



Great Plains

Manufacturing, Inc.

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Seed, Small Seeds and Fertilizer Rate Charts

for the 1300 and 1300F 13-Foot End Wheel Drill

The following pages are to assist in the proper setting of seeding and fertilizer rates for the 1300 and 1300F. The rates indicated in the charts are approximate. To assure the most accurate seeding, it is recommended that the drill be calibrated for the desired seed at the time of planting.



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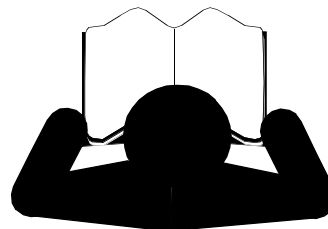
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Introduction

This manual is your guide to planter adjustments for achieving specific seed population and fertilizer density targets.

Although some setup/adjustment material herein is repeated from the drill Operator Manual, you need to be thoroughly familiar with drill operations and adjustments before applying this Seed Rate manual and its table data.



Drill models covered by this manual

1300:

1300-1610	10 inch / 24 cm
1300-2175	7.5 inch / 19 cm spacing
1300-2606	6 inch / 15 cm

1300F:

1300F-1610	10 inch / 24 cm
1300F-2175	7.5 inch / 19 cm spacing
1300F-2606	6 inch / 15 cm

Document Family

175-157M	Product # Operator Manual
175-157P	Product # Parts Manual
175-157B	Seed Rate Manual (this document)



Main Box Seed Rate

Accurately obtaining the desired seed population requires four steps:

1. Setting Drive Type sprockets (from chart)
2. Setting initial Seed Rate Handle (from chart)
3. Positioning Seed Cup Door (by seed type)
4. Calibration: checking predicted seeding rate

Main box seed rate charts begin on page 8. The charts list proper sprocket pairings and seed-rate-handle settings for various seeds and seeding rates.

The seed-rate charts are based on cleaned, untreated seed of average size and test weight. The charts are based on 7.5 x 20, 10-ply Rib Implement end wheel tires, inflated to factory specification. Many factors affect seeding rates including foreign material, seed treatment, seed size, seed weight, field conditions, tire pressure and test weight.

Use the charts only as a starting point. Minor adjustments are commonly required. Set and check the seeding rate using the procedures following, then readjust the rate as necessary.

8 | 1300 and 1300F

Main Box Seed Rate Charts

Metric charts begin on page 27.

Alfalfa or Rape

Drive Type	1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows																							
8 inch	0	6	8	12	15	19	23	27	32	37	41	45	50	54	59	63	69	74	79	85	90	95	100
7.5 inch	0	4	7	10	12	15	18	22	25	29	33	36	40	43	47	51	55	59	63	67	71	75	79
10 inch	0	3	5	7	9	12	14	16	19	22	25	27	30	33	35	38	41	44	48	49	50		

Barley (1 of 3)

Drive Type	1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows																						
8 inch	0	5	8	11	14	18	22	26	30	35	39	43	48	53	57	62	66	70	75	79	84	88
7.5 inch	0	4	6	9	12	15	18	21	24	28	31	35	38	42	46	49	52	55	58	61	64	67
10 inch	0	3	5	6	9	11	13	16	18	21	23	26	29	32	34	37	39	42	44	46	48	50

Barley (2 of 3)

Drive Type	2	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows																						
8 inch	0	6	10	16	22	30	37	45	54	62	71	79	87	96	104	114	123	132	142	152	162	172
7.5 inch	0	7	11	17	24	30	36	43	49	57	64	70	77	83	91	98	106	114	121	129	137	145
10 inch	0	5	10	13	18	22	27	32	37	43	48	52	58	63	68	74	80	85	91	96	101	106

Barley (3 of 3)

Drive Type	4	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows																						
8 inch	0	21	39	53	73	90	110	131	151	174	194	213	234	255	278	300	325	348	371	397	421	447
7.5 inch	0	17	31	41	58	72	88	105	121	139	155	170	188	204	222	240	259	279	297	301	306	
10 inch	0	13	23	32	45	54	68	79	91	104	117	128	141	153	167	180	195	209	222	230	236	

Buckwheat

Drive Type	3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows																						
8 inch	0.0	11	21	29	42	52	63	78	92	107	123	136	150	165	180	195	209	224	240	242	243	
7.5 inch	0	9	17	24	34	42	52	62	74	85	99	109	120	132	144	156	167	179	192	194	196	
10 inch	0	7	13	18	25	31	38	47	55	64	74	81	90	99	108	117	126	134	144	145	147	

175-157B

03/26/08

Setting Drive Type

Refer to Figure 1 and Figure 2

Drive Type is determined by the size (tooth count) of a sprocket on the seed jackshaft ①.

For correct Drive Type, refer to the charts beginning on page 8. The charts list Drive Types as 1, 2, 3 or 4. Each Drive Type corresponds to a specific sized sprocket, per the table below, and Figure 1.

Drive Type	Sprocket	Relative Speed
1	72 Tooth	Slowest
2	34 Tooth	2.12 times faster than Type 1
3	23 Tooth	3.13 times faster than Type 1
4	14 Tooth	5.14 times faster than Type 1

Changing Drive Type

- Loosen top tightening idler ② and slide idler well aft, particularly if changing to Drive Type 1.
- Lift drive chain ③ off sprocket currently in use.
- Remove lynch pin ④ and rearrange sprockets ⑤ on jackshaft ①.
 - Sprocket corresponding to the required Drive Type is innermost.
 - Sprockets have offset hubs. On the driven drive type sprocket, orient the longer hub side to drill right (toward the bearing).
 - Make sure all 4 sprockets are accounted for when remounting them on the shaft. No particular hub orientation is required for the sprockets in storage.
- Remount drive chain on the innermost (Drive Type) sprocket.
- Re-engage top idler and secure. Allow $1 \frac{1}{2}$ inch (1.3 cm) slack in longest (top) span of chain.

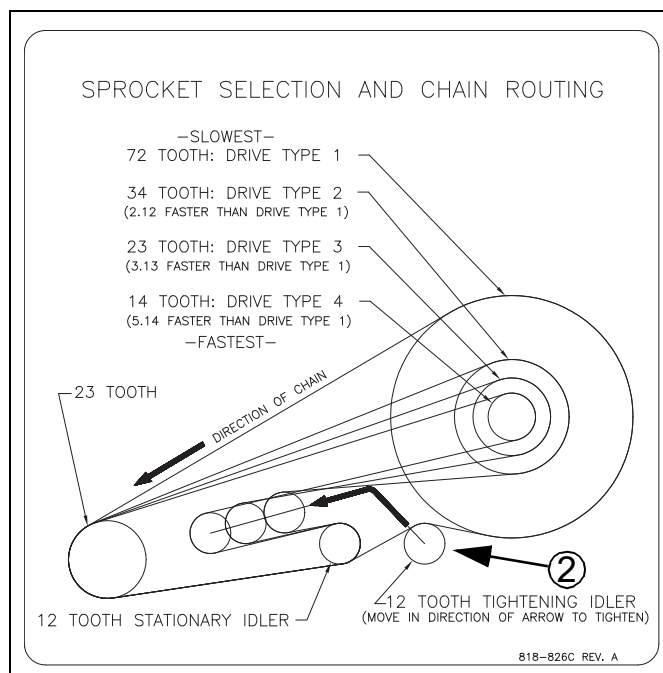


Figure 1
Drill Drive Type Decal

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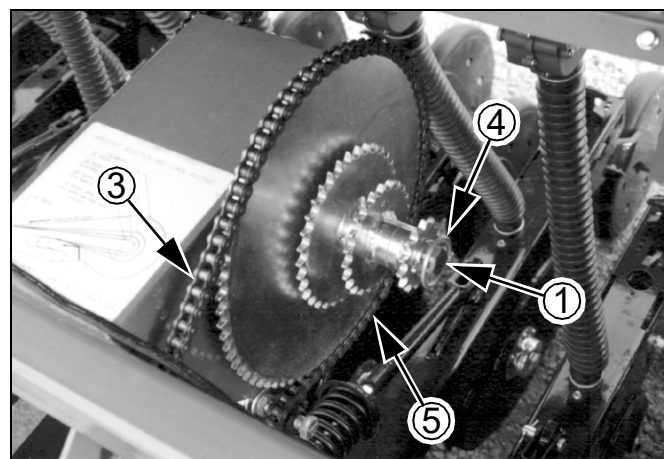


Figure 2
Drive Type 1 Configured

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Main Box Seed Rate Handle

There is a single seed rate handle for the entire the drill.

The seed rate handle controls the percent engagement of the seed sprocket in each seed cup. The initial setting of the handle is given by the Seed Rate Chart.

Note: You can temporarily stop seed flow to the drill (such as for adjusting level and depth) by setting the handle to zero.

To set the handle:

Loosen wing nut ① under handle.

1. Move indicator ② from current setting to about 10 past the new desired value from calibration or the Seed Rate Chart, then move it back to the new desired value.
2. Tighten wing nut.

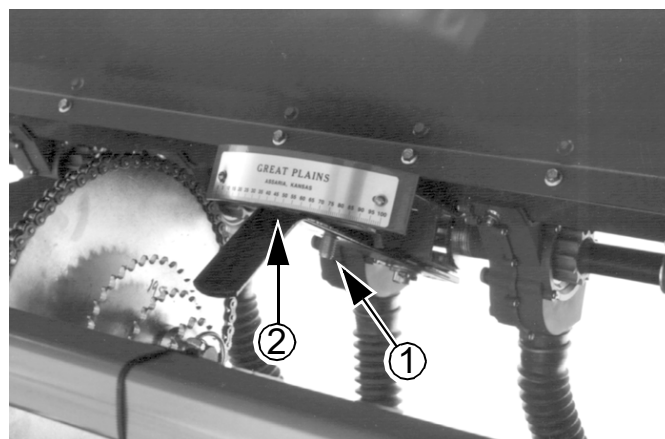


Figure 3
Seed Rate Handle

16653

Position Seed Cup Doors

Refer to Figure 4,

At each main seed box seed tube, adjust the seed cup door handle ④ for the seed size.

The handle has three normal operating position detents:

- ① (top detent) is for the smallest seeds.
Use it for wheat and similar small seeds.
- ② (middle detent) is for larger seeds.
Use it for soybeans and similar larger seeds.
- ③ (bottom detent) is for oversize or fragile seeds.
If you experience excessive cracking with setting ②, use setting ③.

Note: Handle position ⑤ is used for clean-out, not planting. If set to this position with seed loaded, it may be difficult to reset it to a normal operating position.

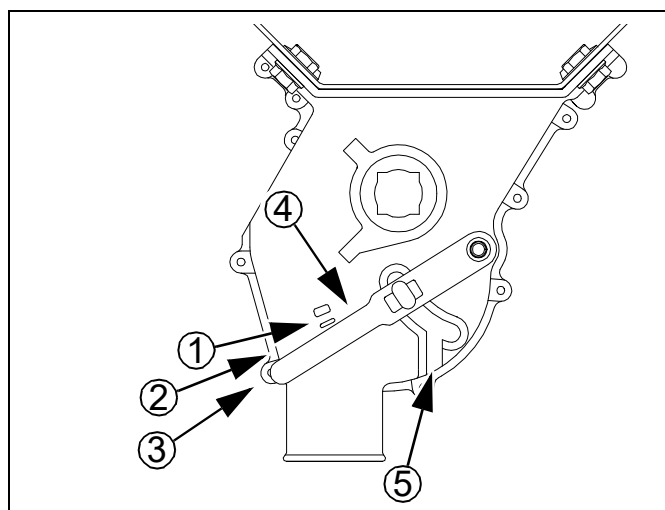


Figure 4
Seed Cup Door Handle

26211

Main Seed Row Shutoff

If alternate row spacings are desired, the unused rows can be shut off with optional plugs (see Operator Manual).

Clean-out seed. The seed box must be empty prior to inserting plugs. See “Main Box Clean-Out” in Operator Manual.

1. Insert one plug at each row to shut off. Verify the seed hose path before inserting the plug, as some hoses do not make a strictly vertical drop to their row units.
2. Review seed rate settings prior to planting. Perform calibration calculations with the actual active row count.

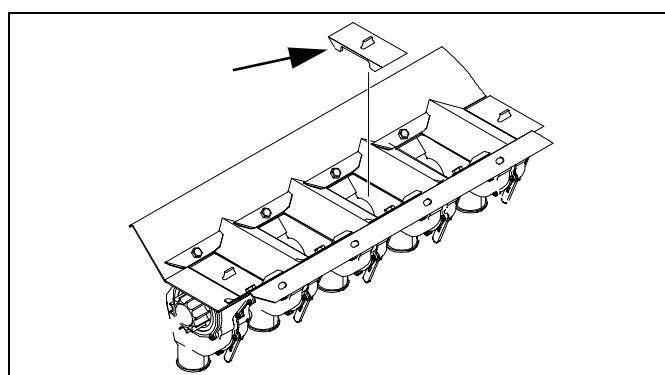


Figure 5
Seed Cup Plug

26279

Reading a Seed Rate Chart

NOTICE

The rate charts are estimations of maximum seed rates. Actual results will vary based on conditions and machine maintenance. Maintain your machine regularly for optimum performance.

