

SEED POPULATION PER ACRE										METER RPM CHART											
Finger Pickup Meter Brush-Type Meter 12 Seeds Per Revolution	Brush-Type Meter 30 Seeds Per Revolution			Brush-Type Meter 36 Seeds Per Revolution			Brush-Type Meter 48 Seeds Per Revolution			Brush-Type Meter 60 Seeds Per Revolution			*Speeds not recommended for use with finger pickup meter.								
	20"	30"	36"	38"	30"	36"	38"	30"	36"	38"	30"	36"	38"	4 mph	5 mph	6 mph	7 mph	8 mph			
84300	56200	46800	44300	140500	117000	110900	168600	140400	132900	224800	187200	177200	281000	234200	221800						
73050	48700	40600	38510	121800	101500	96100	146100	121800	115530	194800	162400	154040	243500	202900	192200	*116 81	*101 81	*122			
65600	43700	36400	34500	109300	91000	86300	131100	109200	103500	174800	145600	138000	218500	182100	172500	*91 69	*109 69	*104 69	*121		
62000	41300	34400	32600	103300	86000	81500	123900	103200	97800	165200	137600	130400	206500	172100	163300						
56700	37800	31600	29900	94500	78800	74600	113400	94800	89700	151200	126400	119600	189000	157500	149000	63 60	79 75	*95 *90	*110 *105	*120	
53600	35700	29800	28200	89300	74400	70500	107100	89400	84600	142800	119200	112800	178500	148800	140900						
48200	32100	26800	25400	80300	66900	63400	96300	80400	76200	128400	107200	101600	160500	133800	126700	54 51	67 63	80 76	*95 *89	*108 *102	
46100	30700	25800	23900	76800	64000	60600	92100	77400	71700	122800	103200	95600	153500	127900	121200						
44900	29950	24950	23700	74900	62400	59100	89850	74850	71100	119800	99800	94800	149800	124800	118200	50 47	63 59	75 71	*88 *82	*100 *94	
41700	27800	23200	21950	69500	57900	54900	83400	69600	65850	111200	92800	87800	139000	115800	109700						
39300	26200	21900	20600	65500	54600	51700	78600	65700	61800	104800	87600	82400	131000	109200	103400	44 41	55 51	66 61	77 71	*88 82	
36500	24300	20300	19200	60800	50600	48000	72900	60900	57600	97200	81200	76800	121500	101300	95900						
35000	23300	19400	18400	58300	48500	46000	69900	58200	55200	93200	77600	73600	116500	97100	92000	39 37	48 46	58 56	68 65	77 74	
33300	22200	18500	17600	55500	46300	43800	66600	55500	52800	88800	74000	70400	111000	92500	87600						
31100	20700	17250	16300	51800	43100	40900	62100	51750	48900	82800	69000	65200	103500	86300	81700	35 34	43 43	52 52	60 60	69 68	
30600	20400	17000	16100	51000	42500	40300	61200	51000	48300	81600	68000	64400	102000	85000	80500						
28700	19100	15900	15100	47800	39800	37700	57300	47700	45300	76400	63600	60400	95500	79600	75400	32 28	40 35	48 42	56 49	64 56	
25100	16700	13950	13200	41750	34800	33000	50100	41850	39600	66800	55800	52800	83500	69600	65900						
24300	16200	13500	12800	40500	33800	32000	48600	40500	38400	64800	54000	51200	81000	67500	63900	27 25	34 31	40 37	47 44	54 50	
22500	14950	12500	11900	37400	31100	29500	44850	37500	35700	59800	50000	47600	74800	62300	59000						
21300	14200	11800	11200	35500	29600	28000	42600	35400	33600	56800	47200	44800	71000	59200	56100	24 22	29 27	35 33	41 38	47 44	
19800	13200	10950	10400	33000	27500	26100	39600	32850	31200	52800	43800	41600	66000	55000	52100						

NOTE: It is recommended to test a new meter with seed at a given RPM and use the percentages obtained as a guide to evaluate used or worn meters. Corn test readings should be between 97% and 103% at 55-65 RPM. Soybean test readings should be between 95% and 100% at RPM below 40. At higher RPM, the sensors will be unable to count all of the seeds dropping through the seed tubes. Cotton should be tested at approximately 30 RPM. Counts at 30 RPM should be 95% to 105%. Milo/grain sorghum seed, because it is so small, cannot be counted accurately by the sensors. An 85% reading at 30 RPM would be acceptable.

7100-176

# KINZE

## Finger Pickup Corn Meters

### Repair, Maintenance and Adjustment

# Facts

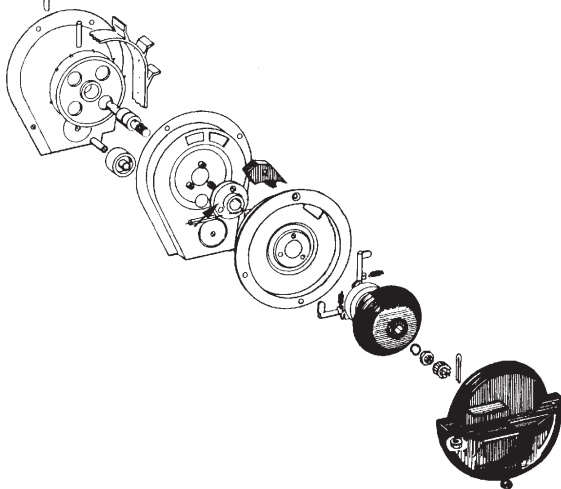
**FACT # 1:** *Today's KINZE Finger Pickup Corn Meter is the best finger pickup meter ever produced.*



Finger-type seed metering was first commercially produced in 1968 by John Deere. KINZE began producing its own Finger Pickup Corn Meter in 1980; and since that time has made many changes and improvements. The earliest changes made were to the carrier plate and fingers.

Ongoing improvements to the KINZE meter have been made in many components of the meter; and large investments have been made to produce meters in-house to even more rigid specifications and tighter tolerances than ever before.

Research and testing continues to ensure that the meters are adapted to new seed coatings, seed treatments and new seed grading systems being used by various seed companies.



**FACT # 2:** *Current KINZE Finger Pickup Corn Meters are carefully designed and manufactured using genuine KINZE parts to ensure top quality, performance and reliability.*

Thirty-seven (37) parts (including 12 springs and 12 fingers) plus hardware are produced to make each finger pickup meter. Every part is manufactured on proprietary tooling to tolerances developed by KINZE Engineering.

Specifications on some parts require tolerances so tight that they can not be measured without sophisticated equipment. Multiple checks are performed throughout the manufacturing process to ensure all parts meet these specifications.

KINZE recommends that only genuine KINZE parts be used to rebuild or repair KINZE meters to ensure optimum meter performance.

**FACT # 3:** *Proper service and maintenance of meters and of the total planter can affect meter performance and population/seed spacing accuracy.*

A properly repaired and adjusted meter can be performance tested on a number of different test stands to indicate population accuracy (seed count) and seed spacing. Many other conditions that undoubtedly affect seed spacing accuracy can not be simulated in a shop or on any kind of test stand. Infield checks behind the planter are still an important part of adjusting a planter for optimum field performance.

Some conditions affecting seed drop that can not be simulated on a test stand include...

Overall condition of the planter — especially the drive components — where excessive wear, stiff chains, improper alignments, improper tire inflations, etc. can cause erratic seed drop.

Field conditions and tillage practices causing row unit bounce and vibration can contribute to less than optimum population and spacing accuracy.

Troublesome hopper-applied seed treatments are not normally used when testing.

Recommended operating speed ranges should be observed for optimum performance.

**FACT # 4:** *Seed size, shape and coating can affect meter performance and accuracy.*

Different shapes and sizes of seed corn can perform differently in the same meter, but the finger pickup meter has demonstrated its ability to plant all sizes within acceptable accuracy ranges. Different seed coatings and treatments can also affect metering. For this reason, it is always advisable to check a meter's condition and adjustment prior to planting using the seed that will be planted.

**FACT # 5:** *The basics of assuring a meter is clean, in good repair and properly adjusted to factory specifications can be more important for proper meter performance than the "fine tuning" being advocated by some non-KINZE service providers.*

After nearly twenty years of refining, manufacturing and servicing finger pickup meters, KINZE knows these basics can provide excellent meter performance over a broad range of seed sizes and shapes. While KINZE recognizes that subtle adjustments may be possible to enhance meter

performance for a specific seed, the feasibility of changing that subtle adjustment every time a seed variety changes is in doubt. Further, if such adjustments are minor, it is uncertain that those adjustments will “hold” over the course of a complete planting season.

Each complete new KINZE Finger Pickup Corn Meter is tested prior to packaging and shipment to assure that it performs to KINZE specifications. As a manufacturer who produces tens of thousands of finger pickup meters each year, KINZE can not know what specific seed size, type or coating will be used in any individual meter. Therefore, we must adjust each meter to the factory specifications that will ensure the best possible performance over a broad range of seeds. KINZE has added a wave washer between the adjustment nut and finger holder to ensure the set tension is “held” as the meter components “wear-in”.

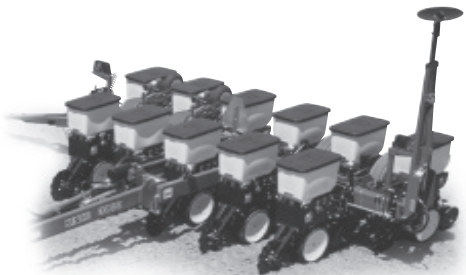
If an individual meter can be “fine tuned” to a particular seed to improve accuracy, such improvement in no way indicates a defective meter or any defective component parts. New meters that perform to KINZE factory test standards and specifications should not require the replacement of parts.

**FACT # 6:** *Different test stands can be used to check finger pickup meters, and authorized KINZE Dealers may choose to use different test stands.*

Much has been written and said regarding the accuracy and merits of different test stands and procedures. More important than the type of test stand or procedure used is the interpretation of those test results and the customer service that results. KINZE has always strongly encouraged its authorized Dealers to acquire and use a meter test stand as a planter service to their customers. While we offer and promote a KINZE test stand, we have many Dealers providing excellent service with other styles of test stands.

KINZE first used a belt-type test stand in the early 1980’s, later opting for the current test stand that provides a much larger (1000 seed) sample for a more statistically accurate population accuracy assessment.

We understand the preference of some Dealers and other service providers for a belt-type test stand, as well as the perceived advantages of the belt. We believe multiple repetitions of each meter test should be made to verify test results when using a belt-type test.



**FACT # 7:** *KINZE recognizes and respects the opportunities for service providers other than authorized KINZE Dealers to offer meter repair and adjustment services.*

KINZE welcomes fair and competent competition. Such competition makes us better and assures farmer customers the best possible product quality, performance and service. We believe KINZE, and our properly trained and equipped KINZE Dealers, will continue to provide the best available service and value.

**FACT # 8:** *Some non-KINZE meter repair and adjustment providers are inaccurately advising farmer customers that they should be able to seek warranty reimbursement for repairs not done by an authorized KINZE Dealer or for the use of non-KINZE replacement parts.*

According to the terms and conditions of the KINZE Limited Warranty, KINZE will repair or replace any part manufactured or supplied by KINZE that fails to meet KINZE specifications or that is deemed to have failed due to defective materials or workmanship.

