.21	181 500	136 126	123 750	4 to 7.5
20	25	5.00	174 240	130 680	118 800	4 to 7.5
20	26	4.81	167 538	125 654	114 231	4 to 8
20	27	4.63	161 344	121 000	110 000	4 to 8
20	28	4.46	155 572	116 678	106 071	4 to 8
16	24	4.17	145 200	108 900	99 000	4 to 8
16	25	4.00	139 392	104 544	95 040	4 to 8
16	26	3.85	134 030	100 524	91 385	4 to 8
16	27	3.70	129 066	96 800	88 000	4 to 8
16	28	3.57	124 458	93 342	84 857	4 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seeds Per In.	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Driver	Driven		15 In. Rows	20 In. Rows	22 In. Rows	
35	24	3.42	119 110	89 332	81 211	4 to 8
35	25	3.28	114 346	85 758	77 963	4 to 8
35	26	3.16	109 948	82 460	74 964	4 to 8
35	27	3.04	105 876	79 406	72 188	4 to 8
35	28	2.93	102 094	76 570	69 609	4 to 8
29	24	2.83	98 690	74 018	67 289	4 to 8
29	25	2.72	94 744	71 058	62 113	4 to 8
29	26	2.61	91 100	68 324	59 813	4 to 8
29	27	2.52	87 726	65 794	57 676	4 to 8
29	28	2.43	84 592	63 444	55 688	4 to 8
24	24	2.34	81 676	61 254	53 460	4 to 8
24	25	2.25	78 408	58 806	51 404	4 to 8
24	26	2.16	75 392	56 544	49 500	4 to 8
24	27	2.08	72 600	54 450	47 732	4 to 8
24	28	2.01	70 008	52 506	46 406	4 to 8
20	24	1.95	68 062	51 046	44 550	4 to 8
20	25	1.88	65 340	49 006	42 837	4 to 8
20	26	1.80	62 826	47 120	41 250	4 to 8
20	27	1.74	60 500	45 376	39 777	4 to 8
20	28	1.67	58 340	43 754	37 125	4 to 8
16	24	1.56	54 450	40 298	35 640	4 to 8
16	25	1.50	52 272	39 204	34 269	4 to 8
16	26	1.44	50 262	37 696	33 000	4 to 8
16	27	1.39	48 400	36 300	31 821	4 to 8
16	28	1.34	46 672	35 004	29 700	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Large Edible Beans (Cell Type Seed Disk)—30 in. to 40 in. Rows

{Decal No. DB1092}

LARGE EDIBLE BEANS, CELL TYPE - 50 CELLS

AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION PER ACRE OF LARGE EDIBLE BEANS
PLANTED WITH VACUUM METER AND USING AA37206 BRUSH

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
Driver	Driven		30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	9.11	158,813	132,344	125,378	119,109	4 to 4.5
35	25	8.75	152,460	127,050	120,363	114,345	4 to 4.5
35	26	8.41	146,596	122,163	115,734	109,947	4 to 4.5
35	27	8.10	141,167	117,639	111,447	105,875	4 to 4.5
35	28	7.81	136,125	113,438	107,467	102,094	4 to 4.5
29	24	7.55	131,588	109,656	103,885	98,691	4 to 5
29	25	7.25	126,324	105,270	99,729	94,743	4 to 5.5
29	26	6.97	121,465	101,221	95,894	91,099	4 to 5.5
29	27	6.71	116,967	97,472	92,342	87,725	4 to 5.5
29	28	6.47	112,789	93,991	89,044	84,592	4 to 6
24	24	6.25	108,900	90,750	85,974	81,675	4 to 6
24	25	6.00	104,544	87,120	82,535	78,408	4 to 6.5
24	26	5.77	100,523	83,769	79,360	75,392	4 to 6.5
24	27	5.56	96,800	80,667	76,421	72,600	4 to 7
24	28	5.36	93,343	77,786	73,692	70,007	4 to 7
20	24	5.21	90,750	75,625	71,645	68,063	4 to 7.5
20	25	5.00	87,120	72,600	68,779	65,340	4 to 7.5
20	26	4.81	83,769	69,808	66,134	62,827	4 to 8
20	27	4.63	80,667	67,222	63,684	60,500	4 to 8
20	28	4.46	77,786	64,821	61,410	58,339	4 to 8
16	24	4.17	72,600	60,500	57,316	54,450	4 to 8
16	25	4.00	69,696	58,080	55,023	52,272	4 to 8
16	26	3.85	67,015	55,846	52,907	50,262	4 to 8
16	27	3.70	64,533	53,778	50,947	48,400	4 to 8
16	28	3.57	62,229	51,857	49,128	46,671	4 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
Driver	Driven		30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	3.42	59,555	49,629	47,017	44,666	4 to 8
35	25	3.28	57,173	47,644	45,136	42,879	4 to 8
35	26	3.16	54,974	45,811	43,400	41,230	4 to 8
35	27	3.04	52,938	44,115	41,793	39,703	4 to 8
35	28	2.93	51,047	42,539	40,300	38,285	4 to 8
29	24	2.83	49,345	41,121	38,957	37,009	4 to 8
29	25	2.72	47,372	39,476	37,399	35,529	4 to 8
29	26	2.61	45,550	37,958	35,960	34,162	4 to 8
29	27	2.52	43,863	36,552	34,638	32,897	4 to 8
29	28	2.43	42,296	35,247	33,392	31,722	4 to 8
24	24	2.34	40,838	34,031	32,240	30,628	4 to 8
24	25	2.25	39,204	32,670	30,951	29,403	4 to 8
24	26	2.16	37,696	31,413	29,760	28,272	4 to 8
24	27	2.08	36,300	30,250	28,658	27,225	4 to 8
24	28	2.01	35,004	29,170	27,634	26,253	4 to 8
20	24	1.95	34,031	28,359	26,867	25,523	4 to 8
20	25	1.88	32,670	27,225	25,792	24,503	4 to 8
20	26	1.80	31,413	26,178	24,800	23,560	4 to 8
20	27	1.74	30,250	25,208	23,882	22,688	4 to 8
20	28	1.67	29,170	24,308	23,029	21,877	4 to 8
16	24	1.56	27,225	22,688	21,493	20,419	4 to 8
16	25	1.50	26,136	21,780	20,634	19,602	4 to 8
16	26	1.44	25,131	20,942	19,840	18,848	4 to 8
16	27	1.39	24,200	20,167	19,105	18,150	4 to 8
16	28	1.34	23,336	19,446	18,423	17,502	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50452 -19-04OCT02

Peanuts (Runner and Spanish)—30 in. to 40 in. Rows

{Decal No. DB1093}

RUNNER AND SPANISH PEANUTS

LARGE EDIBLE BEAN SEED DISK, PART NUMBER H136092 - 50 CELL

AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION PER ACRE OF RUNNER PEANUTS
PLANTED WITH VACUUM METER AND USING AA37206 BRUSH

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	9.11	158,813	132,344	125,378	119,109	3-1/2
35	25	8.75	152,460	127,050	120,363	114,345	3-1/2
35	26	8.41	146,596	122,163	115,734	109,947	3-1/2
35	27	8.10	141,167	117,639	111,447	105,875	3-1/2 to 4
35	28	7.81	136,125	113,438	107,467	102,094	3-1/2 to 4
29	24	7.55	131,588	109,656	103,885	98,691	3-1/2 to 4
29	25	7.25	126,324	105,270	99,729	94,743	3-1/2 to 4-1/2
29	26	6.97	121,465	101,221	95,894	91,099	3-1/2 to 4-1/2
29	27	6.71	116,967	97,472	92,342	87,725	3-1/2 to 4-1/2
29	28	6.47	112,789	93,991	89,044	84,592	3-1/2 to 5
24	24	6.25	108,900	90,750	85,974	81,675	3-1/2 to 5
24	25	6.00	104,544	87,120	82,535	78,408	3-1/2 to 5-1/2
24	26	5.77	100,523	83,769	79,360	75,392	3-1/2 to 5-1/2
24	27	5.56	96,800	80,667	76,421	72,600	3-1/2 to 5-1/2
24	28	5.36	93,343	77,786	73,692	70,007	3-1/2 to 6
20	24	5.21	90,750	75,625	71,645	68,063	3-1/2 to 6
20	25	5.00	87,120	72,600	68,779	65,340	3-1/2 to 6-1/2
20	26	4.81	83,769	69,808	66,134	62,827	3-1/2 to 6-1/2
20	27	4.63	80,667	67,222	63,684	60,500	3-1/2 to 7
20	28	4.46	77,786	64,821	61,410	58,339	3-1/2 to 7
16	24	4.17	72,600	60,500	57,316	54,450	4 to 7-1/2
16	25	4.00	69,696	58,080	55,023	52,272	4 to 8
16	26	3.85	67,015	55,846	52,907	50,262	4 to 8
16	27	3.70	64,533	53,778	50,947	48,400	4 to 8
16	28	3.57	62,229	51,857	49,128	46,671	4 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	3.42	59,555	49,629	47,017	44,666	4 to 8
35	25	3.28	57,173	47,644	45,136	42,879	4 to 8
35	26	3.16	54,974	45,811	43,400	41,230	4 to 8
35	27	3.04	52,938	44,115	41,793	39,703	4 to 8
35	28	2.93	51,047	42,539	40,300	38,285	4 to 8
29	24	2.83	49,345	41,121	38,957	37,009	4 to 8
29	25	2.72	47,372	39,476	37,399	35,529	4 to 8
29	26	2.61	45,550	37,958	35,960	34,162	4 to 8
29	27	2.52	43,863	36,552	34,638	32,897	4 to 8
29	28	2.43	42,296	35,247	33,392	31,722	4 to 8
24	24	2.34	40,838	34,031	32,240	30,628	4 to 8
24	25	2.25	39,204	32,670	30,951	29,403	4 to 8
24	26	2.16	37,696	31,413	29,760	28,272	4 to 8
24	27	2.08	36,300	30,250	28,658	27,225	4 to 8
24	28	2.01	35,004	29,170	27,634	26,253	4 to 8
20	24	1.95	34,031	28,359	26,867	25,523	4 to 8
20	25	1.88	32,670	27,225	25,792	24,503	4 to 8
20	26	1.80	31,413	26,178	24,800	23,560	4 to 8
20	27	1.74	30,250	25,208	23,882	22,688	4 to 8
20	28	1.67	29,170	24,308	23,029	21,877	4 to 8
16	24	1.56	27,225	22,688	21,493	20,419	4 to 8
16	25	1.50	26,136	21,780	20,634	19,602	4 to 8
16	26	1.44	25,131	20,942	19,840	18,848	4 to 8
16	27	1.39	24,200	20,167	19,105	18,150	4 to 8
16	28	1.34	23,336	19,446	18,423	17,502	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Peanuts (Virginia)—30 in. to 40 in. Rows

{Decal No. DB1094}

VIRGINIA PEANUTS

VIRGINIA PEANUT SEED DISK PART NUMBER H138722 - 46 CELL

AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION PER ACRE OF VIRGINIA PEANUTS
PLANTED WITH VACUUM METER AND USING AA37206 BRUSH

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	8.4	146,108	121,756	115,348	109,581	3
35	25	8.1	140,263	116,886	110,734	105,197	3
35	26	7.7	134,868	112,390	106,475	101,151	3
35	27	7.5	129,873	108,228	102,532	97,405	3
35	28	7.2	125,235	104,363	98,870	93,926	3
29	24	6.9	121,061	100,884	95,574	90,795	3
29	25	6.7	116,218	96,848	91,751	87,164	3 to 3-1/2
29	26	6.4	111,748	93,123	88,222	83,811	3 to 3-1/2
29	27	6.2	107,609	89,674	84,955	80,707	3 to 4
29	28	6.0	103,766	86,472	81,921	77,825	3 to 4
24	24	5.8	100,188	83,490	79,096	75,141	3 to 4
24	25	5.5	96,180	80,150	75,932	72,135	3 to 4
24	26	5.3	92,481	77,068	73,011	69,361	3 to 4-1/2
24	27	5.1	89,056	74,213	70,307	66,792	3 to 4-1/2
24	28	4.9	85,875	71,563	67,796	64,407	3 to 4-1/2
20	24	4.8	83,490	69,575	65,913	62,618	3 to 5
20	25	4.6	80,150	66,792	63,277	60,113	3 to 5
20	26	4.4	77,068	64,223	60,843	57,801	3 to 5
20	27	4.3	74,213	61,844	58,589	55,660	3 to 5-1/2
20	28	4.1	71,563	59,636	56,497	53,672	3 to 6
16	24	3.8	66,792	55,660	52,731	50,094	3 to 6
16	25	3.7	64,120	53,434	50,621	48,090	3 to 6-1/2
16	26	3.5	61,654	51,378	48,674	46,241	3 to 6-1/2
16	27	3.4	59,371	49,476	46,872	44,528	3 to 7
16	28	3.3	57,250	47,709	45,198	42,938	3 to 7-1/2

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per Ft.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	3.1	54,790	45,659	43,256	41,093	3 to 7-1/2
35	25	3.0	52,599	43,832	41,525	39,449	3 to 8
35	26	2.9	50,576	42,146	39,928	37,932	3 to 8
35	27	2.8	48,703	40,585	38,449	36,527	3 to 8
35	28	2.7	46,963	39,136	37,076	35,222	3 to 8
29	24	2.6	45,398	37,831	35,840	34,048	4 to 8
29	25	2.5	43,582	36,318	34,407	32,686	4 to 8
29	26	2.4	41,906	34,921	33,083	31,429	4 to 8
29	27	2.3	40,354	33,628	31,858	30,265	4 to 8
29	28	2.2	38,912	32,427	30,720	29,184	4 to 8
24	24	2.2	37,571	31,309	29,661	28,178	4 to 8
24	25	2.1	36,068	30,056	28,474	27,051	4 to 8
24	26	2.0	34,680	28,900	27,379	26,010	4 to 8
24	27	1.9	33,396	27,830	26,365	25,047	4 to 8
24	28	1.8	32,203	26,836	25,424	24,152	4 to 8
20	24	1.8	31,309	26,091	24,717	23,482	4 to 8
20	25	1.7	30,056	25,047	23,729	22,542	4 to 8
20	26	1.7	28,900	24,084	22,816	21,675	4 to 8
20	27	1.6	27,830	23,192	21,971	20,873	4 to 8
20	28	1.5	26,836	22,363	21,186	20,127	4 to 8
16	24	1.4	25,047	20,873	19,774	18,785	4 to 8
16	25	1.4	24,045	20,038	18,983	18,034	4 to 8
16	26	1.3	23,120	19,267	18,253	17,340	4 to 8
16	27	1.3	22,265	18,553	17,577	16,698	4 to 8
16	28	1.2	21,469	17,891	16,949	16,102	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50456 -19-04OCT02

Edible Beans (Flat-Type Seed Disk)—15 in. to 20 in. Rows

{Decal No. DB1420}

EDIBLE BEANS - FLAT TYPE DISK - 50 HOLES

AVERAGE SEED SPACING, AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION PER ACRE
OF EDIBLE BEANS PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in Inches	Average Seeds Per Foot	Approximate Seed Population Per Acre		Recommended Speed Range in mph
				15 In. Rows	20 In. Rows	
35	24	1-5/16	9.11	317 626	238 218	3 to 4
35	25	1-3/8	8.75	304 920	228 690	3 to 4
35	26	1-7/16	8.41	293 192	219 894	3 to 4
35	27	1-1/2	8.10	282 334	211 750	3 to 4
35	28	1-1/2	7.81	272 250	204 188	3 to 4.5
29	24	1-5/8	7.55	263 176	197 382	3 to 4.5
29	25	1-11/16	8.25	252 648	189 486	3 to 4.5
29	26	1-3/4	6.97	242 930	182 198	3 to 4.5
29	27	1-3/4	6.71	233 934	175 450	3 to 4.5
29	28	1-13/16	6.49	225 578	169 184	3 to 4.5
24	24	1-7/8	6.25	217 800	163 350	3 to 4.5
24	25	2	6.00	209 088	156 618	3 to 4.5
24	26	2	5.77	201 046	150 748	4 to 5
24	27	2-1/8	5.56	193 600	145 200	4 to 5
24	28	2-1/4	5.36	186 686	140 014	4 to 5
20	24	2-3/8	5.21	181 500	136 126	4 to 5
20	25	2-7/16	5.00	174 240	130 680	4 to 5
20	26	2-1/2	4.81	167 538	125 654	4 to 5
20	27	2-1/2	4.62	161 344	121 000	4 to 6
20	28	2-9/16	4.46	155 572	116 678	4 to 6
16	24	2-7/8	4.17	145 200	108 900	4 to 6
16	25	3	4.00	139 392	104 544	4 to 6
16	26	3-1/8	3.85	134 030	100 524	4 to 6
16	27	3-1/4	3.70	129 066	96 800	4 to 6
16	28	3-3/8	3.50	124 458	93 342	4 to 6

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in Inches	Average Seeds Per Foot	Approximate Seed Population Per Acre		Recommended Speed Range in mph
				15 In. Rows	20 In. Rows	
35	24	3-1/2	3.42	119 110	89 332	4 to 6
35	25	3-5/8	3.26	114 346	85 758	4 to 6
35	26	3-3/4	3.16	109 948	82 460	4 to 6
35	27	4	3.04	105 876	79 406	4 to 6
35	28	4-1/8	2.93	102 094	76 570	4 to 6
29	24	4-1/2	2.83	98 690	74 018	4 to 6
29	25	4-3/8	2.72	94 744	71 058	4 to 6
29	26	4-5/8	2.61	91 100	68 324	4 to 6
29	27	4-3/4	2.52	87 726	65 794	4 to 6
29	28	4-15/16	2.43	84 592	63 444	4 to 6
24	24	5-1/8	2.34	81 676	61 254	4 to 6
24	25	5-5/16	2.25	78 408	58 806	4 to 6
24	26	5-1/2	2.16	75 392	56 544	4 to 6
24	27	5-3/4	2.08	72 600	54 450	4 to 6
24	28	5-15/16	2.01	70 008	52 506	4 to 6
20	24	6-1/8	1.95	68 062	51 046	4 to 6
20	25	6-3/8	1.88	65 340	49 006	4 to 6
20	26	6-5/8	1.80	62 826	47 120	4 to 6
20	27	6-15/16	1.74	60 500	45 376	4 to 6
20	28	7-1/8	1.67	58 340	43 754	4 to 6
16	24	7-5/8	1.56	54 450	40 298	4 to 6
16	25	8	1.50	52 277	39 204	4 to 6
16	26	8-3/8	1.44	50 262	37 696	4 to 6
16	27	8-5/8	1.39	48 400	36 300	4 to 6
16	28	9	1.34	46 672	35 004	4 to 6

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Edible Beans (Flat-Type Seed Disk)—22 in. Rows

{Decal No. DB1231} EDIBLE BEANS - FLAT TYPE DISK - 50 HOLES

AVERAGE SEED SPACING, AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION PER ACRE
OF EDIBLE BEANS PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing In Inches	Approximate Seed Population Per Acre		Recommended Speed Range in mph
			Average Seeds Per Foot	22 In. Rows	
35	24	1-5/16	9.11	216,563	3 to 4
35	25	1-3/8	8.75	207,900	3 to 4
35	26	1-7/16	8.41	199,904	3 to 4
35	27	1-1/2	8.10	192,500	3 to 4
35	28	1-1/2	7.81	185,625	3 to 4.5
29	24	1-5/8	7.55	179,438	3 to 4.5
29	25	1-11/16	7.25	172,260	3 to 4.5
29	26	1-3/4	6.97	165,635	3 to 4.5
29	27	1-3/4	6.71	159,500	3 to 4.5
29	28	1-13/16	6.49	153,804	3 to 4.5
24	24	1-7/8	6.25	148,500	3 to 4.5
24	25	2	6.00	142,560	3 to 4.5
24	26	2	5.77	137,077	4 to 5
24	27	2-1/8	5.56	132,000	4 to 5
24	28	2-1/4	5.36	127,286	4 to 5
20	24	2-3/8	5.21	123,750	4 to 5
20	25	2-7/16	5.00	118,800	4 to 5
20	26	2-1/2	4.81	114,231	4 to 5
20	27	2-1/2	4.62	110,000	4 to 6
20	28	2-9/16	4.46	106,071	4 to 6
16	24	2-7/8	4.17	99,000	4 to 6
16	25	3	4.00	95,040	4 to 6
16	26	3-1/8	3.85	91,385	4 to 6
16	27	3-1/4	3.70	88,000	4 to 6
16	28	3-3/8	3.50	84,857	4 to 6

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing In Inches	Approximate Seed Population Per Acre		Recommended Speed Range in mph
			Average Seeds Per Foot	22 In. Rows	
35	24	3-1/2	3.42	81,211	4 to 6
35	25	3-5/8	3.26	77,963	4 to 6
35	26	3-3/4	3.16	74,964	4 to 6
35	27	4	3.04	72,188	4 to 6
35	28	4-1/8	2.93	69,609	4 to 6
29	24	4-1/2	2.83	67,289	4 to 6
29	25	4-3/8	2.72	62,113	4 to 6
29	26	4-5/8	2.61	59,813	4 to 6
29	27	4-3/4	2.52	57,676	4 to 6
29	28	4-15/16	2.43	55,688	4 to 6
24	24	5-1/8	2.34	53,460	4 to 6
24	25	5-5/16	2.25	51,404	4 to 6
24	26	5-1/2	2.16	49,500	4 to 6
24	27	5-3/4	2.08	47,732	4 to 6
24	28	5-15/16	2.01	46,406	4 to 6
20	24	6-1/8	1.95	44,550	4 to 6
20	25	6-3/8	1.88	42,837	4 to 6
20	26	6-5/8	1.80	41,250	4 to 6
20	27	6-15/16	1.74	39,777	4 to 6
20	28	7-1/8	1.67	37,125	4 to 6
16	24	7-5/8	1.56	35,640	4 to 6
16	25	8	1.50	34,269	4 to 6
16	26	8-3/8	1.44	33,000	4 to 6
16	27	8-5/8	1.39	31,821	4 to 6
16	28	9	1.34	30,640	4 to 6

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at the desired rate.

A52100 -19-28/MAR03

Edible Beans (Flat-Type Seed Disk)—30 in. to 40 in. Rows

{Decal No. DB1232} EDIBLE BEANS - FLAT TYPE DISK - 50 HOLES

AVERAGE SEED SPACING, AVERAGE SEEDS PER FT. AND/OR APPROXIMATE SEED POPULATION PER ACRE
OF EDIBLE BEANS PLANTED WITH VACUUM METER

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS"

HIGH RANGE INPUT SPROCKET

Approximate Seed Population Per Acre

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing In Inches	Average Seeds Per Foot	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	Recommended Speed Range in mph
35	24	1-5/16	9.11	158,813	132,344	125,378	119,109	3 to 4
35	25	1-3/8	8.75	152,460	127,050	120,363	114,345	3 to 4
35	26	1-7/16	8.41	146,596	122,163	115,734	109,947	3 to 4
35	27	1-1/2	8.10	141,167	117,639	111,447	108,875	3 to 4
35	28	1-1/2	7.81	136,125	113,438	109,467	102,094	3 to 4.5
29	24	1-5/8	7.55	131,588	109,656	103,885	98,691	3 to 4.5
29	25	1-11/16	7.25	126,324	105,270	99,729	94,743	3 to 4.5
29	26	1-3/4	6.97	121,465	101,221	95,894	91,099	3 to 4.5
29	27	1-3/4	6.71	116,967	97,472	92,342	87,725	3 to 4.5
29	28	1-13/16	6.49	112,789	93,991	89,044	84,592	3 to 4.5
24	24	1-7/8	6.25	108,900	90,750	85,974	81,675	3 to 4.5
24	25	2	6.00	104,544	87,120	82,535	78,408	3 to 4.5
24	26	2	5.77	100,523	83,769	79,360	75,392	4 to 5
24	27	2-1/8	5.56	96,800	80,667	76,421	72,600	4 to 5
24	28	2-1/4	5.36	93,343	77,786	73,692	70,007	4 to 5
20	24	2-3/8	5.21	90,750	75,625	71,645	68,063	4 to 5
20	25	2-7/16	5.00	87,120	72,600	68,779	65,340	4 to 5
20	26	2-1/2	4.81	83,769	69,808	66,134	62,827	4 to 5
20	27	2-1/2	4.62	80,667	67,222	63,684	60,500	4 to 6
20	28	2-9/16	4.46	77,786	64,821	61,410	58,339	4 to 6
16	24	2-7/8	4.17	72,600	60,500	57,316	54,450	4 to 6
16	25	3	4.00	69,696	58,080	55,023	52,272	4 to 6
16	26	3-1/8	3.85	67,015	55,846	52,907	50,262	4 to 6
16	27	3-1/4	3.70	64,533	53,778	50,947	48,400	4 to 6
16	28	3-3/8	3.50	62,229	51,857	49,128	46,671	4 to 6

LOW RANGE INPUT SPROCKET

Approximate Seed Population Per Acre

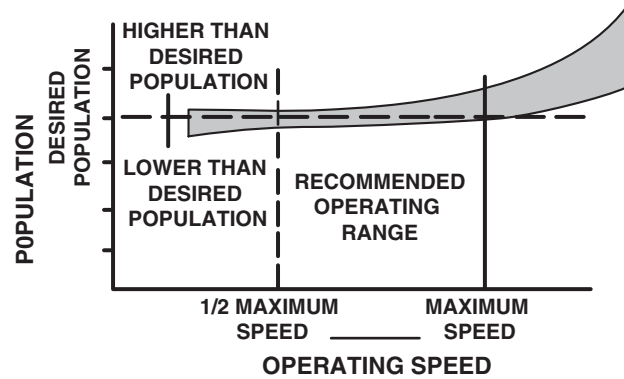
Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing In Inches	Average Seeds Per Foot	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	Recommended Speed Range in mph
35	24	3-1/2	3.42	59,555	49,629	47,017	44,666	4 to 6
35	25	3-5/8	3.26	57,173	47,644	45,136	42,879	4 to 6
35	26	3-3/4	3.16	54,974	45,811	43,400	41,230	4 to 6
35	27	4	3.04	52,938	44,115	41,793	39,703	4 to 6
35	28	4-1/8	2.93	51,047	42,539	40,300	38,285	4 to 6
29	24	4-1/2	2.83	49,345	41,121	38,957	37,009	4 to 6
29	25	4-3/8	2.72	47,372	39,476	37,399	35,529	4 to 6
29	26	4-5/8	2.61	45,550	37,958	35,960	34,162	4 to 6
29	27	4-3/4	2.52	43,863	36,552	34,638	32,897	4 to 6
29	28	4-15/16	2.43	42,296	35,247	33,392	31,722	4 to 6
24	24	5-1/8	2.34	40,838	34,031	32,240	30,628	4 to 6
24	25	5-5/16	2.25	39,204	32,670	30,951	29,403	4 to 6
24	26	5-1/2	2.16	37,696	31,413	29,760	28,272	4 to 6
24	27	5-3/4	2.08	36,300	30,250	28,658	27,225	4 to 6
24	28	5-15/16	2.01	35,004	29,170	27,634	26,253	4 to 6
20	24	6-1/8	1.95	34,031	28,359	26,867	25,523	4 to 6
20	25	6-3/8	1.88	32,670	27,225	25,792	24,503	4 to 6
20	26	6-5/8	1.80	31,413	26,178	24,800	23,560	4 to 6
20	27	6-15/16	1.74	30,250	25,208	23,882	22,688	4 to 6
20	28	7-1/8	1.67	29,170	24,308	23,029	21,877	4 to 6
16	24	7-5/8	1.56	27,225	22,688	21,493	20,419	4 to 6
16	25	8	1.50	26,136	21,780	20,634	19,602	4 to 6
16	26	8-3/8	1.44	25,131	20,942	19,840	18,848	4 to 6
16	27	8-5/8	1.39	24,200	20,167	19,105	18,150	4 to 6
16	28	9	1.34	23,336	19,446	18,423	17,502	4 to 6

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at the desired rate.