- Find your seed. Charts are in alphabetical order by seed name. Charts covering more than one seed may be out of order.
For Rape, see Alfalfa.
For Sudan, see Flax.

The example presumes you desire to plant:
Barley at 60 pounds per acre with a 7.5 inch drill.

There are multiple charts for some seeds, and the rates may overlap. Use the chart where your desired rate is closest to 50 on the Seed Rate Handle scale.

In our example, that would be Barley chart 2 of 3.

If your seed is not listed, find one with similar size, shape and density. Density of the test seed used to develop the chart appears under the right end of the handle scale values.

- Note the Drive Type in the upper left corner of the chart for your seed. This number (1-4) is used to determine the seed jackshaft sprocket. See page 3.

In the example, this is
Drive Type 2 (34T sprocket).

- Find your row spacing in the far left column.

- Locate your desired seed rate in the table row for your row spacing.

In the example the rate closest to 60 is:
64

- Note the Seed Rate Handle setting required, at the top of the column at that seed rate. This is the initial value set on the Seed Rate Handle. See page 4.

In the example, start with a handle setting of:
50 (or interpolate to 47),
and calibrate. When a target rate falls halfway between handle settings, you can adjust the handle slightly to compensate, as in the example, but calibration is apt to result in further adjustment anyway.

10 inch	0	3	5	6	9	11	13	16	18	2
Barley (2 of 3)										
Drive Type										
2	0	5	10	15	20	25	30	35	40	4
Rows	Seed Rate									
6 inch	0	9	16	22	30	37	45	54	62	7

Seed Rate Handle Setting										
25	30	35	40	45	50	55	60	65	70	75
Seed Rate in Pounds Per Acre										
70	75	80	85	90	95	100				
(based on 51 pounds/bushel)										
114	123	133	142	152	154	156				

Barley (2 of 3)										
Drive Type										
2	0	5	10	15	20	25	30	35	40	45
Rows	Seed Rate									
6 inch	0	9	16	22	30	37	45	54	62	7
7.5 inch	0	7	13	17	24	30	36	43	49	57
10 inch	0	5	10	13	18	22	27	32	37	43

15	20	25	30	35	40	45	50	55	60	65	70
Seed Rate in Pounds Per Acre											
22	30	37	45	54	62	71	76	87	96	104	11
17	24	30	36	43	49	57	64	70	77	83	91

Seed Rate Handle Setting										
20	25	30	35	40	45	50	55	60	65	70
Seed Rate in Pounds Per Acre										
30	37	45	54	62	71	76	87	96	104	114
24	30	36	43	49	57	64	70	77	83	91
18	22	27	32	37	43	48	52	58	63	68

Main Box Seed Rate Calibration

Differences will exist between the tested seed and field conditions used to generate the Seed Rate Charts, and your seed and conditions. To accurately achieve your target population, Great Plains recommends calibrating.

Perform the calibration with opener frames lowered (if the openers are raised, the clutch disengages). Leave the tractor hitched for movement control.

Estimate the sample sizes.

Take your planned population (in our example, *barley at 60 pounds per acre*

and divide it by the row count of your drill
21 in our example.

The expected sample size is 2.9 pounds per row, or
8.6 pounds for 3 sample rows.

1. To perform this calibration, you need a scale that is accurate near the aggregate sample size, and three (3) light-weight containers, each capable of holding a row's sample.
2. Disengage the lock-out hub (see Operator Manual), to permit independent rotation of the main jackshaft.

Refer to Figure 6

3. Remove the calibration crank from its storage stob on the left top side of the main toolbar. Store the retaining pin on the stob.

Refer to Figure 7

4. Place the hex socket of the crank on the left end of the main jackshaft.
5. Pull the seed hoses off the top of three opener seed tubes, at the top of the openers. Place the hoses into each sample container.
6. If not already done, set the Drive Type, Seed Rate Handle and Seed Cup Doors across the drill. If fertilizer is loaded, remove the fertilizer drive chain (unless you are simultaneously calibrating fertilizer rate).
7. Load seed above the rows to be sampled. Load well more than the expected sample size.
8. Rotate the crank several turns counter-clockwise to ensure that the drives and seed cups are engaged, working properly, free from foreign material, and that seed is flowing steadily from the meters. Stop.
9. Note the current reading of the acremeter, unless you do not plan to rely on it for the calibration.
10. Empty the sample containers back into the seed box.
11. Record the weight of the empty containers and place them back under the three hoses to gather metered seed.

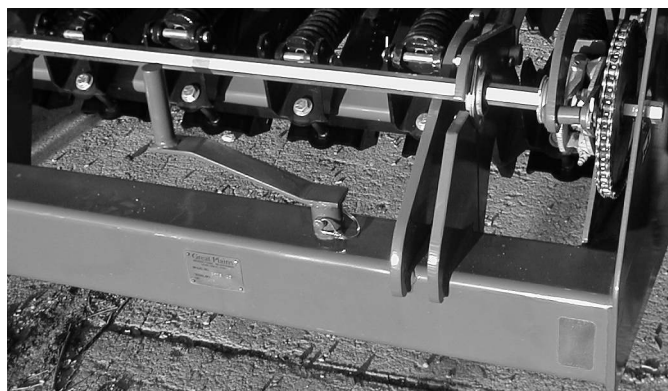


Figure 6
Calibration Crank Stored

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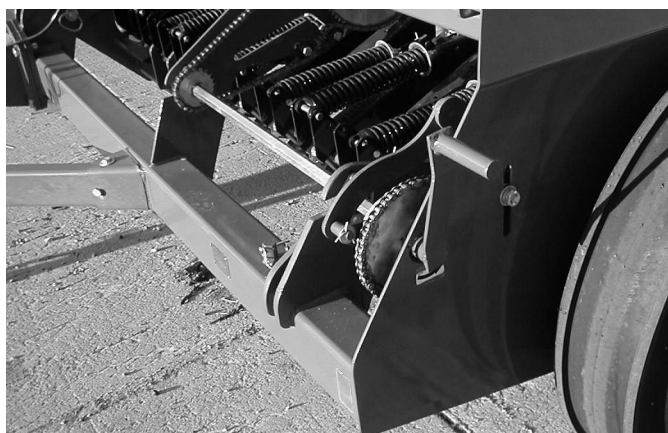


Figure 7
Calibration Crank Engaged

16652

For example:
on a drill with a row spacing of:
7.5 inches
and row count of:
21
you desire to plant barley at:
60 pounds per acre
which, from the chart, is an initial Seed Rate Handle
scale setting of:
47 (interpolating from 50)

For example:
three empty 1.8 pound containers weigh:
5.4 lbs

12. Turn crank at approximately 23 rpm until one acre is tallied on acremeter. While turning, check that cups have ample seed coming into them.

Row Spacing	Rotations Per Acre (Ha)
6 inch (15.2 cm)	134 (331) rotations
7.5 inch (19.1 cm)	133 (329) rotations
10 inch (25.4 cm)	131 (324) rotations

13. Weigh metered seed. Subtract initial weight of container(s)

Crank rotations for one acre:

133

23 rpm (2.6 sec/rev) simulates a 6.5 mph (10.4 kph) planting speed.

14. Divide the net seed weight by three. Multiply by number of openers on your drill to determine the total of pounds-per-acre seeded.

$$\text{NetWeight} = \text{GrossWeight} - \text{ContainerWeights}$$

For example: the containers weighed a total of 13.7 pounds after test:

8.3 pounds net

$$8.3 = 13.7 - 5.4$$

$$\text{MeasuredRate} = \frac{\text{NetWeight}}{3} \times \text{OpenerCount}$$

For example:

on the 21-row 7.5in drill:

58 lbs/ac

$$58.1 = \frac{8.3}{3} \times 21$$

15. The Seed Rate Handle scale is a percentage of meter opening, and its effect is linear near scale center. Calculate a new scale setting based on the test.

Set the Seed Rate Handle to the new scale setting.

16. You may want to repeat calibration procedure at the new setting if your results varied greatly from the Seed Rate Chart, or if you must operate near the ends of the Seed Rate handle scale (0-20 or 90-100).
17. With calibration complete, store calibration crank, re-engage lock-out hub, reinstall fertilizer chain (if removed) and reconnect seed hoses.
18. Check that your end-wheel tires are 7.5 x 20, 10-ply Rib Implement and properly inflated. See “**Tire Inflation Chart**” in Operator Manual.

$$\text{NewScale} = \frac{\text{TargetRate}}{\text{MeasuredRate}} \times \text{OldScale}$$

For example:

the target rate was 60 lbs/ac, and the initial scale 47:

the new scale setting is:

49

$$48.6 = \frac{60}{58} \times 47$$

When drilling, check seeding rate by noting acres drilled, amount of seed added to drill and seed level in drill box. If you are seeding more or less than desired, adjust rate slightly to compensate for field conditions.

Main Box Seed Rate Charts

U.S customary units. Metric charts begin on page 26.

Alfalfa or Rape

Drive Type	Seed Rate Handle Setting																					
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Pounds Per Acre (based on 60 pounds/bushel)																					
6 inch	0	6	8	12	15	19	23	27	32	37	41	45	50	54	59	63	69	74	79	82	84	
7.5 inch	0	4	7	10	12	15	18	22	25	29	33	36	40	43	47	51	55	59	63	65	67	
10 inch	0	3	5	7	9	12	14	16	19	22	25	27	30	33	35	38	41	44	48	49	50	

Barley (1 of 3)

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 51 pounds/bushel)																				
6 inch	0	5	8	11	14	18	22	26	30	35	39	43	48	53	57	62	66	69	73	73	74
7.5 inch	0	4	6	9	12	15	18	21	24	28	31	35	38	42	46	49	52	55	58	59	59
10 inch	0	3	5	6	9	11	13	16	18	21	23	26	29	32	34	37	39	42	44	44	44

Barley (2 of 3)

Drive Type	Seed Rate Handle Setting																				
2	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 51 pounds/bushel)																				
6 inch	0	9	16	22	30	37	45	54	62	71	76	87	96	104	114	123	133	142	152	154	156
7.5 inch	0	7	13	17	24	30	36	43	49	57	64	70	77	83	91	98	106	114	121	123	125
10 inch	0	5	10	13	18	22	27	32	37	43	48	52	58	63	68	74	80	85	91	92	94

Barley (3 of 3)

Drive Type	Seed Rate Handle Setting																				
4	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 51 pounds/bushel)																				
6 inch	0	21	39	53	73	90	110	131	151	174	194	213	234	255	278	300	325	348	371	377	382
7.5 inch	0	17	31	42	58	72	88	105	121	139	155	170	188	204	222	240	260	279	297	301	306
10 inch	0	13	23	32	44	54	66	79	91	104	117	128	141	153	167	180	195	209	222	226	230

Buckwheat

Drive Type	Seed Rate Handle Setting																					
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Pounds Per Acre (based on 48 pounds/bushel)																					
6 inch	0.0	11	21	29	42	52	65	78	92	107	123	136	150	165	180	195	209	224	240	242	245	
7.5 inch	0	9	17	24	34	42	52	62	74	85	99	109	120	132	144	156	167	179	192	194	196	
10 inch	0	7	13	18	25	31	39	47	55	64	74	81	90	99	108	117	126	134	144	145	147	

Seed Rate Charts, Main Box, continued...

Buffalograss (1 of 4)

Drive Type	Seed Rate Handle Setting																					
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Pounds Per Acre										(based on 23 pounds/bushel)											
6 inch	0	2	3	4	5	7	8	10	12	14	16	18	19	21	22	23	23	25	25	26	25	
7.5 inch	0	1	2	3	4	5	7	8	10	11	13	14	15	17	18	19	20	20	20	20	20	
10 inch	0	1	2	2	3	4	5	6	7	8	9	11	12	12	13	14	15	15	15	15	15	

Buffalograss (2 of 4)

Drive Type	Seed Rate Handle Setting																				
2	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre										(based on 23 pounds/bushel)										
6 inch	0	3	5	8	11	14	17	21	25	29	32	36	39	43	46	48	50	51	52	52	52
7.5 inch	0	2	4	6	8	11	14	17	20	23	26	29	32	34	36	38	40	41	42	42	41
10 inch	0	2	3	5	6	8	10	13	15	17	19	22	24	26	27	29	30	31	31	31	31

Buffalograss (3 of 4)

Drive Type	Seed Rate Handle Setting																					
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Pounds Per Acre (based on 23 pounds/bushel)																					
6 inch	0	6	8	11	15	20	25	30	36	42	48	53	59	64	69	73	76	79	80	81	80	
7.5 inch	0	5	7	9	12	16	20	24	29	34	38	43	47	51	55	58	61	63	64	65	64	
10 inch	0	3	5	7	9	12	15	18	22	25	29	32	36	38	41	44	46	47	48	48	48	

Buffalograss (4 of 4)

Drive Type	Seed Rate Handle Setting																					
4	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Pounds Per Acre (based on 23 pounds/bushel)																					
6 inch	0	9	13	19	25	33	41	50	59	68	78	87	96	104	112	118	124	128	131	131	130	
7.5 inch	0	7	11	15	20	26	33	40	47	55	62	70	77	83	90	95	99	102	104	105	104	
10 inch	0	6	8	11	15	20	25	30	35	41	47	52	58	63	67	71	74	77	78	79	78	

Flax or Sudan

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 55 pounds/bushel)																				
6 inch	0	4	8	12	16	20	24	28	33	37	42	46	50	54	59	65	70	76	82	83	85
7.5 inch	0	3	7	9	13	16	19	23	26	30	34	37	40	44	47	52	56	61	66	67	68
10 inch	0	2	5	7	10	12	15	17	20	22	25	27	30	33	35	39	42	45	49	50	51

Seed Rate Charts, Main Box, continued...