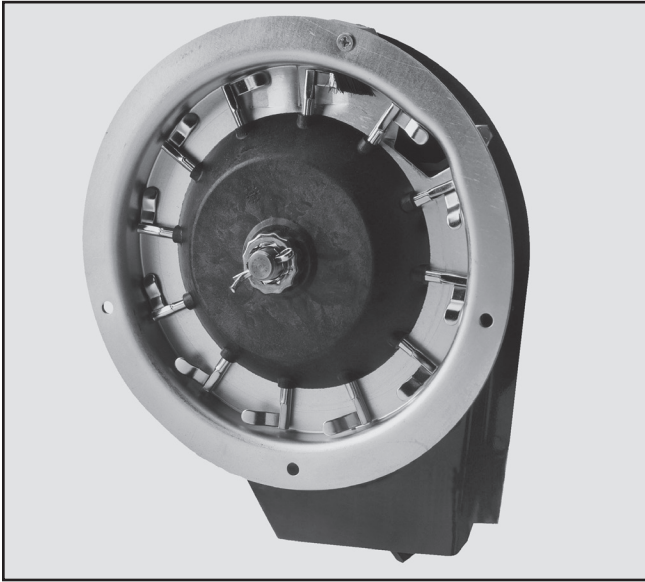
KINZE will not, in any case, allow warranty credit for work not performed by an authorized KINZE Dealer or for any parts procured from other manufacturers or suppliers.

If a new KINZE Finger Pickup Corn Meter is known to KINZE to have been repaired by any service provider other than an authorized KINZE Dealer, KINZE can not allow any warranty claim for that meter. The customer should expect to return that meter to the alternate service provider for that provider’s consideration for their reimbursement of any labor or repair parts.

**FACT # 9:** *KINZE will continue its pursuit of superior product quality, performance and reliability; and we will continue to work through properly equipped and factory trained authorized KINZE Dealers to provide customers with quality repair parts and product service after the new equipment sale.*

**FACT # 10:** *Planter owners should be wary of claims made by meter repair and adjustment service providers that significant dollar benefits will result from their adjustments to brand new finger pickup meters. KINZE believes new meters need to run to “break in” the meter before any “fine tuning” may make a lasting and measurable difference.*

**KINZE Manufacturing, Inc.**  
Williamsburg, IA 52361-0806



Even if a seed meter is in good mechanical condition and properly adjusted, the accuracy of the meter can be affected by three conditions.

1. Size and shape of seed being planted
2. Fungicide Seed Treatments
3. Meter operating RPM

### Size And Shape Of Seed

The seed meter must be able to singulate one seed from a given amount of seed in the meter and drop that seed at the precise instant to achieve accuracy of seed placement. The size and shape of the seed can affect how difficult or easy the seed is to singulate.

A small seed has a greater tendency of overplanting than a large seed.

A flat seed has a greater tendency of overplanting than a round seed. Flat seed can become locked together or stacked one on top of the other under the metering fingers and fail to separate as the fingers pass over the indentation of the carrier plate.

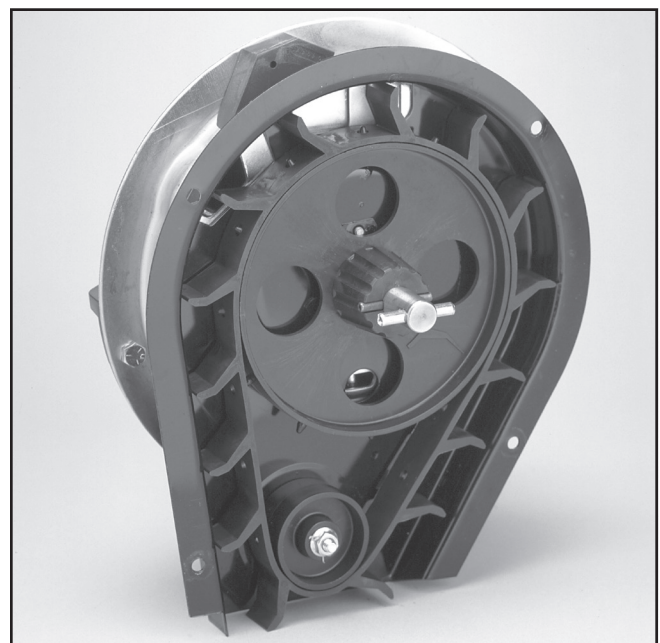
Therefore, a small flat seed is the most difficult seed to singulate and a large round seed is the easiest to singulate.

**Plateless seed**, in most cases is a mix of graded flats and rounds of the same size. Most sizes of plateless seed will meter very accurately. The mix of rounds with the flat seed improves the ability of the meter to singulate the flat seed.

The easier the seed is to singulate by the meter, the more forgiving the meter is in regard to adjustment, mechanical condition and operating speed.

### Fungicide Seed Treatments

Fungicide treatments change the finish or texture of the seed coating and affect the meters ability to hold the seed and meter accurately. Captan, a commonly used fungicide for years, leaves a rough or course finish on the seed. Newer fungicide formulation such as Maxim-Apron treatments have become very common and continue to increase in market share. Maxim-Apron treatments leave a smooth polished finish on the seed which causes underplanting, especially with flat seed sizes. Changes made to the 1998 production finger holder assembly have greatly improved the ability of the seed meter to accurately meter seeds with these new treatments.



## Meter Operating RPM

Proper meter RPM is critical to maintaining maximum metering accuracy.

As meter RPM is increased beyond the ideal RPM range, the chances of the meter overplanting will also increase. As the RPM drops below the ideal RPM range, the chances of the meter underplanting will increase.

What is the ideal meter speed range?

This can only be determined accurately with the use of the meter test unit. This eliminates other factors that could affect actual planted population such as drive wheel slippage, etc. The ideal meter RPM range for any given seed size is plus or minus 3% of 100% on the meter test unit.

As a general rule of thumb, a meter RPM range of between 55 and 65 RPM would be ideal for most conditions.

The following example will help you to determine the approximate RPM a meter is turning in a normal planting situation.

If the seed transmission is set on the 1/1 ratio, the seed meter will be turning approximately 11 RPM per MPH of ground speed.

On a Model 2000 Planter, set on 30" row spacing and using the 23 tooth drive and driven sprockets, the planted population would be approximately 26,659 seeds per acre and the ideal maximum ground speed would be 6 MPH.

$11 \text{ RPM} \times 6 \text{ MPH} = 66 \text{ meter RPM.}$

To give you an example of why meter RPM can greatly affect metering accuracy, let's look at a meter with an operating speed of 60 RPM.

The finger assembly is discharging a seed to the meter seed belt every  $\frac{1}{12}$  of a second. At this same 60 RPM, each finger has approximately  $\frac{1}{6}$  of a second to get rid of any doubles or triples that may be under the finger as it passes over the two indentations in the carrier plate and the brush before the seed is discharged to the seed belt. Therefore, optimum planting speed is directly related to the ease at which the meter can singulate the seed.

## Seed Meter Lubrication

To ensure efficient operation of the finger pickup seed meter and extend the life of its components, mix one teaspoon of powdered graphite with the seed twice daily. Even distribution of the graphite with the seed is critical with newer seed coatings to provide lubrication for the seed pickup mechanism. Graphite application frequency may need to be increased if using additional seed additives.

## Erratic Planting

A loose finger holder assembly will cause the finger pickup seed meter to plant erratically. The GA8343 wave washer is designed to ensure proper meter tension to maintain accurate operation of the seed meter. With the finger holder against the carrier, install the wave washer and adjusting nut. Tighten adjusting nut to fully compress the wave washer. Then back off the nut  $\frac{1}{2}$  to 2 flats ( $\frac{1}{12}$  to  $\frac{1}{3}$ ) to obtain rolling torque of 14 to 22 inch pounds.

## Overplanting By The Seed Meter

Overplanting by the seed meter is a result of more than one seed at a time being delivered to the seed belt. This may show up as doubles or triples. The cause of overplanting is primarily due to meter RPM being high or excessive wear of the carrier plate at the indentation.

## Underplanting By The Seed Meter

Underplanting can generally be isolated to the finger assembly. It may be caused by:

- Misadjustment of finger assembly.

- A broken spring.

- Lost tension of a spring due to rust.

- Rust on a finger where it rotates in the finger holder.

There are more causes for both underplanting and overplanting listed in the troubleshooting portion of the Operators & Parts Manual, but those listed above are the main causes of inaccurate metering and attention should be directed to these areas first

## Evaluating Complaints Of Inaccurate Planting Rate

First determine the basis of such a complaint.

Is the planter overplanting or underplanting?

How was planted population determined?

Many times planted population is based on supposed acres planted and number of bags of seed used. This type of calculation should not be considered because the margin of error may be too great.

The only way to get an accurate determination of actual planted population is to conduct a field check. A random check of  $\frac{1}{1000}$  of an acre at a number of locations, counting seeds found in each and multiply each by 1000. This will give the actual planted rate. Determine if the average seed spacing is consistent with the given seed spacing on the rate chart of the operators manual and look to see if there are any skips or doubles.

If the planter can be operated in field planting conditions, it may be desirable to tie up a row unit closing wheel assembly, set the gauge wheel depth to the shallowest position and operate at normal planting speed.

Planting population is determined by two things:

Planter Drive Ratio

Meter Performance

Drive ratio can be defined as the difference between the speed that the planter is traveling and the RPM at which the meter is turning. Drive ratio determines seed spacing. Improper seed spacing can be caused by:

Incorrect tire pressure.

Incorrect placing of a sprocket in the driveline.

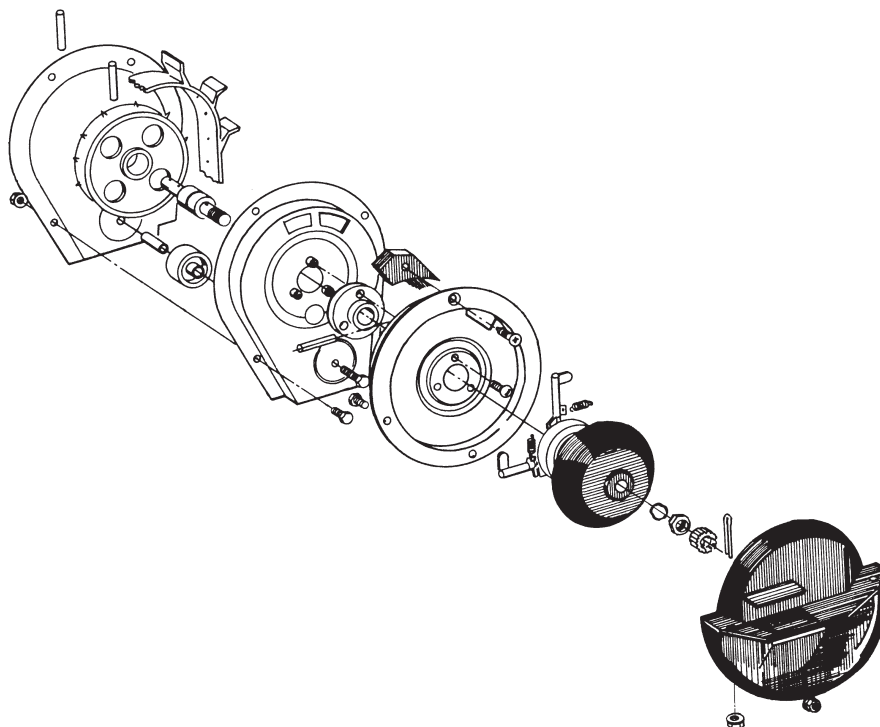
Stiff or worn drive chains.