Plateless Meter Setup

Finger Pick-Up Metering Unit Operating Characteristics

IMPORTANT: Graph at right shows performance characteristics of finger pick-up metering unit relative to operating speed. An increase in operating speed above maximum speed will cause overpopulation. The population is shown as a band on the graph, since slight variations in population may result from differences in seed size and shape.



A53565 -19-07JAN04

The most accurate population will be obtained when machine is operated between one-half maximum speed and maximum speed. Planting too fast may result in doubles and triples. Planting too slow may result in skips.

Maximum speeds, shown in planting rate charts, are for optimum conditions. Slower speeds should always be used when planting in rough seedbeds to insure satisfactory machine performance. Poor depth control and erratic seed spacing may 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 desired planting rate.

Continued on next page

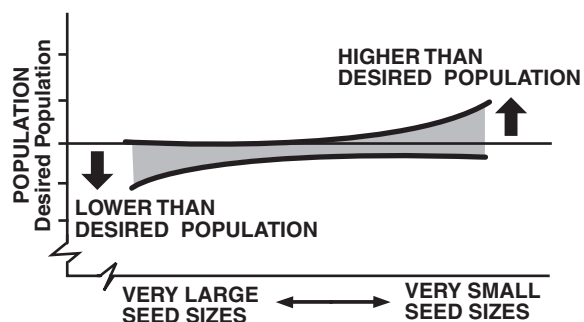
OUO6074,0000BDA -19-05JAN06-1/2

IMPORTANT: The chart at the right illustrates how seed size effects population.

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

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

The finger pick-up planting accuracy will be influenced by seedbed conditions, seed size and operating characteristics of seed meter. Rough seedbed and fast planting speeds typically deteriorate seed placement accuracy.



A46041 -19-30MAR00

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 -19-05JAN06-2/2

Feed-Cup Operating Characteristics

IMPORTANT: The graph shows operating characteristics of feed-cup metering unit.

The operating band illustrates how the feed-cup metering unit performs with regard to desired population (indicated by horizontal line). The width of the band is due to various sizes and shapes of seeds.

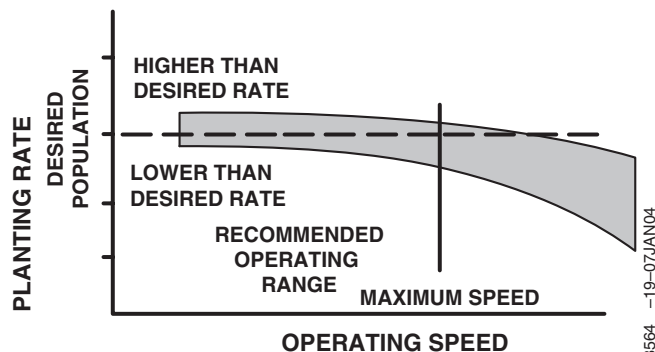
IMPORTANT: To prevent planting miscalculations, make field checks to verify desired rate is being planted.

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

IMPORTANT: Soybeans vary in size from about 815 seeds/kg to about 1600 seeds/kg (from about 1800 seeds/lb to about 3500 seeds/lb). Consequently, planting rates can vary widely. The following charts were developed using uniform soybeans sized to 1600 seeds/kg (2600 seeds/lb) and should be used only as a guide for initial planter settings.

Large beans will generally result in lower rates than those in the chart and small beans will give somewhat higher rates. Actual rates **MUST** be checked in the field at planting speed and planter settings changed accordingly.

If desired rate cannot be obtained when planting large soybeans, edible-bean cup may be used. The Medium Size Beans section of the chart should be used as a guide for initial planter settings.



A53564 -19-07JAN04

Continued on next page

OUO6074.0000BDB -19-12JAN06-1/2

Feed-cup rates can also vary depending upon surface texture of beans as well as whether or not beans are coated with seed treatment. These factors, in combination with variations in seed size can result in significant differences between rates given in charts versus what is actually planted. Further, in order to reduce rates by changing sprocket combinations, it may be necessary to increase ground speed slightly in order to maintain feed-cup rpm. If feed-cup rpm drops due to a change in transmission setting, cup may actually collect more seeds per revolution, and consequently not reduce planting rate by amount expected unless ground speed is correspondingly increased to maintain feed-cup rpm.

The best way to determine if feed cup is delivering correct rate is to actually check population in the field. Refer to Checking Seed Population section.

After determining correct sprocket combination for your desired planting rate, be certain to plant at a speed no greater than the maximum speed shown for the sprocket combination. This will 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

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

OUC6074,0000BDB -19-12JAN06-2/2

Plateless Metering Units

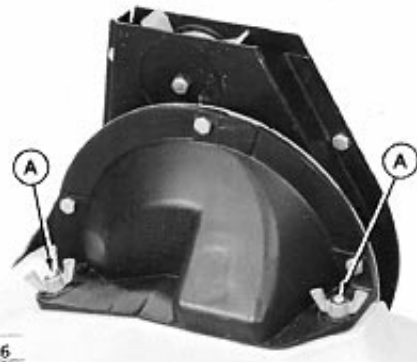
IMPORTANT: Always keep lids on seed hoppers when planting. If lids are left off, dust and dirt can accumulate in seed metering mechanism, causing excessive wear.

IMPORTANT: Always clean out seed after use.

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

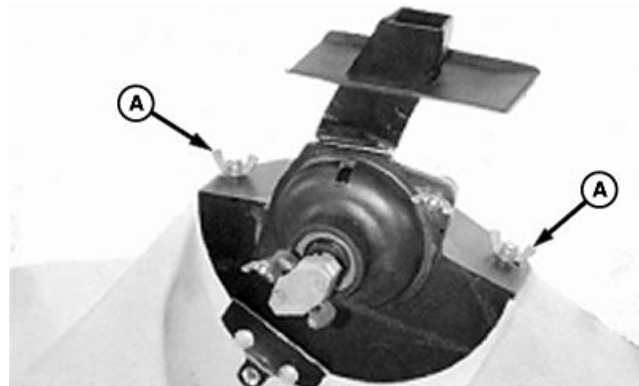
1. Meter assemblies can easily be interchanged with finger pick-up seed meters.
2. Replace meters as follows:
 - a. Remove seed hopper from row unit.
 - b. Turn hopper upside down and remove two wing nuts (A).
 - c. Pull meter assembly straight up.
 - d. Position desired meter on hopper and attach with wing nuts (A).
- Equip machine with finger pick-up metering units 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 feed-cup metering units to plant soybeans, edible beans, sorghum or acid-delinted cotton.
- Equip machine with radial bean metering units to plant soybeans.

A—Wing Nuts



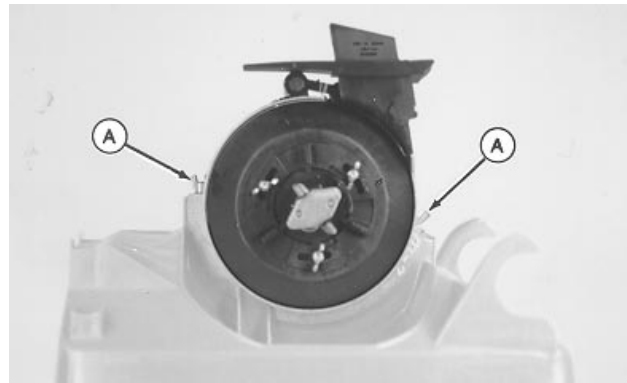
Finger Pick-Up Metering Unit

H44516 —UN-21MAY92



Feed-Cup Metering Unit

A46930 —UN-21NOV00



Radial Bean Metering Unit

A40459 —UN-06NOV96

OUO6045,00006CF —19-12JAN06-1/1

Feed-Cup Metering Unit

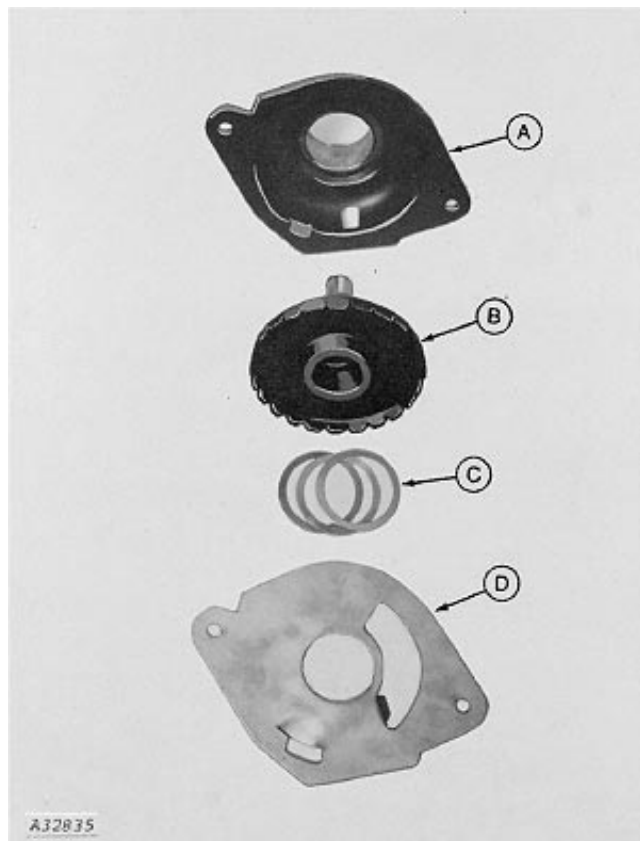
IMPORTANT: Store feed-cup metering assemblies in a clean, dry place while not in use.

The feed-cup metering unit consists of a feed-cup housing (A), feed cup (B), washer shims (C) (used with low-rate sorghum metering units only) and corresponding seed guide (D).

Use feed-cup metering units to plant the following types of seed:

- Soybeans
- Sorghum, Regular-Rate¹
- Sorghum, Low-Rate¹
- Edible Beans¹
- Acid-Delinted Cotton¹

A—Cup Housing
B—Feed-Cup
C—Washer Shims
D—Seed Guide



A32835 -UN-11OCT88

¹ Available through service parts only.

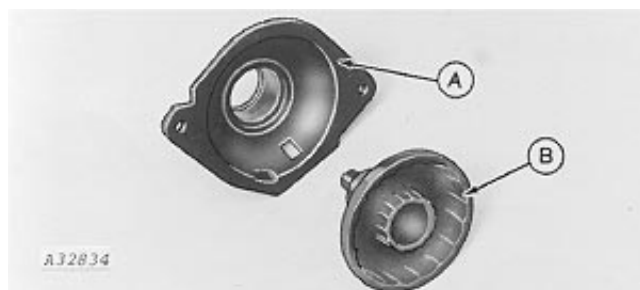
AG,OUO6074,439 -19-03APR00-1/1

Soybean Feed-Cup

IMPORTANT: Store feed-cup metering assemblies in a clean, dry place while they are not in use.

Assemble feed-cup housing (A) with desired feed-cup (B).

A—Feed-Cup Housing
B—Feed-Cup



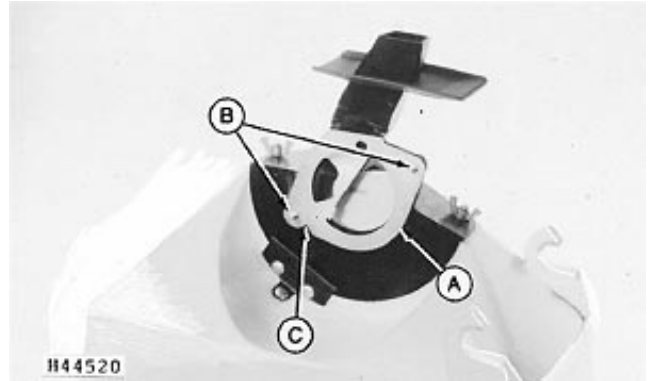
A32834 -UN-11OCT88

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AG,OUO6074,440 -19-12JAN06-1/3

Install seed guide (A) on feed-cup adapter so it seats properly on mounting studs (B). Align notch (C) (in seed guide) with projection on adapter.

- A—Seed Guide
- B—Studs
- C—Notch



H44520 -UN-29MAY92

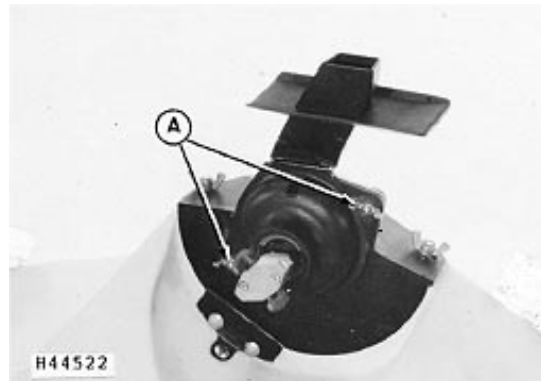
AG,OUO6074,440 -19-12JAN06-2/3

NOTE: Aligning notch must be positioned correctly so feed-cup housing seats properly.

Attach feed-cup and housing to adapter with wing nuts (A).

Wipe off feed-cup bushings periodically to help reduce wear.

- A—Wing Nut



H44522 -UN-21MAY92

AG,OUO6074,440 -19-12JAN06-3/3

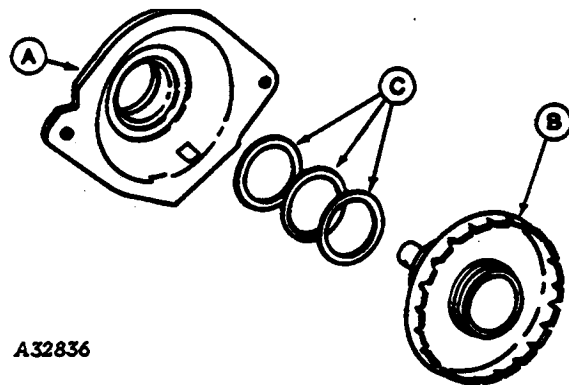
Low-Rate Sorghum Feed-Cup¹

IMPORTANT: Store feed-cup metering assemblies in a clean, dry place while they are not in use.

NOTE: Three washer shims must be used with low-rate feed-cup. Do not operate without all three shims.

For small seed or if population is high, use three washer shims (C) between feed-cup (B) and housing (A) only.

- A—Housing
- B—Feed-Cup
- C—Washer Shims



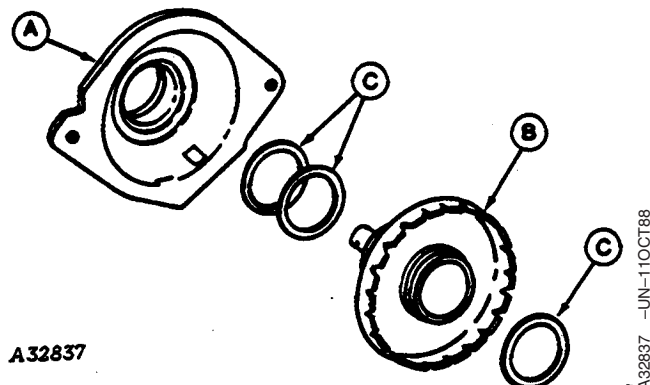
A32836

A32836 -UN-11OCT88

¹Available through service parts only.

For medium size seed, use two washer shims (C) between feed-cup (B) and housing (A) and one washer shim (C) between feed-cup and seed guide.

A—Housing
B—Feed-Cup
C—Washer Shims

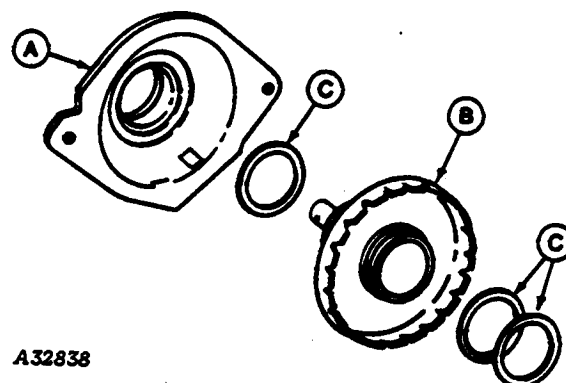


AG,OUO6074,441 -19-12JAN06-2/6

A32837 -UN-11OCT88

For larger seed, use one washer shim (C) between feed-cup (B) and housing (A) and two washer shims (C) between feed-cup and seed guide.

A—Housing
B—Feed-Cup
C—Washer Shim

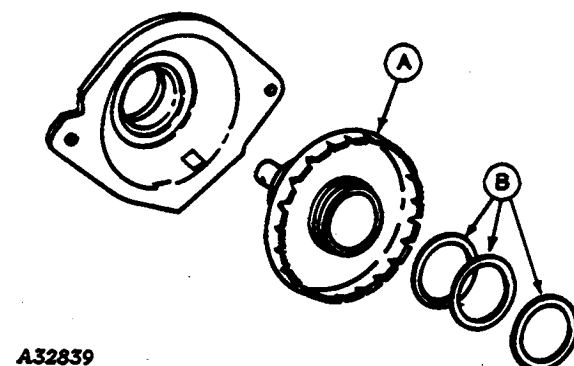


AG,OUO6074,441 -19-12JAN06-3/6

A32838 -UN-11OCT88

For large seed use three washer shims (B) between feed-cup (A) and seed guide.

A—Feed-Cup
B—Washer Shims



AG,OUO6074,441 -19-12JAN06-4/6

A32839 -UN-11OCT88

Assemble feed-cup housing with low-rate sorghum feed cup and correct number of washer shims. Install seed guide on feed-cup adapter so it seats properly on mounting studs (A). Align notch (B) in seed guide with projection on adapter.

A—Studs
B—Notch



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AG,OUO6074,441 -19-12JAN06-5/6

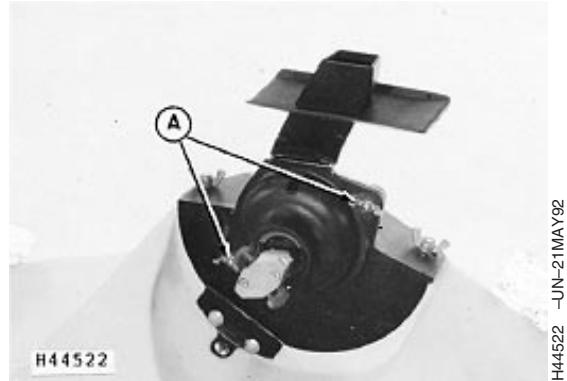
H44521 -UN-29MAY92

NOTE: Aligning notch must be positioned correctly so feed-cup housing seats properly.

Attach feed-cup and housing to adapter with wing nuts (A).

Wipe off feed-cup bushings periodically to help reduce wear.

A—Wing Nut



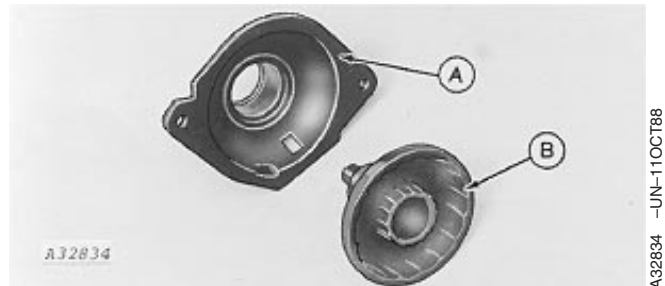
AG,OUO6074,441 -19-12JAN06-6/6

Acid-Delinted Cotton and Small Soybeans¹

IMPORTANT: Store feed-cup metering assemblies in a clean, dry place while they are not in use.

Assemble feed-cup housing (A) with desired feed-cup (B).

A—Feed-Cup Housing
B—Feed-Cup

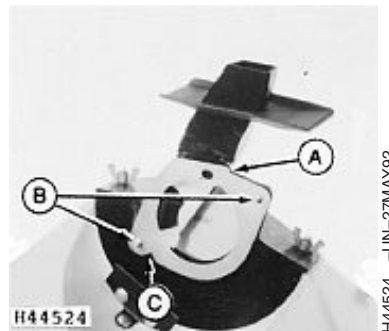


¹ Available through service parts only.

AG,OUO6074,442 -19-12JAN06-1/3

Install seed guide (A) on feed-cup adapter so it seats properly on mounting studs (B). Align notch (C) in seed guide with projection on adapter.

A—Seed Guide
B—Studs
C—Notch



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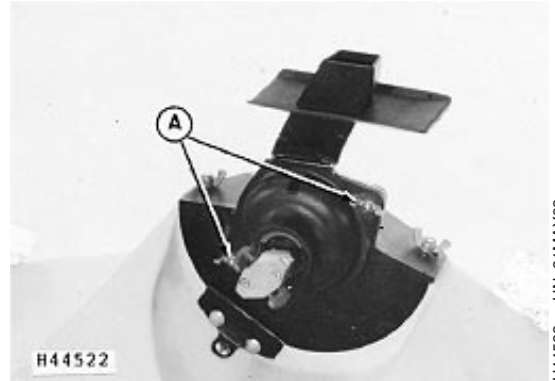
AG,OUO6074,442 -19-12JAN06-2/3

NOTE: Aligning notch must be positioned correctly so feed-cup housing seats properly.

Attach feed-cup and housing to adapter with wing nuts (A).

Wipe off feed-cup bushings periodically to help reduce wear.

A—Wing Nut



AG,OUO6074,442 -19-12JAN06-3/3

Plateless Meter Rate Charts

How to Use Planting Rate Charts

IMPORTANT: The actual planting rate must be checked in the field. See **Checking Seed Population** section.

NOTE: All rates in the following charts are based on typical drive wheel slippage. Drive wheel slippage is affected by crop residue, unit downforce, tire pressure and/or soil conditions.

1. Select desired row spacing and seed population under proper column.
2. Choose proper input sprocket:

A higher population will require the use of the high-range input sprocket and HIGH RANGE chart for that particular seed.

A lower population will require the use of the low range input sprocket and LOW RANGE chart for that particular seed.

3. Determine correct seed drive transmission sprocket combination.
4. Determine recommended planting speed range. The faster speed, in the speed range, is for optimum field conditions. Reduce speed and increase unit downforce if planting in rough conditions.

AG,OUO6074,1262 -19-04AUG00-1/1

Use of Powdered Graphite

See Use of Talc and Graphite Lubricants section.

OUO6074,0000E67 -19-11JAN06-1/1

Corn—Finger Pick-Up—15 in. to 20 in. Rows

{Decal No. DB 1381} FINGER PICK-UP

AVERAGE SEED POPULATION PER ACRE AND AVERAGE SEED SPACING
OF CORN PLANTED WITH FINGER PICK-UP METERING UNIT

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing in In.	Approximate Seed Population Per Acre		Recommended Speed Range in mph
Driver	Driven		15 In. Rows	20 In. Rows	
35	24	3-3/4	112 338	84 254	2 to 3
35	25	3-7/8	107 846	80 848	2 to 3
35	26	4	103 689	77 774	2 to 3
35	27	4-1/4	99 856	74 892	2 to 4
35	28	4-3/8	96 290	72 218	2 to 4
29	24	4-1/2	93 080	69 810	3 to 4
29	25	4-5/8	89 358	67 018	3 to 4
29	26	4-7/8	85 920	64 440	3 to 4
29	27	5	82 738	62 054	3 to 4
29	28	5-1/4	66 486	59 838	3 to 4
24	24	5-1/2	77 032	57 774	3 to 5
24	25	5-5/8	73 952	55 464	3 to 5
24	26	5-7/8	71 106	53 330	3 to 5
24	27	6-1/8	68 654	51 334	3 to 5
24	28	6-3/8	66 028	49 520	3 to 5
20	24	6-1/2	64 194	48 146	4 to 6
20	25	6-3/4	61 626	46 220	4 to 6
20	26	7	59 256	44 442	4 to 6
20	27	7-3/8	57 062	42 796	4 to 7
20	28	7-5/8	55 024	41 268	4 to 7
16	24	8-1/8	51 334	38 516	4 to 7
16	25	8-1/2	49 300	36 976	5 to 8
16	26	8-7/8	47 404	35 554	5 to 8
16	27	9-1/8	45 648	34 236	5 to 8
16	28	9-1/2	44 018	33 014	5 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing in In.	Approximate Seed Population Per Acre		Recommended Speed Range in mph
Driver	Driven		15 In. Rows	20 In. Rows	
35	24	9-7/8	42 128	31 596	5 to 8
35	25	10-3/8	40 442	30 332	5 to 8
35	26	10-3/4	38 886	29 164	5 to 8
35	27	11-1/8	37 446	28 084	6 to 8
35	28	11-5/8	36 108	27 082	6 to 8
29	24	12	34 906	26 178	6 to 8
29	25	12-1/2	33 510	25 132	6 to 8
29	26	13	32 220	24 166	6 to 8
29	27	13-1/2	31 026	23 270	7 to 8
29	28	14	29 918	22 440	7 to 8
24	24	14-1/2	28 888	21 666	7 to 8
24	25	15	27 732	20 798	7 to 8
24	26	15-5/8	26 666	19 948	8
24	27	16-1/4	25 678	19 258	8
24	28	16-7/8	24 760	18 570	8
20	24	17-3/8	24 072	18 054	8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Corn—Finger Pick-Up—30 in. to 40 in. Rows

{Decal No. DB1095}

FINGER PICK-UP

AVERAGE SEED POPULATION PER ACRE AND AVERAGE SEED SPACING
OF CORN PLANTED WITH FINGER PICK-UP METERING UNIT

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	3-3/4	56,169	46,808	44,344	42,127	2 to 3
35	25	3-7/8	53,923	44,936	42,571	40,442	2 to 3
35	26	4	51,849	43,207	40,933	38,887	2 to 3
35	27	4-1/4	49,928	41,607	39,417	37,446	2 to 4
35	28	4-3/8	48,145	40,121	39,009	36,109	2 to 4
29	24	4-1/2	46,540	38,784	36,742	34,905	3 to 4
29	25	4-5/8	44,679	37,232	35,273	33,509	3 to 4
29	26	4-7/8	42,960	35,800	33,916	32,220	3 to 4
29	27	5	41,369	34,474	32,660	31,027	3 to 4
29	28	5-1/4	39,892	33,243	31,494	29,919	3 to 4
24	24	5-1/2	38,516	32,097	30,408	28,887	3 to 5
24	25	5-5/8	36,976	30,813	29,191	27,732	3 to 5
24	26	5-7/8	35,553	29,628	28,068	26,665	3 to 5
24	27	6-1/8	34,237	28,531	27,029	25,677	3 to 5
24	28	6-3/8	33,014	27,512	26,064	24,760	3 to 5
20	24	6-1/2	32,097	26,747	25,340	24,073	4 to 6
20	25	6-3/4	30,813	25,677	24,326	23,110	4 to 6
20	26	7	29,628	24,690	23,390	22,221	4 to 6
20	27	7-3/8	28,531	23,775	22,524	21,398	4 to 7
20	28	7-5/8	27,512	22,926	21,720	20,634	4 to 7
16	24	8-1/8	25,677	21,398	20,272	19,258	4 to 7
16	25	8-1/2	24,650	20,542	19,461	18,488	5 to 8
16	26	8-7/8	23,702	19,752	18,712	17,777	5 to 8
16	27	9-1/8	22,824	19,020	18,019	17,118	5 to 8
16	28	9-1/2	22,009	18,341	17,376	16,507	5 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in In.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	9-7/8	21,064	17,553	16,629	15,798	5 to 8
35	25	10-3/8	20,221	16,851	15,964	15,166	5 to 8
35	26	10-3/4	19,443	16,203	15,350	14,582	5 to 8
35	27	11-1/8	18,723	15,603	14,781	14,042	6 to 8
35	28	11-5/8	18,054	15,045	14,254	13,541	6 to 8
29	24	12	17,453	14,544	13,778	13,089	6 to 8
29	25	12-1/2	16,755	13,962	13,227	12,566	6 to 8
29	26	13	16,110	13,425	12,719	12,083	6 to 8
29	27	13-1/2	15,513	12,928	12,247	11,635	7 to 8
29	28	14	14,959	12,466	11,810	11,220	7 to 8
24	24	14-1/2	14,444	12,036	11,403	10,833	7 to 8
24	25	15	13,866	11,555	10,947	10,399	7 to 8
24	26	15-5/8	13,333	11,110	10,526	9,999	8
24	27	16-1/4	12,839	10,699	10,136	9,629	8
24	28	16-7/8	12,380	10,317	9,774	9,285	8
20	24	17-3/8	12,036	10,030	9,502	9,027	8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50475 -19-04OCT02