Millet

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 60 pounds/bushel)																				
6 inch	0	5	8	12	16	20	23	27	32	36	40	44	49	52	57	62	66	71	76	77	78
7.5 inch	0	4	7	9	13	16	19	22	25	29	32	35	39	42	46	49	53	57	61	62	63
10 inch	0	3	5	7	9	12	14	16	19	21	24	26	29	32	34	37	40	43	46	46	47

Milo

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 64 pounds/bushel)																				
6 inch	0	5	9	13	18	23	28	34	39	45	52	57	63	69	75	81	87	92	98	100	102
7.5 inch	0	4	7	10	14	18	22	27	31	36	41	45	50	55	60	65	69	73	78	80	82
10 inch	0	3	5	8	11	14	17	20	23	27	31	34	38	41	45	49	52	55	59	60	61

Oats

Drive Type	Seed Rate Handle Setting																				
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 37 pounds/bushel)																				
6 inch	0	5	12	17	24	32	39	47	55	63	72	80	88	96	105	113	121	130	139	140	140
7.5 inch	0	4	10	14	19	25	31	37	44	51	58	64	70	77	84	90	97	104	111	112	112
10 inch	0	3	7	10	14	19	23	28	33	38	43	48	53	58	63	68	73	78	83	84	84

Peas

Drive Type	Seed Rate Handle Setting																				
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 61 pounds/bushel)																				
6 inch	0	4	15	28	42	58	74	91	108	125	143	160	177	193	208	222	235	246	255	262	267
7.5 inch	0	3	12	23	34	46	59	73	86	100	114	128	141	154	166	178	188	197	204	210	214
10 inch	0	2	9	17	25	35	44	54	65	75	86	96	106	116	125	133	141	147	153	157	160

Peas

Drive Type	Seed Rate Handle Setting																				
4	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 61 pounds/bushel)																				
6 inch	0	7	25	46	69	94	120	148	176	204	233	261	288	314	339	362	382	401	416	427	436
7.5 inch	0	5	20	37	55	75	96	118	141	163	186	209	230	251	271	289	306	320	333	342	349
10 inch	0	4	15	28	41	56	72	89	105	123	140	156	173	189	203	217	229	240	249	257	261

Seed Rate Charts, Main Box, continued...

Pinto Beans

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 51 pounds/bushel)																				
6 inch	0	0	9	13	17	24	30	35	41	47	53	58	64	69	74	81	85	91	97	96	96
7.5 inch	0	0	7	10	14	19	24	28	33	38	42	47	51	55	60	65	68	73	77	77	77
10 inch	0	0	5	8	10	14	18	21	25	28	32	35	38	41	45	49	51	54	58	58	58

Rice, Short Grain (1 of 2)

Drive Type	Seed Rate Handle Setting																				
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 43 pounds/bushel)																				
6 inch	0	11	18	28	38	46	56	64	73	84	96	107	117	128	139	148	167	165	174	174	174
7.5 inch	0	9	14	23	31	37	44	51	59	67	77	85	94	102	111	118	125	132	139	139	139
10 inch	0	7	11	17	23	27	33	38	44	50	57	64	70	77	83	89	94	99	105	105	105

Rice, Short Grain (2 of 2)

Drive Type	Seed Rate Handle Setting																				
4	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 43 pounds/bushel)																				
6 inch	0	18	29	46	63	74	91	104	120	137	156	174	191	209	226	241	255	269	284	284	284
7.5 inch	0	14	24	37	50	60	72	83	96	109	125	139	153	167	181	193	204	215	227	227	227
10 inch	0	11	18	28	38	45	54	62	72	82	94	105	115	125	136	145	153	162	170	170	170

Rice, Long Grain (1 of 4)

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 47 pounds/bushel)																				
6 inch	0	1.4	4.4	7.4	10.4	13.7	16.8	19.8	22.9	26.1	31.6	32.1	35.1	38.1	41.1	44.3	46.8	49.4	51.5	52.9	53.9
7.5 inch	0	1.1	3.6	5.9	8.3	10.9	13.5	15.9	18.4	20.9	25.3	25.7	28.1	30.5	32.9	35.4	37.5	39.5	41.2	42.3	43.1
10 inch	0	0.8	2.7	4.4	6.2	8.2	10.1	11.9	13.8	15.7	19.0	19.3	21.1	22.9	24.7	26.6	28.1	29.7	30.9	31.7	32.3

Rice, Long Grain (2 of 4)

Drive Type	Seed Rate Handle Setting																				
2	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 47 pounds/bushel)																				
6 inch	0	3	9	15	21	28	35	41	47	54	65	66	72	78	85	91	96	102	106	109	111
7.5 inch	0	2	7	12	17	23	28	33	38	43	52	53	58	63	68	73	77	81	85	87	89
10 inch	0	2	6	9	13	17	21	25	28	32	39	40	43	47	51	55	58	61	64	65	67

Seed Rate Charts, Main Box, continued...

Rice, Long Grain (3 of 4)

Drive Type	Seed Rate Handle Setting																				
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre										(based on 47 pounds/bushel)										
6 inch	0	0	13	22	32	42	53	61	71	81	90	98	107	116	125	135	144	153	161	167	173
7.5 inch	0	0	11	17	25	34	42	49	57	65	72	79	85	92	100	108	116	123	129	134	138
10 inch	0	0	8	13	19	25	32	37	42	49	54	59	64	69	75	81	87	92	97	100	104

Rice, Long Grain (4 of 4)

Drive Type	Seed Rate Handle Setting																				
4	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre										(based on 47 pounds/bushel)										
6 inch	0	0	22	35	52	68	86	100	115	132	146	160	174	188	204	220	235	250	263	273	282
7.5 inch	0	0	17	28	41	55	69	80	92	105	117	128	139	151	163	176	188	200	210	218	226
10 inch	0	0	13	21	31	41	52	60	69	79	88	96	104	113	123	132	141	150	158	164	169

Rye

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre										(based on 57 pounds/bushel)										
6 inch	0	3	8	13	19	24	28	35	41	47	53	58	63	68	74	81	87	94	101	102	102
7.5 inch	0	2	6	10	15	19	22	28	33	38	42	46	50	55	59	64	69	75	81	81	82
10 inch	0	2	5	8	11	14	17	21	24	28	32	35	38	41	44	48	52	56	61	61	61

Soybeans (1 of 4)

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre										(based on 58 pounds/bushel)										
6 inch	0	3	8	13	19	23	29	34	39	45	49	55	61	66	71	77	82	87	93	93	93
7.5 inch	0	2	6	11	15	19	23	27	31	36	40	44	49	53	57	62	65	70	74	74	75
10 inch	0	2	5	8	12	14	17	20	24	27	30	33	37	40	43	46	49	52	56	56	56

Soybeans (2 of 4)

Drive Type	Seed Rate Handle Setting																				
2	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre										(based on 58 pounds/bushel)										
6 inch	0	6	16	27	40	48	59	69	80	92	102	114	125	136	147	158	167	179	190	191	192
7.5 inch	0	5	13	22	32	38	47	55	64	73	81	91	100	109	118	127	134	143	152	153	153
10 inch	0	4	10	16	24	29	35	42	48	55	61	68	75	82	88	95	101	107	115	115	115

Seed Rate Charts, Main Box, continued...

Soybeans (3 of 4)

Drive Type	Seed Rate Handle Setting																				
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 58 pounds/bushel)																				
6 inch	0	12	23	40	60	71	89	101	116	131	148	164	181	196	214	228	248	265	284	284	284
7.5 inch	0	9	18	32	48	57	71	81	93	105	119	131	145	157	171	182	199	212	227	227	227
10 inch	0	7	14	24	36	42	53	61	70	79	89	98	108	118	128	137	149	159	170	170	170

Soybeans (4 of 4)

Drive Type	Seed Rate Handle Setting																				
4	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 58 pounds/bushel)																				
6 inch	0	19	37	66	97	115	145	165	190	214	241	267	295	320	348	371	405	433	463	463	464
7.5 inch	0	15	29	53	78	92	116	132	152	171	193	214	236	256	279	297	324	346	370	371	371
10 inch	0	11	22	40	58	69	87	99	114	128	145	160	177	192	209	223	243	260	278	278	278

Sunflower

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 28 pounds/bushel)																				
6 inch	0	0	2	4	6	8	11	13	15	18	20	23	25	27	30	32	34	36	38	39	41
7.5 inch	0	0	2	3	5	7	9	10	12	14	16	18	20	22	24	26	27	29	31	32	33
10 inch	0	0	1	3	4	5	6	8	9	11	12	14	15	16	18	19	20	22	23	24	24

Wheat (1 of 2)

Drive Type	Seed Rate Handle Setting																				
2	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 64 pounds/bushel)																				
6 inch	0	13	22	30	40	50	57	70	80	91	105	115	127	140	152	164	177	190	203	205	206
7.5 inch	0	10	18	24	32	40	46	56	64	73	84	92	102	112	122	131	142	152	162	164	165
10 inch	0	8	13	18	24	30	34	42	48	55	63	69	76	84	91	99	106	114	122	123	124

Seed Rate Charts, Main Box, continued...

Wheat (2 of 2)

Drive Type	Seed Rate Handle Setting																				
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 64 pounds/bushel)																				
6 inch	0	16	31	45	60	74	88	104	120	137	153	168	186	202	220	240	256	274	290	297	299
7.5 inch	0	13	25	36	48	59	70	83	96	109	123	134	149	162	176	192	205	219	232	237	239
10 inch	0	10	18	27	36	45	53	62	72	82	92	101	111	121	132	144	154	164	174	178	179

Wheatgrass

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Pounds Per Acre (based on 23 pounds/bushel)																				
6 inch	0	1	2	3	4	5	6	7	8	10	11	12	13	14	15	17	18	19	19	21	21
7.5 inch	0	1	2	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15	15	17	17
10 inch	0	1	1	2	3	3	4	4	5	6	7	7	8	9	9	10	11	12	11	13	13

Small Seeds Rate

Seeding rate from the optional Small Seeds Attachment is controlled entirely by a seed rate handle on the small seeds box. No sprocket changes are required, and small seeds rate is unaffected by settings for main seed box.

Refer to Figure 8

To set Small Seeds rate, loosen the wing nut ① at the handle, and adjust the lever ② position. Tighten nut.

Set the initial rate based on the chart in the Seed Rate Manual.

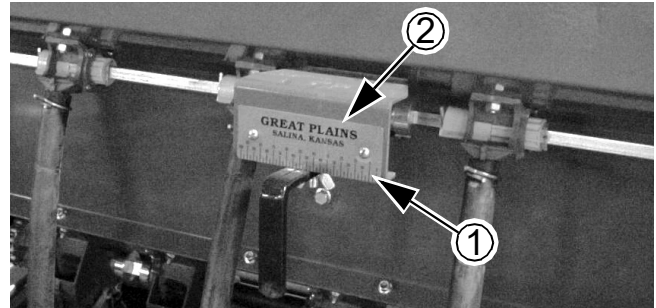


Figure 8
Small Seeds Rate Handle

18511

Small Seeds Rate Calibration

Differences will exist between the tested seed, and field conditions used to generate the Small Seeds Rate Charts, and your seed and conditions. To accurately achieve your target population, Great Plains recommends calibrating.

Perform the calibration with opener frames lowered (if the openers are raised, the clutch disengages). Leave the tractor hitched for movement control.

1. Estimate the sample sizes.
Take your planned population (in our example, *alfalfa at 10 pounds per acre*) and divide it by the row count of the drill:
21 in our example.
The expected sample size is 0.48 lbs per row, or *1.43 pounds for 3 sample rows.*
2. To perform this calibration, you need a scale that is accurate near the aggregate sample size, and three (3) light-weight containers, each capable of holding a row's sample.
3. Disengage the lock-out hub (see Operator Manual), to permit independent rotation of the main jackshaft.

Refer to Figure 9

4. Remove the calibration crank from its storage stob on the left top side of the main toolbar. Store the retaining pin on the stob.

Refer to Figure 10

5. Place the hex socket of the crank on the left end of the main jackshaft.
6. Pull the small seed hoses off the top of three opener seed tubes, at the top of the openers. Place the hoses into each sample container.