Poor row unit drive clutch alignment.

Drive wheel slippage greater or less than slippage factored into seed rate chart.












If the seed spacing is consistent but the desired population is not correct, the seed transmission rate should be changed accordingly.

If spacing is correct but skips or doubles are found, the problem is in the meter and not in the planter drive ratio.



**This page left blank intentionally.**

**BRUSH-TYPE SEED METER**

	<b>Crop</b>	<b>Disc Color-Code (Disc Part No.)</b>	<b>Upper Brush Retainer</b>	<b>Cells</b>	<b>Seed Size Range</b>	<b>*Lubricant</b>
	Soybean	Black (GA5794)	GD11122	60	2200 to 4000 seeds/lb.	<b>Graphite Talc</b>
	Specialty Soybean	Dark Blue (GA6184)	GD11122	48	1400 to 2200 seeds/lb.	<b>Graphite Talc</b>
	Small Milo/Grain Sorghum	Red (GA5982)	GD8237	30	14,000 to 20,000 seeds/lb.	Talc
	Large Milo Grain Sorghum	Light Blue (GA6187)	GD8237	30	10,000 to 16,000 seeds/lb.	Talc
	High-Rate Small Milo/Grain Sorghum	Red (GA5795)	GD8237	60	12,000 to 18,000 seeds/lb.	Talc
	High-Rate Large Milo/Grain Sorghum	Yellow (GA6633)	GD8237	60	10,000 to 14,000 seeds/lb.	Talc
	Cotton, Acid-Delinted	White (GA5796)	GD11122	30	4200 to 5200 seeds/lb.	Talc
	Large Cotton, Acid Delinted	Tan (GA6168)	GD11122	36	3800 to 4400 seeds/lb.	Talc
	High-Rate Cotton, Acid-Delinted	Light Green (GA6478)	GD11122	48	4200 to 5200 seeds/lb.	Talc
	Hill-Drop Cotton, Acid-Delinted	Brown (GA6182)	GD11122	12 (3 to 6 seeds/ cell)	4000 to 5200 seeds/lb.	Talc
	Small Hill-Drop Cotton, Acid-Delinted	Dark Green (GA7255)	GD11122	12 (3 to 6 seeds/ cell)	5000 to 6200 seeds/lb.	Talc

\*For More information on application rate see Additives section.

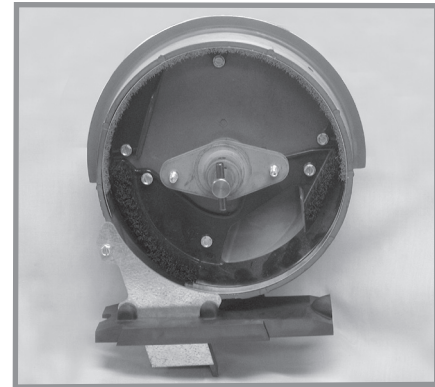
	<p><b>Use GD11122 upper brush retainer when using cotton and soybean discs.</b></p>		<p><b>Use GD8237 upper brush retainer when using milo/grain sorghum discs.</b></p>
---	---	---	--

Turn seed disc counterclockwise when installing on meter hub while tightening two wing nuts that retain disc. Seed disc should have slight resistance when rotated counterclockwise after wing nuts are tight.

Brush-type seed meter attaches to seed hopper same as finger pickup seed meter. Secure to bottom of seed hopper with two 5/16" thumbscrews. Tighten thumbscrews slightly with pliers. **DO NOT OVER TIGHTEN.**

Misalignment between drive coupler and seed meter input shaft may cause erratic seed spacing from momentary stoppage of seed disc. Check alignment and adjust as needed.

Refer to planting rate charts in this manual for recommended seed drive transmission sprocket combinations.



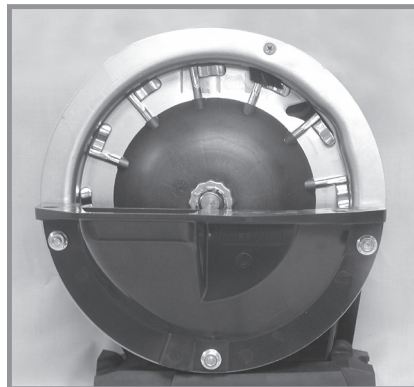
Shown without seed disc installed


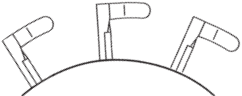


**NOTICE**

Replace hopper lids after hoppers are filled to prevent accumulation of dust or dirt in seed meter which will cause premature wear.

**NOTE:** Clean seed is required to ensure accurate seed metering from brush-type seed meters. Remove seed discs daily and check seed meter or brushes for buildup of foreign material, such as hulls, stems, etc.

**FINGER PICKUP SEED METER**






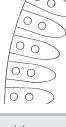






Crop	Fingers	*Lubricant
Corn	 Part No.: GR1848 - Finger Assembly, Corn	Graphite Talc
No. 1 and/or No. 2 size Confectionery Sunflower Seeds	 Part No.: GR1848 - Finger Assembly, Corn	Talc
No. 3 and/or No. 4 size Oil Sunflower Seeds	 Part No.: GR1897 - Finger Assembly, Oil	Talc
Blank fingers replace alternate fingers to reduce planting rate by half while allowing the finger wheel to maintain a minimum of 40 RPM when planting low rates.	 Part No.: GD11787 - Half Rate Blank Finger	Graphite Talc

\*For More information on application rate see Additives section.

**NOTE:** Always field check seed population to verify planting rates.

**NOTE:** Refer to planting rate charts in this manual for recommended seed drive transmission sprocket combinations.

**EDGEVAC SEED METERS**

	<b>Crop</b>	<b>Disc Color-Code (Disc Part No.)</b>	<b>Cells</b>	<b>Seed Size Range</b>	<b>Singulator Brush Setting</b>	<b>Vacuum Setting (H2O)</b>	<b>*Lubricant</b>	<b>See Notes</b>
	Corn	Light Blue (GD17049)	39	35-70 lbs./80k	5-7	18-20	Graphite Talc	4, 5
	Popcorn			2210-4200 seeds/lb.	9	18	Graphite Talc	1, 4, 5
	Low-Rate Corn	Light Green (GD17048)	24	35-70 lbs./80k	5-7	18-20	Graphite Talc	4, 5
	Low-Rate Popcorn			2210-4200 seeds/lb.	9	18	Graphite Talc	1, 4, 5
	Soybean	Black (GD14467)	60	2200-4000 seeds/lb.	5	10	Graphite Talc	1
	Soybean, High-Rate	Dark Blue (GD14468)	120	2200-4000 seeds/lb.	5	10	Graphite Talc	
	Milo/Grain Sorghum	Yellow (GD17050)	60	10,000 - 20,000 seeds/lb.	7	18	Talc	1, 2
	Hill-Drop Cotton, Acid-Delinted	Brown (GD17187)	20 (3 seeds/ cell)	3800-4400 seeds/lb.	8	23	Talc	3
	Small Hill-Drop Cotton, Acid- Delinted	Grey (GD18095)	20 (3 seeds/ cell)	4200-4400 seeds/lb.			Talc	3
	Cotton, Acid- Delinted	Dark Green (GD17186)	54	3800-5200 seeds/lb.	8	20	Talc	3
	Dry Edible Bean, Small			1200-2500 seeds/lb.	6	18	Graphite Talc	3, 5
	Dry Edible Bean, Large	Tan (GD14477)	54	800-1200 seeds/lb.	5	18	Graphite Talc	5
	Small Cotton/ Sunflower	White (GD18098)	54	4200-5200 seeds/lb.	5	30	Talc	3

**\*For More information on application rate see Additives section.**

Install selected seed disc. Position vacuum cover on meter by aligning keyhole slots over bolt heads. Push cover on meter and turn counter clockwise to lock in place.

**NOTES:**

1. Requires use of seed meter baffle.
2. Requires use of cleanout brush.
3. Requires use of cleanout brush w/ball-type ejector.
4. Flat seeds may require higher vacuum level.
5. Larger seeds may require lower singulator brush setting. Smaller seeds may require higher setting.

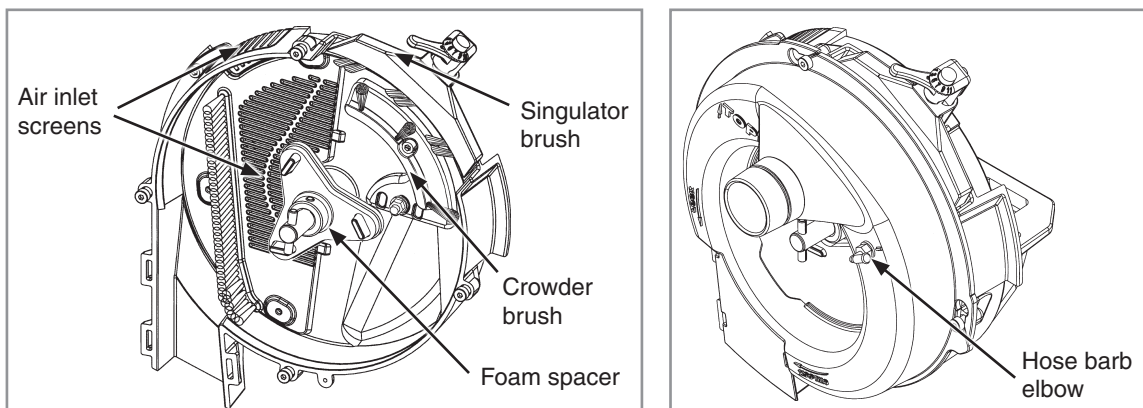
**NOTE:** See “EdgeVac General Planting Rate Information” and “Check Seed Population” pages for more information. Always field check seed population to ensure planting rates are correct.

**NOTE:** Singulator brush settings are marked from 1 thru 11. Lower singulator brush settings are least aggressive. Higher singulator brush settings are most aggressive.

**NOTE:** Mixing seed sizes and shapes affects meter performance. Use consistent seed size and shape.

**NOTE:** Use 1 tablespoon powdered graphite with each hopper fill of seed. Seed treatment, foreign material, dirt or seed chaff may cause gradual reduction of seed disc fill (population). See “Additives” pages for more information.

**NOTE:** Excessive seed treatment, humidity, and light-weight seed can affect meter performance. Use ½ cup of talc with each hopper fill of seed and mix thoroughly to coat all seeds and adjust rates as needed. Use of talc aids seed flow into meter, singulation, and disc seed drop.



**NOTE:** Foreign material in seed disc orifices, such as seed chips, hulls, stems, etc., may affect seed delivery. Clean seed ensures accurate seed metering from vacuum seed meter. Remove Seed discs daily to check for buildup of foreign material in seed disc orifices.