Soybeans With Soybean Feed-Cup—15 in. to 20 in. Rows

{Decal No. DB1096}

SOYBEANS WITH SOYBEAN FEED CUP

APPROXIMATE LB. PER ACRE OF SOYBEANS PLANTED USING SOYBEAN FEED CUP

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Approximate Seed Population Per Acre				Recommended Speed Range in mph
		15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	268	224	206	201	2 to 4
35	25	258	214	204	194	2 to 4
35	26	248	206	196	186	2 to 4
35	27	238	200	188	178	2 to 4
35	28	230	192	182	172	2 to 4
29	24	222	186	176	166	2 to 5
29	25	214	178	168	160	2 to 5
29	26	206	172	162	154	2 to 5
29	27	198	164	156	148	2 to 5
29	28	190	160	150	142	2 to 5
24	24	184	154	146	138	2 to 6
24	25	176	148	140	132	2 to 6
24	26	170	142	134	128	2 to 6
24	27	164	136	130	123	2 to 6
24	28	158	132	124	118	2 to 7
20	24	154	128	122	116	2 to 7
20	25	148	122	116	111	2 to 7
20	26	142	118	112	106	2 to 8
20	27	136	114	108	102	2 to 8
20	28	132	110	104	99	2 to 8
16	24	122	102	96	92	2 to 8
16	25	118	98	94	88	2 to 8
16	26	114	94	90	86	2 to 8
16	27	110	90	86	82	2 to 8
16	28	106	88	84	80	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Approximate Seed Population Per Acre				Recommended Speed Range in mph
		15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	100	84	80	75	2 to 8
35	25	96	80	76	72	2 to 8
35	26	94	78	74	70	2 to 8
35	27	90	74	70	68	2 to 8
35	28	86	72	68	64	2 to 8
29	24	84	70	66	63	2 to 8
29	25	80	66	64	60	2 to 8
29	26	78	64	60	58	2 to 8
29	27	74	62	58	56	2 to 8
29	28	72	60	56	54	2 to 8
24	24	70	58	54	52	2 to 8
24	25	66	56	52	50	2 to 8
24	26	64	54	50	48	2 to 8
24	27	62	52	48	46	2 to 8
24	28	60	50	46	45	2 to 8
20	24	58	48	46	44	2 to 8
20	25	56	46	44	42	2 to 8
20	26	54	44	42	40	2 to 8
20	27	52	42	40	39	2 to 8
20	28	50	42	38	38	2 to 8
16	24	46	38	36	34	2 to 8
16	25	44	36	34	33	2 to 8
16	26	42	36	34	32	2 to 8
16	27	40	34	32	30	2 to 8
16	28	40	32	32	30	2 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Soybeans With Soybean Feed-Cup—30 in. to 40 in. Rows

{Decal No. DB1097}

SOYBEANS WITH SOYBEAN FEED CUP

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Approximate Seed Population Per Acre				Recommended Speed Range in mph
		30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	134	112	106	101	2 to 4
35	25	129	107	102	97	2 to 4
35	26	124	103	98	93	2 to 4
35	27	119	100	94	89	2 to 4
35	28	115	96	91	86	2 to 4
29	24	111	93	88	83	2 to 5
29	25	107	89	84	80	2 to 5
29	26	103	86	81	77	2 to 5
29	27	99	82	78	74	2 to 5
29	28	95	80	75	71	2 to 5
24	24	92	77	73	69	2 to 6
24	25	88	74	70	66	2 to 6
24	26	85	71	67	64	2 to 6
24	27	82	68	65	62	2 to 6
24	28	79	66	62	59	2 to 7
20	24	77	64	61	58	2 to 7
20	25	74	61	58	56	2 to 7
20	26	71	59	56	53	2 to 8
20	27	68	57	54	51	2 to 8
20	28	66	55	52	50	2 to 8
16	24	61	51	48	46	2 to 8
16	25	59	49	47	44	2 to 8
16	26	57	47	45	43	2 to 8
16	27	55	45	43	41	2 to 8
16	28	53	44	42	40	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Approximate Seed Population Per Acre				Recommended Speed Range in mph
		30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	50	42	40	38	2 to 8
35	25	48	40	38	36	2 to 8
35	26	47	39	37	35	2 to 8
35	27	45	37	35	34	2 to 8
35	28	43	36	34	32	2 to 8
29	24	42	35	33	32	2 to 8
29	25	40	33	32	30	2 to 8
29	26	39	32	30	29	2 to 8
29	27	37	31	29	28	2 to 8
29	28	36	30	28	27	2 to 8
24	24	35	29	27	26	2 to 8
24	25	33	28	26	25	2 to 8
24	26	32	27	25	24	2 to 8
24	27	31	26	24	23	2 to 8
24	28	30	25	23	23	2 to 8
20	24	29	24	23	22	2 to 8
20	25	28	23	22	21	2 to 8
20	26	27	22	21	20	2 to 8
20	27	26	21	20	20	2 to 8
20	28	25	21	19	19	2 to 8
16	24	23	19	18	17	2 to 8
16	25	22	18	17	17	2 to 8
16	26	21	18	17	16	2 to 8
16	27	20	17	16	15	2 to 8
16	28	20	16	16	15	2 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50476 -19-07OCT02

Converting Edible Beans Per Foot to Pounds Per Acre—Various Seed Sizes—15 in. to 20 in. Rows

APPROXIMATE NUMBER OF LB. PER ACRE FOR VARIOUS SOYBEAN SEED SIZES												
Seeds per Ft.	15 In. Rows			18 In. Rows			19 In. Rows			20 In. Rows		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
	Approx. 3200 per Lb.	Approx. 2600 per Lb.	Approx. 2200 per Lb.	Approx. 3200 per Lb.	Approx. 2600 per Lb.	Approx. 2200 per Lb.	Approx. 3200 per Lb.	Approx. 2600 per Lb.	Approx. 2200 per Lb.	Approx. 3200 per Lb.	Approx. 2600 per Lb.	Approx. 2200 per Lb.
5	54	68	80	46	56	66	42	52	62	40	51	60
6	66	80	96	54	68	80	52	64	74	50	60	72
7	76	94	110	64	78	92	60	74	88	57	70	82
8	88	108	126	72	90	106	64	84	100	66	81	94
9	98	120	144	82	100	118	78	96	112	74	90	108
10	108	134	158	90	112	132	86	106	126	81	100	118
11	120	148	174	100	122	146	94	116	138	90	111	130
12	130	160	190	108	134	158	104	126	150	98	120	142
13	142	174	206	118	146	172	112	138	162	106	130	154
14	152	188	222	128	156	184	120	148	176	114	141	166
15	164	202	238	136	168	198	128	158	188	123	152	178
16	174	214	254	146	178	212	138	170	200	130	160	190
17	186	228	270	154	190	224	146	180	212	140	171	202
18	196	242	286	164	202	238	154	190	226	147	182	214
19	206	254	300	172	212	250	164	202	238	154	190	225
20	218	268	316	182	224	264	172	212	250	164	201	237

A32845

A32845 -19-31JAN89

Refer to above chart to convert beans per foot into pounds per acre so a sprocket combination can be determined from seed charts.

EXAMPLE:

Desired seed spacing is approximately 11 beans/ft on 19 in. rows with an approximate soybean seed size of 2600 seeds/lb (medium size).

Referring to above chart, to achieve approximately 11 beans/ft on 19 in. rows with approximately 2600 seeds/lb (medium size soybeans), a sprocket combination for 116 lb/acre will be needed.

Refer to EDIBLE BEAN WITH SOYBEAN FEED-CUP chart. A 19 in. row spacing will require the high range input sprocket with a 16-tooth driver and 25-tooth driven sprocket to produce approximately 116 lb/acre.

Rates in the chart are based on a uniform seed size sample of approximately 2600 seeds/lb and should only be used as a starting point for determining actual planting rate. Actual rate must be checked in the field at desired planting speed. See Checking Seed Population section.

OUO1074.0001462 -19-25MAR03-1/1

Converting Edible Beans Per Foot to Pounds Per Acre—Various Seed Sizes—30 in. to 40 in. Rows

APPROXIMATE NUMBER OF LB. PER ACRE FOR VARIOUS SOYBEAN SEED SIZES												
Seeds per Ft.	30 In. Rows			36 In. Rows			38 In. Rows			40 In. Rows		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
	Approx. 3200 per Lb.	Approx. 2600 per Lb.	Approx. 2200 per Lb.	Approx. 3200 per Lb.	Approx. 2600 per Lb.	Approx. 2200 per Lb.	Approx. 3200 per Lb.	Approx. 2600 per Lb.	Approx. 2200 per Lb.	Approx. 3200 per Lb.	Approx. 2600 per Lb.	Approx. 2200 per Lb.
5	27	34	40	23	28	33	21	26	31	20	26	30
6	33	40	48	27	34	40	26	32	38	25	30	36
7	38	47	55	32	39	46	30	37	44	29	35	41
8	44	54	63	36	45	53	34	42	50	33	41	47
9	49	60	72	41	50	59	39	48	56	37	45	53
10	54	67	79	45	56	66	43	53	63	40	50	59
11	60	74	87	50	61	73	47	58	69	45	56	65
12	65	80	95	54	67	79	52	63	75	49	60	71
13	71	87	103	59	73	86	56	69	81	53	65	77
14	76	94	111	64	78	92	60	74	88	57	71	83
15	82	101	119	68	84	99	64	79	94	62	76	89
16	87	107	127	73	89	106	69	85	100	65	80	95
17	93	114	135	77	95	112	73	90	106	70	86	101
18	98	121	143	82	101	119	77	95	113	74	91	107
19	103	127	150	86	106	125	82	101	119	77	95	113
20	109	134	158	91	112	132	86	106	125	82	100	118

A28571

A28571 -19-31JAN89

Refer to above chart to convert beans per foot into pounds per acre so a sprocket combination can be determined from seed charts.

EXAMPLE:

Desired seed spacing is approximately 11 beans/ft on 38 in. rows with an approximate soybean seed size of 2600 seeds/lb (medium size).

Referring to above chart, to achieve approximately 11 beans/ft on 38 in. rows with approximately 2600 seeds/lb (medium size soybeans), a sprocket combination for 58 lb/acre will be needed.

Refer to EDIBLE BEAN WITH SOYBEAN FEED-CUP chart. A 38 in. row spacing will require the high range input sprocket with a 16-tooth driver and 25-tooth driven sprocket to produce approximately 58 lb/acre.

Rates in the chart are based on a uniform seed size sample of approximately 2600 seeds/lb and should only be used as a starting point for determining actual planting rate. Actual rate must be checked in the field at desired planting speed. See Checking Seed Population section.

OUO6074,0000023 -19-05SEP00-1/1

Edible Beans With Soybean Feed-Cup—15 in. to 20 in. Rows

{Decal No. DB1098}

EDIBLE BEANS WITH SOYBEAN FEED CUP

APPROXIMATE LB. PER ACRE OF EDIBLE BEANS PLANTED USING SOYBEAN FEED CUP

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Lb. of Small Beans* Per Acre				Lb. of Medium Beans** Per Acre				Recommended Speed Range in mph
Driver	Driven	15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	428	356	338	321	336	280	264	252	2 to 4
35	25	410	342	324	308	322	268	254	242	2 to 4
35	26	394	330	312	296	310	258	244	232	2 to 4
35	27	380	316	300	285	298	248	236	224	2 to 4
35	28	366	306	290	274	288	240	226	216	2 to 4
29	24	354	296	280	266	278	232	220	208	2 to 5
29	25	340	284	268	255	266	222	210	200	2 to 5
29	26	328	272	258	246	256	214	202	192	2 to 5
29	27	316	262	248	237	246	206	194	184	2 to 5
29	28	304	254	240	228	238	198	188	178	2 to 5
24	24	297	244	232	223	230	192	182	172	2 to 6
24	25	282	234	222	212	220	184	174	165	2 to 6
24	26	270	226	214	202	212	176	168	159	2 to 6
24	27	260	218	206	195	204	170	162	153	2 to 6
24	28	252	210	198	189	196	164	156	147	2 to 7
20	24	244	204	194	183	192	160	152	144	2 to 7
20	25	234	196	186	176	184	154	146	138	2 to 7
20	26	226	188	178	170	176	148	140	132	2 to 8
20	27	219	182	172	164	170	142	134	128	2 to 8
20	28	210	174	166	158	164	136	130	123	2 to 8
16	24	196	162	154	147	154	128	120	116	2 to 8
16	25	188	156	148	141	148	122	116	111	2 to 8
16	26	180	150	142	135	142	118	112	106	2 to 8
16	27	174	144	138	130	136	114	108	102	2 to 8
16	28	168	140	132	126	132	110	104	99	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Lb. of Small Beans* Per Acre				Lb. of Medium Beans** Per Acre				Recommended Speed Range in mph
Driver	Driven	15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	160	134	126	120	126	104	100	94	2 to 8
35	25	154	128	122	116	120	100	96	90	2 to 8
35	26	148	124	116	111	116	96	92	87	2 to 8
35	27	142	118	112	106	112	94	88	84	2 to 8
35	28	138	114	108	104	108	90	86	81	2 to 8
29	24	132	110	104	99	104	86	82	78	2 to 8
29	25	128	106	100	96	100	84	78	75	2 to 8
29	26	122	102	96	92	96	80	76	72	2 to 8
29	27	118	98	94	88	92	78	74	69	2 to 8
29	28	114	94	90	86	90	74	70	68	2 to 8
24	24	110	92	86	82	86	72	68	64	2 to 8
24	25	106	88	84	80	82	68	66	62	2 to 8
24	26	102	84	80	76	80	66	62	60	2 to 8
24	27	98	82	78	74	76	64	60	57	2 to 8
24	28	94	78	74	70	74	62	58	56	2 to 8
20	24	92	76	72	69	72	60	56	54	2 to 8
20	25	88	74	70	66	68	58	54	51	2 to 8
20	26	84	70	66	63	66	56	52	50	2 to 8
20	27	82	68	64	62	64	54	50	48	2 to 8
20	28	78	66	62	58	62	52	48	46	2 to 8
16	24	74	62	58	56	58	48	46	44	2 to 8
16	25	70	58	56	52	56	46	44	42	2 to 8
16	26	68	56	54	51	54	44	42	40	2 to 8
16	27	66	54	52	50	52	42	40	39	2 to 8
16	28	62	52	50	46	50	42	38	38	2 to 8

* Small beans include varieties which run approximately 2500 seeds/lb., such as navy beans.

** Medium beans include kidney beans at approximately 1000 seeds/lb., pinto beans at approximately 1100 seeds/lb., pink beans at approximately 1400 seeds/lb., or other beans of similar size and shape.

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Edible Beans With Soybean Feed-Cup—30 in. to 40 in. Rows

{Decal No. DB1099}

EDIBLE BEANS WITH SOYBEAN FEED CUP

APPROXIMATE LB. PER ACRE OF EDIBLE BEANS PLANTED USING SOYBEAN FEED CUP

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Lb. of Small Beans* Per Acre				Lb. of Medium Beans** Per Acre				Recommended Speed Range in mph
Driver	Driven	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	214	178	169	161	168	140	132	126	2 to 4
35	25	205	171	162	154	161	134	127	121	2 to 4
35	26	197	165	156	148	155	129	122	116	2 to 4
35	27	190	158	150	143	149	124	118	112	2 to 4
35	28	183	153	145	137	144	120	113	108	2 to 4
29	24	177	148	140	133	139	116	110	104	2 to 5
29	25	170	142	134	128	133	111	105	100	2 to 5
29	26	164	136	129	123	128	107	101	96	2 to 5
29	27	158	131	124	118	123	103	97	92	2 to 5
29	28	152	127	120	114	119	99	94	89	2 to 5
24	24	147	122	116	110	115	96	91	86	2 to 6
24	25	141	117	111	106	110	92	87	83	2 to 6
24	26	135	113	107	101	106	88	84	80	2 to 6
24	27	130	109	103	98	102	85	81	77	2 to 6
24	28	126	105	99	95	98	82	78	74	2 to 7
20	24	122	102	97	92	96	80	76	72	2 to 7
20	25	117	98	93	88	92	77	73	69	2 to 7
20	26	113	94	89	85	88	74	70	66	2 to 8
20	27	109	91	86	82	85	71	67	64	2 to 8
20	28	105	87	83	79	82	68	65	62	2 to 8
16	24	98	81	77	74	77	64	60	58	2 to 8
16	25	94	78	74	70	74	61	58	56	2 to 8
16	26	90	75	71	68	71	59	56	53	2 to 8
16	27	87	72	69	65	68	57	54	51	2 to 8
16	28	84	70	66	63	66	55	52	50	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Lb. of Small Beans* Per Acre				Lb. of Medium Beans** Per Acre				Recommended Speed Range in mph
Driver	Driven	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	80	67	63	60	63	52	50	47	2 to 8
35	25	77	64	61	58	60	50	48	45	2 to 8
35	26	74	62	58	56	58	48	46	44	2 to 8
35	27	71	59	56	53	56	47	44	42	2 to 8
35	28	69	57	54	52	54	45	43	40	2 to 8
29	24	66	55	52	50	52	43	41	39	2 to 8
29	25	64	53	50	48	50	42	39	38	2 to 8
29	26	61	51	48	46	48	40	38	36	2 to 8
29	27	59	49	47	44	46	39	37	35	2 to 8
29	28	57	47	45	43	45	37	35	34	2 to 8
24	24	55	46	43	41	43	36	34	32	2 to 8
24	25	53	44	42	40	41	34	33	31	2 to 8
24	26	51	42	40	38	40	33	31	30	2 to 8
24	27	49	41	39	37	38	32	30	28	2 to 8
24	28	47	39	37	35	37	31	29	28	2 to 8
20	24	46	38	36	35	36	30	28	27	2 to 8
20	25	44	37	35	33	34	29	27	26	2 to 8
20	26	42	35	33	32	33	28	26	25	2 to 8
20	27	41	34	32	31	32	27	25	24	2 to 8
20	28	39	33	31	29	31	26	24	23	2 to 8
16	24	37	31	29	28	29	24	23	22	2 to 8
16	25	35	29	28	26	28	23	22	21	2 to 8
16	26	34	28	27	26	27	22	21	20	2 to 8
16	27	33	27	26	25	26	21	20	20	2 to 8
16	28	31	26	25	23	25	21	19	19	2 to 8

* Small beans include varieties which run approximately 2500 seeds/lb., such as navy beans.

** Medium beans include kidney beans at approximately 1000 seeds/lb., pinto beans at approximately 1100 seeds/lb., pink beans at approximately 1400 seeds/lb., or other beans of similar size and shape.

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50477 -19-16OCT02

Planting Small Soybeans with Soybean Feed Cup

NOTE: Extra small soybeans vary in size from approximately 9000 seeds/kg to 12 000 seeds/kg (4000 seeds/lb to 5400 seeds/lb). Varying seed sizes may cause planting rates to vary widely.

The following charts were developed using uniform soybeans sized to 9300 seeds/kg (4200 seeds/lb). Use charts as a guide for initial machine settings only.

Large beans will generally result in lower rates than those in charts.

Actual rates MUST be checked in the field at planting speed. See Checking Seed Population section.

OUO6074.0000028 -19-11APR05-1/1

Converting Beans Per Foot to Pounds Per Acre—Small Soybeans—15 in. to 20 in. Rows

APPROXIMATE NUMBER OF LB. PER ACRE FOR EXTRA SMALL SOYBEAN SEEDS

Seeds per Ft.	15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows
	Approximately 4200 Seeds per Lb.	Approximately 4200 Seeds per Lb.	Approximately 4200 Seeds per Lb.	Approximately 4200 Seeds per Lb.
5	42	34	32	31
6	50	42	40	38
7	58	48	46	44
8	66	56	52	50
9	74	62	58	56
10	82	70	66	62
11	92	76	72	69
12	100	82	78	75
13	108	90	86	81
14	116	96	92	87
15	124	104	98	93
16	132	110	104	99
17	142	118	112	106
18	150	124	118	112
19	158	132	124	118
20	166	138	132	124

A32855

A32855 -19-31JAN89

Refer to above chart to convert beans per foot into pounds per acre so a sprocket combination can be determined from seed charts.

EXAMPLE:

Desired seed spacing is approximately 10 beans/ft on 19 in. rows with an approximate soybean seed size of 4200 seeds/lb.

Referring to above chart, to achieve approximately 10 beans/ft on 19 in. rows with approximately 4200 seeds/lb, a sprocket combination for 66 lb/acre will be needed.

Refer to SMALL SOYBEAN WITH SOYBEAN FEED-CUP chart. A 19 in. row spacing will require the high range input sprocket with a 20-tooth driver and 28-tooth driven sprocket to produce approximately 66 lb/acre.

Rates in the chart are based on a uniform seed size sample of approximately 4200 seeds/lb and should only be used as a starting point for determining actual planting rate. Actual rate must be checked in the field at desired planting speed. See Checking Seed Population section.

OUO6074,0000026 -19-05SEP00-1/1

Converting Beans Per Foot to Pounds Per Acre—Small Soybeans—30 in. to 40 in. Rows

APPROXIMATE NUMBER OF LB. PER ACRE FOR EXTRA SMALL SOYBEAN SEEDS

Seeds per Ft.	30 in. Rows	36 in. Rows	38 in. Rows	40 in. Rows
	Approximately 4200 Seeds per Lb.	Approximately 4200 Seeds per Lb.	Approximately 4200 Seeds per Lb.	Approximately 4200 Seeds per Lb.
5	21	17	16	15
6	25	21	20	19
7	29	24	23	22
8	33	28	26	25
9	37	31	29	28
10	41	35	33	31
11	46	38	36	34
12	50	41	39	38
13	54	45	43	40
14	58	48	46	44
15	62	52	49	46
16	66	55	52	50
17	71	59	56	53
18	75	62	59	56
19	79	66	62	59
20	83	69	66	62

A30239

A30239 -19-02FEB89

Refer to above chart to convert beans per foot into pounds per acre so a sprocket combination can be determined from seed charts.

EXAMPLE:

Desired seed spacing is approximately 10 beans/ft on 38 in. rows with an approximate soybean seed size of 4200 seeds/lb.

Referring to above chart, to achieve approximately 10 beans/ft on 38 in. rows with approximately 4200 seeds/lb, a sprocket combination for 33 lb/acre will be needed.

Refer to SMALL SOYBEAN WITH SOYBEAN FEED-CUP chart. A 38 in. row spacing will require the high range input sprocket with a 20-tooth driver and 28-tooth driven sprocket to produce approximately 33 lb/acre.

Rates in the chart are based on a uniform seed size sample of approximately 4200 seeds/lb and should only be used as a starting point for determining actual planting rate. Actual rate must be checked in the field at desired planting speed. See Checking Seed Population section.

OUO6074.0000027 -19-05SEP00-1/1

Small Soybeans With Soybean Feed-Cup—15 in. to 20 in. Rows

{Decal No. DB1100} SMALL SOYBEANS WITH SOYBEAN FEED CUP AND A48005 SEED GUIDE

APPROXIMATE LB. PER ACRE OF SMALL SOYBEANS PLANTED
USING SOYBEAN FEED CUP WITH A48005 SEED GUIDE

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

(Based on 4,200 Seeds Per Lb.)

Sprocket Combinations (Number of Teeth)		Lb. Per Acre				Recommended Speed Range in mph
Driver	Driven	15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	172	144	138	129	3 to 5
35	25	166	138	132	124	3 to 5
35	26	158	132	128	118	3 to 5
35	27	154	128	122	116	3 to 5
35	28	148	124	118	111	3 to 5
29	24	142	118	114	106	3 to 5
29	25	136	114	110	102	3 to 5-1/2
29	26	132	110	106	99	3 to 6
29	27	126	106	102	94	3 to 6
29	28	122	102	100	92	3 to 6
24	24	118	98	94	88	4 to 6-1/2
24	25	114	94	90	86	4 to 7
24	26	110	90	88	82	4 to 7-1/2
24	27	104	88	84	78	4 to 8
24	28	102	84	82	76	4 to 8
20	24	98	82	78	74	4 to 8
20	25	94	78	76	70	4 to 8
20	26	90	76	72	68	4 to 8
20	27	88	72	70	66	4 to 8
20	28	84	70	68	63	4 to 8
16	24	78	66	64	58	4 to 8
16	25	76	64	60	57	4 to 8
16	26	72	60	58	54	4 to 8
16	27	70	58	56	52	4 to 8
16	28	68	56	54	51	4 to 8

LOW RANGE INPUT SPROCKET

(Based on 4,200 Seeds Per Lb.)

Sprocket Combinations (Number of Teeth)		Lb. Per Acre				Recommended Speed Range in mph
Driver	Driven	15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	64	54	52	48	3 to 5
35	25	62	52	50	46	3 to 5
35	26	60	50	48	45	3 to 5
35	27	58	48	46	44	3 to 5
35	28	56	46	44	42	3 to 5
29	24	54	44	42	40	3 to 5
29	25	52	42	42	39	3 to 5-1/2
29	26	50	42	40	38	3 to 6
29	27	48	40	38	36	3 to 6
29	28	46	38	36	34	3 to 6
24	24	44	36	36	33	4 to 6-1/2
24	25	42	36	34	32	4 to 7
24	26	40	34	32	30	4 to 7-1/2
24	27	40	32	32	30	4 to 8
24	28	38	32	30	28	4 to 8
20	24	36	30	30	27	4 to 8
20	25	36	30	28	27	4 to 8
20	26	34	28	28	26	4 to 8
20	27	32	28	26	24	4 to 8
20	28	30	26	26	22	4 to 8
16	24	30	24	24	22	4 to 8
16	25	28	24	22	21	4 to 8
16	26	28	22	22	21	4 to 8
16	27	26	22	22	20	4 to 8
16	28	26	22	20	20	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50474 -19-04OCT02

Small Soybeans With Soybean Feed-Cup—30 in. to 40 in. Rows

{Decal No. DB1101} SMALL SOYBEANS WITH SOYBEAN FEED CUP AND A48005 SEED GUIDE

APPROXIMATE LB. PER ACRE OF SMALL SOYBEANS PLANTED
USING SOYBEAN FEED CUP A48005 SEED GUIDE

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		(Based on 4,200 Seeds Per Lb.) Lb. Per Acre				Recommended Speed Range in mph
		30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	86	72	69	65	3 to 5
35	25	83	69	66	62	3 to 5
35	26	79	66	64	59	3 to 5
35	27	77	64	61	58	3 to 5
35	28	74	62	59	56	3 to 5
29	24	71	59	57	53	3 to 5
29	25	68	57	55	51	3 to 5-1/2
29	26	66	55	53	50	3 to 6
29	27	63	53	51	47	3 to 6
29	28	61	51	50	46	3 to 6
24	24	59	49	47	44	4 to 6-1/2
24	25	57	47	45	43	4 to 7
24	26	55	45	44	41	4 to 7-1/2
24	27	52	44	42	39	4 to 8
24	28	51	42	41	38	4 to 8
20	24	49	41	39	37	4 to 8
20	25	47	39	38	35	4 to 8
20	26	45	38	36	34	4 to 8
20	27	44	36	35	33	4 to 8
20	28	42	35	34	32	4 to 8
16	24	39	33	32	29	4 to 8
16	25	38	32	30	28	4 to 8
16	26	36	30	29	27	4 to 8
16	27	35	29	28	26	4 to 8
16	28	34	28	27	26	4 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		(Based on 4,200 Seeds Per Lb.) Lb. Per Acre				Recommended Speed Range in mph
		30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	32	27	26	24	3 to 5
35	25	31	26	25	23	3 to 5
35	26	30	25	24	23	3 to 5
35	27	29	24	23	22	3 to 5
35	28	28	23	22	21	3 to 5
29	24	27	22	21	20	3 to 5
29	25	26	21	21	20	3 to 5-1/2
29	26	25	21	20	19	3 to 6
29	27	24	20	19	18	3 to 6
29	28	23	19	18	17	3 to 6
24	24	22	18	18	17	4 to 6-1/2
24	25	21	18	17	16	4 to 7
24	26	20	17	16	15	4 to 7-1/2
24	27	20	16	16	15	4 to 8
24	28	19	16	15	14	4 to 8
20	24	18	15	15	14	4 to 8
20	25	18	15	14	14	4 to 8
20	26	17	14	14	13	4 to 8
20	27	16	14	13	12	4 to 8
20	28	15	13	13	11	4 to 8
16	24	15	12	12	11	4 to 8
16	25	14	12	11	10	4 to 8
16	26	14	11	11	10	4 to 8
16	27	13	11	11	10	4 to 8
16	28	13	11	10	10	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50479 -19-07OCT02

Planting Acid-Delinted Cotton with Soybean Feed-Cup

NOTE: Acid-delinted cotton seeds vary in size from approximately 9000 seeds/kg to 12 000 seeds/kg (4100 seeds/lb to 5400 seeds/lb). Varying cotton seed sizes may cause planting rates to vary widely.