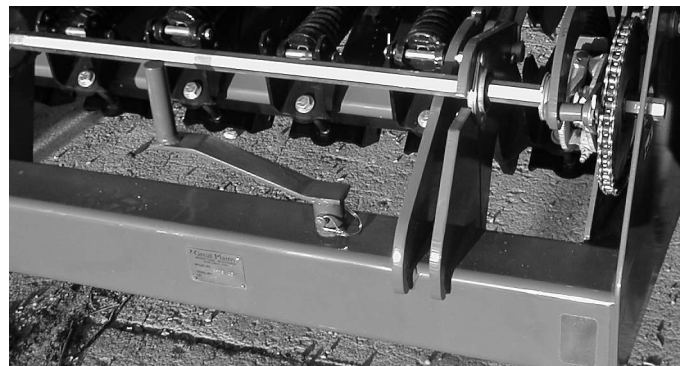


Figure 9
Calibration Crank Stored

16651

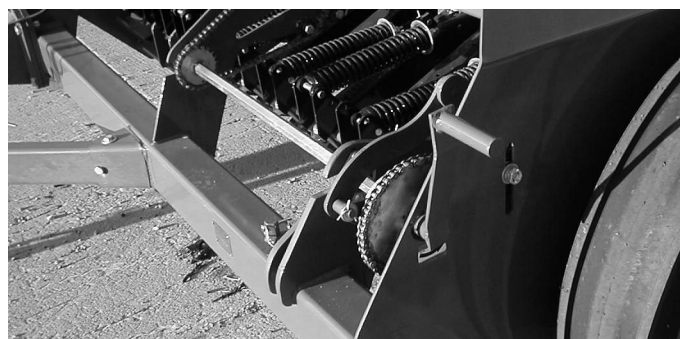


Figure 10
Calibration Crank Engaged

16652

7. If not already done, set the Seed Rate Handle. If fertilizer is loaded, remove the fertilizer drive chain (unless you are simultaneously calibrating fertilizer rate).
8. Load seed above the rows to be sampled. Load well more than the expected sample size.
9. Rotate the crank several turns counter-clockwise to ensure that the drives and seed cups are engaged, working properly, free from foreign material, and that seed is flowing steadily from the meters. Stop.
10. Note the current reading of the acremeter, unless you do not plan to rely on it for the calibration.
11. Empty the sample containers back into the seed box.
12. Record the weight of the empty containers and place them back under the three hoses to gather metered seed.

For example:
 using a row spacing of:
7.5 inches
 row count:
21
 you desire to plant alfalfa at:
10 pounds per acre.
 This corresponds to an initial Seed Rate Handle of:
50

For example:
 three 0.5 pound (8 oz) containers weigh:
1.5 lbs

13. Turn crank at approximately 23 rpm until one acre is tallied on acremeter. While turning, check that cups have ample seed coming into them.

Rotations for 1 acre:
133
 23 rpm (2.6 sec/rev) simulates a 6.5 mph (10.4 kph) field speed.

Row Spacing	Rotations Per Acre (Ha)
6 inch (15.2 cm)	134 (331) rotations
7.5 inch (19.1 cm)	133 (329) rotations
10 inch (25.4 cm)	131 (324) rotations

14. Weigh metered seed. Subtract initial weight of container(s)

$$NetWeight = GrossWeight - ContainerWeights$$

For example:
 the three containers weighed a total 2.6 lbs after test:
1.1 lbs net

$$1.1 = 2.6 - 1.5$$

15. Divide the net seed weight by three. Multiply by number of openers on your drill to determine the total of pounds-per-acre seeded.

$$MeasuredRate = \frac{NetWeight}{3} \times RowCount$$

For example:
 a 7.5in drill has 21 rows:
7.7 lbs/ac

$$7.7 = \frac{1.1}{3} \times 21$$

16. The Small Seeds Rate Handle scale is a percentage of meter opening, and its effect is linear near scale center. Calculate a new scale setting based on the test.
17. Set the Small Seeds Rate Handle to the new scale setting.
18. You may want to repeat calibration procedure at the new setting if your results varied greatly from the Seed Rate Chart, or if you must operate near the ends of the Seed Rate handle scale (0-20 or 90-100).
19. Check that your end-wheel tires are 7.5 x 20, 10-ply Rib Implement and properly inflated. See **"Tire Inflation Chart"** in Operator Manual.
20. With calibration complete, store calibration crank, re-engage lock-out hub, reinstall fertilizer chain (if removed) and reconnect seed hoses.

When drilling, check seeding rate by noting acres drilled, amount of seed added to drill and seed level in drill box. If you are seeding more or less than desired, adjust rate slightly to compensate for field conditions.

Small Seeds Row Shut-Off

If alternate row spacing is required for small seeds, optional plugs (see Operator Manual) are available to block flow inside the seed box tray.

Clean-out seed. The seed box must be empty prior to inserting plugs. See **"Small Seeds Box Clean-out"** in Operator Manual.

1. Before installing plugs, inspect the seed boxes for existing factory-installed plugs. These are blocking extra unused seed ports. You may want to identify these plugs with an indelible marker.
2. Insert one plug at each row to shut off. Verify the seed hose path before inserting the plug, as some hoses do not make a strictly vertical drop to their row units.
3. Review seed rate settings prior to planting. Perform calibration calculations with the actual active row count.

When removing plugs to restore rows to operation, be sure to not disturb a factory-installed plug.

$$NewScale = \frac{TargetRate}{MeasuredRate} \times OldScale$$

For example:

new scale:

65

$$64.9 = \frac{10}{7.7} \times 50$$

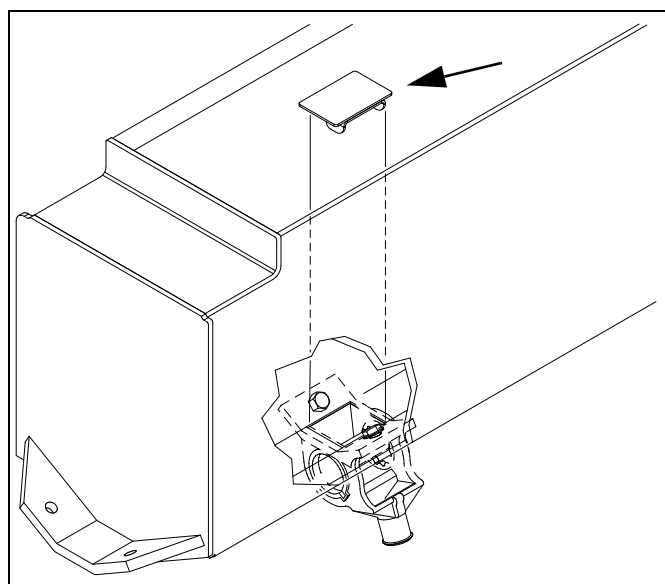


Figure 11
Small Seeds Tube Plug

27407

Small Seeds Rate Charts

U.S customary units. Metric charts begin on page 34.

Alfalfa, Red Alsike, Crimson Clover

	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Pounds per Acre																				
6 inch	0	0.0	2.2	3.5	4.8	6.0	7.5	8.7	9.8	11.2	12.5	13.8	15.1	16.4	17.5	18.6	20.2	21.4	22.9	24.0	25.2
7.5 inch	0	0.0	1.8	2.8	3.9	4.8	6.0	7.0	7.9	9.0	10.0	11.1	12.1	13.2	14.0	15.3	16.2	17.2	18.3	19.3	20.3
10 inch	0	0.0	1.3	2.1	2.8	3.5	4.4	5.1	5.8	6.6	7.4	8.1	8.9	9.7	10.3	11.2	11.9	12.6	13.4	14.2	14.9

Kentucky Bluegrass, Fescue, Annual Rye Grass

	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Pounds per Acre																				
6 inch	0	0.0	0.2	1.2	1.9	2.7	3.3	4.1	4.6	5.2	5.8	6.3	6.8	7.3	7.8	8.3	8.8	9.2	9.7	10.0	10.5
7.5 inch	0	0.0	0.2	.9	1.5	2.2	2.7	3.3	3.7	4.2	4.6	5.1	5.5	5.9	6.3	6.7	7.0	7.4	7.7	8.1	8.4
10 inch	0	0.0	0.1	0.7	1.1	1.6	2.0	2.4	2.7	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2	5.4	5.7	5.9	6.2

Bermuda, Red Top, Lespedeza Unhulled, Sercia, Sand, Weeping Love Grass

	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Pounds per Acre																				
6 inch	0	0.0	0.7	1.1	1.7	2.6	3.3	4.1	5.0	5.9	6.6	7.2	7.8	8.4	9.0	9.5	10.2	10.9	11.6	12.2	12.9
7.5 inch	0	0.0	0.5	0.9	1.4	2.1	2.6	3.3	4.0	4.7	5.3	5.8	6.3	6.7	7.2	7.6	8.2	8.8	9.3	9.8	10.4
10 inch	0	0.0	0.4	0.6	1.0	1.5	1.9	2.4	3.0	3.5	3.9	4.2	4.6	4.9	5.3	5.6	6.0	6.4	6.8	7.2	7.6

Red & Sweet Clover, Lespedeza Hulled

	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Pounds per Acre																				
6 inch	0	0.0	1.5	3.4	5.2	7.1	9.0	11.3	13.2	15.3	17.0	19.0	20.8	22.5	24.5	26.4	28.3	30.1	32.1	33.8	35.6
7.5 inch	0	0.0	1.2	2.7	4.2	5.7	7.2	9.1	10.6	12.3	13.7	15.3	16.7	18.1	19.7	21.2	22.7	24.2	25.8	27.2	28.6
10 inch	0	0.0	0.9	2.0	3.1	4.2	5.3	6.7	7.8	9.0	10.0	11.2	12.2	13.3	14.4	15.6	16.6	17.8	18.9	19.9	20.9

Orchard Grass

	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Pounds per Acre																				
6 inch	0	0.0	0.0	0.3	0.7	.9	1.3	1.5	2.0	2.4	2.8	3.3	3.5	3.9	4.4	4.8	5.0	5.5	5.7	6.1	6.3
7.5 inch	0	0.0	0.0	0.2	0.5	0.7	1.1	1.2	1.6	1.9	2.3	2.6	2.8	3.2	3.5	3.9	4.0	4.4	4.6	4.9	5.1
10 inch	0	0.0	0.0	0.1	0.4	0.5	.8	0.9	1.2	1.4	1.7	1.9	2.1	2.3	2.6	2.8	3.0	3.2	3.3	3.6	3.7

Rate Charts, Small Seeds Box, continued...

Millet, Reed Canary

	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Pounds per Acre																				
6 inch	0	0.4	1.4	2.4	3.5	4.4	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.5	13.6	14.6	15.6	16.6	17.6	18.5	19.0
7.5 inch	0	0.3	1.2	2.0	2.8	3.6	4.4	5.2	6.0	6.8	7.6	8.4	9.3	10.1	10.9	11.7	12.5	13.3	14.1	14.9	15.1
10 inch	0	0.3	0.8	1.4	2.0	2.6	3.2	3.8	4.4	5.0	5.6	6.2	6.8	7.4	8.0	8.6	9.2	9.8	10.4	10.9	11.5

Ladino Clover, Canary Grass,
Timothy, Canola

	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Pounds per Acre																				
6 inch	0	0.0	1.1	2.1	3.3	4.7	6.1	7.6	9.2	10.7	12.2	13.8	15.5	17.0	18.5	20.3	21.7	23.4	25.4	27.3	29.2
7.5 inch	0	0.0	0.9	1.6	2.6	3.9	4.9	6.1	7.4	8.6	9.8	11.1	12.5	13.7	14.9	16.3	17.6	18.8	20.4	21.9	23.5
10 inch	0	0.0	0.6	1.5	1.9	2.5	3.6	4.5	5.4	6.3	7.2	8.1	9.1	10.0	10.9	12.0	12.9	13.8	14.9	16.1	17.2

Birdsfoot, Trefoil, Sudan

	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Pounds per Acre																				
6 inch	0	0.0	1.7	3.3	5.2	6.8	8.7	10.7	12.7	14.7	16.8	19.2	21.2	23.4	25.6	28.0	29.9	32.1	34.2	36.3	38.4
7.5 inch	0	0.0	1.4	2.6	4.2	5.4	7.0	8.6	10.2	11.9	13.5	15.4	17.0	18.8	20.5	22.5	24.0	25.8	27.6	29.1	30.9
10 inch	0	0.0	1.0	1.9	3.1	4.0	5.1	6.3	7.5	8.6	9.9	11.3	12.5	13.8	15.1	16.5	17.6	18.9	20.2	21.4	22.7



Setting Fertilizer Rate

The 1300F fertilizer meters are driven from the clutch shaft through a series of sprockets. This system is independent of the seed meter drives, and is unaffected by Drive Type. Fertilizer rate is adjusted by changing one Range sprocket and two Transmission sprockets.

Fertilizer application rates vary with fertilizer type, density and particle size. Relative humidity and field conditions can also affect application rates. The chart in the Seed Rate Manual is based on fertilizer with average particle size and a density of 65 pounds per cubic foot. Initially set rate according to charts, then calibrate the drill to your material as described on this page.

Accurately obtaining the desired application rate requires four steps:

Adjusting target rate for large differences between material and chart density.