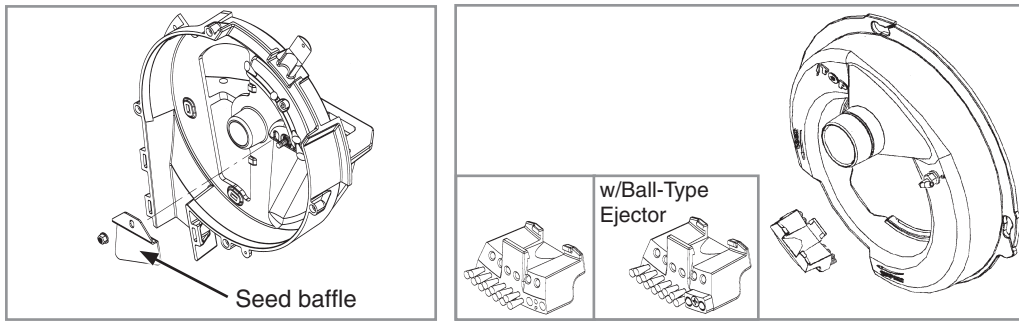
Crowder brush aids in singulation of small flat seeds by crowding seeds to outer perimeter of seed disc and orienting seeds to allow singulator brush to be more effective.

Air inlet screens allow air to enter system and aids in keeping field residue or other foreign material out of meter.

Foam spacer gently preloads seed disc against vacuum cover when no vacuum is present.

3/16" hose barb elbow on seed meter vacuum cover allows measurement of vacuum level at each meter. A customer-supplied vacuum gauge is required.

See “EdgeVac Seed Meter Maintenance” and “Preparation For Storage” in Lubrication and Maintenance section for more information.



**NOTE: Damaged seed or seed containing foreign material will cause plugging of seed disc orifices and require more frequent seed meter cleanout to prevent underplanting.**

**SEED BAFFLE**

Seed baffle prevents excessive seed in meter from restricting air flow through seed. Used with 60 Cell Milo/Grain Sorghum Disc, 60 Cell Soybean Disc, 120 Cell High-Rate Soybean Disc and 39 Cell, and 24 Cell Popcorn Discs.

**CLEANOUT BRUSH**

Cleanout brush removes foreign material and seed remnants to help prevent plugging of seed disc orifices. Used with 60 Cell Milo/Grain Sorghum Disc.

**CLEANOUT BRUSH W/BALL-TYPE EJECTOR**

Cleanout brush w/ball-type ejector ejects seed remnants from seed disc orifices. Used with 20 Cell Hill-Drop Cotton, Acid-Delinted (3 Seeds Per Cell) Discs; 54 Cell Acid-Delinted Cotton/Small Dry Edible Bean; and Small Cotton/Sunflower Discs.

***NOTICE***

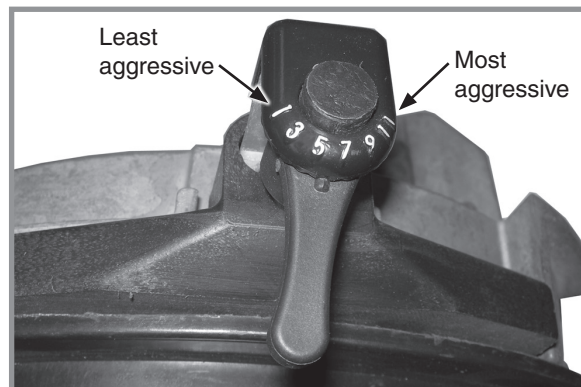
**Replace hopper or tank lids after filling to prevent accumulation of dust or dirt in seed meter resulting in premature wear.**

**NOTE: Seed size, seed shape, seed treatments, travel speed, and planting rate affect meter performance.**

1. Select seed disc (and seed meter baffle, cleanout brush and/or cleanout brush w/ball-type ejector if applicable) to match crop and population.



**Singulator brush adjustment location**



**Singulator brush adjustment lever**

2. Adjust singulator brush to initial setting. Seed size, seed shape, seed treatments, travel speed and planting rate all affect meter performance.
3. With vacuum fan running, lower planter to planting position and drive forward a short distance to load seed into seed disc cells.

- Adjust vacuum level to initial setting according to tables on page.

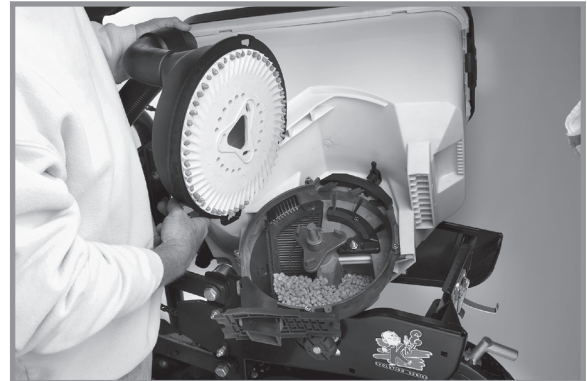
**NOTE: Vacuum reading will be much lower when seed disc cells are empty. Load all seed cells before setting vacuum level.**

**NOTE: Operate vacuum fan 3-5 minutes to bring oil up to normal operating temperature prior to making final vacuum level adjustment.**

- Perform optional seed disc fill check.



**Remove vacuum cover and seed disc**



**Check seed fill**

With vacuum hose connected and vacuum fan operating, remove vacuum cover and seed disc as an assembly. Inspect seed discs for proper seed fill.

See “Seed Metering System (EdgeVac) Troubleshooting” in Troubleshooting section.

## SEED METER CLEANOUT

**NOTE: Use of damaged seed or seed containing foreign material will cause plugging of seed cell orifices and require more frequent seed meter cleanout to prevent underplanting.**

Thorough seed meter cleanout is important to maintain genetic purity.

- Disengage seed drive and remove seed hopper and meter.
- Dump seed from right rear corner of hopper into a container.
- (Mechanical) Disassemble seed disc by removing wing nuts.  
(EdgeVac) Lay hopper on its right side. Rotate seed meter vacuum cover clockwise to align keyhole slots with bolt heads. Lift off cover. Remove seed disc.
- Empty Meter.
- Thoroughly inspect brushes in meter to ensure all seed is removed.
- Replace seed disc. (Mechanical) Install wing nuts. (EdgeVac) Install Vacuum cover.

**ADDITIVES**

**CONVENTIONAL HOPPERS**

Mix one tablespoon of **powdered graphite** with seed each time hoppers are filled. Regular graphite use prolongs life of the seed meter components, improves seed spacing, and may reduce buildup of seed treatments.

**NOTE: DO NOT apply graphite only in center of hopper. It will not distribute evenly.**

Apply graphite around outer perimeter of hopper.

**ASD HOPPERS**

Mix 1 pound bottle of powdered graphite each time the bulk seed hopper is filled. Graphite should be added in layers as the bulk seed hoppers are filled. Regular graphite use prolongs life of the seed meter components, improves seed spacing, and may reduce buildup of seed treatments.

<b>Lubricant Application Rate</b>	
<b>Graphite</b>	
Conventional Hoppers	1 Tbs./Hopper Fill
ASD Hoppers	1 Pound Bottle/Hopper
<b>Talc</b>	
Conventional Hoppers	¼ C.*
ASD Hoppers	4 Pounds/Hopper
*Sunflowers increase talc amount from ¼ C. to ½ C.	



**Adding graphite to conventional hopper**



**Adding graphite ASD hopper**

**NOTE: Additional graphite or talc may be required to retard buildup of seed treatments on meter components. More frequent cleaning of monitor seed tubes may be necessary due to use of additional graphite or talc.**

**Talc seed lubricant** may be used instead of or in addition to graphite to reduce seed treatment buildup on seed disc and meter components.

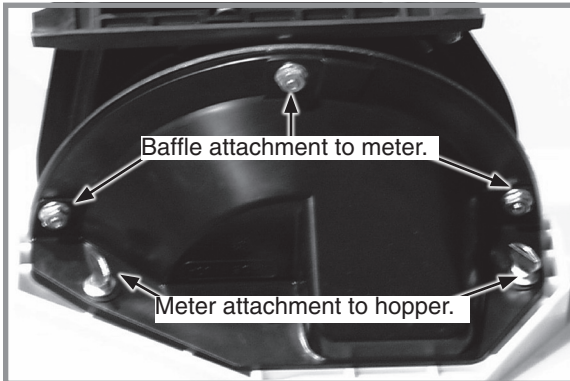
1. Coat seed disc and brushes with talc before installing meter.
2. Fill hopper ½ full of seed, add ¼ cup (conventional); 2 pounds (ASD) of talc and **mix thoroughly.**
3. Finish filling hopper, add another ¼ cup (conventional); 2 pounds (ASD) of talc and **mix thoroughly.**
4. Adjust rate of talc use as needed so all seeds are coated, while avoiding a buildup of talc in bottom of hopper.

Humid conditions and/or small sized seeds with extra seed treatment may require as much as one cup of talc per hopper to prevent seed treatment buildup on seed disc and/or brushes.

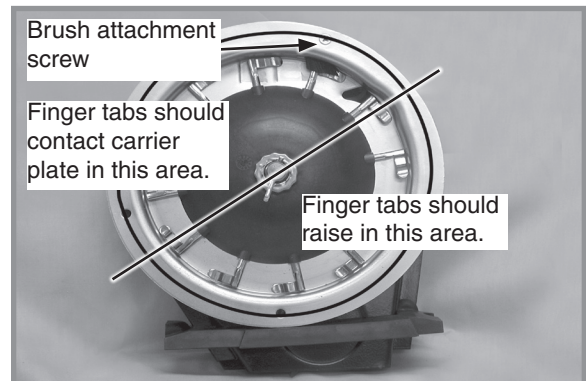
**NOTE: Liquid seed treatments or inoculants may create buildup on the seed disc or brushes. Check frequently for proper population and/or seed delivery when using any liquid seed treatment.**

Completely mix all treatments with seed following manufacturers' recommendations. Seed treatment dumped on top of seed after hopper is filled may not mix properly and cause seed bridging, reducing population or stopping meter from planting.

**FINGER PICKUP SEED METER INSPECTION/ADJUSTMENT**

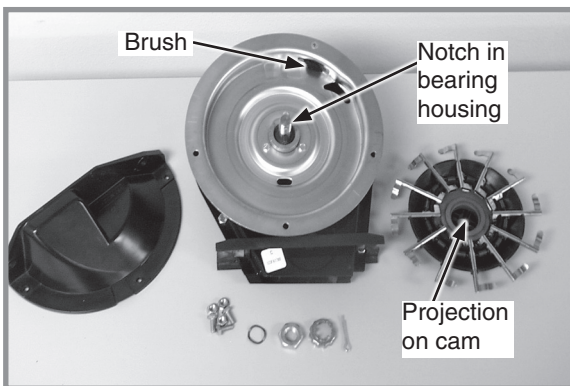


**Removing meter and baffle**

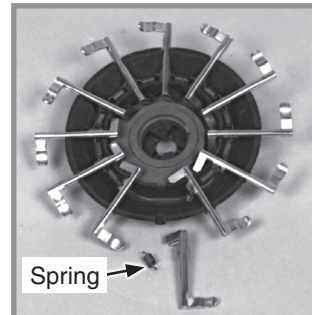


**Proper finger operation**

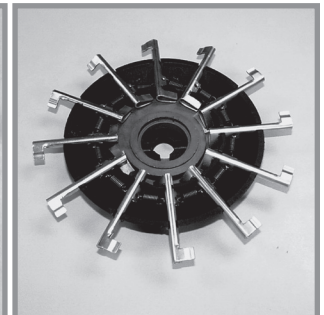
1. Remove two thumbscrews and meter from seed hopper and remove three cap screws and baffle from meter assembly.
2. Rotate seed meter drive by hand to ensure springs are holding tabs of fingers against carrier plat and fingers raise in correct area as shown in above photo.