The above chart was developed using uniform cotton seed sized to 10 000 seeds/kg (4500 seeds/lb). Use the chart as a guide for initial machine settings only.

Large cotton seed will generally result in lower rates than those in chart. Small cotton seed will give somewhat higher rates than those in chart.

Actual rates MUST be checked in the field at planting speed. See Checking Seed Population section.

OUO6074,000002A -19-11APR05-1/1

Acid-Delinted Cotton With Soybean Feed-Cup—15 in. to 20 in. Rows

{Decal No. DB1102} ACID-DELINTED COTTON WITH SOYBEAN FEED CUP AND A48005 SEED GUIDE

APPROXIMATE LB. PER ACRE OF ACID-DELINTED COTTON
PLANTED USING SOYBEAN FEED CUP WITH A48005 SEED GUIDE

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		(Based on 4,500 Seeds Per Lb.) Lb. Per Acre				Recommended Speed Range in mph
Driver	Driven	15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	126	108	98	94	3 to 5
35	25	120	104	96	90	3 to 5
35	26	116	100	92	87	3 to 5
35	27	112	96	88	84	3 to 5
35	28	108	94	84	81	3 to 5
29	24	104	90	82	78	3 to 5
29	25	100	86	78	75	3 to 5-1/2
29	26	96	84	76	72	3 to 6
29	27	92	80	72	69	3 to 6
29	28	90	78	70	68	3 to 6
24	24	86	76	68	64	4 to 6-1/2
24	25	82	72	66	62	4 to 7
24	26	80	68	62	60	4 to 7-1/2
24	27	76	66	60	57	4 to 8
24	28	74	64	58	56	4 to 8
20	24	72	62	56	54	4 to 8
20	25	68	60	54	51	4 to 8
20	26	66	58	52	50	4 to 8
20	27	64	54	50	48	4 to 8
20	28	62	54	48	46	4 to 8
16	24	58	50	46	44	4 to 8
16	25	56	48	44	42	4 to 8
16	26	54	46	42	40	4 to 8
16	27	52	44	40	39	4 to 8
16	28	50	42	38	38	4 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		(Based on 4,500 Seeds Per Lb.) Lb. Per Acre				Recommended Speed Range in mph
Driver	Driven	15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	46	38	36	34	3 to 5
35	25	46	38	36	34	3 to 5
35	26	44	36	34	33	3 to 5
35	27	42	34	34	32	3 to 5
35	28	40	34	32	30	3 to 5
29	24	40	32	30	30	3 to 5
29	25	38	32	30	28	3 to 5-1/2
29	26	36	30	28	27	3 to 6
29	27	34	28	28	26	3 to 6
29	28	34	28	26	26	3 to 6
24	24	32	26	26	24	4 to 6-1/2
24	25	32	26	24	24	4 to 7
24	26	30	24	24	22	4 to 7-1/2
24	27	28	24	22	21	4 to 8
24	28	28	24	22	21	4 to 8
20	24	26	22	22	20	4 to 8
20	25	26	22	20	20	4 to 8
20	26	24	20	20	18	4 to 8
20	27	24	20	18	18	4 to 8
20	28	24	20	18	18	4 to 8
16	24	22	18	18	16	4 to 8
16	25	20	18	16	15	4 to 8
16	26	20	16	16	15	4 to 8
16	27	20	16	16	15	4 to 8
16	28	18	16	14	14	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Acid-Delinted Cotton With Soybean Feed-Cup—30 in. to 40 in. Rows

{Decal No. DB1103} ACID DELINTED COTTON WITH SOYBEAN FEED CUP AND A48005 SEED GUIDE

APPROXIMATE LB. PER ACRE OF ACID-DELINTED COTTON
PLANTED USING SOYBEAN FEED CUP AND A48005 SEED GUIDE

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

(Based on 4,500 Seeds Per Lb.)

Sprocket Combinations (Number of Teeth)		Lb. Per Acre				Recommended Speed Range in mph
Driver	Driven	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	63	54	49	47	3 to 5
35	25	60	52	48	45	3 to 5
35	26	58	50	46	44	3 to 5
35	27	56	48	44	42	3 to 5
35	28	54	47	42	40	3 to 5
29	24	52	45	41	39	3 to 5
29	25	50	43	39	38	3 to 5-1/2
29	26	48	42	38	36	3 to 6
29	27	46	40	36	34	3 to 6
29	28	45	39	35	34	3 to 6
24	24	43	38	34	32	4 to 6-1/2
24	25	41	36	33	31	4 to 7
24	26	40	34	31	30	4 to 7-1/2
24	27	38	33	30	28	4 to 8
24	28	37	32	29	28	4 to 8
20	24	36	31	28	27	4 to 8
20	25	34	30	27	26	4 to 8
20	26	33	29	26	25	4 to 8
20	27	32	27	25	24	4 to 8
20	28	31	27	24	23	4 to 8
16	24	29	25	23	22	4 to 8
16	25	28	24	22	21	4 to 8
16	26	27	23	21	20	4 to 8
16	27	26	22	20	20	4 to 8
16	28	25	21	19	19	4 to 8

LOW RANGE INPUT SPROCKET

(Based on 4,500 Seeds Per Lb.)

Sprocket Combinations (Number of Teeth)		Lb. Per Acre				Recommended Speed Range in mph
Driver	Driven	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	23	19	18	17	3 to 5
35	25	23	19	18	17	3 to 5
35	26	22	18	17	16	3 to 5
35	27	21	17	17	16	3 to 5
35	28	20	17	16	15	3 to 5
29	24	20	16	15	15	3 to 5
29	25	19	16	15	14	3 to 5-1/2
29	26	18	15	14	14	3 to 6
29	27	17	14	14	13	3 to 6
29	28	17	14	13	13	3 to 6
24	24	16	13	13	12	4 to 6-1/2
24	25	16	13	12	12	4 to 7
24	26	15	12	12	11	4 to 7-1/2
24	27	14	12	11	10	4 to 8
24	28	14	12	11	10	4 to 8
20	24	13	11	11	10	4 to 8
20	25	13	11	10	10	4 to 8
20	26	12	10	10	9	4 to 8
20	27	12	10	9	9	4 to 8
20	28	12	10	9	9	4 to 8
16	24	11	9	9	8	4 to 8
16	25	10	9	8	8	4 to 8
16	26	10	8	8	8	4 to 8
16	27	10	8	8	8	4 to 8
16	28	9	8	7	7	4 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50484 -19-07OCT02

Sorghum With Low-Rate Feed-Cup—15 in. to 20 in. Rows

{Decal No. DB1104} **SORGHUM WITH LOW-RATE SORGHUM FEED CUP**
 APPROXIMATE LB. PER ACRE OF SORGHUM PLANTED USING LOW-RATE SORGHUM FEED CUP
 NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		(Based on 18,000 Seeds Per Pound) Lb. Per Acre				Recommended Speed Range in mph
		15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	12.2	10.2	9.6	9.2	2 to 4
35	25	11.6	9.8	9.2	8.7	2 to 4
35	26	11.2	9.4	8.8	8.4	2 to 4
35	27	10.8	9.0	8.6	8.1	2 to 4
35	28	10.4	8.6	8.2	7.8	2 to 4
29	24	10.0	8.4	8.0	7.5	2 to 5
29	25	9.6	8.0	7.6	7.2	2 to 5
29	26	9.4	7.8	7.4	7.0	2 to 5
29	27	9.0	7.4	7.0	6.8	2 to 5
29	28	8.8	7.2	6.8	6.4	2 to 5
24	24	8.4	7.0	6.6	6.3	2 to 6
24	25	8.0	6.6	6.4	6.0	2 to 6
24	26	7.8	6.4	6.0	5.8	2 to 6
24	27	7.4	6.2	5.8	5.6	2 to 6
24	28	7.2	6.0	5.6	5.4	2 to 7
20	24	7.0	5.8	5.4	5.2	2 to 7
20	25	6.6	5.6	5.2	5.0	2 to 7
20	26	6.4	5.4	5.0	4.8	2 to 8
20	27	6.2	5.2	4.8	4.6	2 to 8
20	28	6.0	5.0	4.8	4.5	2 to 8
16	24	5.6	4.6	4.4	4.2	2 to 8
16	25	5.4	4.4	4.2	4.0	2 to 8
16	26	5.2	4.2	4.0	3.9	2 to 8
16	27	5.0	4.2	4.0	3.8	2 to 8
16	28	4.8	4.0	3.8	3.6	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		(Based on 18,000 Seeds Per Pound) Lb. Per Acre				Recommended Speed Range in mph
		15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	4.6	3.8	3.6	3.4	2 to 8
35	25	4.4	3.6	3.4	3.3	2 to 8
35	26	4.2	3.6	3.4	3.2	2 to 8
35	27	4.0	3.4	3.2	3.0	2 to 8
35	28	4.0	3.2	3.0	3.0	2 to 8
29	24	3.8	3.2	3.0	2.8	2 to 8
29	25	3.6	3.0	2.8	2.7	2 to 8
29	26	3.4	3.0	2.8	2.6	2 to 8
29	27	3.4	2.8	2.6	2.6	2 to 8
29	28	3.2	2.8	2.6	2.4	2 to 8
24	24	3.2	2.6	2.4	2.4	2 to 8
24	25	3.0	2.6	2.4	2.2	2 to 8
24	26	2.8	2.4	2.2	2.1	2 to 8
24	27	2.8	2.4	2.2	2.1	2 to 8
24	28	2.6	2.2	2.2	2.0	2 to 8
20	24	2.6	2.2	2.0	2.0	2 to 8
20	25	2.6	2.0	2.0	2.0	2 to 8
20	26	2.4	2.0	2.0	1.8	2 to 8
20	27	2.4	2.0	1.8	1.8	2 to 8
20	28	2.2	1.8	1.8	1.6	2 to 8
16	24	2.0	1.8	1.6	1.5	2 to 8
16	25	2.0	1.6	1.6	1.5	2 to 8
16	26	2.0	1.6	1.6	1.5	2 to 8
16	27	1.8	1.6	1.4	1.4	2 to 8
16	28	1.8	1.4	1.4	1.4	2 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Sorghum With Low-Rate Feed-Cup—30 in. to 40 in. Rows

{Decal No. DB1105}

SORGHUM WITH LOW-RATE SORGHUM FEED CUP

APPROXIMATE LB. PER ACRE OF SORGHUM PLANTED USING LOW-RATE SORGHUM FEED CUP

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		(Based on 18,000 Seeds Per Pound) Lb. Per Acre				Recommended Speed Range in mph
		30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	6.1	5.1	4.8	4.6	2 to 4
35	25	5.8	4.9	4.6	4.4	2 to 4
35	26	5.6	4.7	4.4	4.2	2 to 4
35	27	5.4	4.5	4.3	4.1	2 to 4
35	28	5.2	4.3	4.1	3.9	2 to 4
29	24	5.0	4.2	4.0	3.8	2 to 5
29	25	4.8	4.0	3.8	3.6	2 to 5
29	26	4.7	3.9	3.7	3.5	2 to 5
29	27	4.5	3.7	3.5	3.4	2 to 5
29	28	4.3	3.6	3.4	3.2	2 to 5
24	24	4.2	3.5	3.3	3.2	2 to 6
24	25	4.0	3.3	3.2	3.0	2 to 6
24	26	3.9	3.2	3.0	2.9	2 to 6
24	27	3.7	3.1	2.9	2.8	2 to 6
24	28	3.6	3.0	2.8	2.7	2 to 7
20	24	3.5	2.9	2.7	2.6	2 to 7
20	25	3.3	2.8	2.6	2.5	2 to 7
20	26	3.2	2.7	2.5	2.4	2 to 8
20	27	3.1	2.6	2.4	2.3	2 to 8
20	28	3.0	2.5	2.4	2.2	2 to 8
16	24	2.8	2.3	2.2	2.1	2 to 8
16	25	2.7	2.2	2.1	2.0	2 to 8
16	26	2.6	2.1	2.1	2.0	2 to 8
16	27	2.5	2.1	2.0	1.9	2 to 8
16	28	2.4	2.0	1.9	1.8	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		(Based on 18,000 Seeds Per Pound) Lb. Per Acre				Recommended Speed Range in mph
		30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	2.3	1.9	1.8	1.7	2 to 8
35	25	2.2	1.8	1.7	1.6	2 to 8
35	26	2.1	1.8	1.7	1.6	2 to 8
35	27	2.0	1.7	1.6	1.5	2 to 8
35	28	2.0	1.6	1.5	1.5	2 to 8
29	24	1.9	1.6	1.5	1.4	2 to 8
29	25	1.8	1.5	1.4	1.4	2 to 8
29	26	1.7	1.5	1.4	1.3	2 to 8
29	27	1.7	1.4	1.3	1.3	2 to 8
29	28	1.6	1.4	1.3	1.2	2 to 8
24	24	1.6	1.3	1.2	1.2	2 to 8
24	25	1.5	1.3	1.2	1.1	2 to 8
24	26	1.4	1.2	1.1	1.1	2 to 8
24	27	1.4	1.2	1.1	1.1	2 to 8
24	28	1.3	1.1	1.1	1.0	2 to 8
20	24	1.3	1.1	1.0	1.0	2 to 8
20	25	1.3	1.0	1.0	1.0	2 to 8
20	26	1.2	1.0	1.0	.9	2 to 8
20	27	1.2	1.0	.9	.9	2 to 8
20	28	1.1	.9	.9	.8	2 to 8
16	24	1.0	.9	.8	.8	2 to 8
16	25	1.0	.8	.8	.8	2 to 8
16	26	1.0	.8	.8	.8	2 to 8
16	27	.9	.8	.7	.7	2 to 8
16	28	.9	.7	.7	.7	2 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50488 -19-07OCT02

Sorghum With Regular-Rate Feed-Cup—15 in. to 20 in. Rows

{Decal No. DB1106} SORGHUM WITH REGULAR-RATE SORGHUM FEED CUP

APPROXIMATE LB. PER ACRE OF SORGHUM PLANTED USING REGULAR-RATE SORGHUM FEED CUP

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		(Based on 15,000 Seeds Per Pound) Lb. Per Acre				Recommended Speed Range in mph
		15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	65.0	54.2	51.2	48.8	2 to 4
35	25	62.4	52.0	49.2	46.8	2 to 4
35	26	60.0	50.0	47.4	45.0	2 to 4
35	27	57.8	48.2	45.6	43.4	2 to 4
35	28	55.6	46.4	44.0	41.7	2 to 4
29	24	53.8	44.8	42.4	40.4	2 to 5
29	25	51.6	43.0	40.8	38.7	2 to 5
29	26	49.6	41.4	39.2	37.2	2 to 5
29	27	47.8	39.8	37.8	35.8	2 to 5
29	28	46.2	38.4	36.4	34.6	2 to 5
24	24	44.3	37.2	35.2	33.2	2 to 6
24	25	42.8	35.6	33.8	32.1	2 to 6
24	26	41.2	34.2	32.4	30.9	2 to 6
24	27	39.6	33.0	31.2	29.7	2 to 6
24	28	38.2	31.8	30.2	28.6	2 to 7
20	24	37.2	31.0	29.4	27.9	2 to 7
20	25	35.6	29.8	28.2	26.7	2 to 7
20	26	34.2	28.6	27.0	25.6	2 to 8
20	27	33.0	27.6	26.0	24.8	2 to 8
20	28	31.8	26.6	25.2	23.8	2 to 8
16	24	29.8	24.8	23.4	22.4	2 to 8
16	25	28.6	23.8	22.6	21.4	2 to 8
16	26	27.4	22.8	21.6	20.6	2 to 8
16	27	26.4	22.0	20.8	19.8	2 to 8
16	28	25.4	21.2	20.0	19.0	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		(Based on 15,000 Seeds Per Pound) Lb. Per Acre				Recommended Speed Range in mph
		15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	24.4	20.4	19.2	18.3	2 to 8
35	25	23.4	19.4	18.4	17.6	2 to 8
35	26	22.4	18.8	17.8	16.8	2 to 8
35	27	21.6	18.0	17.0	16.2	2 to 8
35	28	20.8	17.4	16.4	15.6	2 to 8
29	24	20.2	16.8	16.0	15.2	2 to 8
29	25	19.4	16.2	15.2	14.6	2 to 8
29	26	18.6	15.6	14.8	14.0	2 to 8
29	27	18.0	15.0	14.2	13.5	2 to 8
29	28	17.4	14.4	13.6	13.0	2 to 8
24	24	16.8	14.0	13.2	12.6	2 to 8
24	25	16.0	13.4	12.6	12.0	2 to 8
24	26	15.4	12.8	12.2	11.6	2 to 8
24	27	14.8	12.4	11.8	11.1	2 to 8
24	28	14.4	12.0	11.4	10.8	2 to 8
20	24	14.0	11.6	11.0	10.5	2 to 8
20	25	13.4	11.2	10.6	10.0	2 to 8
20	26	12.8	10.8	10.2	9.6	2 to 8
20	27	12.4	10.4	9.8	9.3	2 to 8
20	28	12.0	10.0	9.4	9.0	2 to 8
16	24	11.2	9.2	8.8	8.4	2 to 8
16	25	10.6	9.0	8.4	8.0	2 to 8
16	26	10.2	8.6	8.2	7.6	2 to 8
16	27	10.0	8.2	7.8	7.5	2 to 8
16	28	9.6	8.0	7.6	7.2	2 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Sorghum With Regular-Rate Feed-Cup—30 in. to 40 in. Rows

(DB1107)

SORGHUM WITH REGULAR-RATE SORGHUM FEED CUP

AVERAGE LB. PER ACRE OF SORGHUM PLANTED USING REGULAR RATE SORGHUM FEED CUP

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS."

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		(Based on 15,000 Seeds Per Pound) Lb. Per Acre				Recommended Speed Range in mph
Driver	Driven	30 in Rows	36 in Rows	38 in Rows	40 in Rows	
35	24	32.5	27.1	25.6	24.4	2 to 6
35	25	31.2	26.0	24.6	23.4	2 to 6
35	26	30.0	25.0	23.7	22.5	2 to 6
35	27	28.9	24.1	22.8	21.7	2 to 6
35	28	27.8	23.2	22.0	20.9	2 to 6
29	24	26.9	22.4	21.2	20.2	2 to 7
29	25	25.8	21.5	20.4	19.4	2 to 7
29	26	24.8	20.7	19.6	18.6	2 to 7
29	27	20.6	19.9	18.9	17.9	2 to 7
29	28	23.1	19.2	18.2	17.3	2 to 6
24	24	22.2	18.6	17.6	16.6	2 to 8
24	25	21.4	17.8	16.9	16.1	2 to 8
24	26	20.6	17.1	16.2	15.5	2 to 8
24	27	19.8	16.5	15.6	14.9	2 to 8
24	28	19.1	15.9	15.1	14.3	2 to 8
20	24	18.6	15.5	14.7	14.0	2 to 8
20	25	17.9	14.9	14.1	13.4	2 to 8
20	26	17.1	14.2	13.5	12.8	2 to 8
20	27	16.5	13.8	13.0	12.4	2 to 8
20	28	15.9	13.3	12.6	11.9	2 to 8
16	24	14.9	12.4	11.7	11.2	2 to 8
16	25	14.3	11.9	11.3	10.7	2 to 8
16	26	13.7	11.4	10.8	10.3	2 to 8
16	27	13.2	11.0	10.4	9.9	2 to 8
16	28	12.7	10.6	10.0	9.5	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		(Based on 15,000 Seeds Per Pound) Lb. Per Acre				Recommended Speed Range in mph
Driver	Driven	30 in Rows	36 in Rows	38 in Rows	40 in Rows	
35	24	12.2	10.2	9.6	9.2	2 to 8
35	25	11.7	9.7	9.2	8.8	2 to 8
35	26	11.2	9.4	8.9	8.4	2 to 8
35	27	10.8	9.0	8.5	8.1	2 to 8
35	28	10.4	8.7	8.2	7.8	2 to 8
29	24	10.1	8.4	8.0	7.6	2 to 8
29	25	9.7	8.1	7.6	7.3	2 to 8
29	26	9.3	7.8	7.4	6.8	2 to 8
29	27	9.0	7.5	7.1	6.8	2 to 8
29	28	8.7	7.2	6.8	6.5	2 to 8
24	24	8.4	7.0	6.6	6.3	2 to 8
24	25	8.0	6.7	6.3	6.0	2 to 8
24	26	7.7	6.4	6.1	5.8	2 to 8
24	27	7.4	6.2	5.9	5.6	2 to 8
24	28	7.2	6.0	5.7	5.4	2 to 8
20	24	7.0	5.8	5.5	5.2	2 to 8
20	25	6.7	5.6	5.3	5.0	2 to 8
20	26	6.4	5.4	5.1	4.8	2 to 8
20	27	6.2	5.2	4.9	4.6	2 to 8
20	28	6.0	5.0	4.7	4.5	2 to 8
16	24	5.6	4.6	4.4	4.2	2 to 8
16	25	5.3	4.5	4.2	4.0	2 to 8
16	26	5.1	4.3	4.1	3.8	2 to 8
16	27	5.0	4.1	3.9	3.8	2 to 8
16	28	4.8	4.0	3.8	3.6	2 to 8

A50494 -19-07OCT02

Edible Beans or Large Soybeans With Edible Bean Feed-Cup—15 in. to 20 in. Rows

{Decal No. DB1108} EDIBLE BEANS OR LARGE SOYBEANS WITH EDIBLE BEAN FEED CUP

APPROXIMATE LB. PER ACRE OF EDIBLE BEANS OR LARGE SOYBEANS PLANTED USING EDIBLE BEAN FEED CUP

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Lb. of Medium Beans* Per Acre				Lb. of Large Beans** Per Acre				Recommended Speed Range in mph
		15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	708	590	558	531	548	456	432	411	2 to 4
35	25	680	566	536	510	526	438	416	395	2 to 4
35	26	654	544	516	491	506	422	400	368	2 to 4
35	27	630	524	496	473	486	406	384	365	2 to 4
35	28	606	506	478	455	470	392	370	353	2 to 4
29	24	586	488	462	440	454	378	358	341	2 to 5
29	25	562	470	444	422	436	364	344	327	2 to 5
29	26	542	452	428	407	418	350	330	314	2 to 5
29	27	522	434	412	392	404	336	318	303	2 to 5
29	28	502	418	396	377	388	324	308	291	2 to 5
24	24	486	404	384	365	376	312	296	282	2 to 6
24	25	466	388	368	350	360	300	284	270	2 to 6
24	26	448	374	354	336	346	288	274	260	2 to 6
24	27	432	360	340	324	334	278	264	251	2 to 6
24	28	416	346	328	312	322	268	254	242	2 to 7
20	24	404	338	320	303	312	260	248	234	2 to 7
20	25	388	324	306	291	300	250	238	225	2 to 7
20	26	374	312	294	281	288	240	228	216	2 to 8
20	27	360	300	284	270	278	232	220	209	2 to 8
20	28	346	288	274	260	268	224	212	201	2 to 8
16	24	334	270	256	251	250	208	198	188	2 to 8
16	25	310	258	246	233	240	200	190	180	2 to 8
16	26	298	248	236	224	232	192	182	174	2 to 8
16	27	288	240	228	216	222	186	176	167	2 to 8
16	28	278	232	218	208	214	178	170	161	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Lb. of Medium Beans* Per Acre				Lb. of Large Beans** Per Acre				Recommended Speed Range in mph
		15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	15 In. Rows	18 In. Rows	19 In. Rows	20 In. Rows	
35	24	266	222	210	200	206	172	162	155	2 to 4
35	25	254	212	202	191	198	164	156	149	2 to 4
35	26	244	204	194	183	190	158	150	119	2 to 4
35	27	236	196	186	177	182	152	144	137	2 to 4
35	28	228	190	180	171	176	146	138	132	2 to 4
29	24	220	184	174	165	170	142	134	128	2 to 5
29	25	212	176	166	159	164	136	128	123	2 to 5
29	26	202	170	160	152	158	130	122	119	2 to 5
29	27	196	162	154	147	152	126	120	114	2 to 5
29	28	188	158	148	141	146	122	116	110	2 to 5
24	24	182	152	144	137	140	118	112	105	2 to 6
24	25	174	146	138	131	136	112	106	102	2 to 6
24	26	168	140	132	126	130	108	102	98	2 to 6
24	27	162	134	128	122	126	104	98	95	2 to 6
24	28	156	130	124	117	120	100	96	90	2 to 7
20	24	152	126	120	114	118	98	92	89	2 to 7
20	25	146	122	114	110	112	94	88	84	2 to 7
20	26	140	116	111	105	108	90	86	81	2 to 8
20	27	134	112	106	101	104	86	82	78	2 to 8
20	28	130	108	102	98	100	84	80	75	2 to 8
16	24	122	102	96	92	94	78	74	71	2 to 8
16	25	116	98	92	87	90	76	72	68	2 to 8
16	26	112	94	88	84	86	72	68	65	2 to 8
16	27	108	90	86	81	84	70	66	63	2 to 8
16	28	104	86	82	78	80	68	64	60	2 to 8

* Medium beans include kidney beans at approximately 1000 seeds/lb., pinto beans at approximately 1100 seeds/lb., pink beans at approximately 1400 seeds/lb., or other beans of similar size and shape.