1. Setting Range sprocket (from chart)
2. Setting initial Driver / Driven sprockets (from chart)
3. Calibration: checking predicted application rate

Adjusting for Density

The fertilizer meter rate chart is based on fertilizer with a density of 65 pounds per cubic foot (1.04 kg/liter). If your fertilizer density is within a few percent of that, you can skip this step and rely on calibration to determine final Driver/Driven setup.

For larger variances, particularly with very low densities, pre-compensating can simplify calibration, by choosing a different target chart value for the application rate.

Find your actual material density. Normally, this reported on the container in which it was supplied. If not, weigh a known volume and calculate it.

1. Find your material Density in the table at right, and the Conversion Factor below it.
2. Adjust your target application rate prior to consulting the Fertilizer Rate Chart.
3. Consult the Fertilizer Rate Chart for the Adjusted rate.
4. Calibrate using the sprocket setup for the adjusted rate.

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Fertilizer Rate Chart
Based on 65 pounds per cubic foot (1.04 kg/liter)

6in (15.2cm) Rows					7.5in (19.1cm) Rows					10in (25.4cm) Rows				
Meter Rate	Sprockets	Range	Driver	Driven	Meter Rate	Sprockets	Range	Driver	Driven	Meter Rate	Sprockets	Range	Driver	Driven
47	42	Low	12 T	21 T	38	34	Low	12 T	21 T	28	25	Low	12 T	21 T
50	44	Low	12 T	21 T	41	36	Low	12 T	20 T	30	27	Low	12 T	20 T
53	47	Low	12 T	19 T	42	37	Low	12 T	19 T	32	28	Low	12 T	19 T
55	49	Low	12 T	18 T	44	39	Low	12 T	18 T	34	30	Low	12 T	18 T
59	52	Low	12 T	17 T	47	42	Low	12 T	17 T	35	31	Low	12 T	18 T
62	55	Low	12 T	16 T	50	44	Low	12 T	16 T	37	33	Low	12 T	17 T
68	60	Low	17 T	21 T	54	48	Low	17 T	21 T	41	36	Low	17 T	19 T
71	63	Low	17 T	20 T	56	50	Low	17 T	20 T	43	38	Low	17 T	20 T
74	66	Low	17 T	19 T	60	53	Low	17 T	19 T	45	40	Low	17 T	19 T
78	70	Low	20 T	21 T	63	56	Low	20 T	21 T	47	42	Low	20 T	21 T
88	78	Low	21 T	20 T	70	62	Low	21 T	20 T	53	47	Low	21 T	20 T
92	82	Low	21 T	19 T	73	65	Low	21 T	19 T	55	49	Low	21 T	19 T
103	91	Low	21 T	18 T	78	69	Low	21 T	18 T	59	52	Low	21 T	18 T
109	97	Low	21 T	17 T	82	73	Low	21 T	17 T	65	58	Low	21 T	16 T
118	105	Low	17 T	12 T	85	84	Low	17 T	12 T	68	61	Low	21 T	16 T
125	111	Low	18 T	12 T	100	89	Low	17 T	12 T	71	63	Low	17 T	12 T
131	116	High	12 T	21 T	105	93	High	12 T	21 T	74	66	Low	18 T	12 T
132	117	Low	19 T	12 T	106	94	Low	19 T	12 T	79	70	Low	19 T	12 T
137	122	High	12 T	19 T	109	97	High	12 T	20 T	79	70	High	12 T	21 T
148	130	Low	20 T	12 T	110	98	Low	20 T	12 T	82	73	High	12 T	20 T
148	130	High	12 T	19 T	116	103	Low	20 T	12 T	83	74	Low	20 T	12 T
149	130	Low	21 T	12 T	116	103	High	12 T	19 T	87	77	High	12 T	19 T
152	135	High	12 T	18 T	130	115	High	12 T	17 T	88	78	Low	21 T	12 T
161	143	High	12 T	17 T	132	108	High	12 T	18 T	91	81	High	12 T	18 T
185	164	High	17 T	21 T	148	131	High	17 T	21 T	97	86	High	12 T	17 T
194	172	High	17 T	19 T	155	138	High	17 T	20 T	112	99	High	17 T	21 T
204	181	High	20 T	21 T	163	145	High	17 T	19 T	116	103	High	17 T	20 T
217	193	High	20 T	21 T	174	154	High	20 T	21 T	123	109	High	17 T	19 T
240	213	High	21 T	20 T	192	170	High	21 T	20 T	131	116	High	20 T	21 T
252	224	High	21 T	19 T	202	179	High	21 T	19 T	144	128	High	21 T	20 T
266	236	High	21 T	18 T	213	189	High	21 T	18 T	151	134	High	21 T	19 T
282	250	High	21 T	17 T	225	200	High	21 T	17 T	160	142	High	21 T	18 T
323	287	High	17 T	12 T	259	230	High	17 T	12 T	169	150	High	21 T	17 T
341	303	High	18 T	12 T	274	243	High	18 T	12 T	194	172	High	17 T	12 T
361	320	High	19 T	12 T	288	256	High	19 T	12 T	205	182	High	18 T	12 T
390	337	High	20 T	12 T	303	269	High	20 T	12 T	218	192	High	19 T	12 T
398	353	High	21 T	12 T	319	283	High	21 T	12 T	229	202	High	20 T	12 T
										239	212	High	21 T	12 T

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Density: lbs/cu-ft (kg/liter)	45.0 (0.72)	50.0 (0.80)	55.0 (0.88)	60.0 (0.96)
Conversion Factor	1.45	1.30	1.20	1.10
Density: lbs/cu-ft (kg/liter)	65.0 (1.04)	70.0 (1.12)	75.0 (1.20)	80.0 (1.28)
Conversion Factor	1.00	0.93	0.87	0.81

$$\text{AdjustedRate} = \text{TargetRate} \times \text{ConversionFactor}$$

Example: Your fertilizer has a density of 45 pounds per cubic foot, and you want to apply 100 pounds per acre with your 7.5in drill.

$$145 = 100 \times 1.45$$

Example: the adjusted 145 rate corresponds to a High Range, and 17T/19T Driver/Driven transmission.

Setting Fertilizer Drive Range

Refer to the Fertilizer Rate Chart on page 25 to find the correct Range sprocket size for your drill's row spacing and target (or adjusted) application rate.

Setting High Range

Refer to Figure 12 (striped arrow shows chain direction)

High Range uses the smaller 16T sprocket ①.

Loosen the idler sprocket ② and remove chain from driving ③ and range sprockets (①, ④).

1. Open chain at removable link. Remove and save the 13-pitch section of the chain.
2. Loosen the set screws on the driving sprocket ③, and slide it on the shaft until it is in alignment with the small 16T High Range sprocket ①.

Refer to Figure 13

3. Re-assemble and re-mount the chain. Make sure the open ends of all chain clips face away from the direction of chain travel (shown by the gray arrow).
4. Re-engage the idler sprocket ②, allowing $1 \frac{1}{4}$ inch (6.4 mm) slack in the top chain span. Tighten set screws on driving sprocket ③.
5. If this is the final Range setting, after calibration, repeat step through step 4 for the right drill section.

Setting Low Range

Refer to Figure 12

Low Range uses the larger 44T sprocket ④. If it is already engaged by the chain, no change is necessary.

Loosen the idler sprocket ② and remove chain from driving ③ and range sprockets (①, ④).

1. Re-insert the saved 13-pitch section of the chain.
2. Loosen the set screws on the driving sprocket ③, and slide it on the shaft until it is in alignment with the large 44T Low Range sprocket ④.
3. Re-assemble and re-mount the chain. Make sure the open ends of chain clips face away from the direction of chain travel (shown by the gray arrow).
4. Re-engage the idler sprocket ②, allowing $1 \frac{1}{4}$ inch (6.4 mm) slack in the top chain span. Tighten set screws on driving sprocket ③.
5. If this is the final Range setting, after calibration, repeat step through step 4 for the right drill section.

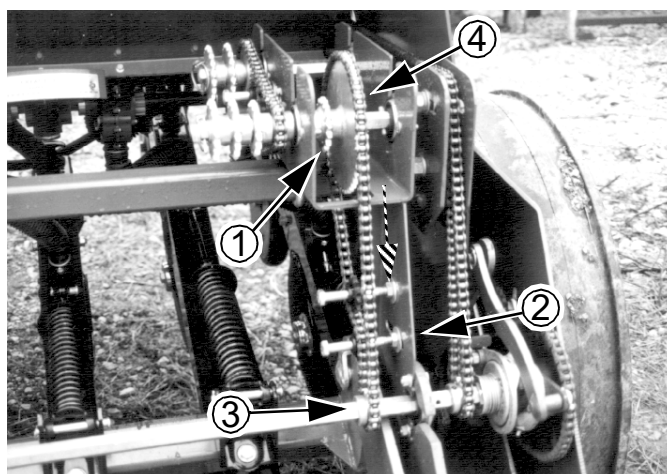


Figure 12
Fertilizer Drive Low Range

17052

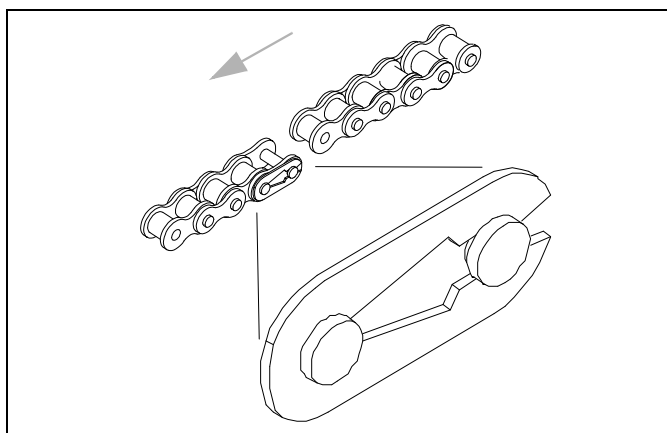


Figure 13
Chain Clip Orientation

26482

Setting Fertilizer Transmission

Refer to the Fertilizer Rate Chart on page 25 to find the correct Transmission (Driver/Driven) sprocket sizes for your drill's row spacing and target (or adjusted) application rate.

Refer to Figure 14

To change the Transmission setting:

Loosen idlers ① and slide idler sprockets out of engagement with chain.

1. Remove lynch pins ② from both sprocket shafts, and remove sprockets.
2. Place correct Driver and Driven sprockets on their respective shafts.
3. Store sprockets not used on ends of shafts. Re-install pins.
4. Reinstall chain and engage idlers, allowing $1 \frac{3}{4}$ inch (6.4 mm) slack in the top chain span.
5. If this is the final setting, after calibration, repeat step through step 4 for the right drill section.

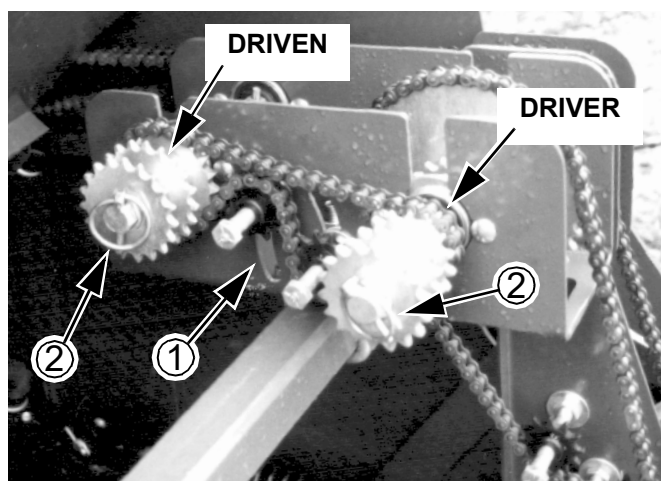


Figure 14
Fertilizer Final Drive

17049

Fertilizer Rate Calibration

Differences will exist between the tested fertilizer and field conditions used to generate the Rate Chart, and your fertilizer and conditions. To accurately achieve your target application, Great Plains recommends calibrating.

Perform the calibration with the opener frames lowered (if the openers are raised, the clutch disengages). Leave the tractor hitched for movement control.

Estimate the sample sizes.

Take your planned application rate (in our example, *78 pounds per acre*) and divide it by the row count of your drill *21 in our example*.

The expected sample size is 4.8 lbs per row, or *14.3 pounds for 3 sample rows*.

1. To perform this calibration, you need a scale that is accurate near the aggregate sample size, and 3 light-weight containers, each capable of holding a row's sample.
2. Disengage the lock-out hub (see Operator Manual), to permit independent rotation of the main jackshaft.

Refer to Figure 15

3. Remove the calibration crank from its storage stob on the left top side of the main toolbar. Store the retaining pin on the stob.