**Finger pickup meter parts**



**Corn Finger Assembly**  
(Position Spring Opening Toward Holder)



**Oil Sunflower Finger Assembly**

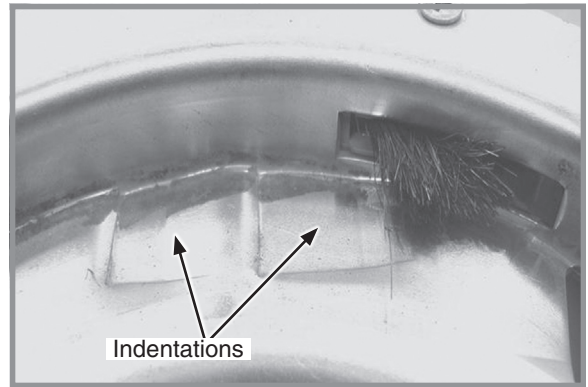
Buildup of debris or chaff may prevent proper finger operation and requires disassembly and cleaning of finger pickup meter.

1. Remove cotter pin, cover nut and adjusting nut and wave washer (If applicable) from drive shaft.
2. Carefully lift finger holder with fingers and cam off shaft and clean.
3. Check brush for wear and replace if necessary or after every 100 acres per row of operation (Approximately 800 acres of corn or sunflowers on a 8 row machine or 1200 acres on an 12 row machine).

**NOTE: It is not necessary to remove finger holder to replace brush.**

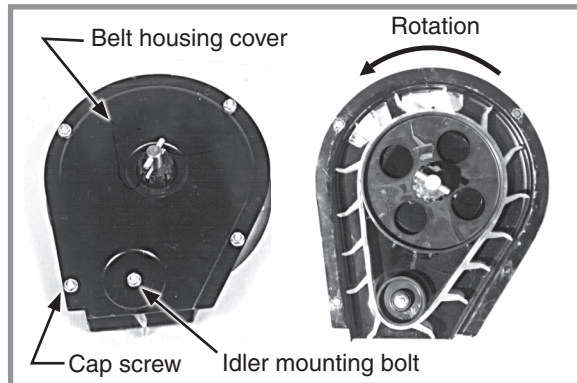
4. Remove springs from fingers and remove finger from holder by lifting it out of friction fit slot. Life expectancy of these parts is about 600-900 acres per row of operation under average conditions.
5. Reassemble meter in reverse order after cleaning and replacing defective parts. Make sure open end of spring loop is toward inside of finger holder when replacing fingers.
6. Install fingers in holder so holder is flush with carrier plate when assembled. A cam projection aligns with a mating notch in bearing housing to ensure proper operation when assembled.

7. Check indentations on carrier plate for wear before installing finger holder on carrier plate. Excessive wear of carrier plate at indentations will cause over planting especially with small sizes of seed. Inspect carrier plate annually. Life expectancy should be 250-300 acres per row of operation under average conditions.
8. Install wave washer and adjusting nut with finger holder flush against carrier. Tighten adjusting nut to fully compress wave washer. Back off nut 1/2 to 2 flats to obtain rolling torque of 22 to 25 inch pounds.
9. Turn finger holder by hand to make sure it is firmly against carrier plate, but can be rotated with moderate force.
10. Install cover nut and cotter pin. Reinstall baffle.

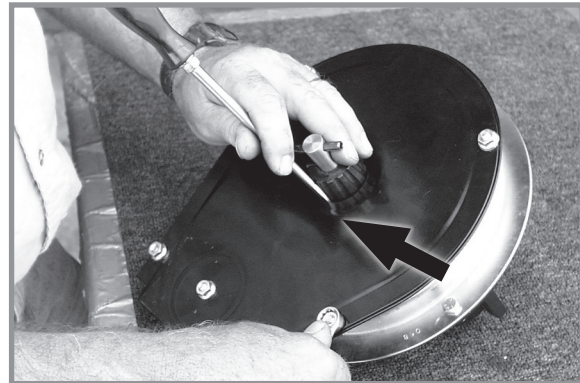


**Worn carrier plate**

**NOTE: Check adjusting nut tightness on each unit after first day of use and periodically thereafter.**



**Belt idler**



**Centering belt housing cover**

Remove four cap screws around edge of housing cover and nut from belt idler mounting bolt. Paddles must be correctly oriented as shown above. If belt is replaced. A diagram molded into drive sprocket shows correct orientation.

**NOTICE**

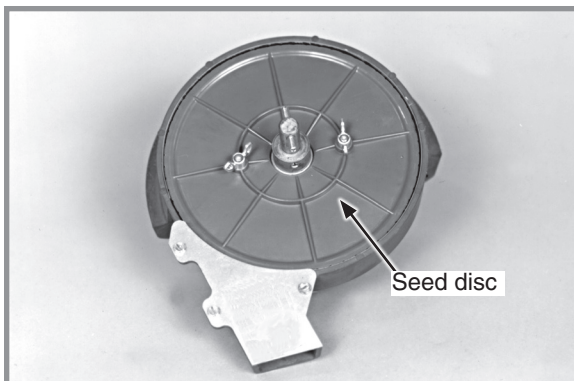
**Do not over-tighten hardware or components may be damaged.**

Reinstall housing cover. **DO NOT TIGHTEN** hardware. Wedge a screwdriver between sprocket hub and housing cover as shown above. Pry cover down until centered on belt housing and tighten hardware. Rotate meter drive shaft and check idler alignment. Seed belt should “run” centered on idler or with only slight contact with belt housing or cover.

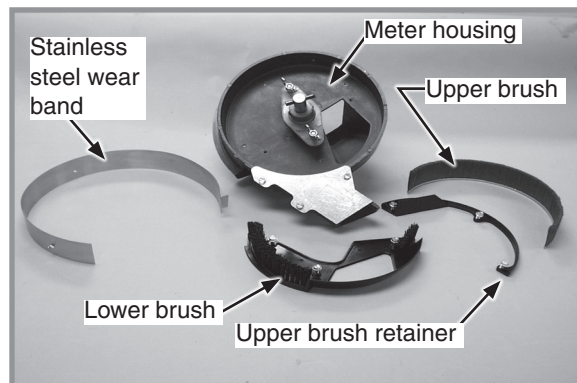
**CLEANING FINGER PICKUP SEED METER FOR STORAGE**

1. Disassemble meter and blow out any foreign material.
2. Wash **ONLY** in mild soap and water. Do not use gasoline, kerosene, or any other petroleum based product. Dry thoroughly.
3. Coat lightly with a rust inhibitor.
4. Rotate finger assembly so finger does not touch brush.
5. Reassemble and store in a dry, rodent-free location.

**BRUSH-TYPE SEED METER MAINTENANCE**



**Brush-type seed meter seed disc installed**

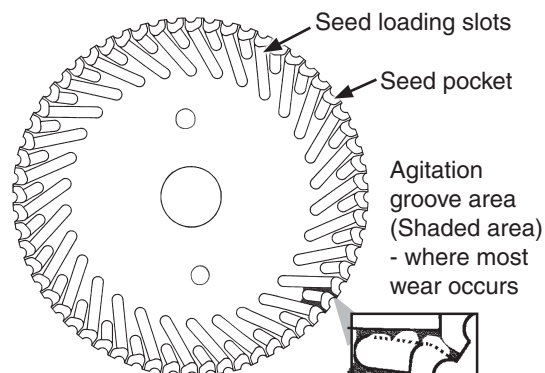


**Brush-type seed meter parts**

Use clean, high quality seed. Damaged or cracked seed, hulls, or foreign materials can become lodged in upper brush and greatly reduce meter accuracy. Remove seed disc daily and check for buildup of foreign material on seed disc, particularly in seed loading slots. Clean disc by washing it with soap and water. Check for cracked seed, hulls, etc. lodged between brush retainer and stainless steel wear band which can greatly reduce accuracy of the meter because upper brush will not be able to retain seed in seed disc pocket. Thoroughly clean brush areas of meter housing.

**SEED DISC WEAR**

Most seed disc wear is found in the agitation groove area (area between seed loading slots). Wear affects planting accuracy at high RPM. Lay a straight edge across disc surface at agitation groove area and measure gap between disc and straight edge. If agitation groove areas are worn in excess of .030" and accuracy starts to drop off at higher meter RPM, replace seed disc. Estimated seed disc life expectancy under normal operating conditions is approximately 200 acres per row. Severe operating conditions such as dust, lack of lubrication or abrasive seed coating could reduce seed disc life expectancy to under 100 acres per row.

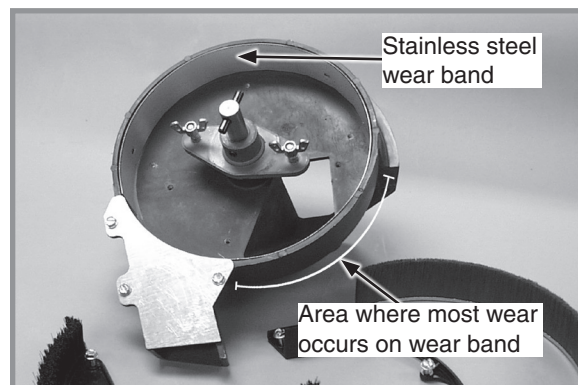


**STAINLESS STEEL WEAR BAND**

**NOTICE**

**If wear band wears through or if meter is used without wear band in place, meter housing may be damaged.**

Stainless steel wear band protects meter housing from wear and is .030" thick. Replace wear band when there is approximately .020" of wear in primary wear area. Estimated life expectancy of stainless steel wear band is 240-800 acres per row.

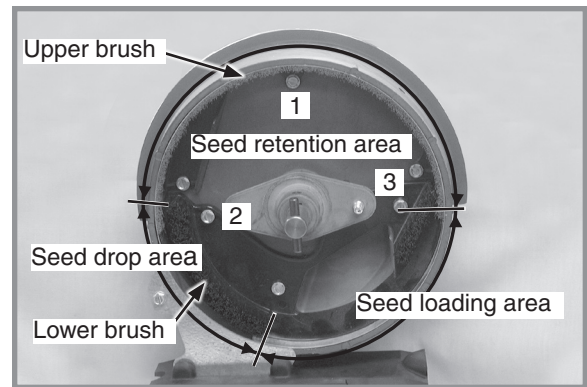


**Stainless steel wear band**

### UPPER BRUSH

Upper brush holds seed in seed disc pocket in seed retention area. Brush must apply enough pressure against seed in seed disc pocket as disc rotates through seed retention area to prevent seed from dropping out of disc pocket. A damaged spot, excessive brush wear, or foreign material lodged in brush may greatly reduce meter performance.

Replace upper brush at 120-400 acres per row of use or sooner if damage or excessive wear is found. Position upper brush into inner perimeter of seed retention area. Make sure base of brush is tight against bottom of meter housing. Install brush retainer and three hex head screws. Tighten screws in sequence shown in photo at right.



Upper brush installation

**NOTE: Use GD11122 upper brush retainer for soybean and cotton discs. Use GD8237 upper brush retainer for milo/grain sorghum discs.**

### LOWER BRUSH

Lower brush moves seed down seed loading slots to seed pockets, isolates seed in reservoir from entering seed tube, and cleans seed loading slots. Estimated lower brush life expectancy is 240-800 acres per row. Replace lower brush if bristles are deformed or missing, or if there are cracks in brush retainer.