** Large beans include varieties which run approximately 400 seeds per lb., such as lima beans.

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Edible Beans or Large Soybeans With Edible Bean Feed-Cup—30 in. to 40 in. Rows

{Decal No. DB1109} EDIBLE BEAN FEED CUP (EDIBLE BEANS OR LARGE SOYBEANS)

APPROXIMATE LB. PER ACRE OF EDIBLE BEANS OR LARGE SOYBEANS PLANTED WITH FINGER PICKUP WHEN USING EDIBLE BEAN FEED CUP

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Lb. of Medium Beans* Per Acre				Lb. of Large Beans** Per Acre				Recommended Speed Range in mph
		30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	354	295	279	266	274	228	216	206	2 to 4
35	25	340	283	268	255	263	219	208	197	2 to 4
35	26	327	272	258	245	253	211	200	190	2 to 4
35	27	315	262	248	236	243	203	192	182	2 to 4
35	28	303	253	239	227	235	196	185	176	2 to 4
29	24	293	244	231	220	227	189	179	170	2 to 5
29	25	281	235	222	211	218	182	172	164	2 to 5
29	26	271	226	214	203	209	175	165	157	2 to 5
29	27	261	217	206	196	202	168	159	152	2 to 5
29	28	251	209	198	188	194	162	154	146	2 to 5
24	24	243	202	192	182	188	156	148	141	2 to 6
24	25	233	194	184	175	180	150	142	135	2 to 6
24	26	224	187	177	168	173	144	137	130	2 to 6
24	27	216	180	170	162	167	139	132	125	2 to 6
24	28	208	173	164	156	161	134	127	121	2 to 7
20	24	202	169	160	152	156	130	124	117	2 to 7
20	25	194	162	153	146	150	125	119	113	2 to 7
20	26	187	156	147	140	144	120	114	108	2 to 8
20	27	180	150	142	135	139	116	110	104	2 to 8
20	28	173	144	137	130	134	112	106	100	2 to 8
16	24	162	135	128	122	125	104	99	94	2 to 8
16	25	155	129	123	116	120	100	95	90	2 to 8
16	26	149	124	118	112	116	96	91	87	2 to 8
16	27	144	120	114	108	111	93	88	83	2 to 8
16	28	139	116	109	104	107	89	85	80	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Lb. of Medium Beans* Per Acre				Lb. of Large Beans** Per Acre				Recommended Speed Range in mph
		30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	133	111	105	100	103	86	81	77	2 to 4
35	25	127	106	101	95	99	82	78	74	2 to 4
35	26	122	102	97	92	95	79	75	71	2 to 4
35	27	118	98	93	89	91	76	72	68	2 to 4
35	28	114	95	90	86	88	73	69	66	2 to 4
29	24	110	92	87	82	85	71	67	64	2 to 5
29	25	106	88	83	80	82	68	64	62	2 to 5
29	26	101	85	80	76	79	65	62	59	2 to 5
29	27	98	81	77	74	76	63	60	57	2 to 5
29	28	94	79	74	70	73	61	58	55	2 to 5
24	24	91	76	72	68	70	59	56	52	2 to 6
24	25	87	73	69	65	68	56	53	51	2 to 6
24	26	84	70	66	63	65	54	51	49	2 to 6
24	27	81	67	64	61	63	52	49	47	2 to 6
24	28	78	65	62	58	60	50	48	45	2 to 7
20	24	76	63	60	57	59	49	46	44	2 to 7
20	25	73	61	57	55	56	47	44	42	2 to 7
20	26	70	58	55	52	54	45	43	40	2 to 8
20	27	67	56	53	50	52	43	41	39	2 to 8
20	28	65	54	51	49	50	42	40	38	2 to 8
16	24	61	51	48	46	47	39	37	35	2 to 8
16	25	58	49	46	44	45	38	36	34	2 to 8
16	26	56	47	44	42	43	36	34	32	2 to 8
16	27	54	45	43	41	42	35	33	32	2 to 8
16	28	52	43	41	39	40	34	32	30	2 to 8

* Medium beans include kidney beans at approximately 1000 seeds/lb., pinto beans at approximately 1100 seeds/lb., pink beans at approximately 1400 seeds/lb., or other beans of similar size and shape.

** Large beans include varieties which run approximately 400 seeds per lb., such as lima beans.

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

A50499 -19-16MAR04

Radial Bean Meter Rate Charts

Radial Bean Meter Operating Characteristics

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

The operating band illustrates how a radial bean metering unit performs with regard to desired population (indicated by the horizontal line). The width of the band is due to various sizes and shapes of seeds.

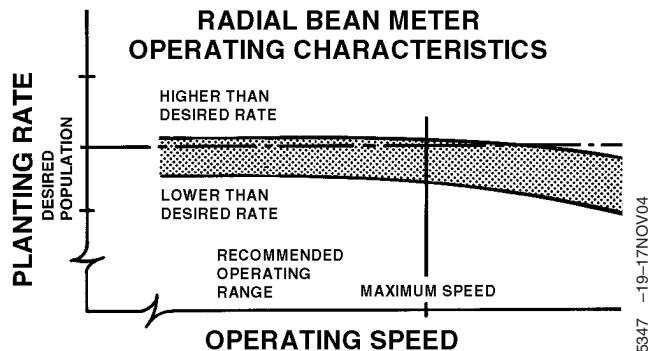
IMPORTANT: To prevent planting miscalculations, perform field checks to determine if the desired rate is being planted.

IMPORTANT: Replace hopper lids after hoppers have been filled. If lids are left off, dust and dirt can accumulate in seed metering mechanism, causing excessive wear.

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

Large beans may result in lower rates than those in the chart at higher planting speeds. Small beans may give somewhat higher rates at lower planting speeds. Actual rates **MUST** be checked in the field at planting speed, and machine settings changed 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 setting for smallest seed size.



Continued on next page

AG,OUO6074,1266 -19-28JUN05-1/3

IMPORTANT: If farmer-applied treatments are used, follow chemical manufacturer's recommendations carefully. Dry powder or fast drying liquid treatments are generally 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 as well as whether or not beans are coated with seed treatment. These factors, in combination with variations in seed size, can result in differences between rates given in charts versus what is actually planted.

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

The best way to determine if a radial bean meter is delivering the correct rate is to actually check population in the field. See Checking 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 being used. This will 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

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

AG,OUO6074,1266 -19-28JUN05-3/3

How to Use Planting Rate Charts

IMPORTANT: The actual planting rate must be checked in the field. See CHECKING SEED POPULATION section.

NOTE: All rates in the following charts are based on typical drive wheel slippage. Drive wheel slippage is affected by crop residue, unit downforce, tire pressure and soil conditions.

1. Select desired row spacing and seed population under proper column.

2. Choose proper input sprocket:

A higher population will require the use of the high-range input sprocket and HIGH RANGE chart for that particular seed.

A lower population will require the use of the low range input sprocket and LOW RANGE chart for that particular seed.

3. Determine correct seed drive transmission sprocket combination.

4. Determine recommended planting speed range. The faster speed, in the speed range, is for optimum field conditions. Reduce speed and increase unit downforce if planting in rough conditions.

AG,OUO6074,1267 -19-12JAN06-1/1

Use of Powdered Graphite

See Use of Talc and Graphite Lubricants section.

OUO6074,0000E67 -19-11JAN06-1/1

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.

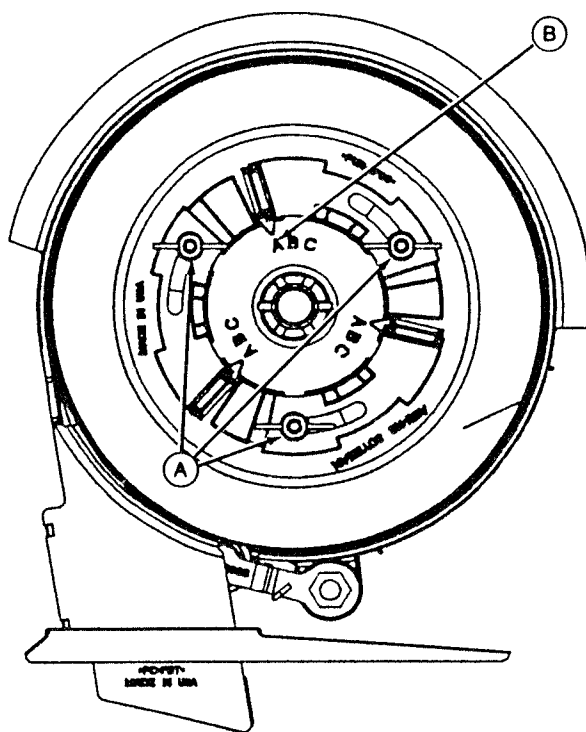
Loosen nuts (A) and align indicator with the corresponding letter (B) listed according to soybean size.

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.



A—Nut
B—Letter Indicator

A40338 -UN-17OCT96

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 -19-12JAN06-2/2

Soybeans—18 in. to 22 in. Rows

SOYBEANS WITH RADIAL BEAN METER
AVERAGE SEED SPACING IN INCHES AND/OR APPROXIMATE
SEED POPULATION PER ACRE OF SOYBEANS

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS."

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing Inches	Approximate Seed Population Per Acre			Recommended Speed Range in mph
			18 in Rows	19 in Rows	22 in Rows	
35	24	0.80	436 874	413 880	357 442	2 to 6
35	25	0.83	419 399	397 325	343 144	2 to 6
35	26	0.86	403 268	382 043	329 947	2 to 6
35	27	0.90	388 332	367 894	317 726	2 to 6
35	28	0.93	374 463	354 755	306 379	2 to 6
29	24	0.96	361 981	342 929	296 166	2 to 7
29	25	1.00	347 502	329 212	284 320	2 to 7
29	26	1.04	334 136	316 650	273 384	2 to 7
29	27	1.08	321 761	304 826	263 259	2 to 7
29	28	1.12	310 269	293 940	253 857	2 to 8
24	24	1.16	299 571	283 804	245 103	2 to 8
24	25	1.21	287 588	272 452	235 299	2 to 8
24	26	1.26	276 527	261 973	226 249	2 to 8
24	27	1.31	266 285	252 270	217 869	2 to 8
24	28	1.36	256 776	243 260	210 088	2 to 8
20	24	1.40	249 642	236 503	204 253	2 to 8
20	25	1.45	239 656	227 043	196 083	2 to 8
20	26	1.51	230 439	218 311	188 541	2 to 8
20	27	1.57	221 904	210 225	181 558	2 to 8
20	28	1.63	213 979	202 717	175 074	2 to 8
16	24	1.74	198 714	189 202	163 402	2 to 8
16	25	1.82	191 725	181 634	156 866	2 to 8
16	26	1.89	184 351	174 648	150 833	2 to 8
16	27	1.96	177 523	168 180	145 246	2 to 8
16	28	2.04	171 183	162 174	140 059	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing Inches	Approximate Seed Population Per Acre			Recommended Speed Range in mph
			18 in Rows	19 in Rows	22 in Rows	
35	24	2.13	163 828	155 205	134 041	2 to 8
35	25	2.22	157 275	148 997	128 679	2 to 8
35	26	2.30	151 226	143 286	123 730	2 to 8
35	27	2.39	145 625	137 960	119 147	2 to 8
35	28	2.48	140 240	133 033	114 892	2 to 8
29	24	2.57	135 743	128 599	111 062	2 to 8
29	25	2.67	130 313	123 455	106 620	2 to 8
29	26	2.78	125 301	118 706	102 519	2 to 8
29	27	2.89	120 660	114 310	98 722	2 to 8
29	28	3.00	116 351	110 227	95 196	2 to 8
24	24	3.10	112 339	106 426	91 914	2 to 8
24	25	3.23	107 845	102 169	88 237	2 to 8
24	26	3.36	103 697	98 240	84 843	2 to 8
24	27	3.49	99 857	94 601	81 701	2 to 8
24	28	3.62	96 291	91 223	78 783	2 to 8
20	24	3.72	93 616	88 689	76 595	2 to 8
20	25	3.88	89 871	85 141	73 531	2 to 8
20	26	4.03	86 415	81 866	70 703	2 to 8
20	27	4.19	83 214	78 834	68 084	2 to 8
20	28	4.34	80 242	76 019	65 653	2 to 8
16	24	4.65	74 893	70 951	61 276	2 to 8
16	25	4.85	71 897	68 113	58 825	2 to 8
16	26	5.04	69 132	65 493	56 562	2 to 8
16	27	5.23	66 571	63 067	54 467	2 to 8
16	28	5.43	64 194	60 815	52 522	2 to 8

A50504 -19-07OCT02

Soybeans—15 in. to 30 in. Rows

{Decal No. DB 1328}

SOYBEANS WITH RADIAL BEAN METER - 56 CELLS

AVERAGE SEEDS SPACING IN INCHES AND/OR APPROXIMATE
SEED POPULATION PER ACRE OF SOYBEANS

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing Inches	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Tran Driver	Tran Driven		15 in Rows	20 in Rows	30 in Rows	
35	24	0.80	524 248	393 186	262 124	2 to 6
35	25	0.83	503 278	377 459	251 639	2 to 6
35	26	0.86	483 922	362 941	241 961	2 to 6
35	27	0.90	465 999	349 499	232 999	2 to 6
35	28	0.93	449 356	337 017	224 678	2 to 6
29	24	0.96	434 377	325 783	217 189	2 to 7
29	25	1.00	417 002	312 752	208 501	2 to 7
29	26	1.04	400 964	300 723	200 482	2 to 7
29	27	1.08	386 113	289 585	193 057	2 to 7
29	28	1.12	372 323	279 243	186 162	2 to 8
24	24	1.16	359 485	269 613	179 742	2 to 8
24	25	1.21	345 105	258 829	172 553	2 to 8
24	26	1.26	331 832	248 874	165 916	2 to 8
24	27	1.31	319 542	239 656	159 771	2 to 8
24	28	1.36	308 130	231 097	154 065	2 to 8
20	24	1.40	299 571	224 678	149 785	2 to 8
20	25	1.45	287 588	215 691	143 794	2 to 8
20	26	1.51	276 527	207 395	138 263	2 to 8
20	27	1.57	266 285	199 714	133 142	2 to 8
20	28	1.63	256 775	192 581	128 387	2 to 8
16	24	1.74	239 656	179 742	119 828	2 to 8
16	25	1.82	230 070	172 553	115 035	2 to 8
16	26	1.89	221 221	165 916	110 611	2 to 8
16	27	1.96	213 028	159 771	106 514	2 to 8
16	28	2.04	205 420	154 065	102 710	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing Inches	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Tran Driver	Tran Driven		15 in Rows	20 in Rows	30 in Rows	
35	24	2.13	196 593	147 445	98 297	2 to 8
35	25	2.22	188 729	141 547	94 365	2 to 8
35	26	2.30	181 471	136 103	90 735	2 to 8
35	27	2.39	174 749	131 062	87 375	2 to 8
35	28	2.48	168 508	126 381	84 254	2 to 8
29	24	2.57	162 891	122 169	81 446	2 to 8
29	25	2.67	156 376	117 282	78 188	2 to 8
29	26	2.78	150 361	112 771	75 181	2 to 8
29	27	2.89	144 792	108 594	72 396	2 to 8
29	28	3.00	139 621	104 716	69 811	2 to 8
24	24	3.10	134 807	101 105	67 403	2 to 8
24	25	3.23	129 414	97 061	64 707	2 to 8
24	26	3.36	124 437	93 328	62 218	2 to 8
24	27	3.49	119 828	89 871	59 914	2 to 8
24	28	3.62	115 549	86 661	57 774	2 to 8
20	24	3.72	112 339	84 254	56 169	2 to 8
20	25	3.88	107 845	80 884	53 923	2 to 8
20	26	4.03	103 697	77 773	51 849	2 to 8
20	27	4.19	99 857	74 893	49 928	2 to 8
20	28	4.34	96 291	72 218	48 145	2 to 8
16	24	4.65	89 871	67 403	44 936	2 to 8
16	25	4.85	86 276	64 707	43 138	2 to 8
16	26	5.04	82 958	62 218	41 479	2 to 8
16	27	5.23	79 885	59 914	39 943	2 to 8
16	28	5.43	77 032	57 774	38 516	2 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

Soybeans—36 in. to 40 in. Rows

{Decal No. DB 1329}

SOYBEANS WITH RADIAL BEAN METER - 56 CELLS

AVERAGE SEEDS SPACING IN INCHES AND/OR APPROXIMATE
SEED POPULATION PER ACRE OF SOYBEANS

NOTE: For information on using planting rate charts, see "HOW TO USE PLANTING RATE CHARTS".

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing Inches	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Tran Driver	Tran Driven		36 in Rows	38 in Rows	40 in Rows	
35	24	0.80	218 437	206 940	196 593	2 to 6
35	25	0.83	209 699	198 663	188 729	2 to 6
35	26	0.86	201 634	191 022	181 471	2 to 6
35	27	0.90	194 166	183 947	174 749	2 to 6
35	28	0.93	187 232	177 377	168 508	2 to 6
29	24	0.96	180 991	171 465	162 891	2 to 7
29	25	1.00	173 751	164 606	156 376	2 to 7
29	26	1.04	167 068	158 275	150 361	2 to 7
29	27	1.08	160 880	152 413	144 792	2 to 7
29	28	1.12	155 135	146 970	139 621	2 to 8
24	24	1.16	149 785	141 902	134 807	2 to 8
24	25	1.21	143 794	136 226	129 414	2 to 8
24	26	1.26	138 263	130 986	124 437	2 to 8
24	27	1.31	133 142	126 135	119 828	2 to 8
24	28	1.36	128 387	121 630	115 549	2 to 8
20	24	1.40	124 821	118 252	112 339	2 to 8
20	25	1.45	119 828	113 521	107 845	2 to 8
20	26	1.51	115 219	109 155	103 697	2 to 8
20	27	1.57	110 952	105 112	99 857	2 to 8
20	28	1.63	106 989	101 358	96 291	2 to 8
16	24	1.74	99 857	94 601	89 871	2 to 8
16	25	1.82	95 863	90 817	86 276	2 to 8
16	26	1.89	92 176	87 324	82 958	2 to 8
16	27	1.96	88 762	84 090	79 885	2 to 8
16	28	2.04	85 592	81 087	77 032	2 to 8

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth)		Average Seed Spacing Inches	Approximate Seed Population Per Acre			Recommended Speed Range in mph
Tran Driver	Tran Driven		36 in Rows	38 in Rows	40 in Rows	
35	24	2.13	81 914	77 603	73 722	2 to 8
35	25	2.22	78 637	74 498	70 774	2 to 8
35	26	2.30	75 613	71 633	68 051	2 to 8
35	27	2.39	72 812	68 980	65 531	2 to 8
35	28	2.48	70 212	66 516	63 191	2 to 8
29	24	2.57	67 871	64 299	61 084	2 to 8
29	25	2.67	65 157	61 727	58 641	2 to 8
29	26	2.78	62 651	59 353	56 386	2 to 8
29	27	2.89	60 330	57 155	54 297	2 to 8
29	28	3.00	58 176	55 114	52 358	2 to 8
24	24	3.10	56 169	53 213	50 553	2 to 8
24	25	3.23	53 923	51 085	48 530	2 to 8
24	26	3.36	51 849	49 120	46 664	2 to 8
24	27	3.49	49 928	47 301	44 936	2 to 8
24	28	3.62	48 145	45 611	43 331	2 to 8
20	24	3.72	46 808	44 344	42 127	2 to 8
20	25	3.88	44 936	42 571	40 442	2 to 8
20	26	4.03	43 207	40 933	38 887	2 to 8
20	27	4.19	41 607	39 417	37 446	2 to 8
20	28	4.34	40 121	38 009	36 109	2 to 8
16	24	4.65	37 446	35 475	33 702	2 to 8
16	25	4.85	35 948	34 056	32 354	2 to 8
16	26	5.04	34 566	32 747	31 109	2 to 8
16	27	5.23	33 286	31 534	29 957	2 to 8
16	28	5.43	32 097	30 408	28 887	2 to 8

IMPORTANT: To prevent planting miscalculations, make field checks to be sure you are planting at desired rate.

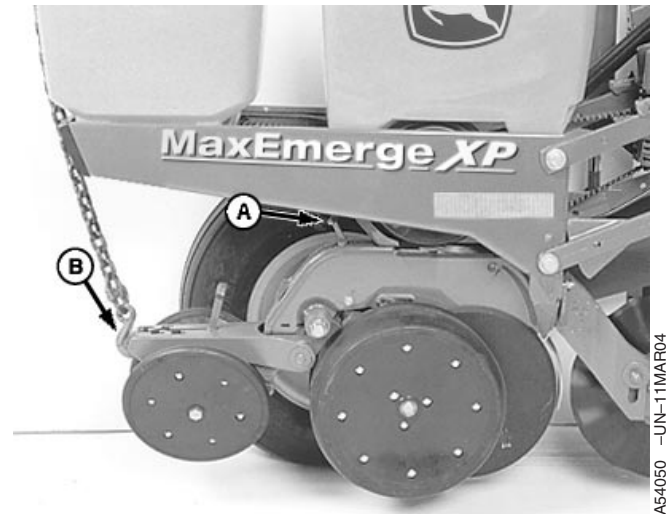
A50501 -19-04OCT02

Checking Seed Population

Checking Seed Population

NOTE: When planting at a shallow depth with the closing wheels raised, seeds may tend to roll or bounce. This will affect seed spacing accuracy.

1. Attach chain (B) to one or more sets of closing wheels, so seed trench remains open.
2. Set depth-adjusting handle (A) two settings from minimum setting.
3. Plant a short distance and check to see if seeds are visible in trench. Adjust depth-adjusting handle if necessary.
4. Plant approximately 91 m (100 yd).
5. Consult charts and determine what distance equals 1/1000 of a hectare, 1/1000 of an acre or 1/200 of an acre as it relates to the row width being planted.



A—Depth-Adjusting Handle
B—Chain

Distance to Plant for Population Check									
	Row Width Being Planted								
Fraction of Acre	15 in.	18 in.	19 in.	20 in.	22 in.	30 in.	36 in.	38 in.	40 in.
1/1000 if population is more than 100 000 seeds/acre	34.8 ft	24.0 ft	27.6 ft	26.1 ft	23.8 ft	17.4 ft	14.5 ft	13.8 ft	13.1 ft
1/200 if population is less than 100 000 seeds/acre	174 ft	145 ft	138 ft	131 ft	119 ft	87 ft	72.5 ft	69 ft	66 ft

Distance to Plant for Population Check										
	Row Width Being Planted									
Fraction of Hectare	38 cm	46 cm	48 cm	51 cm	56 cm	70 cm	76 cm	91 cm	97 cm	101 cm
1/1000	26.24 m	21.88 m	20.72 m	19.68 m	17.90 m	14.29 m	13.12 m	10.94 m	10.36 m	9.84 m

Continued on next page

OUC6074,0000A0B -19-19APR05-1/2

6. Mark distance selected with flags (A).

NOTE: When planting at a shallow depth with closing wheels raised, seeds may tend to roll or bounce. This will affect seed spacing accuracy.

7. Count seeds (B) between flags.

8. If 1/1000 of an acre was marked off, multiply number of seeds counted by 1000.

If 1/200 of an acre was marked off, multiply number of seeds counted by 200.

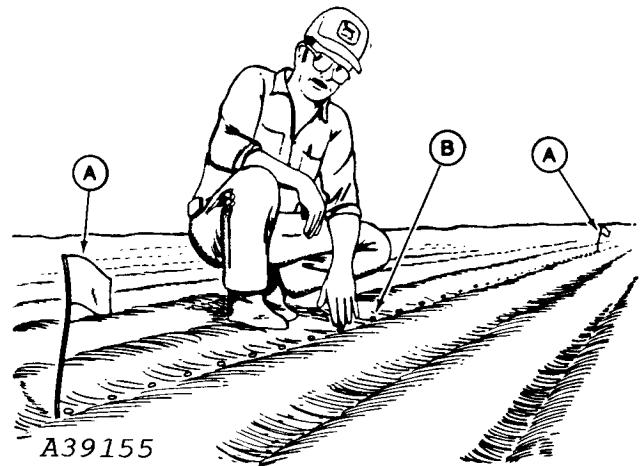
If 1/1000 of a hectare was marked off, multiply number of seeds counted by 1000.

If in-field checks indicate that machine is planting at a rate significantly different than seed transmission rate chart indicates, investigate the following in the order listed:

1. Ensure that ALL transmission sprockets are set according to rate chart.
2. Excessive unit bounce can cause low population and reduced spacing control. Increase unit down force or drive slower to reduce excessive unit bounce.
3. Ensure that machine drive-wheel slippage is close to normal. Crop residue, tire inflation pressure, soil conditions and unit down force can cause variations in drive-wheel slippage.

FOR VACUUM METER ONLY:

If all other settings are correct and if population is too high, vacuum level can be reduced in one inch increments until correct population is achieved. If actual population is too low, vacuum level can be increased in half inch to one inch increments until correct population is achieved.



A—Flag
B—Seeds

A39155 -UN-13FEB96

Drive-Wheel Slippage—Machines with Seed Transmission

Another item that may cause actual rates of seed or fertilizer to differ from delivery rates shown in the operator's manual is the amount of drive-wheel slippage.

While a certain amount of wheel slippage is normal, excessive drive-wheel slippage may cause undesirable changes in actual rates.

The rates shown in the operator's manual are based on approximately 12 percent drive wheel slippage.

Excessive drive-wheel slippage may be caused by binding or poorly lubricated parts, misaligned bearings or caked material in pesticide or fertilizer hoppers.

Down pressure springs, coulters, tine tooth attachments, or any other attachment that removed weight from drive wheels, may contribute to drive-wheel slippage and lower than expected rates.

Continued on next page

AG,OUO6074,1270 –19–04AUG00–1/2

The amount of excessive drive-wheel slippage can be calculated.

1. Mark a length of field that would normally represent 30 drive wheel revolutions. Use the following formula to calculate the length of field to drive.

FORMULA:

Revolutions x Drive Wheel Rolling Circumference =
Length of Field to Drive

EXAMPLE:

- 30 revolutions x 2.5 m = 75 m
- 30 revolutions x 8.3 ft = 250 ft

2. Mark drive wheel with a rubber hold-down strap, reflective tape or duct tape. This will help to count wheel revolutions.
3. With all rows planting under normal field conditions, drive a 76 m (250 ft) course at normal planting speed while another person counts drive-wheel revolutions.
4. Subtract number of revolutions observed over the course length from 30. Then divide this difference by 30.

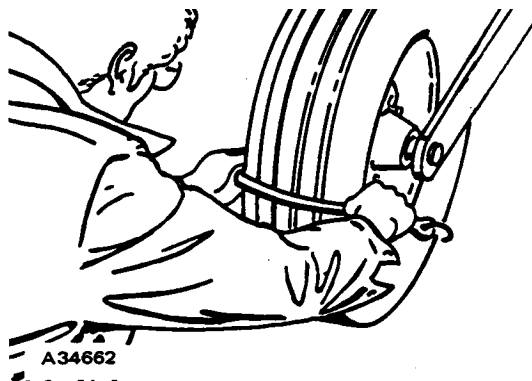
EXAMPLE:

If 28 wheel revolutions are observed, there is 6.6 percent drive-wheel slippage.

$$30 - 28 = 2$$

$$2 \div 30 = 0.066$$

If drive-wheel slippage is greater than or less than 12 percent (baseline slippage), adjust seed transmission to obtain desired population.