Refer to Figure 16

4. Place the hex socket of the crank on the left end of the main jackshaft.

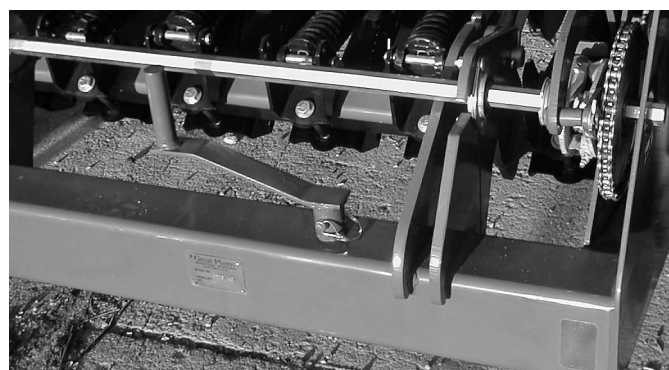


Figure 15
Calibration Crank Stored

16651

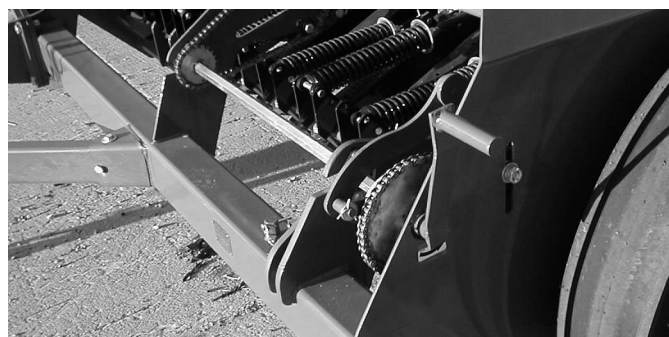


Figure 16
Calibration Crank Engaged

16652

5. Pull the fertilizer hoses off the top of three openers, at the top of the openers. Place the hoses into each sample container.
6. If not already done, make any density correction, then using the chart for the target rate, set the Range and Transmission sprockets. If seed is loaded, remove the drive chain for the seed box (unless you are simultaneously calibrating seed rate).
7. Load fertilizer above the rows to be sampled. Load well more than the expected sample size.

CAUTION

Follow material supplier recommendations for safety precautions in handling fertilizer.

8. Rotate the crank several turns counter-clockwise to ensure that the drive and meters are engaged, working properly, free from foreign material, and that material is flowing steadily from the meters. Stop.
9. Note the current reading of the acremeter, unless you do not plan to rely on it for the calibration.
10. Empty the sample containers back into the fertilizer box.
11. Record the weight of the empty containers and place them back under the three hoses to gather metered material.
12. Turn crank at approximately 23 rpm until one acre is tallied on acremeter. While turning, check that cups have ample seed coming into them.

Row Spacing	Rotations Per Acre (Ha)
6 inch (15.2 cm)	134 (331) rotations
7.5 inch (19.1 cm)	133 (329) rotations
10 inch (25.4 cm)	131 (324) rotations

13. Weigh metered material. Subtract initial weight of container(s)
14. Divide the net material weight by three. Multiply by number of openers on your drill to determine the total of pounds-per-acre applied.

For example, on a 1300F-2175 drill:
you desire to apply 45 lb/cu-ft material at a rate of:
100 pounds per acre

The density correction factor is 1.45.

$$145 = 100 \times 1.45$$

Use initial sprocket setting for a 145 pounds/ac rate:

Range: High

Driver: 17T

Driven: 19T



For example:
three empty 1.8 pound containers weigh:
5.4 lbs

Rotations for 1 acre is:
133

23 rpm (2.6 sec/rev) simulates a 6.5 mph (10.4 kph) field speed.

$$NetWeight = GrossWeight - ContainerWeights$$

For example:
the three containers weighed a total of 19.1 pounds after test: 13.7 lbs net

$$13.7 = 19.1 - 5.4$$

$$MeasuredRate = \frac{NetWeight}{3} \times RowCount$$

For example:
a 21-row (7.5in) drill: 95.9 lbs/ac

$$95.9 = \frac{13.7}{3} \times 21$$

15. Subtract to calculate the difference between the measured rate and the original target rate.

$$\text{Variance} = \text{FieldRate} - \text{MeasuredRate}$$

For example:
the target rate was 100 lbs/ac:
new variance=7

$$4.1 = 100 - 95.9$$

16. If a Density Adjustment was made (see page 20), apply it to the variance.

$$\text{AdjustedVariance} = \text{Variance} \times \text{CorrectionFactor}$$

In the example, we are using 45# material, factor 1.45.
Our density-corrected variance is:
6 lbs/ac

$$5.95 = 4.1 \times 1.45$$

17. Consult the chart for the *chart* rate used for your first calibration run with this material. If the just-measured result was low, add the [adjusted] variance to the previously used chart rate. If the measured result was high, subtract the [adjusted] variance from the previous chart rate.

For example:
Our measured rate was high, so we
subtract the adjusted variance (6)
from the chart rate (145)
to obtain a new chart rate (139) The closest is:
138

18. Reset the fertilizer Range and Final Drive based on the settings at the new chart rate.

This corresponds to a new drive setup of:
Range: Low
Driving: 17T
Driven: 20T

19. Re-calibrate using the sprocket settings for the resulting new target rate.

20. You may want to repeat calibration procedure at the new setting if your results varied greatly from the desired field rate.

21. With calibration complete, store the calibration crank, re-engage the lock-out hub, re-install any seed chain removed and reconnect fertilizer hoses.

22. Check that your end-wheel tires are 7.5 x 20, 10-ply Rib Implement and properly inflated. See "**Tire Inflation Chart**" in Operator Manual.

23. When drilling, check application rate by noting acres drilled, amount of fertilizer added to drill and fertilizer level in drill box. If you are applying more or less than desired, adjust rate slightly to compensate for field conditions.

Fertilizer Rate Chart

US customary and Metric units. Based on 65 pounds per cubic foot (1.04 kg/liter).

6in (15.2cm) Rows				
Meter Rate		Sprockets		
kg/Ha	lbs/ac	Range	Driver	Driven
47	42	Low	12 T	21 T
50	44	Low	12 T	20 T
53	47	Low	12 T	19 T
55	49	Low	12 T	18 T
59	52	Low	12 T	17 T
62	55	Low	12 T	16 T
68	60	Low	17 T	21 T
71	63	Low	17 T	20 T
74	66	Low	17 T	19 T
79	70	Low	20 T	21 T
88	78	Low	21 T	20 T
92	82	Low	21 T	19 T
97	86	Low	21 T	18 T
103	91	Low	21 T	17 T
109	97	Low	21 T	16 T
118	105	Low	17 T	12 T
125	111	Low	18 T	12 T
131	116	High	12 T	21 T
132	117	Low	19 T	12 T
137	122	High	12 T	20 T
139	123	Low	20 T	12 T
144	128	High	12 T	19 T
146	130	Low	21 T	12 T
152	135	High	12 T	18 T
161	143	High	12 T	17 T
185	164	High	17 T	21 T
194	172	High	17 T	20 T
204	181	High	17 T	19 T
217	193	High	20 T	21 T
240	213	High	21 T	20 T
252	224	High	21 T	19 T
266	236	High	21 T	18 T
282	250	High	21 T	17 T
323	287	High	17 T	12 T
341	303	High	18 T	12 T
361	320	High	19 T	12 T
380	337	High	20 T	12 T
398	353	High	21 T	12 T

7.5in (19.1cm) Rows				
Meter Rate		Sprockets		
kg/Ha	lbs/ac	Range	Driver	Driven
38	34	Low	12 T	21 T
41	36	Low	12 T	20 T
42	37	Low	12 T	19 T
44	39	Low	12 T	18 T
47	42	Low	12 T	17 T
50	44	Low	12 T	16 T
54	48	Low	17 T	21 T
56	50	Low	17 T	20 T
60	53	Low	17 T	19 T
63	56	Low	20 T	21 T
70	62	Low	21 T	20 T
73	65	Low	21 T	19 T
78	69	Low	21 T	18 T
82	73	Low	21 T	17 T
88	78	Low	21 T	16 T
95	84	Low	17 T	12 T
100	89	Low	18 T	12 T
105	93	High	12 T	21 T
106	94	Low	19 T	12 T
109	97	High	12 T	20 T
110	98	Low	20 T	12 T
116	103	Low	21 T	12 T
116	103	High	12 T	19 T
122	108	High	12 T	18 T
130	115	High	12 T	17 T
148	131	High	17 T	21 T
155	138	High	17 T	20 T
163	145	High	17 T	19 T
174	154	High	20 T	21 T
192	170	High	21 T	20 T
202	179	High	21 T	19 T
213	189	High	21 T	18 T
225	200	High	21 T	17 T
259	230	High	17 T	12 T
274	243	High	18 T	12 T
288	256	High	19 T	12 T
303	269	High	20 T	12 T
319	283	High	21 T	12 T

10in (25.4cm) Rows				
Meter Rate		Sprockets		
kg/Ha	lbs/ac	Range	Driver	Driven
28	25	Low	12 T	21 T
30	27	Low	12 T	20 T
32	28	Low	12 T	19 T
34	30	Low	12 T	18 T
35	31	Low	12 T	17 T
37	33	Low	12 T	16 T
41	36	Low	17 T	21 T
43	38	Low	17 T	20 T
45	40	Low	17 T	19 T
47	42	Low	20 T	21 T
53	47	Low	21 T	20 T
55	49	Low	21 T	19 T
59	52	Low	21 T	18 T
62	55	Low	21 T	17 T
65	58	Low	21 T	16 T
71	63	Low	17 T	12 T
74	66	Low	18 T	12 T
79	70	Low	19 T	12 T
79	70	High	12 T	21 T
82	73	High	12 T	20 T
83	74	Low	20 T	12 T
87	77	High	12 T	19 T
88	78	Low	21 T	12 T
91	81	High	12 T	18 T
97	86	High	12 T	17 T
112	99	High	17 T	21 T
116	103	High	17 T	20 T
123	109	High	17 T	19 T
131	116	High	20 T	21 T
144	128	High	21 T	20 T
151	134	High	21 T	19 T
160	142	High	21 T	18 T
169	150	High	21 T	17 T
194	172	High	17 T	12 T
205	182	High	18 T	12 T
216	192	High	19 T	12 T
228	202	High	20 T	12 T
239	212	High	21 T	12 T



Appendix

Metric Rate Charts, Main Seed Box

See page 2 for instructions.

Charts in U.S. customary units begin on page 8.

Alfalfa or Rape

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.77 kg per liter)																				
15.2cm (6in)	0	6.2	9.3	13.5	17.3	21.4	25.6	30.5	35.4	41.2	46.0	50.3	55.7	60.9	66.2	71.0	77.1	83.0	89.0	91.6	94.3
19.1cm (7.5in)	0	4.9	7.5	10.8	13.8	17.2	20.5	24.4	28.3	33.0	36.8	40.3	44.6	48.7	53.0	56.8	61.7	66.4	71.2	73.3	75.4
25.4cm (10in)	0	3.7	5.6	8.1	10.3	12.9	15.4	18.3	21.2	24.7	27.6	30.2	33.5	36.5	39.7	42.6	46.3	49.7	53.4	55.0	56.6

Barley (1 of 3)

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.66 kg per liter)																				
15.2cm (6in)	0	5.1	8.5	12.0	16.2	20.3	24.9	29.3	33.8	38.7	43.7	48.6	53.7	59.3	64.1	69.3	73.5	77.6	81.5	82.1	82.7
19.1cm (7.5in)	0	4.0	6.8	9.5	12.9	16.3	20.0	23.5	27.1	31.0	34.9	38.8	43.0	47.4	51.3	55.5	58.8	62.1	65.2	65.7	68.2
25.4cm (10in)	0	3.0	5.1	7.2	9.7	12.1	14.9	17.6	20.3	23.2	26.2	29.2	32.2	35.6	38.5	41.5	44.1	46.6	48.8	49.3	49.6

Barley (2 of 3)

Drive Type	Seed Rate Handle Setting																				
2	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.66 kg per liter)																				
15.2cm (6in)	0	9.8	17.9	24.3	33.5	41.5	50.6	60.3	69.4	79.7	85.8	97.7	107.6	116.9	127.4	137.8	149.1	159.9	170.2	172.9	175.6
19.1cm (7.5in)	0	7.7	14.3	19.3	26.7	33.2	40.5	48.3	55.5	63.8	71.3	78.1	86.1	93.5	101.9	110.1	119.2	127.9	136.1	138.2	140.4
25.4cm (10in)	0	5.8	10.7	14.5	20.1	24.9	30.4	36.2	41.7	47.8	53.4	58.6	64.6	70.2	76.5	82.6	89.5	95.9	100.1	103.7	105.3

Barley (3 of 3)

Drive Type	Seed Rate Handle Setting																					
4	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Kilograms per Hectare (based on 0.66 kg per liter)																					
15.2cm (6in)	0	23.8	43.6	59.2	81.8	101.5	123.8	147.4	169.6	195.0	217.9	238.8	263.2	285.8	311.8	336.8	364.5	391.0	416.1	422.7	429.3	
19.1cm (7.5in)	0	19.0	34.8	47.4	65.5	81.2	99.1	118.0	135.7	155.9	174.4	191.1	210.5	228.7	249.5	269.4	291.7	312.8	332.9	338.2	343.4	
25.4cm (10in)	0	14.3	26.2	35.5	49.1	60.9	74.3	88.5	101.8	117.0	130.8	143.3	157.9	171.5	187.0	202.1	218.8	234.6	249.7	253.6	257.7	

Metric Seed Rate Charts, Main Box, continued...