### CLEANING BRUSH-TYPE SEED METER FOR STORAGE

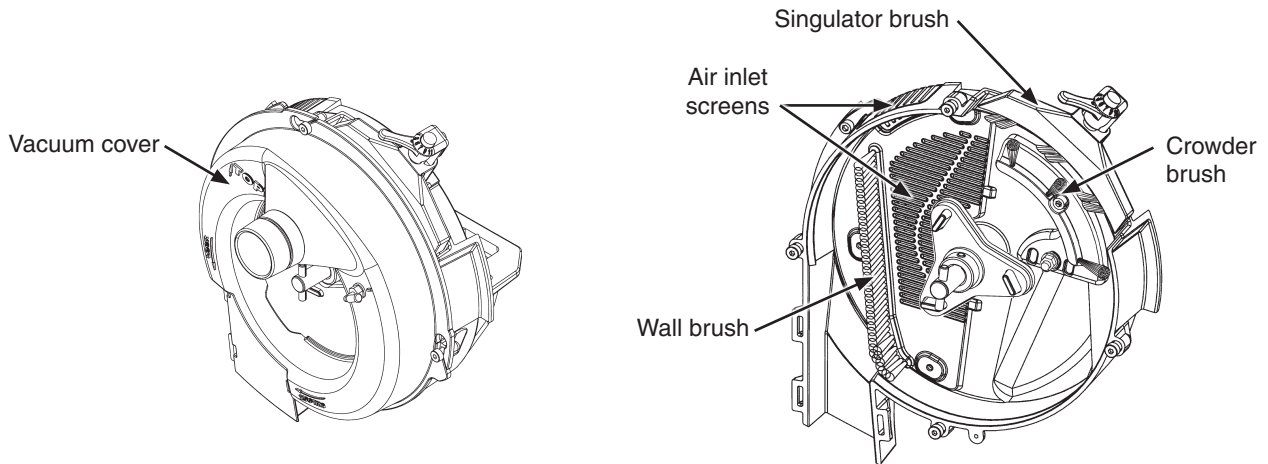
1. Remove meter from seed hopper by removing two thumbscrews securing meter to hopper.
2. Remove seed disc and wash with soap and water and dry thoroughly.
3. Remove three hex head screws from brush retainer. Remove brush retainer and upper brush.
4. Remove three hex head screws from lower brush. Remove lower brush and stainless steel wear band.
5. Wash all parts and meter housing with soap and water and dry thoroughly.
6. Inspect all parts and replace worn parts.
7. Reassemble meter except for seed disc. Store meter in a dry, rodent-free space with seed disc removed.

### VACUUM MANIFOLD MAINTENANCE

Dust accumulates in manifolds and hoses during normal operation. Clean manifolds annually. Abnormally dusty planting conditions may require more frequent cleaning.

1. Remove vacuum hose from each seed meter.
2. Operate vacuum fan at full hydraulic flow from tractor for two minutes to clear manifolds, hoses, and fittings of dust and debris.
3. Shut down fan and replace hoses

## EDGEVAC SEED METER MAINTENANCE



Before each planting season inspect seed discs, singulator brush, crowder brush, wall brush, and air inlet screens and clean or replace as needed.

Use clean, high quality seed for maximum meter accuracy. Damaged or cracked seed, hulls, and foreign material may become lodged in seed disc orifices and greatly reduce meter accuracy.

Inspect and clean seed discs daily checking for any buildup of foreign material and blocked orifices. If seed disc orifices are plugged frequently with seed remnants, cleanout brush or cleanout brush with ball-type ejector (if applicable) may need to be replaced. Clean seed disc by washing it with soap and water. Dry thoroughly.

Inspect singulator brush for wear after every 200 acres per row of operation. If adjustment of singulator brush does not affect meter performance or if brushes appear frayed, singulator brush may need to be replaced.

Replace seed disc or vacuum cover if abnormally high vacuum is required or if consistent operation can not be achieved.

See "Preparation For Storage" for additional EdgeVac Seed Metering System maintenance.

**NOTE: Remove seed discs from meters for annual storage and store them vertically on a dowel or pipe.**

## EDGEVAC SEED METER CLEANOUT

Thorough seed meter cleanout is important to maintain genetic purity.

1. Disengage seed drive and remove seed hopper and meter. Lay hopper on its right side.
2. Rotate vacuum cover clockwise to align key hole slots with bolt heads. Lift off cover.
3. Remove seed disc.
4. Empty meter and hopper by allowing seed to run out of meter.
5. Inspect brushes in meter to ensure all seed is removed.
6. Replace seed disc and install vacuum cover.

**NOTE: Use of damaged seed or seed containing foreign material will cause plugging of seed cell orifices and require more frequent seed meter cleanout to prevent underplanting.**

**SEED METER (BRUSH-TYPE)**

<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>SOLUTION</b>
Low count.	Meter RPM too high.	Reduce planting speed.
	Seed sensor not picking up all seeds dropped.	Clean seed tube. Switch meter to different row. If problem stays in same row, replace sensor.
	Lack of lubrication causing seeds not to release from disc properly.	Use graphite or talc as recommended.
	Seed size too large for seed disc being used.	Switch to smaller seed or appropriate seed disc. See "Brush-Type Seed Meter" for proper seed disc for size of seed being used.
	Seed treatment buildup in meter.	Reduce treatment amount used. Thoroughly mix treatment with seed. Add talc.
Low count at low RPM and higher count at higher RPM.	Foreign material lodged in upper brush.	Remove seed disc and remove foreign material from between brush retainer and bristles. Clean thoroughly.
	Worn upper brush.	Replace. See "Maintenance".
Low count at higher RPM and normal count at low RPM.	Seed disc worn in agitation groove area.	Replace disc. See "Maintenance".
High count.	Seed size too small for seed disc.	Switch to larger or appropriate seed disc.
	Incorrect seed rate transmission setting.	Reset transmission. Refer to rate charts.
	Upper brush too wide (fanned out) for small seed size.	Replace upper brush.
High count. (Milo/Grain Sorghum)	Incorrect brush retainer being used.	Make sure GD8237 brush retainer is used to keep upper brush from fanning out.
Upper brush laid back.	Seed treatment buildup on brush.	Remove brush. Wash with soap and water. Dry thoroughly before reinstalling.
	Foreign material buildup at base of brush.	Remove brush retainer and brush. Clean thoroughly. Reinstall.

**SEED METER (EDGEVAC)**

<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>SOLUTION</b>
Low seed count.	Meter RPM too high.	Reduce planting rate or planting speed.
	Singulator brush setting too aggressive.	Adjust singulator brush.
	Vacuum level too low.	Increase fan speed.
	Seed sensor not picking up all seeds dropped.	Clean seed tube. Move meter to different row.
	Seeds sticking to seed disc.	Use graphite or talc to aid release.
	Seed treatment buildup in seed disc recesses.	Reduce amount of treatment used and or mix thoroughly. Add talc.
	Seed size too large for disc used.	Use appropriate disc for seed size.
	Wrong transmission setting.	Change transmission to desired rate.
	Wrong seed disc.	Use appropriate disc for seed type and size.
	Drive wheel slippage.	Compensate by adjusting transmission sprockets.
	Low tire pressure.	Adjust tire pressure to correct level.
	Failed/worn drive components.	Inspect and replace parts as required.
	Plugged orifices in seed disc.	Inspect and clean disc. Check cleanout brush. (If Applicable)
	Loss of vacuum at meter.	Check for foreign material between vacuum cover and disc. Inspect parts for wear/damage. Clean or replace as required.
	Seed bridging in hopper.	Add graphite to improve seed flow.
	Faulty vacuum gauge reading.	Repair/replace gauge.
	Dirt in vacuum manifold.	Check vacuum manifold for dirt and clean.
	Seed baffle (If Applicable) not allowing seed flow due to bridging of seed.	Thoroughly mix talc to coat all seeds. Remove seed baffle. See "Seed Meter" in Operation/Maintenance section.
	60 cell soybean disc not filling properly due to excessive RPM.	Replace with 120 cell soybean disc.
	Seed disc worn.	Replace.
Vacuum cover worn.	Replace.	
Not planting seed.	Seed hoppers empty.	Fill seed hopper.
	Seed tube plugged/damaged.	Clean or replace tube.
	Meter drive damaged.	Repair/replace drive components.
	Low/no vacuum.	Inspect vacuum system and repair as necessary.
	Singulator brush setting too aggressive.	Adjust singulator brush.
	Faulty vacuum gauge.	Repair/replace vacuum gauge.
	Seed bridging in hopper.	Add graphite to improve seed flow.
	Loss of vacuum at meter.	Check for foreign material between vacuum cover and disc. Inspect parts for wear/ damage. Clean and/or replace as required.
	Wrong seed disc.	Use appropriate disc for seed type and size.
	Meter drive clutch not engaged.	Engage drive clutch.
	Fan not running.	Start fan.
	Dirt in vacuum manifold.	Check vacuum manifold for dirt and clean.

Continued on next page.