A34662 -JUN-10OCT88

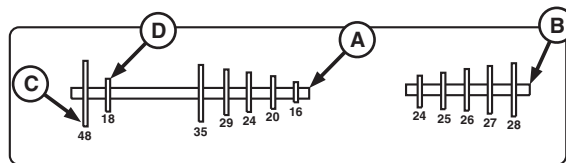
Seed Transmission 1700-1710-1720-1730-1750

Changing Input Sprocket Combinations

A56188 -UN-12APR05

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

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

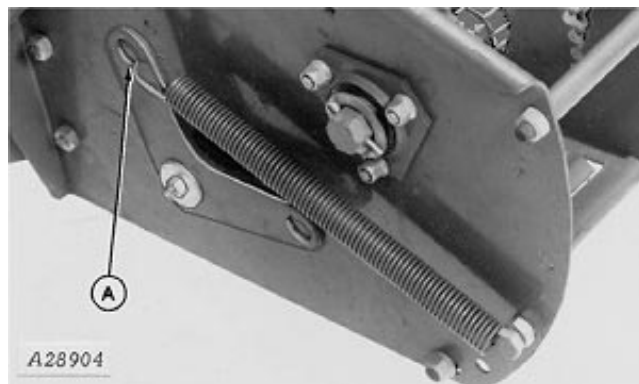


Number of Sprocket Teeth

OUO1074,00001B6 -19-12APR05-1/5

2. Remove spring (A) from chain tightener.

A—Spring

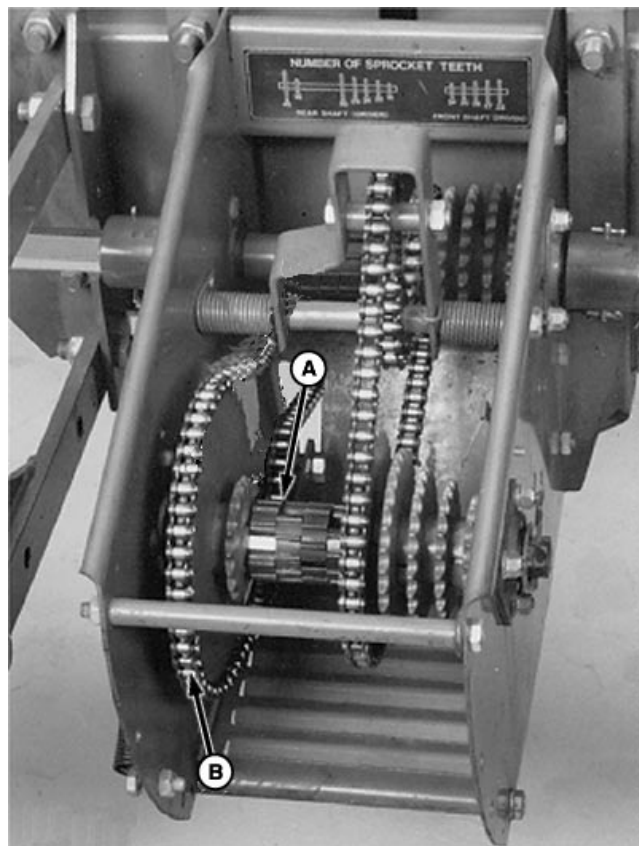


A28904 -UN-14OCT88

OUO1074,00001B6 -19-12APR05-2/5

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

A—Rubber Sprocket Spacers
B—Chain



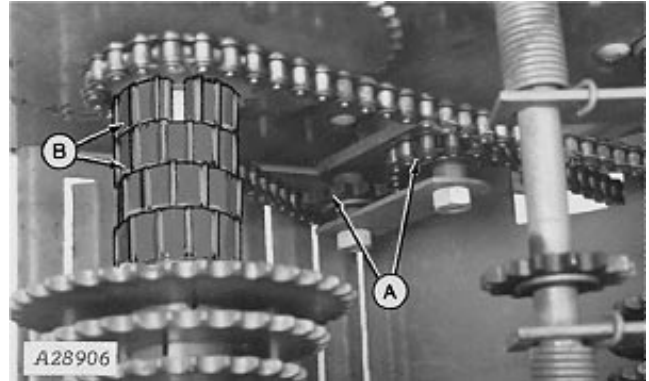
A47173 -UN-16MAR01

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OUO1074,00001B6 -19-12APR05-3/5

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

A—Sprockets
B—Rubber Sprocket Spacers

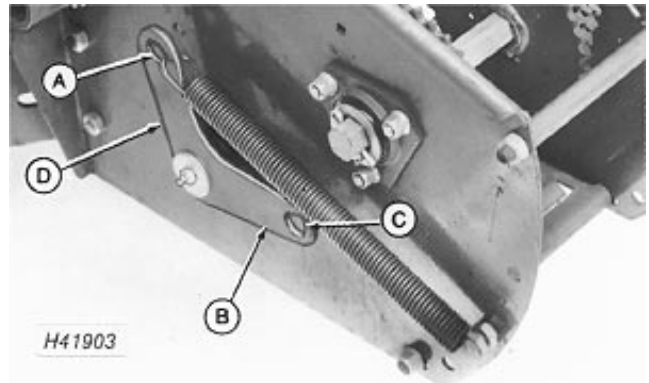


A28906 -UN-14OCT88

OUO1074,00001B6 -19-12APR05-4/5

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.

A—Hole
B—Arm
C—Hole
D—Arm



H41903 -UN-03MAY90

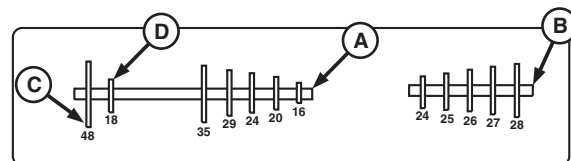
OUO1074,00001B6 -19-12APR05-5/5

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.

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

A56188 -UN-12APR05



Number of Sprocket Teeth

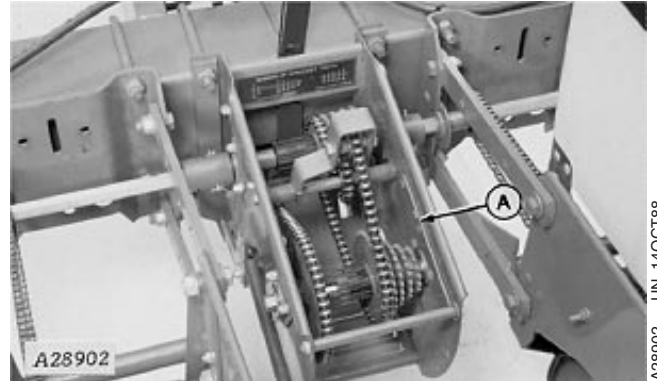
A—Rear Shaft (Driver)
B—Front Shaft (Driven)
C—Low Range
D—High Range

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OUO1074,00001B7 -19-09SEP05-1/3

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

A—Hook

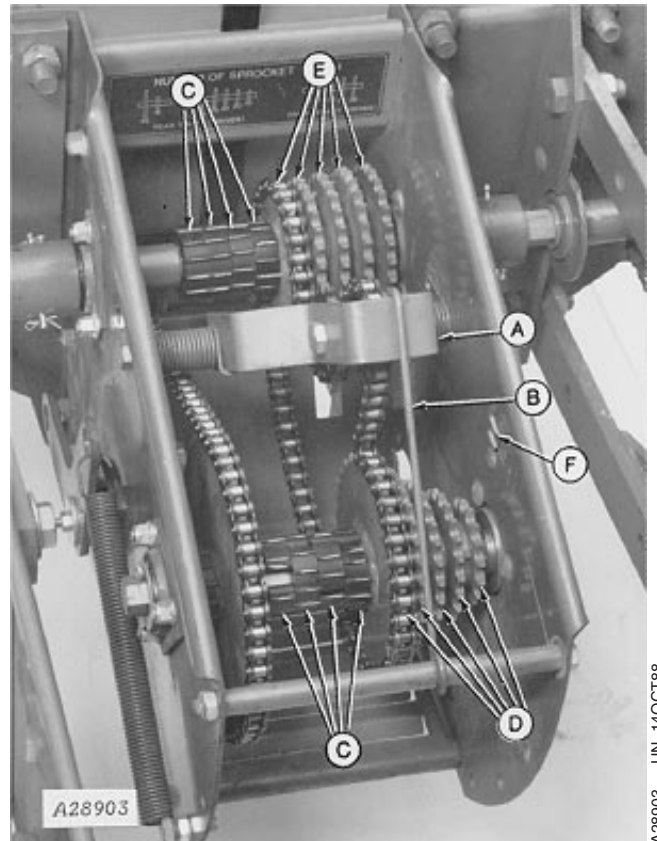


OUO1074,00001B7 -19-09SEP05-2/3

A28902 -UN-14OCT88

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.

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



OUO1074,00001B7 -19-09SEP05-3/3

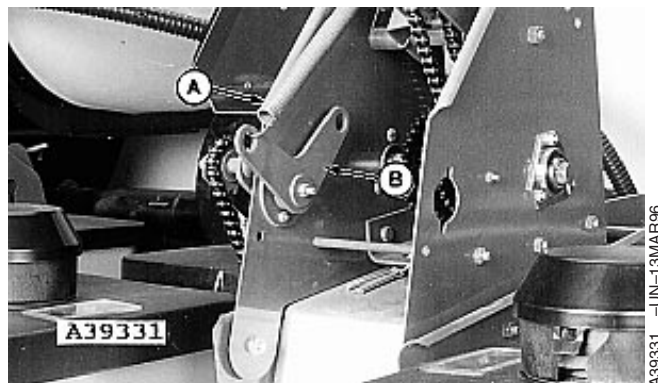
A28903 -UN-14OCT88

Seed Transmission 1760-1760NT-1770 12 Row

Changing Input Sprocket Combinations—Seed Transmission

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

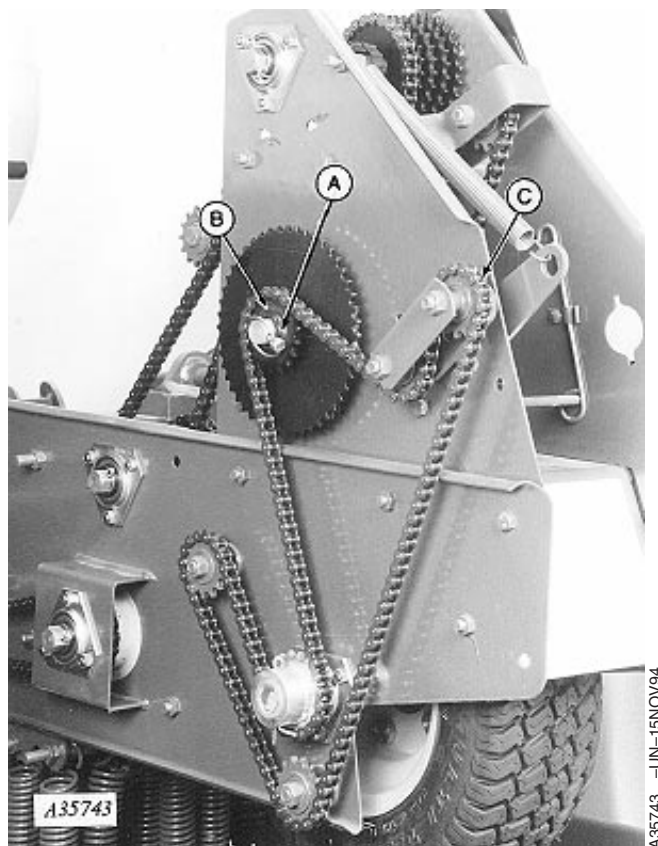
A—Spring
B—Chain Tightener



OUO1011,000500F -19-16FEB04-1/3

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.

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

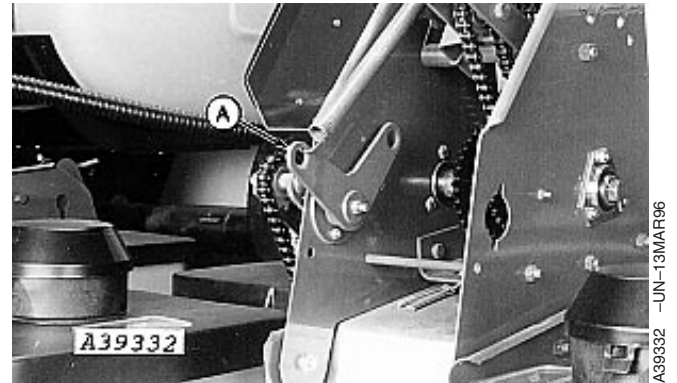


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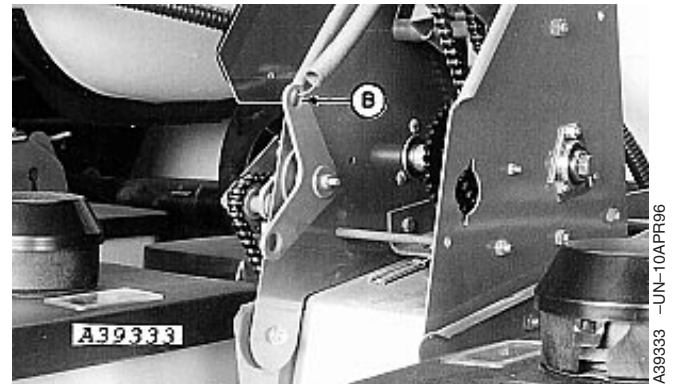
OUO1011,000500F -19-16FEB04-2/3

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.

A—Hole
B—Hole



High-Range



Low-Range

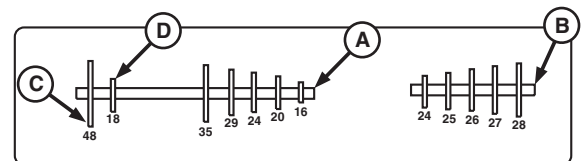
OUO1011.000500F -19-16FEB04-3/3

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.

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

A56188 -UN-12APR05



Number of Sprocket Teeth

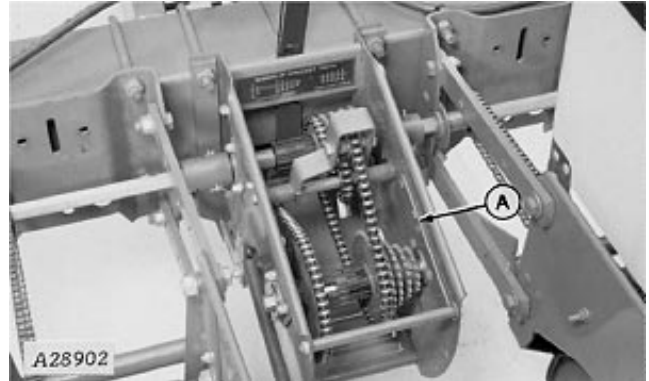
A—Rear Shaft (Driver)
B—Front Shaft (Driven)
C—Low Range
D—High Range

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OUO1074.00001B7 -19-09SEP05-1/3

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

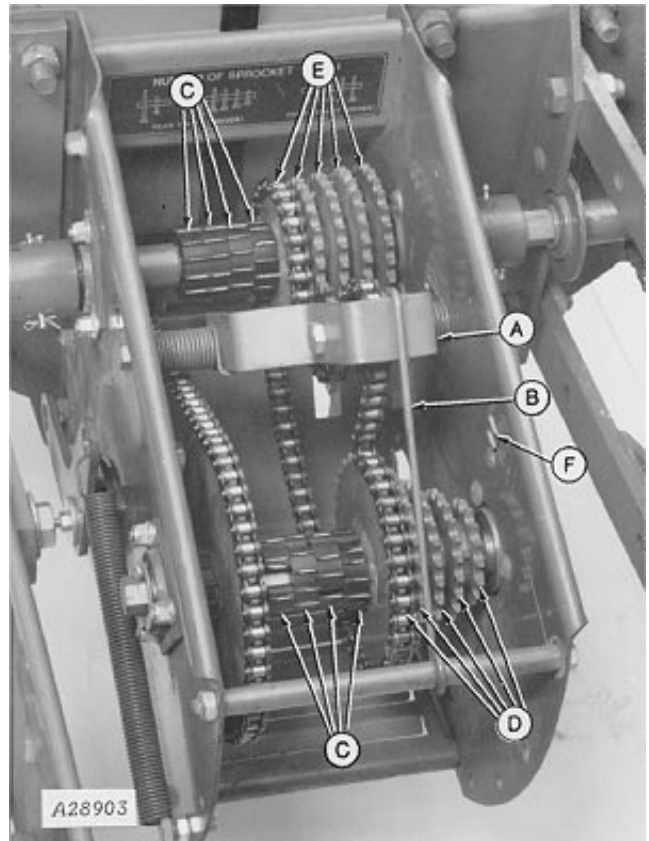
A—Hook



OUO1074,00001B7 -19-09SEP05-2/3

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.

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



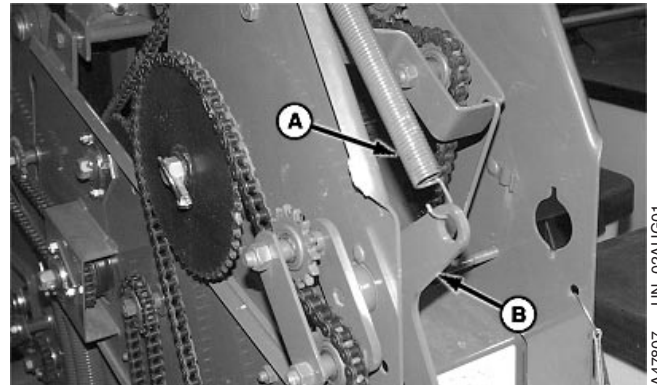
OUO1074,00001B7 -19-09SEP05-3/3

Seed Transmission 1770NT 12/16 Row

Changing Input Sprocket Combinations— Seed Transmission

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

A—Spring
B—Chain Tightener

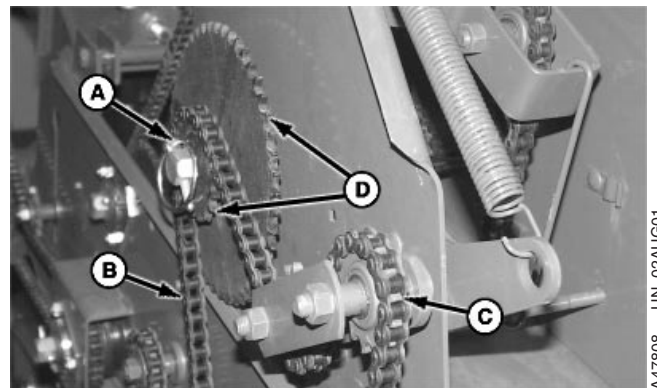


Low Range

OUC6074,0000816 -19-05NOV03-1/3

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.

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



High Range

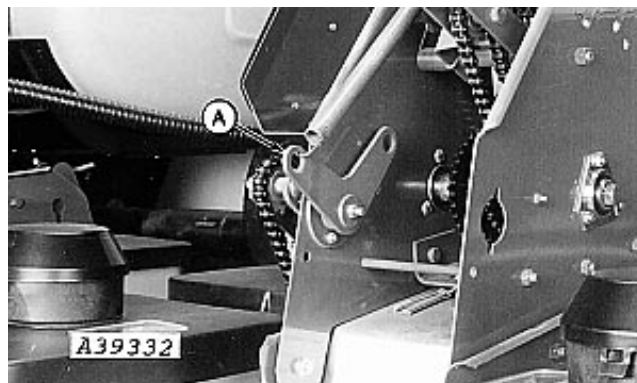
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OUC6074,0000816 -19-05NOV03-2/3

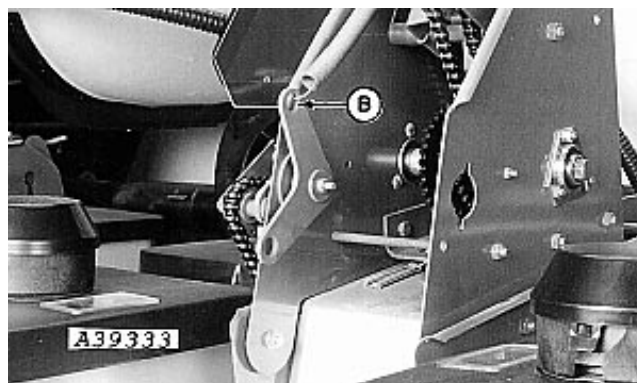
7. If chain is installed on (small) high-range input sprocket, install spring in hole (A) on chain tightener.
8. If chain is installed on (large) low-range input sprocket, locate spring in hole (B) on chain tightener.

A—Hole

B—Hole



High-Range



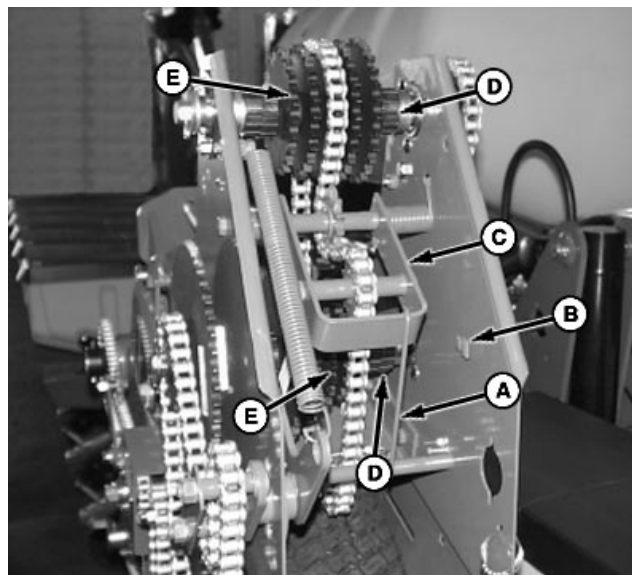
Low-Range

OUO6074,0000816 -19-05NOV03-3/3

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.

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.



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

OUO6074,0000817 -19-03JUN05-1/1

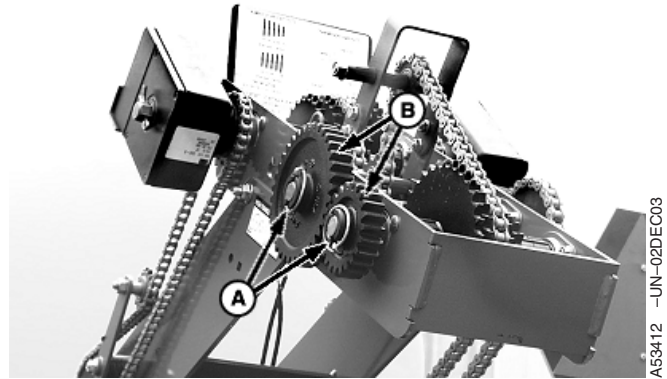
Seed Transmission 1770NT 24 Row

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.

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



High Range Setting Shown

A—Pins
B—Spur Gears

OUC6074,00003D4 -19-26JUN06-1/1

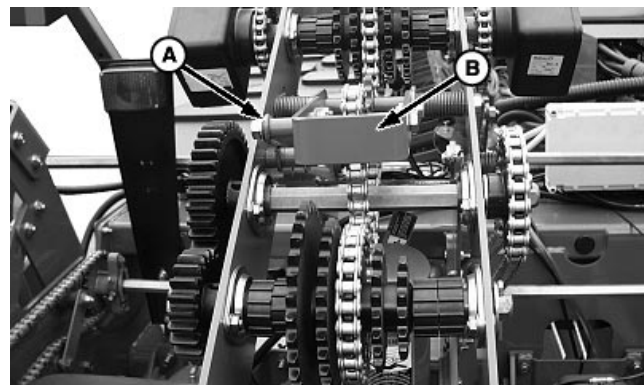
Changing Planting Rate Sprocket Combinations—Seed Transmission

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.

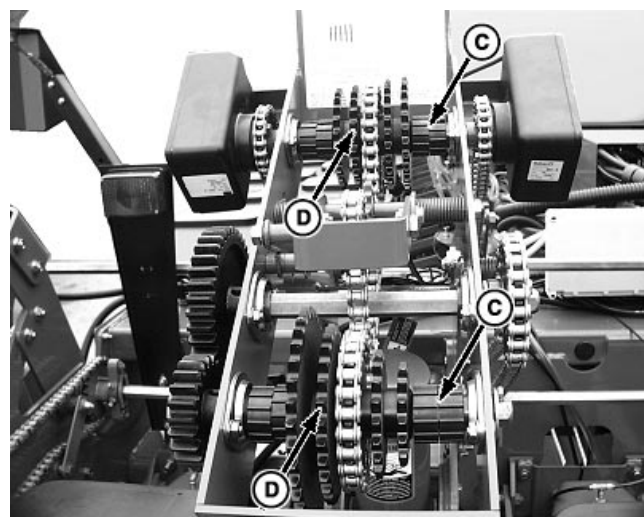
Consult appropriate planting rate chart to determine desired sprocket combinations.

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.

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



A53410 -UN-02DEC03



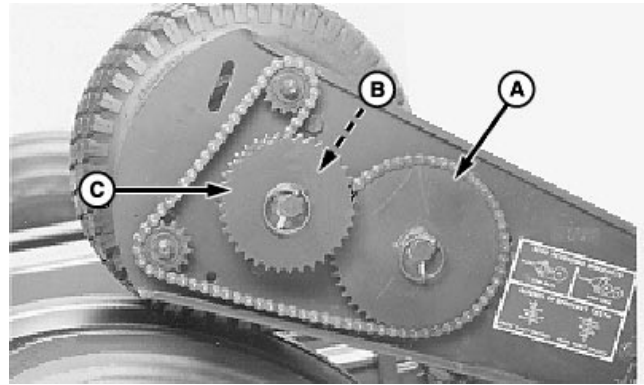
A53416 -UN-02DEC03

Seed Transmission 1780

Changing Input Sprocket Combinations—Seed Transmission

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.



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

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

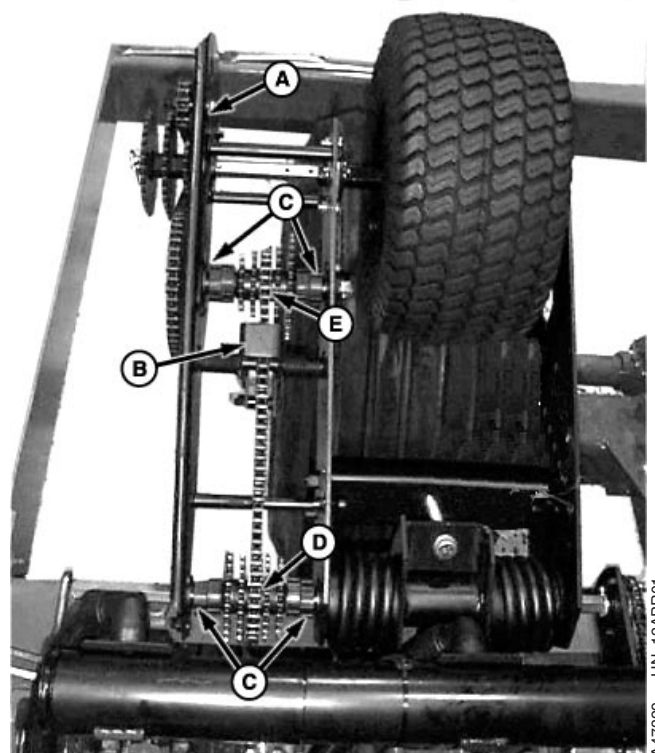
OUO6074,000021C -19-22APR05-1/1

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.

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.



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

AG,OUO6076,129 -19-03JUN05-1/1

Seed Transmission 1790

Changing Population Settings—Mechanical Transmission

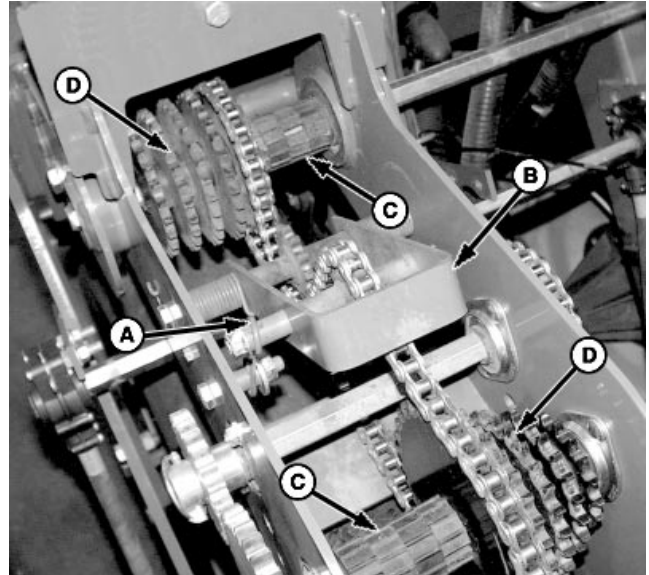
NOTE: Rate charts are based on average planter wheel slip in tilled soil conditions. No-till conditions will likely result in a higher population than what is shown in rate charts. Adjust accordingly. Always verify population and spacing with a field check.

Consult appropriate planting rate chart to determine desired sprocket combinations.