Buckwheat

Drive Type	Seed Rate Handle Setting																					
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Kilograms per Hectare (based on 0.62 kg per liter)																					
15.2cm (6in)	0	12.7	23.6	33.0	47.0	58.6	73.0	87.5	103.7	119.9	138.2	152.4	168.9	185.7	201.5	219.4	235.0	251.0	268.0	268.5	273.6	
19.1cm (7.5in)	0	10.1	18.9	26.5	37.6	46.9	58.4	70.1	83.0	95.9	110.6	121.8	135.1	148.5	161.2	175.6	187.9	201.2	214.4	214.6	218.9	
25.4cm (10in)	0	7.6	14.1	19.9	28.2	35.1	43.8	52.5	62.2	72.0	83.0	91.4	101.3	111.4	120.9	131.7	141.0	150.9	160.8	164.7	170.1	

Buffalograss (1 of 4)

Drive Type	Seed Rate Handle Setting																					
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Kilograms per Hectare (based on 0.30 kg per liter)																					
15.2cm (6in)	0	2.3	3.4	4.5	5.6	7.9	9.0	11.3	13.5	15.8	18.0	20.3	21.4	23.7	24.8	25.9	25.9	28.2	28.2	29.3	28.2	
19.1cm (7.5in)	0	1.1	2.3	3.4	4.5	5.6	7.9	9.0	11.3	12.4	14.6	15.8	16.9	19.2	20.3	21.4	22.5	22.5	22.5	22.5	22.5	
25.4cm (10in)	0	1.1	2.3	2.3	3.4	4.5	5.6	6.8	7.9	9.0	10.1	12.4	13.5	13.5	14.6	15.8	16.9	16.9	16.9	16.9	16.9	

Buffalograss (2 of 4)

Drive Type	Seed Rate Handle Setting																				
2	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.30 kg per liter)																				
15.2cm (6in)	0	3.4	5.6	9.0	12.4	15.8	19.2	23.7	28.2	32.7	36.1	40.6	43.9	48.5	51.8	54.1	56.3	57.5	58.6	58.6	58.6
19.1cm (7.5in)	0	2.3	4.5	6.8	9.0	12.4	15.8	19.2	22.5	25.9	29.3	32.7	36.1	38.3	40.6	42.8	45.1	46.2	47.3	47.3	46.2
25.4cm (10in)	0	2.3	3.4	5.6	6.8	9.0	11.3	14.6	16.9	19.2	21.4	24.8	27.0	29.3	30.4	32.7	33.8	34.9	34.9	34.9	34.9

Buffalograss (3 of 4)

Drive Type	Seed Rate Handle Setting																				
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.30 kg per liter)																				
15.2cm (6in)	0	6.8	9.0	12.4	16.9	22.5	28.2	33.8	40.6	47.3	54.1	59.7	66.5	72.1	77.7	82.3	85.6	89.0	90.1	91.3	90.1
19.1cm (7.5in)	0	5.6	7.9	10.1	13.5	18.0	22.5	27.0	32.7	38.3	42.8	48.5	53.0	57.5	62.0	65.4	68.7	71.0	72.1	73.2	72.1
25.4cm (10in)	0	3.4	5.6	7.9	10.1	13.5	16.9	20.3	24.8	28.2	32.7	36.1	40.6	42.8	46.2	49.6	51.8	53.0	54.1	54.1	54.1

Metric Seed Rate Charts, Main Box, continued...**Buffalograss (4 of 4)**

Drive Type	Seed Rate Handle Setting																				
4	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.30 kg per liter)																				
15.2cm (6in)	0	10.0	14.6	21.4	28.2	37.2	46.2	56.3	66.5	76.6	87.9	98.0	108.2	117.2	126.2	133.0	139.7	144.2	147.6	147.6	146.5
19.1cm (7.5in)	0	7.9	12.4	16.9	22.5	29.3	37.2	45.1	53.0	62.0	69.9	78.9	86.8	93.5	101.4	107.0	111.6	114.9	117.2	118.3	117.2
25.4cm (10in)	0	6.5	9.0	12.4	16.9	22.5	28.2	33.8	39.4	46.2	53.0	58.6	65.4	71.0	75.5	80.0	83.4	86.8	87.9	89.0	87.9

Flax or Sudan

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.71 kg per liter)																				
15.2cm (6in)	0	4.2	9.2	13.1	18.1	22.6	27.1	31.8	36.8	41.5	46.9	51.3	56.0	61.1	66.4	72.6	78.4	85.0	91.9	93.4	95.3
19.1cm (7.5in)	0	3.4	7.4	10.6	14.5	18.1	21.7	25.4	29.4	33.2	37.6	41.1	44.8	48.8	53.1	58.0	62.6	68.0	73.5	74.8	76.2
25.4cm (10in)	0	2.5	5.5	7.9	10.9	13.6	16.3	19.1	22.1	24.9	28.2	30.8	33.6	36.6	39.7	43.6	47.0	51.0	55.2	56.0	57.1

Millet

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.77 kg per liter)																				
15.2cm (6in)	0	5.3	9.2	13.1	17.6	21.9	26.3	30.5	35.4	40.1	44.7	49.4	54.5	58.8	64.0	69.3	74.1	79.5	85.1	86.4	87.7
19.1cm (7.5in)	0	4.2	7.4	10.6	14.0	17.5	21.0	24.5	28.3	32.0	35.7	39.5	43.6	47.0	51.2	55.5	59.3	63.5	68.0	69.2	70.2
25.4cm (10in)	0	3.1	5.5	7.9	10.6	13.1	15.7	18.3	21.2	24.0	26.8	29.6	32.7	35.4	38.4	41.5	44.5	47.7	51.1	51.9	52.7

Milo

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.82 kg per liter)																				
15.2cm (6in)	0	5.3	9.9	14.6	19.9	25.3	31.2	37.6	43.8	50.3	57.8	63.7	70.5	77.2	83.9	90.7	97.2	103.0	109.7	112.6	114.6
19.1cm (7.5in)	0	4.2	7.9	11.7	15.9	20.2	24.9	30.1	35.0	40.3	46.3	51.0	56.5	61.9	67.1	72.5	77.8	82.3	87.7	90.0	91.6
25.4cm (10in)	0	3.1	6.0	8.8	11.9	15.2	18.7	22.6	26.3	30.2	34.7	38.2	42.3	46.4	50.3	54.5	58.4	61.7	65.8	67.6	68.7

Metric Seed Rate Charts, Main Box, continued...

Oats

Drive Type	Seed Rate Handle Setting																				
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.48 kg per liter)																				
15.2cm (6in)	0	5.8	13.6	19.4	26.9	35.4	43.4	52.5	51.5	71.0	81.1	89.5	98.8	107.9	117.3	126.8	136.1	145.5	155.6	155.8	158.8
19.1cm (7.5in)	0	4.7	10.9	15.6	21.5	28.3	34.7	42.0	49.3	56.8	64.8	71.5	79.0	86.3	93.9	101.4	108.9	116.4	124.4	124.5	127.5
25.4cm (10in)	0	3.5	8.2	11.7	16.2	21.2	26.0	31.5	36.9	42.6	48.6	53.7	59.3	64.8	70.4	76.0	81.6	87.3	93.3	93.4	95.6

Peas

Drive Type	Seed Rate Handle Setting																					
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Kilograms per Hectare (based on 0.79 kg per liter)																					
15.2cm (6in)	0	4.6	17.3	31.6	47.5	64.6	82.8	101.6	120.9	140.5	160.0	179.3	198.0	216.0	233.0	248.7	262.9	275.3	285.7	293.9	299.5	
19.1cm (7.5in)	0	3.7	13.8	25.3	38.0	51.7	66.2	81.3	96.7	112.4	128.0	143.4	158.4	172.8	186.4	199.0	210.3	220.3	228.6	235.1	239.6	
25.4cm (10in)	0	2.8	10.4	19.0	28.5	38.8	49.7	61.0	72.5	84.3	96.0	107.6	118.8	129.6	139.8	149.2	157.7	165.2	171.4	176.3	179.7	

Peas

Drive Type	Seed Rate Handle Setting																					
4	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Kilograms per Hectare (based on 0.79 kg per liter)																					
15.2cm (6in)	0	7.5	28.1	51.6	77.5	105.4	134.9	165.6	197.1	229.0	260.9	292.3	322.9	352.2	379.9	405.5	428.7	448.9	465.9	479.1	488.3	
19.1cm (7.5in)	0	6.0	22.5	41.3	62.0	84.3	107.9	132.5	157.7	183.2	208.7	233.9	258.3	281.8	304.0	324.4	343.0	359.2	372.7	383.3	390.7	
25.4cm (10in)	0	4.5	16.9	31.0	46.5	63.2	81.0	99.4	118.3	137.4	156.5	175.4	193.8	211.4	228.0	243.3	257.2	269.4	279.5	287.5	293.0	

Pinto Beans

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.66 kg per liter)																				
15.2cm (6in)	0	0.0	9.5	14.5	19.5	26.5	33.2	39.6	46.3	52.9	59.5	65.3	71.5	77.2	83.5	90.7	95.9	101.8	107.7	107.8	107.9
19.1cm (7.5in)	0	0.0	7.6	11.6	15.8	21.2	28.5	31.7	37.0	42.3	47.8	52.3	57.1	61.9	66.8	72.3	76.7	81.5	86.1	87.9	88.3
25.4cm (10in)	0	0.0	5.7	8.8	11.7	15.9	19.9	23.8	27.7	31.8	35.7	39.2	42.9	46.4	50.2	54.5	57.5	61.1	64.6	64.8	64.8

Metric Seed Rate Charts, Main Box, continued...

Rice, Short Grain (1 of 2)

Drive Type	Seed Rate Handle Setting																					
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Kilograms per Hectare (based on 0.55 kg per liter)																					
15.2cm (6in)	0	12.3	20.2	31.8	43.0	51.2	62.3	71.3	82.3	94.0	107.3	119.9	131.6	143.6	155.6	166.0	175.7	185.4	195.5	198.2	199.8	
19.1cm (7.5in)	0	9.9	16.2	25.4	34.5	41.0	49.8	57.0	65.9	75.2	85.9	95.9	105.3	114.9	124.4	132.9	140.6	148.3	156.4	158.9	159.4	
25.4cm (10in)	0	7.4	12.1	19.1	25.8	30.8	37.4	42.8	49.4	56.4	64.4	72.0	78.9	86.1	93.3	99.7	105.4	111.3	117.3	119.8	120.7	

Rice, Short Grain (2 of 2)

Drive Type	Seed Rate Handle Setting																				
4	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.55 kg per liter)																				
15.2cm (6in)	0	20.1	33.0	51.8	70.2	83.5	101.6	116.2	134.2	153.2	175.0	195.5	214.5	234.1	253.6	270.8	286.4	302.2	318.7	325.8	330.1
19.1cm (7.5in)	0	16.1	26.4	41.4	56.1	66.8	81.3	93.0	107.3	122.6	140.0	158.4	171.7	187.3	202.9	216.7	229.1	241.8	255.0	262.3	268.2
25.4cm (10in)	0	12.0	19.9	31.1	42.1	50.1	61.0	69.7	80.5	91.9	105.0	117.3	128.8	140.4	152.2	162.5	171.9	181.3	191.2	196.6	199.8

Rice, Long Grain (1 of 4)

Drive Type	Seed Rate Handle Setting																					
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Kilograms per Hectare (based on 0.60 kg per liter)																					
15.2cm (6in)	0	1	5	8	11	16	19	23	26	29	36	36	39	43	46	50	53	55	59	60	61	
19.1cm (7.5in)	0	1	5	7	9	12	16	18	20	24	28	29	32	35	37	39	43	45	46	47	48	
25.4cm (10in)	0	1	3	5	7	9	11	14	16	18	21	21	24	26	28	30	32	34	35	36	36	

Rice, Long Grain (2 of 4)

Drive Type	Seed Rate Handle Setting																					
2	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Kilograms per Hectare (based on 0.60 kg per liter)																					
15.2cm (6in)	0	3	10	17	24	32	39	46	53	61	73	74	81	88	96	103	108	115	119	123	125	
19.1cm (7.5in)	0	2	8	14	19	26	32	37	43	48	59	60	65	71	77	82	87	91	96	98	100	
25.4cm (10in)	0	2	7	10	15	19	24	28	32	36	37	45	48	53	57	62	65	69	72	73	75	

Metric Seed Rate Charts, Main Box, continued...**Rice, Long Grain (3 of 4)**

Drive Type	Seed Rate Handle Setting																					
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Kilograms per Hectare (based on 0.60 kg per liter)																					
15.2cm (6in)	0	0.0	14.8	24.3	35.5	47.0	59.2	68.7	79.4	90.7	100.8	110.1	119.6	129.7	140.7	151.2	162.0	172.1	180.8	187.6	194.1	
19.1cm (7.5in)	0	0.0	11.8	19.4	28.4	37.6	47.4	55.0	63.5	72.6	80.6	88.1	95.7	103.7	112.5	121.0	129.7	137.6	144.6	150.1	155.3	
25.4cm (10in)	0	0.0	8.9	14.6	21.2	28.2	35.5	41.2	47.6	54.5	60.5	66.1	71.7	77.8	84.4	90.7	97.2	103.3	108.5	112.6	116.4	