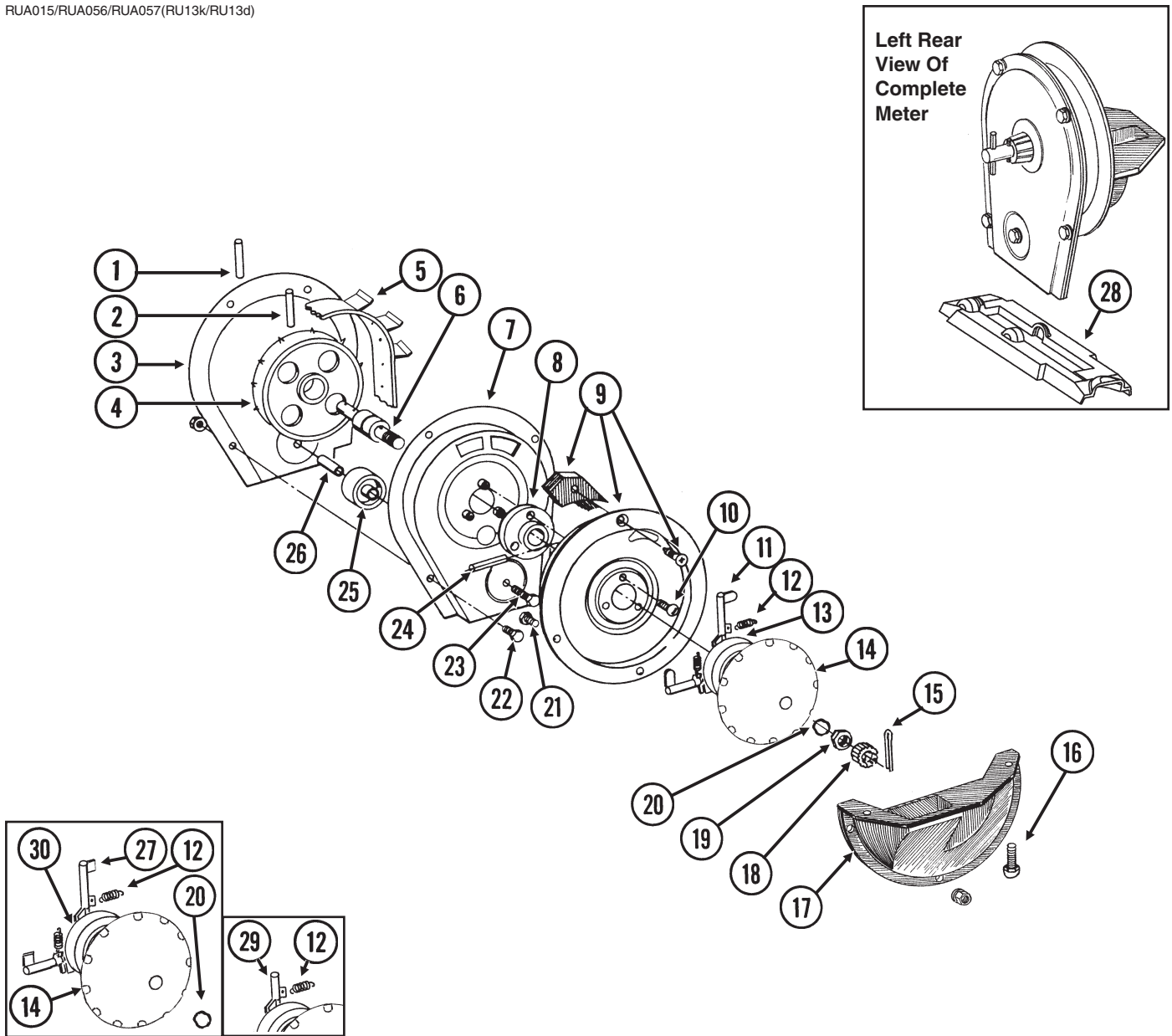
**SEED METER (EDGEVAC) - Continued**

<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>SOLUTION</b>
Not planting seed. (Continued)	Seed baffle (If Applicable) not allowing seed flow due to bridging of seed.	Thoroughly mix talc to coat all seeds. Remove seed baffle. See "Seed Meter" in Seed Meter Operation/Maintenance section.
	60 cell soybean disc not filling properly due to excessive RPM.	Replace with 120 cell soybean disc.
High seed count.	Wrong transmission setting.	Change transmission to desired rate.
	High vacuum.	Adjust vacuum level to appropriate level.
	Wrong seed disc.	Replace seed disc.
	Singulator brush setting not aggressive enough.	Adjust singulator brush.
	Worn singulator brush.	Inspect brush and replace as required.
	Seed leaking past wall brush.	Inspect wall brush condition and installation. Replace as necessary.
	Faulty vacuum gauge.	Check gauge line for dirt/obstruction. Repair/replace vacuum gauge.
Poor seed spacing.	Obstruction in seed tube.	Clean seed tube.
	Dirty/damaged seed disc.	Inspect seed disc for damage, foreign material in orifices or seed treatment buildup in recesses. Clean or replace.
	Wrong vacuum setting.	Adjust vacuum to appropriate level.
	Excess foreign material in seed.	Inspect and clean meter and seed discs. Use clean, undamaged seed.
	Incorrect singulator brush setting.	Adjust singulator brush to appropriate setting.
	Inconsistent driveline.	Inspect drive components for rust, misalignment, worn or damaged parts. Replace/repair as required.
	Toolbar not level or wrong height.	Adjust hitch to level toolbar and row units.
	Planting too fast for conditions.	Reduce speed.
	Rough field conditions.	Reduce speed.
Irregular seed population.	Driving too fast.	Reduce speed.
	Drive wheels slipping.	Reduce speed. Decrease row unit down pressure spring settings.
Unable to achieve desired vacuum level.	Tractor hydraulic flow set too low.	Increase flow to fan motor.
	Incorrect hydraulic connections.	Check all hydraulic connections and hose routings.
	Damaged fan components.	Inspect motor and impeller for wear/damage and repair/replace as necessary.
	Vacuum hose pinched/kinked/blocked.	Inspect air lines for any damage or obstruction. Clean air lines and manifold by removing end cap from manifold and running fan at high speed.
	Vacuum hose loose/disconnected.	Inspect and reattach all air hoses.
	Tractor not producing required hydraulic flow/pressure.	Have tractor serviced by qualified technician.
	Dirt in vacuum gauge line.	Check gauge line for dirt/obstruction and clean.

**SEED METER (FINGER PICKUP)**

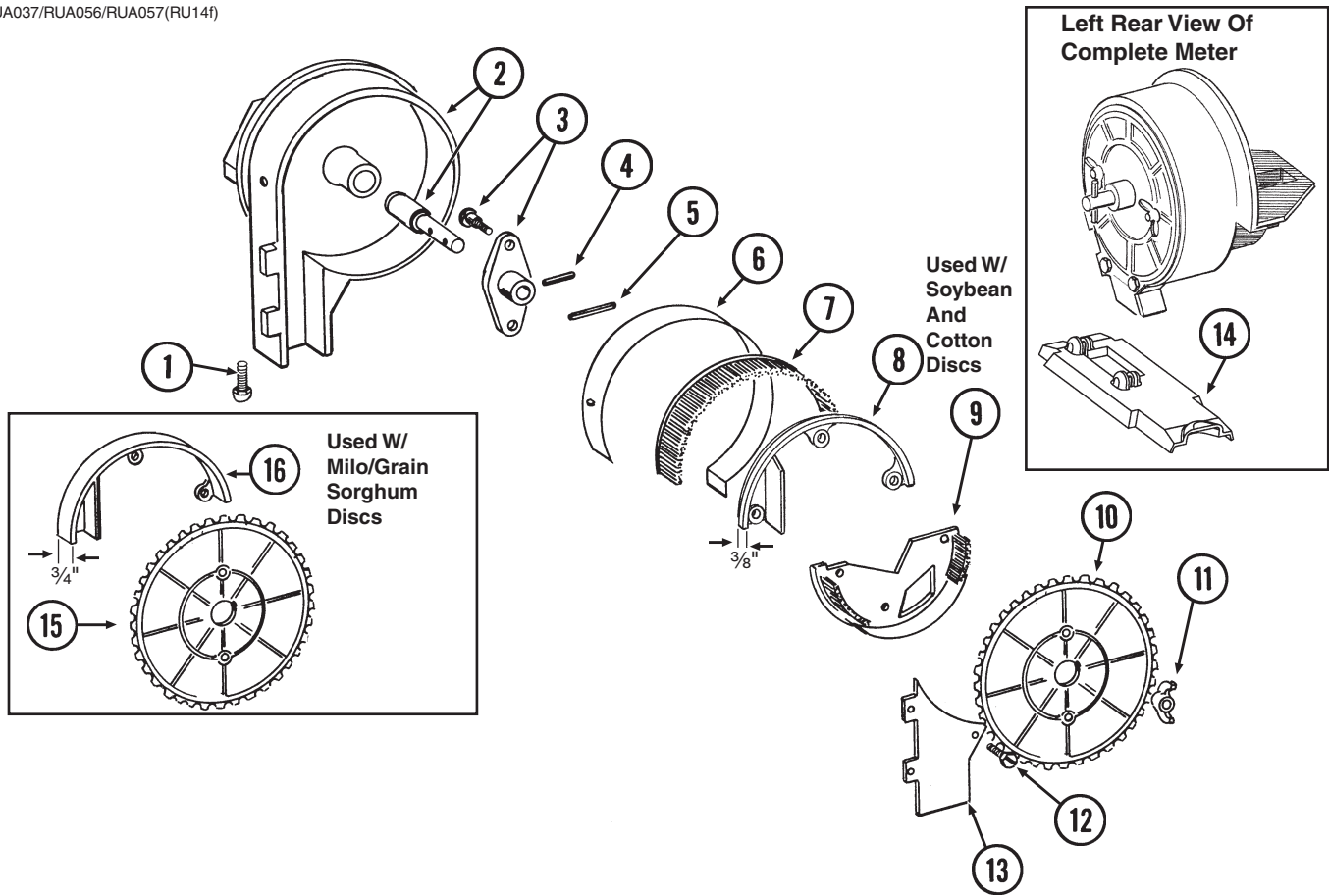
<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>SOLUTION</b>
One row not planting seed.	Drive release not engaged.	Engage drive release mechanism.
	Foreign material in hopper.	Clean hopper and finger carrier mechanism.
	Seed hopper empty.	Fill seed hopper.
	Row unit drive chain off of sprocket or broken.	Check drive chain.
Unit is skipping.	Foreign material or obstruction in meter.	Clean and inspect.
	Finger holder improperly adjusted.	Adjust to specifications. (22 to 25 in. lbs. rolling torque)
	Broken fingers.	Replace fingers and/or springs as required.
	Planting too slowly.	Increase planting speed to within recommended range.
Planting too many doubles.	Planting too fast.	Stay within recommended speed range.
	Loose finger holder.	Adjust to specifications. (22 to 25 in. lbs. rolling torque)
	Worn brush in carrier plate.	Inspect and replace if necessary.
Overplanting.	Worn carrier plate.	Inspect and replace if necessary.
	Seed hopper additive being used.	Reduce or eliminate additive or increase graphite.
Underplanting.	Seed belt installed backwards.	Remove and install correctly.
	Weak or broken springs.	Replace.
	Spring not properly installed.	Remove finger holder and correct.
	Seed belt catching or dragging.	Replace belt.
	Brush dislodging seed.	Replace brush.
Irregular or incorrect seed spacing.	Driving too fast.	Check chart for correct speed.
	Wrong tire pressure.	Inflate tires to correct air pressure.
	Drive wheels slipping.	Reduce down pressure on row unit down force springs.
	Wrong sprockets.	Check seed rate charts for correct sprocket combinations.
Seed spacing not as indicated in charts.	Wrong tire pressure.	Inflate tires to correct air pressure.
	Inconsistent seed size.	Perform field check and adjust sprockets.
	Wrong sprockets.	Check chart for correct sprocket combination.
	Charts are approximate.	Slight variations due to wear in meter components and tire slippage due to field conditions may produce seed spacing variations.
	Stiff or worn drive chains.	Replace chains.
Scattering of seeds.	Planting too fast.	Reduce planting speed.
	Seed tube improperly installed.	Check seed tube installation.
	Seed tube worn or damaged.	Replace seed tube.
Seed tubes and/or openers plugging.	Allowing planter to roll backward when lowering.	Lower planter only when tractor is moving forward.
Inconsistent seed depth.	Rough seed bed.	Adjust down pressure springs. Reduce planting speed.
	Partially plugged seed tube.	Inspect and clean.
	Seed tube improperly installed.	Install properly.