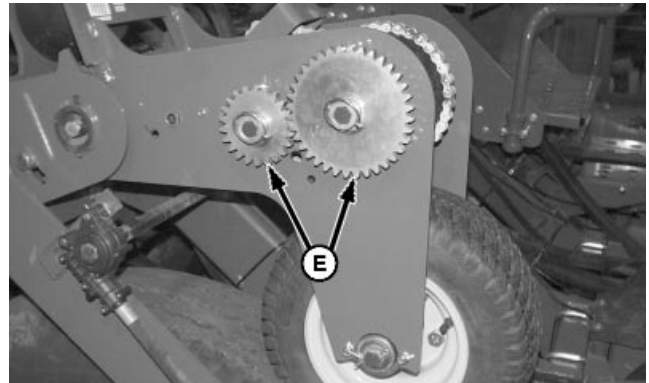
1. Remove retaining hook (A) from storage clip.
2. Pull chain tightener (B) downward and fasten with hook (A).
3. Remove required number of rubber sprocket spacers (C).
4. Remove chain from sprockets. Slide desired driver and driven sprockets (D) into alignment with chain tightener and replace chain.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



A52499 -UN-30JUL03



A52500 -UN-30JUL03

Low Range Shown

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

OUO6023,000149F -19-27JUN06-1/1

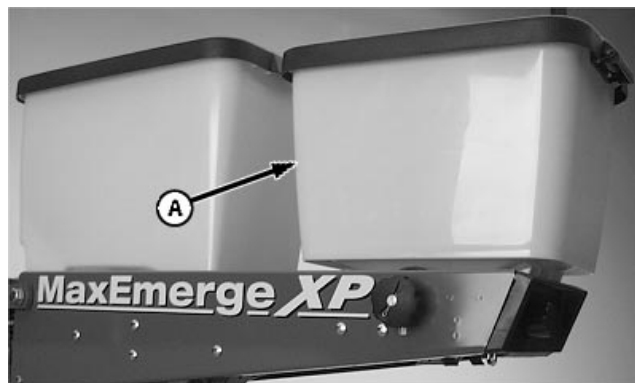
Granular Chemical Attachment

Granular Chemical Attachment

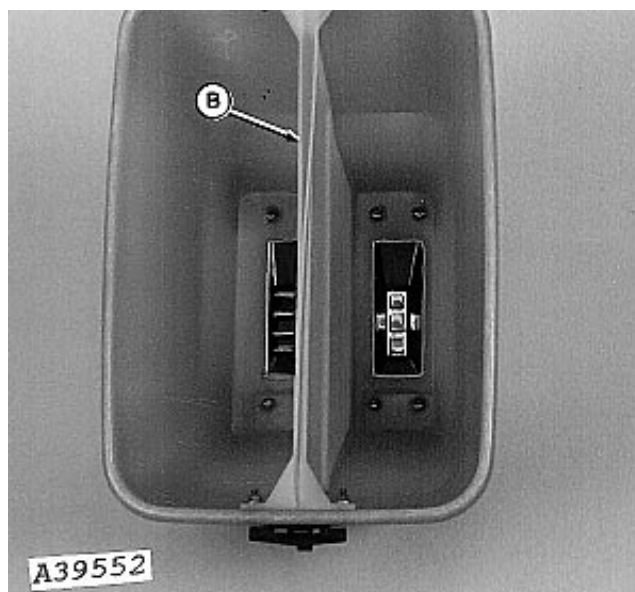


Single Chemical Hopper

A41131 -JUN-17APR97



A54021 -JUN-08MAR04



A39552 -JUN-29MAR96

Dual Chemical Hopper

A—Granular Hopper

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).

B—Divider

The application rate is determined by:

- Size of opening in meter housing assembly
- Planting speed

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 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.

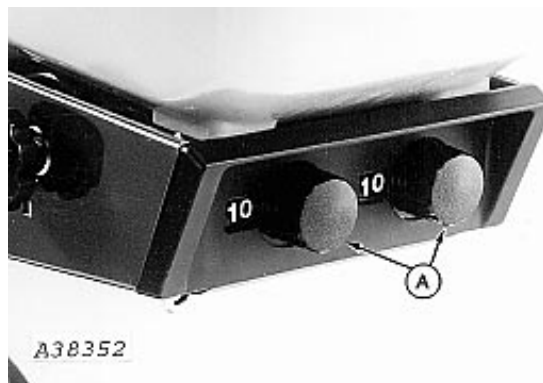
EXAMPLE:

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.



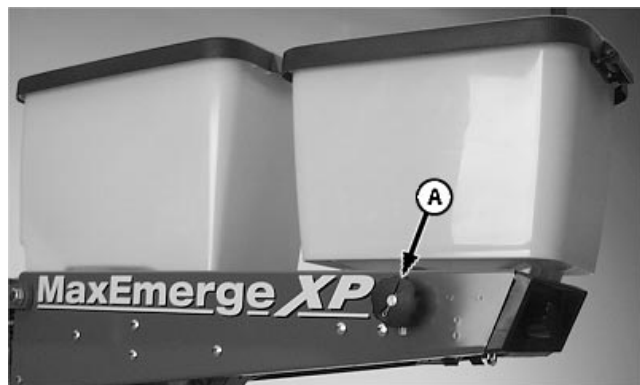
A—Knobs

A38352 -UN-19DEC95

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.



A54022 -UN-08MAR04

A—Knob

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—End of Season 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.

Granular Chemical Attachment

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

OUC6074,00009DB -19-21MAR06-4/4

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:

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

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

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

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.

AG,OUO6074,1303 -19-04AUG00-2/2

Insecticide Rate Chart—Sand Granules—20 in. Rows

**US. UNITS OF MEASURE - METER SETTING
INSECTIDE APPLICATION RATES (Sand Granules)**

METER SETTING	APPROXIMATE RATE IN LBS/ACRE 20 INCH ROWS			OUNCES PER 1000 ROW FT		
	MPH			MPH		
	4	6	8	4	6	8
6	2.4	1.7	1.2	1.5	1.0	0.7
7	3.5	2.3	1.8	2.1	1.4	1.1
8	4.7	3.2	2.4	2.8	1.9	1.4
9	5.9	3.9	3.5	3.6	2.4	1.8
10	7.2	4.8	3.6	4.4	2.9	2.2
11	8.6	5.7	4.4	5.2	3.5	2.6
12	10.1	6.8	5.1	6.2	4.1	3.1
13	11.6	7.7	5.9	7.1	4.7	3.5
14	13.2	8.9	6.6	8.1	5.4	4.0
15	14.7	9.8	7.4	9.0	6.0	4.5
16	16.1	10.7	8.1	9.8	6.6	4.9
17	17.4	11.6	8.7	10.7	7.1	5.3
18	18.8	12.5	9.5	11.5	7.7	5.7
19	19.9	13.4	10.1	12.2	8.1	6.1
20	21.3	14.3	10.7	13.0	8.7	6.5
21	22.7	15.2	11.4	13.9	9.2	6.9
22	24.0	16.1	12.0	14.7	9.8	7.3
23	25.4	16.9	12.8	15.5	10.3	7.8
24	26.7	17.9	13.4	16.3	10.9	8.2
25	28.1	18.8	14.1	17.2	11.4	8.6
26	29.6	19.7	14.9	18.1	12.1	9.0
27	30.9	20.6	15.5	18.9	12.6	9.5
28	32.4	21.6	16.2	19.8	13.2	9.9
29	33.9	22.7	17.0	20.8	13.8	10.4
30	35.4	23.6	17.7	21.7	14.4	10.8
31	37.1	24.8	18.6	22.7	15.1	11.3
32	38.6	25.7	19.4	23.6	15.7	11.8
33	40.2	26.9	20.1	24.6	16.4	12.3
34	41.9	27.9	21.0	25.6	17.1	12.8
35	43.5	29.0	21.8	26.6	17.8	13.3
36	45.3	30.2	22.7	27.7	18.5	13.9
37	47.1	31.4	23.6	28.8	19.2	14.4
38	48.9	32.5	24.5	29.9	20.0	15.0
39	50.7	33.8	25.4	31.0	20.7	15.5
40	52.5	35.0	26.3	32.1	21.4	16.1
41	54.5	36.3	27.3	33.3	22.2	16.7
42	56.4	37.7	28.2	34.5	23.0	17.3
43	58.4	38.9	29.3	35.7	23.8	17.9
44	60.3	40.2	30.2	36.9	24.6	18.5
45	62.4	41.6	31.2	38.2	25.5	19.1
46	64.5	43.1	32.3	39.5	26.3	19.7
47	66.6	44.4	33.3	40.8	27.2	20.4
48	68.9	45.9	34.5	42.1	28.1	21.1
49	71.0	47.3	35.6	43.4	29.0	21.7
50	73.4	48.9	36.8	44.9	29.9	22.5

A47168 -19-15MAR01

Insecticide Rate Chart—Sand Granules—22 in. Rows

U.S. UNITS OF MEASURE - METER SETTING
INSECTICIDE APPLICATION RATES (Sand Granules)

METER SETTING	Approximate Rate in Lbs/Acre 22 INCH ROWS MPH			OUNCES PER 1000 ROW FT. MPH		
	4	6	8	4	6	8
6	1.2	1.5	1.1	1.5	1.0	0.7
7	3.2	2.1	1.6	2.1	1.4	1.1
8	4.2	2.9	2.2	2.8	1.9	1.4
9	5.3	3.6	2.7	3.6	2.4	1.8
10	6.6	4.4	3.3	4.4	2.9	2.2
11	7.8	5.2	4.0	5.2	3.5	2.6
12	9.2	6.2	4.7	6.2	4.1	3.1
13	10.5	7.0	5.3	7.1	4.7	3.5
14	12.1	8.1	6.0	8.1	5.4	4.0
15	13.5	8.9	6.7	9.0	6.0	4.5
16	14.7	9.7	7.4	9.8	6.6	4.9
17	15.9	10.5	7.9	10.7	7.1	5.3
18	17.1	11.4	8.6	11.5	7.7	5.7
19	18.2	12.2	9.2	12.2	8.1	6.1
20	19.5	13.0	9.7	13.0	8.7	6.5
21	20.7	13.8	10.4	13.9	9.2	6.9
22	21.9	14.7	11.0	14.7	9.8	7.3
23	23.2	15.5	11.6	15.5	10.3	7.8
24	24.4	16.3	12.2	16.3	10.9	8.2
25	25.6	17.1	12.9	17.2	11.4	8.6
26	27.0	17.9	13.6	18.1	12.1	9.0
27	28.2	18.8	14.1	18.9	12.6	9.5
28	29.6	19.7	14.8	19.8	13.2	9.9
29	31.0	20.7	15.5	20.8	13.8	10.4
30	24.9	21.5	16.2	21.7	14.4	10.8
31	33.8	22.6	17.0	22.7	15.1	11.3
32	35.2	23.4	17.7	23.6	15.7	11.8
33	36.7	24.5	18.4	24.6	16.4	12.3
34	38.2	25.5	19.2	25.6	17.1	12.8
35	39.7	26.4	19.9	26.6	17.8	13.3
36	41.3	27.5	20.7	27.7	18.5	13.9
37	43.0	28.6	21.5	28.8	19.2	14.4
38	44.7	29.7	22.3	29.9	20.0	15.0
39	46.3	30.8	23.2	31.0	20.7	15.5
40	47.9	31.9	24.0	32.1	21.4	16.1
41	49.7	33.2	24.9	33.3	22.2	16.7
42	51.5	34.1	25.8	34.5	23.0	17.3
43	53.3	35.5	26.7	35.7	23.8	17.9
44	55.1	36.7	27.5	36.9	24.6	18.5
45	57.0	37.9	28.5	38.2	25.5	19.1
46	58.9	39.3	29.5	39.5	26.3	19.7
47	60.8	40.6	30.4	40.8	27.2	20.4
48	62.9	41.9	31.5	42.1	28.1	21.1
49	64.8	43.2	32.5	43.4	29.0	21.7
50	67.0	44.7	33.6	44.9	29.9	22.5

A57349 -19-19DEC05

Insecticide Rate Chart—Sand Granules—30 in. to 38 in. Rows

METER SETTING	Approximate Rate in Lbs/Acre									OUNCES PER 1000 ROW FT.		
	30 INCH ROWS MPH			36 INCH ROWS MPH			38 INCH ROWS MPH			MPH		
	4	6	8	4	6	8	4	6	8	4	6	8
6	1.6	1.1	0.8	1.3	0.9	0.7	1.3	0.8	0.6	1.5	1.0	0.7
7	2.3	1.5	1.2	1.9	1.3	1.0	1.8	1.2	0.9	2.1	1.4	1.1
8	3.1	2.1	1.6	2.6	1.7	1.3	2.4	1.6	1.2	2.8	1.9	1.4
9	3.9	2.6	2.0	3.3	2.2	1.6	3.1	2.1	1.5	3.6	2.4	1.8
10	4.8	3.2	2.4	4.0	2.7	2.0	3.8	2.5	1.9	4.4	2.9	2.2
11	5.7	3.8	2.9	4.8	3.2	2.4	4.5	3.0	2.3	5.2	3.5	2.6
12	6.7	4.5	3.4	5.6	3.7	2.8	5.3	3.5	2.6	6.2	4.1	3.1
13	7.7	5.1	3.9	6.4	4.3	3.2	6.1	4.1	3.0	7.1	4.7	3.5
14	8.8	5.9	4.4	7.3	4.9	3.7	6.9	4.6	3.5	8.1	5.4	4.0
15	9.8	6.5	4.9	8.2	5.4	4.1	7.7	5.2	3.9	9.0	6.0	4.5
16	10.7	7.1	5.4	8.9	5.9	4.5	8.4	5.6	4.2	9.8	6.6	4.9
17	11.6	7.7	5.8	9.7	6.4	4.8	9.2	6.1	4.6	10.7	7.1	5.3
18	12.5	8.3	6.3	10.4	6.9	5.2	9.9	6.6	4.9	11.5	7.7	5.7
19	13.3	8.9	6.7	11.1	7.4	5.5	10.5	7.0	5.3	12.2	8.1	6.1
20	14.2	9.5	7.1	11.8	7.9	5.9	11.2	7.5	5.6	13.0	8.7	6.5
21	15.1	10.1	7.6	12.6	8.4	6.3	11.9	7.9	6.0	13.9	9.2	6.9
22	16.0	10.7	8.0	13.3	8.9	6.7	12.6	8.4	6.3	14.7	9.8	7.3
23	16.9	11.3	8.5	14.1	9.4	7.0	13.3	8.9	6.7	15.5	10.3	7.8
24	17.8	11.9	8.9	14.8	9.9	7.4	14.1	9.4	7.0	16.3	10.9	8.2
25	18.7	12.5	9.4	15.6	10.4	7.8	14.8	9.8	7.4	17.2	11.4	8.6
26	19.7	13.1	9.9	16.4	10.9	8.2	15.6	10.4	7.8	18.1	12.1	9.0
27	20.6	13.7	10.3	17.2	11.4	8.6	16.3	10.8	8.1	18.9	12.6	9.5
28	21.6	14.4	10.8	18.0	12.0	9.0	17.1	11.4	8.5	19.8	13.2	9.9
29	22.6	15.1	11.3	18.8	12.6	9.4	17.8	11.9	8.9	20.8	13.8	10.4
30	23.6	15.7	11.8	19.7	13.1	9.8	18.6	12.4	9.3	21.7	14.4	10.8
31	24.7	16.5	12.4	20.6	13.7	10.3	19.5	13.0	9.8	22.7	15.1	11.3
32	25.7	17.1	12.9	21.4	14.3	10.7	20.3	13.5	10.1	23.6	15.7	11.8
33	26.8	17.9	13.4	22.3	14.9	11.2	21.2	14.1	10.6	24.6	16.4	12.3
34	27.9	18.6	14.0	23.3	15.5	11.6	22.0	14.7	11.0	25.6	17.1	12.8
35	29.0	19.3	14.5	24.2	16.1	12.1	22.9	15.3	11.4	26.6	17.8	13.3
36	30.2	20.1	15.1	25.2	16.8	12.6	23.8	15.9	11.9	27.7	18.5	13.9
37	31.4	20.9	15.7	26.2	17.4	13.1	24.8	16.5	12.4	28.8	19.2	14.4
38	32.6	21.7	16.3	27.2	18.1	13.6	25.7	17.2	12.9	29.9	20.0	15.0
39	33.8	22.5	16.9	28.2	18.8	14.1	26.7	17.8	13.3	31.0	20.7	15.5
40	35.0	23.3	17.5	29.2	19.4	14.6	27.6	18.4	13.8	32.1	21.4	16.1
41	36.3	24.2	18.2	30.3	20.2	15.1	28.7	19.1	14.3	33.3	22.2	16.7
42	37.6	25.1	18.8	31.3	20.9	15.7	29.7	19.8	14.8	34.5	23.0	17.3
43	38.9	25.9	19.5	32.4	21.6	16.2	30.7	20.5	15.4	35.7	23.8	17.9
44	40.2	26.8	20.1	33.5	22.3	16.8	31.7	21.2	15.9	36.9	24.6	18.5
45	41.6	27.7	20.8	34.7	23.1	17.3	32.8	21.9	16.4	38.2	25.5	19.1
46	43.0	28.7	21.5	35.8	23.9	17.9	33.9	22.6	17.0	39.5	26.3	19.7
47	44.4	29.6	22.2	37.0	24.7	18.5	35.1	23.4	17.5	40.8	27.2	20.4
48	45.9	30.6	23.0	38.3	25.5	19.1	36.2	24.2	18.1	42.1	28.1	21.1
49	47.3	31.5	23.7	39.4	26.3	19.7	37.3	24.9	18.7	43.4	29.0	21.7
50	48.9	32.6	24.5	40.8	27.2	20.4	38.6	25.7	19.3	44.9	29.9	22.5

A49132 -19-244PE02

Insecticide Rate Chart—Clay Granules—20 in. Rows

INSECTIDE APPLICATION RATES (Clay Granules)

METER SETTING	APPROXIMATE RATE IN LBS/ACRE 20 INCH ROWS			OUNCES PER 1000 ROW FT		
	MPH			MPH		
	4	6	8	4	6	8
10	3.8	2.6	2.0	2.3	1.5	1.1
11	4.5	3.0	2.3	2.8	1.8	1.4
12	5.4	3.6	2.7	3.3	2.2	1.7
13	6.6	4.4	3.3	4.0	2.7	2.0
14	7.8	5.3	3.9	4.8	3.2	2.4
15	9.0	6.0	4.5	5.5	3.7	2.8
16	10.2	6.8	5.1	6.3	4.2	3.1
17	11.4	7.7	5.7	7.0	4.7	3.5
18	12.3	8.3	6.2	7.5	5.0	3.8
19	13.1	8.7	6.6	8.0	5.3	4.0
20	14.0	9.3	7.1	8.6	5.7	4.3
21	14.7	9.8	7.4	9.0	6.0	4.5
22	15.5	10.2	7.7	9.4	6.3	4.7
23	16.1	10.7	8.1	9.8	6.6	4.9
24	16.8	11.3	8.4	10.3	6.8	5.1
25	17.4	11.6	8.7	10.6	7.1	5.3
26	17.9	11.9	9.0	10.9	7.3	5.5
27	18.6	12.5	9.3	11.4	7.6	5.7
28	19.1	12.8	9.6	11.7	7.8	5.8
29	19.8	13.2	9.9	12.1	8.1	6.1
30	20.3	13.5	10.2	12.4	8.3	6.2
31	20.7	13.8	10.4	12.6	8.4	6.3
32	21.3	14.3	10.7	13.1	8.7	6.5
33	21.9	14.6	11.0	13.4	8.9	6.7
34	22.7	15.2	11.4	13.9	9.2	6.9
35	23.4	15.6	11.7	14.3	9.6	7.2
36	24.2	16.1	12.0	14.8	9.8	7.4
37	24.8	16.5	12.3	15.1	10.1	7.6
38	25.5	17.0	12.8	15.6	10.4	7.8
39	26.3	17.6	13.1	16.1	10.7	8.0
40	27.0	18.0	13.5	16.5	11.0	8.2
41	27.6	18.5	13.8	16.9	11.3	8.4
42	28.7	19.1	14.4	17.6	11.7	8.8
43	30.0	20.0	15.0	18.4	12.2	9.2
44	31.5	21.0	15.8	19.3	12.9	9.6
45	33.2	22.2	16.6	20.3	13.5	10.2
46	35.1	23.4	17.6	21.5	14.3	10.7
47	36.8	24.5	18.5	22.5	15.0	11.2
48	38.4	25.7	19.2	23.5	15.7	11.8
49	40.2	26.7	20.1	24.6	16.4	12.3
50	41.9	27.9	20.9	25.6	17.1	12.8
51	43.5	29.0	21.8	26.6	17.8	13.3
52	45.5	30.3	22.7	27.8	18.5	13.9
53	47.4	31.7	23.7	29.0	19.4	14.5
54	49.5	33.0	24.8	30.3	20.2	15.2
55	51.8	34.5	26.0	31.7	21.1	15.8
56	54.0	36.0	27.0	33.1	22.0	16.5
57	56.1	37.4	28.1	34.3	22.9	17.2
58	58.4	38.9	29.1	35.7	23.8	17.8
59	60.6	40.4	30.3	37.1	24.7	18.5
60	62.4	41.7	31.2	38.2	25.5	19.1

A47167 -19-15MAR01

OUO6074,0000A55 -19-17MAR04-1/1

Insecticide Rate Chart—Clay Granules—22 in. Rows**INSECTICIDE APPLICATION RATES (Clay Granules)**

METER SETTING	Approximate Rate in Lbs/Acre 22 INCH ROWS MPH			OUNCES PER 1000 ROW FT. MPH		
	4	6	8	4	6	8
10	3.4	2.3	1.8	2.3	1.5	1.1
11	4.1	2.7	2.1	2.8	1.8	1.4
12	4.9	3.3	2.5	3.3	2.2	1.7
13	6.0	4.0	3.0	4.0	2.7	2.0
14	7.3	4.8	3.6	4.8	3.2	2.4
15	8.2	5.5	4.1	5.5	3.7	2.8
16	9.3	6.2	4.7	6.3	4.2	3.1
17	10.4	7.0	5.2	7.0	4.7	3.5
18	11.2	7.5	5.6	7.5	5.0	3.8
19	12.0	8.0	6.0	8.0	5.3	4.0
20	12.7	8.5	6.4	8.6	5.7	4.3
21	13.4	8.9	6.7	9.0	6.0	4.5
22	14.0	9.3	7.0	9.4	6.3	4.7
23	14.7	9.7	7.4	9.8	6.6	4.9
24	15.3	10.3	7.7	10.3	6.8	5.1
25	15.9	10.5	7.9	10.6	7.1	5.3
26	16.3	10.8	8.2	10.9	7.3	5.5
27	17.0	11.4	8.5	11.4	7.6	5.7
28	17.4	11.6	8.8	11.7	7.8	5.8
29	18.1	12.1	9.0	12.1	8.1	6.1
30	18.5	12.3	9.3	12.4	8.3	6.2
31	18.9	12.6	9.5	12.6	8.4	6.3
32	19.5	13.0	9.7	13.1	8.7	6.5
33	20.0	13.2	10.0	13.4	8.9	6.7
34	20.7	13.8	10.4	13.9	9.2	6.9
35	21.4	14.2	10.7	14.3	9.6	7.2
36	22.1	14.7	11.0	14.8	9.8	7.4
37	22.6	15.1	11.2	15.1	10.1	7.6
38	23.3	15.5	11.6	15.6	10.4	7.8
39	23.9	16.0	11.9	16.1	10.7	8.0
40	24.7	16.4	12.3	16.5	11.0	8.2
41	25.2	16.9	12.5	16.9	11.3	8.4
42	26.2	17.4	13.2	17.6	11.7	8.8
43	27.4	18.2	13.7	18.4	12.2	9.2
44	28.8	19.2	14.4	19.3	12.9	9.6
45	30.3	20.3	15.2	20.3	13.5	10.2
46	32.1	21.4	16.0	21.5	14.3	10.7
47	33.6	22.3	16.8	22.5	15.0	11.2
48	35.1	23.4	17.5	23.5	15.7	11.8
49	36.7	24.4	22.8	24.6	16.4	12.3
50	38.2	25.5	19.0	25.6	17.1	12.8
51	39.7	26.4	19.9	26.6	17.8	13.3
52	41.5	27.7	20.7	27.8	18.5	13.9
53	43.3	28.9	21.6	29.0	19.4	14.5
54	45.2	30.1	22.6	30.3	20.2	15.2
55	47.3	31.5	23.7	31.7	21.1	15.8
56	49.3	32.9	24.7	33.1	22.0	16.5
57	51.2	34.1	25.6	34.3	22.9	17.2
58	53.3	35.5	26.6	35.7	23.8	17.8
59	55.3	36.8	27.7	37.1	24.7	18.5
60	57.0	38.1	28.5	38.2	25.5	19.1

Insecticide Rate Chart—Clay Granules—30 in. to 38 in. Rows

METER SETTING	Approximate Rate in Lbs/Acre									OUNCES PER 1000 ROW FT. MPH		
	30 INCH ROWS MPH			36 INCH ROWS MPH			38 INCH ROWS MPH					
	4	6	8	4	6	8	4	6	8	4	6	8
10	2.5	1.7	1.3	2.1	1.4	1.0	2.0	1.3	1.0	2.3	1.5	1.1
11	3.0	2.0	1.5	2.5	1.7	1.3	2.4	1.6	1.2	2.8	1.8	1.4
12	3.6	2.4	1.8	3.0	2.0	1.5	2.9	1.9	1.4	3.3	2.2	1.7
13	4.4	2.9	2.2	3.6	2.4	1.8	3.5	2.3	1.7	4.0	2.7	2.0
14	5.3	3.5	2.6	4.4	2.9	2.2	4.1	2.8	2.1	4.8	3.2	2.4
15	6.0	4.0	3.0	5.0	3.3	2.5	4.7	3.2	2.4	5.5	3.7	2.8
16	6.8	4.5	3.4	5.7	3.8	2.8	5.4	3.6	2.7	6.3	4.2	3.1
17	7.6	5.1	3.8	6.3	4.2	3.2	6.0	4.0	3.0	7.0	4.7	3.5
18	8.2	5.5	4.1	6.8	4.6	3.4	6.5	4.3	3.2	7.5	5.0	3.8
19	8.7	5.8	4.4	7.3	4.8	3.6	6.9	4.6	3.4	8.0	5.3	4.0
20	9.3	6.2	4.7	7.8	5.2	3.9	7.4	4.9	3.7	8.6	5.7	4.3
21	9.8	6.5	4.9	8.2	5.4	4.1	7.7	5.2	3.9	9.0	6.0	4.5
22	10.3	6.8	5.1	8.6	5.7	4.3	8.1	5.4	4.1	9.4	6.3	4.7
23	10.7	7.1	5.4	8.9	6.0	4.5	8.5	5.6	4.2	9.8	6.6	4.9
24	11.2	7.5	5.6	9.3	6.2	4.7	8.8	5.9	4.4	10.3	6.8	5.1
25	11.6	7.7	5.8	9.6	6.4	4.8	9.1	6.1	4.6	10.6	7.1	5.3
26	11.9	7.9	6.0	9.9	6.6	5.0	9.4	6.3	4.7	10.9	7.3	5.5
27	12.4	8.3	6.2	10.3	6.9	5.2	9.8	6.5	4.9	11.4	7.6	5.7
28	12.7	8.5	6.4	10.6	7.1	5.3	10.1	6.7	5.0	11.7	7.8	5.8
29	13.2	8.8	6.6	11.0	7.3	5.5	10.4	6.9	5.2	12.1	8.1	6.1
30	13.5	9.0	6.8	11.3	7.5	5.6	10.7	7.1	5.3	12.4	8.3	6.2
31	13.8	9.2	6.9	11.5	7.6	5.7	10.9	7.2	5.4	12.6	8.4	6.3
32	14.2	9.5	7.1	11.9	7.9	5.9	11.2	7.5	5.6	13.1	8.7	6.5
33	14.6	9.7	7.3	12.2	8.1	6.1	11.5	7.7	5.8	13.4	8.9	6.7
34	15.1	10.1	7.6	12.6	8.4	6.3	11.9	7.9	6.0	13.9	9.2	6.9
35	15.6	10.4	7.8	13.0	8.7	6.5	12.3	8.2	6.2	14.3	9.6	7.2
36	16.1	10.7	8.0	13.4	8.9	6.7	12.7	8.5	6.3	14.8	9.8	7.4
37	16.5	11.0	8.2	13.7	9.2	6.9	13.0	8.7	6.5	15.1	10.1	7.6
38	17.0	11.3	8.5	14.2	9.4	7.1	13.4	8.9	6.7	15.6	10.4	7.8
39	17.5	11.7	8.7	14.6	9.7	7.3	13.8	9.2	6.9	16.1	10.7	8.0
40	18.0	12.0	9.0	15.0	10.0	7.5	14.2	9.5	7.1	16.5	11.0	8.2
41	18.4	12.3	9.2	15.3	10.2	7.7	14.5	9.7	7.3	16.9	11.3	8.4
42	19.1	12.7	9.6	15.9	10.6	8.0	15.1	10.1	7.5	17.6	11.7	8.8
43	20.0	13.3	10.0	16.7	11.1	8.3	15.8	10.5	7.9	18.4	12.2	9.2
44	21.0	14.0	10.5	17.5	11.7	8.8	16.6	11.1	8.3	19.3	12.9	9.6
45	22.1	14.8	11.1	18.4	12.3	9.2	17.5	11.6	8.7	20.3	13.5	10.2
46	23.4	15.6	11.7	19.5	13.0	9.7	18.5	12.3	9.2	21.5	14.3	10.7
47	24.5	16.3	12.3	20.4	13.6	10.2	19.3	12.9	9.7	22.5	15.0	11.2
48	25.6	17.1	12.8	21.4	14.2	10.7	20.2	13.5	10.1	23.5	15.7	11.8
49	26.8	17.8	13.4	22.3	14.9	11.1	21.1	14.1	10.6	24.6	16.4	12.3
50	27.9	18.6	13.9	23.2	15.5	11.6	22.0	14.7	11.0	25.6	17.1	12.8
51	29.0	19.3	14.5	24.2	16.1	12.1	22.9	15.3	11.4	26.6	17.8	13.3
52	30.3	20.2	15.1	25.2	16.8	12.6	23.9	15.9	11.9	27.8	18.5	13.9
53	31.6	21.1	15.8	26.4	17.6	13.2	25.0	16.6	12.5	29.0	19.4	14.5
54	33.0	22.0	16.5	27.5	18.3	13.8	26.1	17.4	13.0	30.3	20.2	15.2
55	34.5	23.0	17.3	28.8	19.2	14.4	27.2	18.2	13.6	31.7	21.1	15.8
56	36.0	24.0	18.0	30.0	20.0	15.0	28.4	18.9	14.2	33.1	22.0	16.5
57	37.4	24.9	18.7	31.1	20.8	15.6	29.5	19.7	14.8	34.3	22.9	17.2
58	38.9	25.9	19.4	32.4	21.6	16.2	30.7	20.5	15.3	35.7	23.8	17.8
59	40.4	26.9	20.2	33.6	22.4	16.8	31.9	21.2	15.9	37.1	24.7	18.5
60	41.6	27.8	20.8	34.7	23.1	17.3	32.9	21.9	16.4	38.2	25.5	19.1

A49130 -19-24APR02

Herbicide Rate Chart—Clay Granules—20 in. Rows

**U.S. UNITS OF MEASURE - METER SETTING
HERBICIDE APPLICATION RATES (Clay Granules)**

Approximate Rate in Lbs/Acre

METER SETTING	20 INCH ROWS		
	MPH		
	4	6	8
10	3.2	2.1	1.7
11	3.8	2.4	1.8
12	4.5	2.9	2.1
13	5.3	3.5	2.6
14	6.0	3.9	3.0
15	7.2	4.7	3.5
16	8.3	5.4	3.9
17	9.3	6.0	4.4
18	10.1	6.6	4.8
19	10.8	7.1	5.1
20	11.9	7.7	5.6
21	12.6	8.1	6.0
22	13.5	8.7	6.3
23	14.3	9.2	6.8
24	15.2	9.8	7.1
25	15.9	10.1	7.4
26	16.6	10.7	7.8
27	17.6	11.1	8.1
28	18.4	11.6	8.4
29	19.2	12.2	8.7
30	19.8	12.6	9.2
31	20.3	12.9	9.5
32	21.2	13.4	9.8
33	21.9	13.8	10.1
34	22.7	14.4	10.4
35	23.6	14.9	10.7
36	24.3	15.3	11.1
37	24.9	15.8	11.6
38	26.0	16.4	11.9
39	26.4	16.7	12.0
40	27.0	17.1	12.3
41	27.6	17.3	12.6
42	28.5	17.9	13.1
43	29.7	18.6	13.5
44	30.5	19.2	14.0
45	32.3	20.3	14.6
46	33.6	21.3	15.6
47	35.9	22.8	16.5
48	37.7	24.0	17.6
49	39.8	25.5	18.5
50	42.2	27.5	20.1
51	44.6	29.3	21.6
52	47.1	31.2	23.1
53	49.5	33.0	24.8
54	52.4	35.1	26.4
55	55.2	37.2	28.5
56	57.0	38.9	30.3
57	60.0	41.1	32.3
58	62.6	43.1	33.8
59	64.5	44.6	35.3
60	66.9	46.5	37.1

A57345 -19-19DEC05

Herbicide Rate Chart—Clay Granules—22 in. Rows

U.S. UNITS OF MEASURE - METER SETTING
HERBICIDE APPLICATION RATES (Clay Granules)
Approximate Rate in Lbs/Acre
22 INCH ROWS

METER SETTING	MPH		
	4	6	8
10	2.9	1.9	1.5
11	3.4	2.2	1.6
12	4.1	2.6	1.9
13	4.8	3.1	2.3
14	5.5	3.6	2.7
15	6.6	4.2	3.2
16	7.5	4.9	3.7
17	8.5	5.5	4.0
18	9.2	6.0	4.4
19	9.9	6.4	4.7
20	10.8	7.0	5.1
21	11.5	7.4	5.5
22	12.3	7.9	5.8
23	13.0	8.3	6.2
24	13.8	8.9	6.4
25	14.5	9.2	6.7
26	15.2	9.7	7.1
27	16.0	10.1	7.4
28	16.7	10.6	7.6
29	17.5	11.1	7.9
30	18.1	11.5	8.4
31	18.5	11.8	8.6
32	19.3	12.2	8.9
33	20.0	12.6	9.2
34	20.7	13.2	9.5
35	21.5	13.6	9.7
36	22.2	13.9	10.1
37	22.7	14.4	10.5
38	23.7	14.9	10.8
39	24.1	15.2	11.0
40	24.7	15.6	11.2
41	25.2	15.8	11.5
42	26.0	16.3	11.9
43	27.1	17.0	12.3
44	27.8	17.5	12.7
45	29.5	18.5	13.3
46	30.7	19.5	14.1
47	32.7	20.8	15.1
48	34.4	21.9	16.0
49	36.3	23.3	16.9
50	38.5	25.1	18.4
51	40.7	26.7	19.7
52	43.0	28.5	21.1
53	45.2	30.1	22.6
54	47.8	32.1	24.1
55	50.4	34.0	26.0
56	52.1	35.5	27.7
57	54.8	37.5	29.5
58	57.1	39.3	31.8
59	58.9	40.7	32.2
60	61.1	42.5	33.8

A57347 -19-19DEC05

Herbicide Rate Chart—Clay Granules—30 in. to 38 in. Rows

U.S. UNITS OF MEASURE - METER SETTING
HERBICIDE APPLICATION RATES (Clay Granules)
Approximate Rate in Lbs/Acre

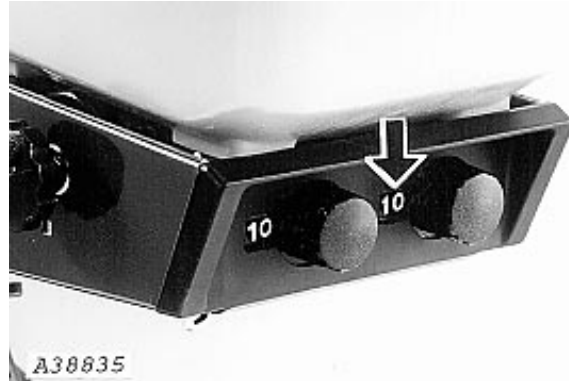
METER SETTING	30 INCH ROWS			36 INCH ROWS			38 INCH ROWS		
	MPH			MPH			MPH		
	4	6	8	4	6	8	4	6	8
10	2.1	1.4	1.1	1.7	1.2	0.9	1.7	1.1	0.9
11	2.5	1.6	1.2	2.1	1.4	1.0	2.0	1.3	1.0
12	3.0	1.9	1.4	2.5	1.6	1.2	2.3	1.5	1.1
13	3.5	2.3	1.7	2.9	1.9	1.4	2.8	1.8	1.3
14	4.0	2.6	2.0	3.3	2.2	1.6	3.2	2.1	1.5
15	4.8	3.1	2.3	4.0	2.6	1.9	3.8	2.4	1.8
16	5.5	3.6	2.6	4.6	3.0	2.2	4.4	2.8	2.1
17	6.2	4.0	2.9	5.1	3.3	2.4	4.9	3.2	2.3
18	6.7	4.4	3.2	5.6	3.6	2.7	5.3	3.4	2.5
19	7.2	4.7	3.4	6.0	3.9	2.8	5.7	3.7	2.7
20	7.9	5.1	3.7	6.6	4.2	3.1	6.2	4.0	2.9
21	8.4	5.4	4.0	7.0	4.5	3.3	6.6	4.3	3.1
22	9.0	5.8	4.2	7.5	4.8	3.5	7.1	4.6	3.4
23	9.5	6.1	4.5	7.9	5.1	3.7	7.5	4.8	3.5
24	10.1	6.5	4.7	8.4	5.4	3.9	8.0	5.1	3.7
25	10.6	6.7	4.9	8.8	5.6	4.1	8.4	5.3	3.9
26	11.1	7.1	5.2	9.2	5.9	4.3	8.7	5.6	4.1
27	11.7	7.4	5.4	9.8	6.2	4.5	9.2	5.9	4.3
28	12.3	7.8	5.6	10.3	6.5	4.6	9.6	6.2	4.4
29	12.8	8.1	5.8	10.7	6.7	4.8	10.1	6.4	4.6
30	13.2	8.4	6.1	11.0	7.0	5.1	10.4	6.6	4.8
31	13.5	8.6	6.3	11.3	7.2	5.2	10.7	6.8	4.9
32	14.1	8.9	6.5	11.7	7.5	5.4	11.1	7.1	5.1
33	14.6	9.2	6.7	12.1	7.7	5.6	11.5	7.3	5.3
34	15.1	9.6	6.9	12.6	8.0	5.8	11.9	7.6	5.5
35	15.7	9.9	7.1	13.1	8.3	6.0	12.4	7.8	5.6
36	16.2	10.2	7.4	13.5	8.5	6.2	12.8	8.1	5.8
37	16.6	10.5	7.7	13.9	8.7	6.4	13.1	8.3	6.0
38	17.3	10.9	7.9	14.4	9.0	6.5	13.7	8.6	6.2
39	17.6	11.1	8.0	14.7	9.2	6.7	13.9	8.7	6.3
40	18.0	11.4	8.2	15.0	9.5	6.9	14.2	9.0	6.5
41	18.4	11.5	8.4	15.4	9.6	7.0	14.5	9.1	6.6
42	19.0	11.9	8.7	15.8	9.9	7.2	15.0	9.4	6.8
43	19.8	12.4	9.0	16.5	10.4	7.5	15.6	9.8	7.1
44	20.3	12.8	9.3	16.9	10.6	7.7	16.0	10.1	7.3
45	21.5	13.5	9.7	17.9	11.2	8.1	16.9	10.7	7.7
46	22.4	14.2	10.3	18.7	11.8	8.6	17.7	11.2	8.2
47	23.9	15.2	11.0	19.9	12.7	9.2	18.9	12.0	8.7
48	25.1	16.0	11.7	20.9	13.3	9.7	19.8	12.6	9.2
49	26.5	17.0	12.3	22.1	14.2	10.3	20.9	13.5	9.7
50	28.1	18.3	13.4	23.5	15.3	11.2	22.2	14.4	10.6
51	29.7	19.5	14.4	24.7	16.3	12.0	23.4	15.4	11.3
52	31.4	20.8	15.4	26.2	17.3	12.9	24.8	16.4	12.2
53	33.0	22.0	16.5	27.5	18.4	13.7	26.0	17.4	13.0
54	34.9	23.4	17.6	29.1	19.5	14.7	27.6	18.5	13.9
55	36.8	24.8	19.0	30.7	20.7	15.9	29.1	19.6	15.0
56	38.0	25.9	20.2	31.7	21.6	16.8	30.0	20.5	15.9
57	40.0	27.4	21.5	33.4	22.8	17.9	31.6	21.6	17.0
58	41.7	28.7	22.5	34.7	24.0	18.7	32.9	22.7	17.7
59	43.0	29.7	23.5	35.8	24.8	19.6	33.9	23.4	18.6
60	44.6	31.0	24.7	37.1	25.9	20.6	35.2	24.5	19.5

A57346 -19-19DEC05

Calibrating Insecticide/Herbicide Meter

If it should ever become necessary to recalibrate the granular meter on insecticide/herbicide hopper, proceed as follows:

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



A38835 -UN-19DEC95

AG,OUO6074,1305 -19-04AUG00-1/5

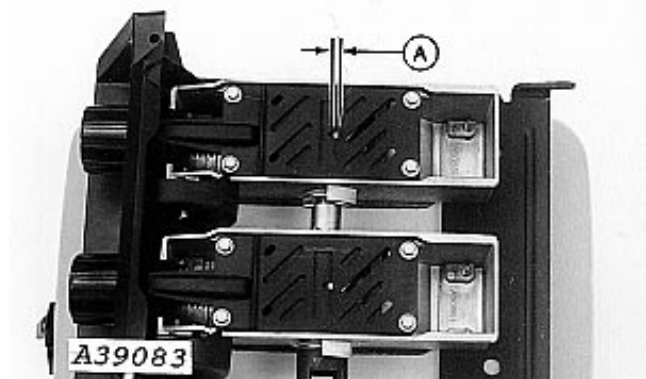
3. Measure the V-notch opening (A) on the meter gate.
The opening should be set to a specified width.

Specification

V-Notch Opening—Width 4 mm
(0.160 in.)

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

A—V-Notch Opening



A39083 -UN-17JAN96

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AG,OUO6074,1305 -19-04AUG00-2/5

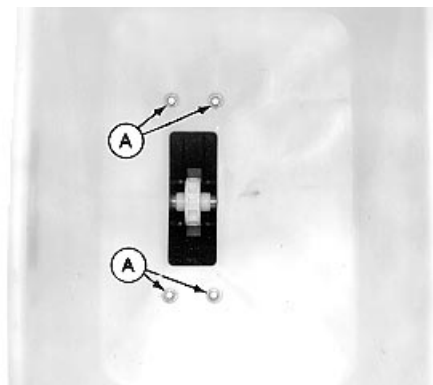
4. Remove four M6 x 20 cap screws (A) securing meter to hopper (eight cap screws if two meters are used). Remove meter(s) from bottom of hopper.

5. Remove four M6 x 16 cap screws (B). Remove gate cover (C).

A—Cap Screws, M6 x 20

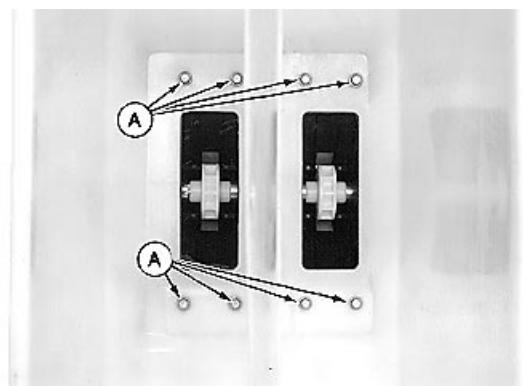
B—Cap Screws, M6 x 16

C—Cover



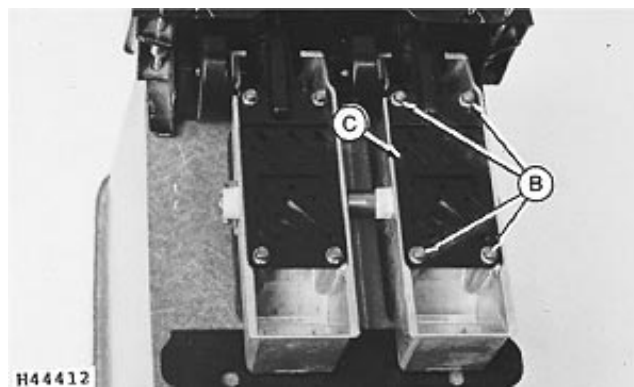
Single Meter

A41132 -UN-21APR97



Dual Meter

A41129 -UN-17APR97



H44412 -UN-20MAY92

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AG,OUO6074,1305 -19-04AUG00-3/5

6. Remove entire plastic gate assembly (A) from aluminum housing.
7. Work knob (B) back and forth while pulling apart to remove knob from splined nut (C).
8. Turn nut (C) until V-notch opening is to specification.

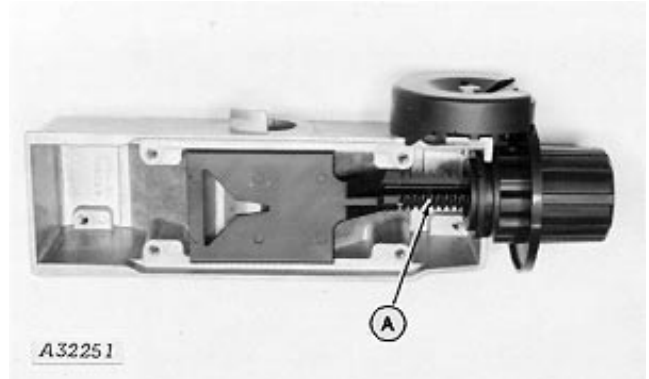
Specification

V-Notch Opening—Width4 mm
(0.160 in.)

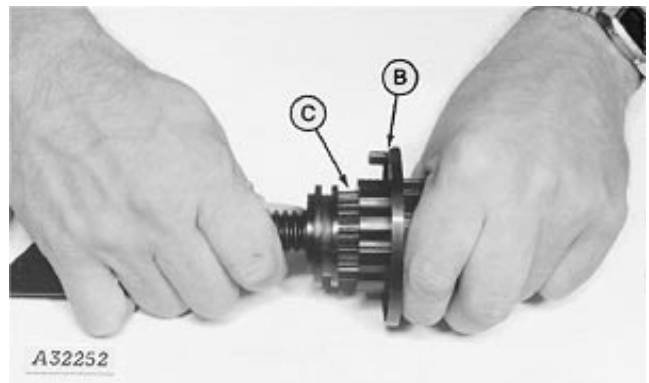
A—Plastic Gate Assembly

B—Knob

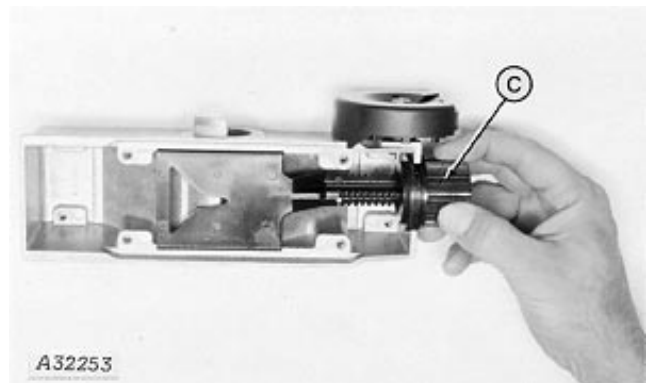
C—Nut



A32251 -UN-12OCT88



A32252 -UN-12OCT88



A32253 -UN-12OCT88

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AG,OUO6074,1305 -19-04AUG00-4/5

9. Replace the knob on nut so the number "0" lines up with the number "1" on cam follower. The meter should have a setting of "10".
10. Seat knob to flange on nut.
11. Install gate cover with cap screws previously removed.
12. Install meter on bottom of hopper and attach with cap screws previously removed.



A32254 -UN-12OCT88

AG,OUO6074,1305 -19-04AUG00-5/5

Lid Fill Closed Handling System

An optional lid fill closed handling system is available for a machine ordered with insecticide only granular chemical application system.



A54023 -UN-08MAR04

OUO6074,00009DC -19-08MAR04-1/1

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 -19-04AUG00-1/1

Insecticide Seed-Furrow Placement Bracket

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

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

A—Bracket



A48632 -UN-29JAN02

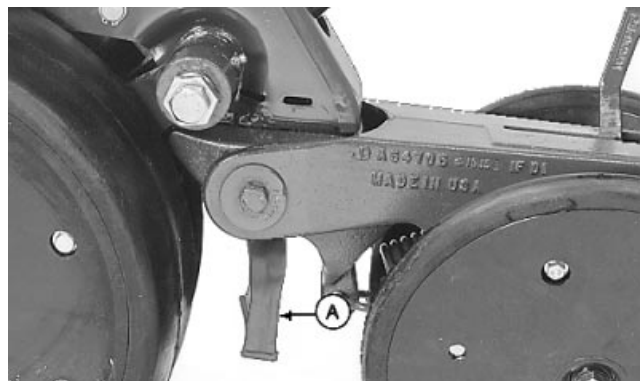
AG,OUO6074,1308 -19-04AUG00-1/1

Insecticide Band Spreader (Front Mounted)

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

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.

A—Insecticide Band Spreader

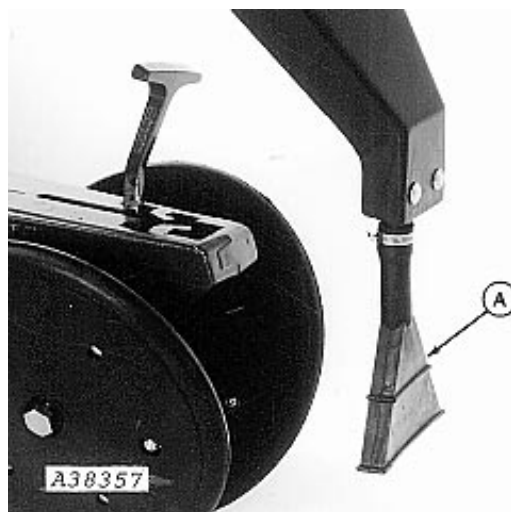


AG,OUO6074,1309 -19-04AUG00-1/1

Insecticide Band Spreader (Rear Mounted)

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.

A—Insecticide Band Spreader



AG,OUO6074,1310 -19-04AUG00-1/1

Herbicide Diffuser

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

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



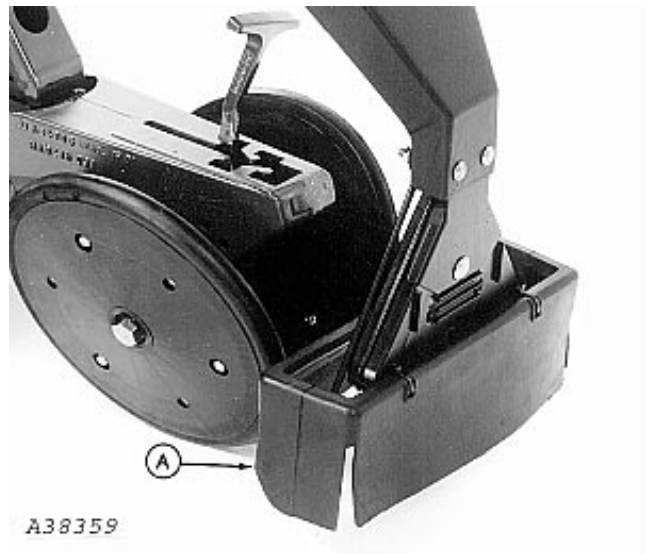
A38358 -UN-27NOV95

AG,OUO6074,1311 -19-04AUG00-1/1

Windshield

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

A—Windshield



A38359 -UN-27NOV95

AG,OUO6074,1312 -19-04AUG00-1/1

Tine-Tooth Incorporator

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

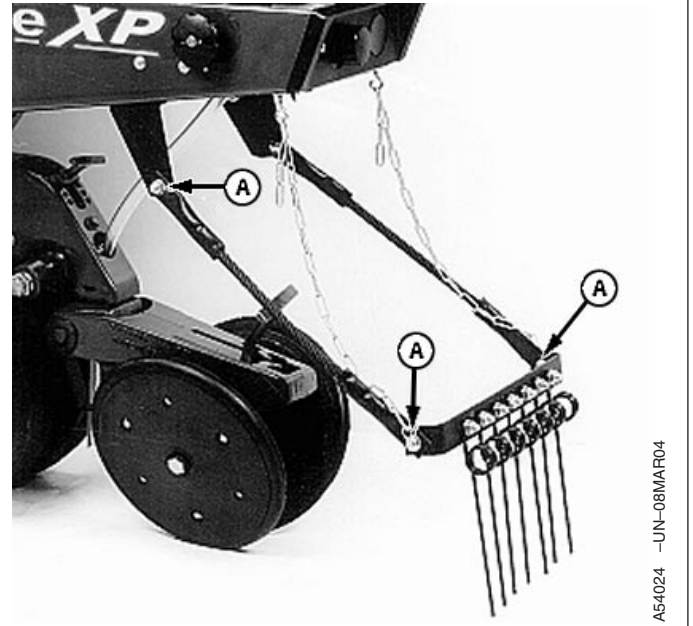
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OUO6074,00009DD -19-08MAR04-1/2

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

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

A—Nuts



OUO6074,00009DD -19-08MAR04-2/2

A54024 -UN-08MAR04

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John Deere Service Literature

Technical Information

Technical information can be purchased from John Deere. Some of this information is available in electronic media, such as CD-ROM disks, and in printed form. There are many ways to order. Contact your John Deere dealer. Call **1-800-522-7448** to order using a credit card. Search online from <http://www.JohnDeere.com>. Please have available the model number, serial number, and name of the product.

Available information includes:

- **PARTS CATALOGS** list service parts available for your machine with exploded view illustrations to help you identify the correct parts. It is also useful in assembling and disassembling.
- **OPERATOR'S MANUALS** providing safety, operating, maintenance, and service information. These manuals and safety signs on your machine may also be available in other languages.
- **OPERATOR'S VIDEO TAPES** showing highlights of safety, operating, maintenance, and service information. These tapes may be available in multiple languages and formats.
- **TECHNICAL MANUALS** outlining service information for your machine. Included are specifications, illustrated assembly and disassembly procedures, hydraulic oil flow diagrams, and wiring diagrams. Some products have separate manuals for repair and diagnostic information. Some components, such as engines, are available in separate component technical manuals
- **FUNDAMENTAL MANUALS** detailing basic information regardless of manufacturer:
 - Agricultural Primer series covers technology in farming and ranching, featuring subjects like computers, the Internet, and precision farming.
 - Farm Business Management series examines "real-world" problems and offers practical solutions in the areas of marketing, financing, equipment selection, and compliance.
 - Fundamentals of Services manuals show you how to repair and maintain off-road equipment.



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TS191 -UN-02DEC88



TS224 -UN-17JAN89



TS1663 -UN-10OCT97

- Fundamentals of Machine Operation manuals explain machine capacities and adjustments, how to improve machine performance, and how to eliminate unnecessary field operations.

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CUSTOMER SATISFACTION is important to John Deere.

Our dealers strive to provide you with prompt, efficient parts and service:

- Maintenance and service parts to support your equipment.
- Trained service technicians and the necessary diagnostic and repair tools to service your equipment.

CUSTOMER SATISFACTION PROBLEM RESOLUTION PROCESS

Your John Deere dealer is dedicated to supporting your equipment and resolving any problem you may experience.

1. When contacting your dealer, be prepared with the following information:

- Machine model and product identification number
- Date of purchase
- Nature of problem

2. Discuss problem with dealer service manager.

3. If unable to resolve, explain problem to dealership manager and request assistance.

4. If you have a persistent problem your dealership is unable to resolve, ask your dealer to contact John Deere for assistance. Or contact the Ag Customer Assistance Center at 1-866-99DEERE (866-993-3373) or e-mail us at www.deere.com/en_US/ag/contactus/.



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