RUA015/RUA056/RUA057(RU13k/RU13d)



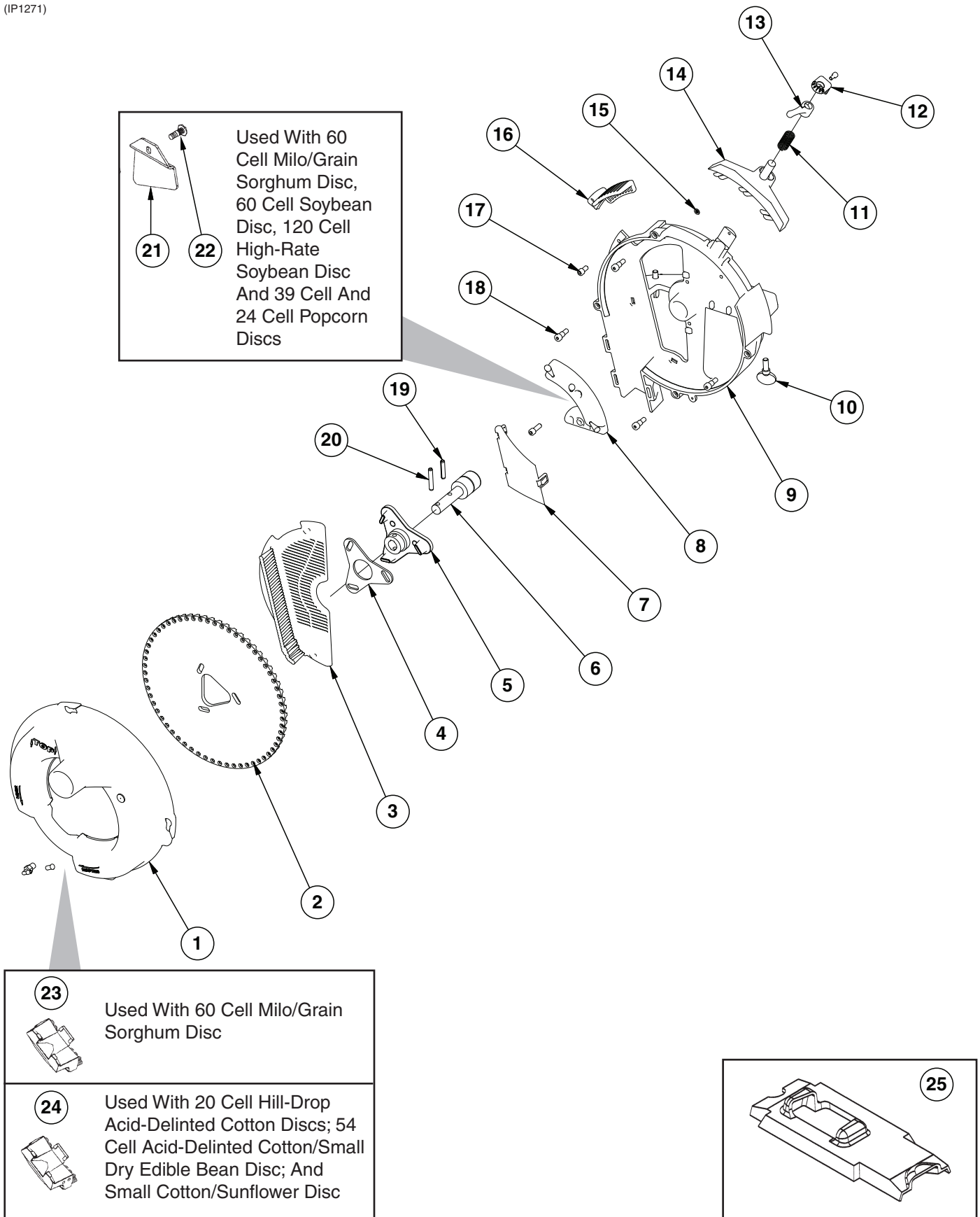
ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1	G10602	1	Spring Pin, 1/4" x 1 1/2"
2	G10604	1	Spring Pin, 3/16" x 1 1/2"
3	GD1039	1	Housing Cover
4	GD1041	1	Belt Drive Sprocket
5	GD11286	1	Seed Belt
6	GA2019	1	Bearing
7	GA2018	1	Conveyor Housing
8	GB0110	1	Bearing Housing
9	GR1569	1	Carrier Plate W/Brush And Screw (Corn)
	GR0664	-	Carrier Plate W/Brush And Screw (Sunflower)
	GA2020	-	Brush
	G10690	-	Rolling Thread Screw, No. 10 x 3/4"
10	G10401	3	Slotted Hex Washer Head Screw, No. 10-32 x 5/8"
11	GD18704	12	Finger, Corn
12	GD19790	12	Spring
13	GB0410	1	Cam
14	GD11528	1	Finger Holder
15	G10470	1	Cotter Pin, 5/32" x 1"
16	G11009	2	Locking Thumbscrew, 5/16"-18 x 3/4"
17	GD11311	1	Seed Baffle
18	GD1083	1	Cover Nut
19	G10500	1	Jam Nut, 5/8"-18 UNF
20	GA8343	1	Wave Washer, 5/8" (Triple Wave)
21	G10020	3	Hex Head Cap Screw, 1/4"-20 x 5/8"
	G10323	3	Hex Flange Nut, 1/4"-20, No Serrations
22	G10022	4	Hex Head Cap Screw, 1/4"-20 x 1/2"
	G10621	4	Serrated Flange Nut, 1/4"-20
23	G10021	1	Hex Head Cap Screw, 1/4"-20 x 1 1/2"
	G10621	1	Serrated Flange Nut, 1/4"-20
24	G10603	1	Spring Pin, 1/4" x 1 1/4"
25	GD1042	1	Idler
26	GB0120	1	Bushing, 1 7/64" I.D. x 1 1/32" Long
27	GD19333	12	Finger, Oil Sunflower
28	GD15698	1	Shank Cover, Finger Pickup Seed Meter
29	GD11787	-	Half Rate Blank Finger
30	GB0111	1	Cam (Sunflower)
A	GR1848	-	Finger Assembly, Corn (Items 11-14 And 20)
B	GR1897	-	Finger Assembly, Oil Sunflower (Items 12, 14, 20, 27 And 30)
C	700-07078	-	Corn Meter (Items 1-26 and 28)

RUA037/RUA056/RUA057(RU14f)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1	G11009	2	Locking Thumbscrew, 5/16"-18 x 3/4"
2	GA6027 GA5698	1 -	Housing W/Bearing Bearing
3	GA6038 GD1755	1 -	Hub W/Shoulder Bolts Shoulder Bolt, 1/4"-20 (2 Used)
4	G10603	1	Spring Pin, 1/4" x 1 1/4"
5	G10602	1	Spring Pin, 1/4" x 1 1/2"
6	GD8778	1	Wear Strip
7	GA5699	1	Upper Brush
8	GD11122	1	Upper Brush Retainer (Used W/Soybean And Cotton Discs)
9	GA5834	1	Lower Brush
10	GA5794 GA6184 GA5796 GA6168 GA6478 GA6182 GA7255	- - - - - - -	Seed Disc, Soybean, 60 Cell, Black Color-Coded Seed Disc, Specialty Soybean, 48 Cell, Dark Blue Color-Coded Seed Disc, Cotton, Acid-Delinted, 30 Cell, White Color-Coded Seed Disc, Large Cotton, Acid-Delinted, 36 Cell, Tan Color-Coded Seed Disc, High-Rate Cotton, Acid-Delinted, 48 Cell, Light Green Color-Coded Seed Disc, Hill-Drop Cotton, Acid-Delinted, 12 Cell, Brown Color-Coded Seed Disc, Small Hill-Drop Cotton, Acid-Delinted, 12 Cell, Dark Green Color-Coded
11	G10531	2	Wing Nut W/Nylon Insert, 1/4"-20
12	G11151 G10634	9 -	Hex Washer Head Screw, No. 10-24 x 1/2" Slotted Tap Screw, No. 10-24 x 5/8" (Use As Required)
13	GD7878	1	Cover
14	GD15699	1	Shank Cover, Brush-Type Seed Meter
15	GA5982 GA6187 GA5795 GA6633	- - - -	Seed Disc, Small Milo/Grain Sorghum, 30 Cell, Red Color-Coded Seed Disc, Large Milo/Grain Sorghum, 30 Cell, Light Blue Color-Coded Seed Disc, High-Rate Small Milo/Grain Sorghum, 60 Cell, Red Color-Coded Seed Disc, High-Rate Large Milo/Grain Sorghum, 60 Cell, Yellow Color-Coded
16	GD8237	-	Upper Brush Retainer (Used W/Milo/Grain Sorghum Discs)
A	700-01079	-	Brush Meter (Items 1-9 and 11-14)

(IP1271)



ITEM	PART NO.	QTY.	DESCRIPTION
1	GA11911	1	Vacuum Cover W/Elbow And Cap
	GD17099	1	3/16" Hose Barb Elbow
	GD17152	1	Cap
2	GD17049	-	Seed Disc, Corn/Popcorn, 39 Cell, Light Blue Color-Coded
	GD17048	-	Seed Disc, Low-Rate Corn/Popcorn, 24 Cell, Light Green Color-Coded
	GD14467	-	Seed Disc, Soybean, 60 Cell, Black Color-Coded
	GD14468	-	Seed Disc, High-Rate Soybean, 120 Cell, Dark Blue Color-Coded
	GD17050	-	Seed Disc, Milo/Grain Sorghum, 60 Cell, Yellow Color-Coded
	GD17187	-	Seed Disc, Hill-Drop Cotton, Acid-Delinted, 3 Seeds Per Cell, 20 Cell, Brown Color-Coded
	GD18095	-	Seed Disc, Small Hill-Drop Cotton, Acid-Delinted, 20 Cell (3 Seeds Per Cell), Grey Color-Coded
	GD17186	-	Seed Disc, Cotton, Acid-Delinted/Small Dry Edible Bean, 54 Cell, Dark Green Color-Coded
GD18098	-	-	Seed Disc, Small Cotton/Sunflower, 54 Cell, White Color-Coded
	GD14477	-	Seed Disc, Large Dry Edible Bean, 54 Cell, Tan Color-Coded
3	GD17028	1	Wall Brush/Vent
4	GD17021	1	Foam Spacer
5	GB0328	1	Mount
6	GA5698	1	Bearing
7	GD14541	1	Discharge Cover
8	GA11935	1	Crowder Brush
	G11213	1	Hex Socket Head Cap Screw, 1/4"-20 x 3/4"
9	GB0319	1	Housing
10	G11009	2	Locking Thumbscrew, 5/16"-18 x 3/4"
11	GD14592	1	Spring
12	GB0358	1	Cap
	G11173	1	Hex Socket Head Cap Screw, No. 10-24 x 3/8", Stainless Steel
13	GD15663	1	Brush Adjustment Lever
14	GA12848	1	Singulator Brush
15	GD17162	3	Push Nut, 1/8" I.D.
16	GD17047	1	Air Inlet Screen
17	G10260	1	Hex Socket Head Cap Screw, 1/4"-20 x 1/2"
18	G11172	4	Hex Socket Head Shoulder Screw, 1/4"-20 x 3/8", Stainless Steel
19	G10603	1	Spring Pin, 1/4" x 1 1/4"
20	G10602	1	Spring Pin, 1/4" x 1 1/2"
21	GD17104	1	Seed Baffle <b>(Used With 60 Cell Milo/Grain Sorghum Disc, 60 Cell Soybean Disc, 120 Cell High-Rate Soybean Disc And 39 Cell And 24 Cell Popcorn Discs)</b>
22	G11210	1	Rib Neck Bolt, 1/4"-20 x 3/4"
	G10323	1	Hex Flange Nut, 1/4"-20, No Serrations
23	GA12133	1	Cleanout Brush (Used With 60 Cell Milo/Grain Sorghum Disc)
24	GA12154	-	Cleanout Brush W/Ball-Type Ejector <b>(Used With 20 Cell Hill-Drop Acid-Delinted Cotton Discs And 54 Cell Acid-Delinted Cotton/Small Dry Edible Bean And Small Cotton/Sunflower Discs)</b>
25	GD15700	1	Shank Cover, EdgeVac Meter

**This page left blank intentionally.**