Rice, Long Grain (4 of 4)

Drive Type	Seed Rate Handle Setting																					
4	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Kilograms per Hectare (based on 0.60 kg per liter)																					
15.2cm (6in)	0	0.0	24.1	39.6	57.8	76.6	96.4	112.0	129.4	148.0	164.3	179.6	195.0	211.4	229.4	246.5	264.5	280.6	294.7	305.9	316.5	
19.1cm (7.5in)	0	0.0	19.3	31.7	46.3	61.3	77.2	89.6	103.6	118.3	131.5	143.7	155.9	169.1	183.4	197.3	211.4	224.4	235.8	244.7	253.2	
25.4cm (10in)	0	0.0	14.5	23.8	34.7	45.9	57.9	67.2	77.7	88.8	98.6	107.8	117.0	126.9	137.6	148.0	158.5	168.4	176.8	183.6	189.8	

Rye

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.73 kg per liter)																				
15.2cm (6in)	0	3.1	8.8	14.1	20.8	26.9	31.4	38.8	45.7	52.8	59.4	65.1	70.6	76.7	82.9	90.4	97.1	105.0	113.4	114.2	114.6
19.1cm (7.5in)	0	2.5	7.1	11.3	16.6	21.6	25.1	31.1	36.6	42.2	47.6	52.1	56.5	61.4	66.2	72.3	77.7	84.0	90.7	91.3	91.6
25.4cm (10in)	0	1.9	5.3	8.5	12.5	16.2	18.9	23.4	27.4	31.7	35.7	39.1	42.4	46.0	49.7	54.2	58.3	63.0	68.0	68.5	68.7

Soybeans (1 of 4)

Drive Type	Seed Rate Handle Setting																				
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.75 kg per liter)																				
15.2cm (6in)	0	3.1	8.8	14.7	21.7	25.9	32.2	37.8	43.9	50.2	55.5	62.2	68.5	74.3	80.2	88.4	91.5	97.6	103.8	104.4	104.7
19.1cm (7.5in)	0	2.5	7.0	11.8	17.3	20.8	25.7	30.3	35.1	40.1	44.3	49.7	54.8	59.5	64.2	69.2	73.2	78.0	83.1	83.5	83.8
25.4cm (10in)	0	1.9	5.3	8.9	13.0	15.6	19.3	22.7	26.4	30.1	33.3	37.4	41.1	44.6	48.2	51.9	54.9	58.5	62.3	62.8	62.9

Metric Seed Rate Charts, Main Box, continued...

Soybeans (2 of 4)

Drive Type	Seed Rate Handle Setting																					
2	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Kilograms per Hectare (based on 0.75 kg per liter)																					
15.2cm (6in)	0	6.5	18.0	30.2	44.5	53.3	66.1	77.8	90.3	103.1	114.1	127.9	140.7	152.8	164.8	177.6	187.9	200.5	213.4	214.5	215.2	
19.1cm (7.5in)	0	5.2	14.4	24.3	35.6	42.7	52.9	62.2	72.3	82.4	91.3	102.3	112.5	122.1	131.9	142.1	150.3	160.4	170.8	171.7	172.1	
25.4cm (10in)	0	3.9	10.8	18.2	26.7	32.0	39.6	46.7	54.2	61.9	68.5	76.8	84.4	91.6	98.9	106.5	112.8	120.4	127.6	128.8	129.1	

Soybeans (3 of 4)

Drive Type	Seed Rate Handle Setting																					
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Kilograms per Hectare (based on 0.75 kg per liter)																					
15.2cm (6in)	0	12.9	25.3	45.4	66.8	79.4	99.8	113.4	130.6	147.4	166.3	184.1	202.9	220.4	239.8	255.4	278.7	297.9	317.4	317.7	318.0	
19.1cm (7.5in)	0	10.3	20.2	36.3	53.4	63.5	79.8	90.7	104.5	118.0	133.0	147.3	162.3	176.3	191.9	204.3	223.0	238.2	253.9	254.1	254.5	
25.4cm (10in)	0	7.7	15.2	27.2	40.1	47.6	59.8	68.0	78.4	88.5	99.7	110.5	121.7	132.3	143.9	153.2	167.2	178.7	190.5	190.8	190.8	

Soybeans (4 of 4)

Drive Type	Seed Rate Handle Setting																				
4	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.75 kg per liter)																				
15.2cm (6in)	0	21	42	74	109	130	163	186	214	241	272	301	332	361	392	418	456	488	522	522	522
19.1cm (7.5in)	0	17	33	60	88	104	131	149	171	193	217	241	266	288	314	335	365	390	417	418	418
25.4cm (10in)	0	12	25	45	65	78	98	112	128	144	163	163	199	216	236	251	274	293	313	313	313

Sunflower

Drive Type	Seed Rate Handle Setting																					
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Kilograms per Hectare (based on 0.36 kg per liter)																					
15.2cm (6in)	0	0.0	2.2	4.7	6.8	9.3	12.0	14.5	17.3	20.0	22.7	25.3	28.0	30.6	33.3	35.8	38.3	40.4	43.0	44.2	45.7	
19.1cm (7.5in)	0	0.0	1.8	3.8	5.5	7.5	9.5	11.6	13.8	15.9	18.2	20.2	22.3	24.6	26.6	28.6	30.6	32.3	34.5	35.4	36.5	
25.4cm (10in)	0	0.0	1.3	2.8	4.2	5.6	7.2	8.8	10.3	12.0	13.6	15.2	16.7	18.4	20.0	21.4	22.9	24.3	25.8	26.6	27.4	

Metric Seed Rate Charts, Main Box, continued...

Wheat (1 of 2)

Drive Type	Seed Rate Handle Setting																					
2	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Kilograms per Hectare (based on 0.82 kg per liter)																					
15.2cm (6in)	0	14.0	24.6	34.1	44.3	55.8	64.4	78.5	90.3	102.6	117.5	129.2	143.0	157.5	170.9	184.3	198.8	213.2	227.9	230.9	231.2	
19.1cm (7.5in)	0	11.2	19.8	27.3	35.5	44.6	51.5	62.8	72.3	82.1	94.1	103.4	114.4	126.0	136.7	147.4	159.0	170.7	182.3	184.8	184.9	
25.4cm (10in)	0	8.4	14.8	20.4	26.6	33.5	38.6	47.0	54.2	61.5	70.5	77.6	85.8	94.5	102.5	110.6	119.2	128.0	136.7	138.5	138.8	

Wheat (2 of 2)

Drive Type	Seed Rate Handle Setting																				
3	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seed Rate in Kilograms per Hectare (based on 0.82 kg per liter)																				
15.2cm (6in)	0	17.9	34.4	50.2	66.8	83.3	98.2	116.3	134.8	153.2	172.1	188.6	206.4	227.2	247.2	269.3	287.2	307.2	325.4	333.1	335.5
19.1cm (7.5in)	0	14.3	27.5	40.2	53.4	66.6	78.6	93.1	107.9	122.6	137.6	150.9	166.7	181.8	197.8	215.4	229.7	245.8	260.4	266.5	268.3
25.4cm (10in)	0	10.7	20.7	30.1	40.1	50.0	58.9	69.5	80.8	91.9	103.3	113.2	125.1	138.3	148.3	161.6	172.3	184.3	195.2	199.8	201.3

Wheatgrass

Drive Type	Seed Rate Handle Setting																					
1	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Seed Rate in Kilograms per Hectare (based on 0.30 kg per liter)																					
15.2cm (6in)	0	0.0	1.0	2.4	3.4	4.7	5.7	6.7	8.3	9.4	10.8	12.1	13.4	14.7	15.9	17.3	18.9	20.1	20.4	20.8	23.4	
19.1cm (7.5in)	0	0.0	0.8	1.9	2.7	3.8	4.6	5.4	6.6	7.5	8.6	9.7	10.7	11.8	12.8	13.9	15.0	16.1	16.3	16.6	18.6	
25.4cm (10in)	0	0.0	0.7	1.5	2.0	2.8	3.5	4.0	4.9	5.7	6.5	7.3	8.0	8.9	9.5	10.4	11.3	12.0	12.2	12.5	14.0	

Metric Rate Charts, Small Seeds Box

See page 2 for instructions.

Charts in U.S. customary units begin on page 18.

Alfalfa, Red Alsike, Crimson Clover

Metric	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Kilograms per Hectare																				
15.2cm (6in)	0	0.0	2.5	3.9	5.4	6.8	8.5	9.8	11.0	12.6	14.1	15.5	17.0	18.5	19.7	21.0	22.8	24.1	25.8	27.0	28.4
19.1cm (7.5in)	0	0.0	2.0	3.2	4.4	5.4	6.8	7.9	8.9	10.1	11.3	12.5	13.6	14.9	15.8	17.2	18.3	19.4	20.6	21.7	22.9
25.4cm (10in)	0	0.0	1.5	2.4	3.2	3.9	5.0	5.7	6.5	7.4	8.3	9.1	10.0	10.9	11.6	12.6	13.4	14.2	15.1	15.1	15.1

Kentucky Bluegrass, Fescue, Annual Rye Grass

Metric	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Kilograms per Hectare																				
15.2cm (6in)	0	0.0	0.2	1.4	2.1	3.0	3.7	4.6	5.2	5.9	6.5	7.1	7.7	8.2	8.8	9.4	9.9	10.4	10.9	11.3	11.8
19.1cm (7.5in)	0	0.0	0.2	1.0	1.7	2.5	3.0	3.7	4.2	4.7	5.2	5.7	6.2	6.6	7.1	7.5	7.9	8.3	8.3	9.1	9.5
25.4cm (10in)	0	0.0	0.1	0.8	0.8	1.8	2.3	2.3	2.3	3.5	3.5	4.2	4.5	4.8	5.2	5.5	5.5	6.1	6.1	6.6	7.0

Bermuda, Red Top, Lespedeza Unhulled, Sercia, Sand, Weeping Love Grass

Metric	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Kilograms per Hectare																				
15.2cm (6in)	0	0.0	0.8	1.2	1.9	2.9	3.7	4.6	5.6	6.6	7.4	8.1	8.8	9.5	10.1	10.7	11.5	12.3	13.1	13.7	14.5
19.1cm (7.5in)	0	0.0	0.6	1.0	1.6	2.4	2.9	3.7	4.5	5.3	6.0	6.5	7.1	7.5	8.1	8.6	9.2	9.9	10.5	11.0	11.7
25.4cm (10in)	0	0.0	0.5	0.7	1.1	1.7	2.1	2.7	3.4	3.9	4.4	4.7	5.2	5.2	6.0	6.3	6.8	7.2	7.7	8.1	8.1

Red & Sweet Clover, Lespedeza Hulled

Metric	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Kilograms per Hectare																				
15.2cm (6in)	0	0.0	1.7	3.8	3.8	8.0	10.1	12.7	14.9	17.2	19.2	21.4	23.4	25.4	27.6	29.7	31.9	33.9	36.2	38.1	40.1
19.1cm (7.5in)	0	0.0	1.4	3.0	4.7	6.4	8.1	10.3	11.9	13.9	15.4	17.2	18.8	20.4	22.2	23.9	25.6	27.3	29.1	30.6	32.2
25.4cm (10in)	0	0.0	1.0	2.3	3.5	4.7	6.0	7.5	8.8	10.1	11.3	12.6	13.7	15.0	16.2	17.6	18.7	20.1	21.3	21.3	23.6

Orchard Grass

Metric	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Kilograms per Hectare																				
15.2cm (6in)	0	0.0	0.0	0.3	0.8	1.0	1.5	1.7	2.3	2.7	3.2	3.7	3.9	4.4	5.0	5.4	5.6	6.2	6.4	6.4	7.1
19.1cm (7.5in)	0	0.0	0.0	0.2	0.6	0.8	0.8	1.4	1.4	1.4	1.4	1.4	3.2	3.6	3.9	4.4	4.5	5.0	5.2	5.5	5.5
25.4cm (10in)	0	0.0	0.0	0.1	0.5	0.6	0.9	1.0	1.4	1.6	1.9	2.1	2.4	2.6	2.9	3.2	3.4	3.6	3.7	4.1	4.2

Metric Rate Charts, Small Seeds Box, continued...**Millet, Reed Canary**

Metric	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Kilograms per Hectare																				
15.2cm (6in)	0	0.5	1.6	2.7	3.9	5.0	6.2	7.3	8.5	9.6	10.7	11.8	13.0	14.1	15.3	16.5	17.6	18.7	19.8	20.8	21.4
19.1cm (7.5in)	0	0.3	1.4	1.4	1.4	4.1	5.0	5.9	6.8	7.7	8.6	9.5	10.5	11.4	12.3	13.2	14.1	15.0	15.9	16.8	17.0
25.4cm (10in)	0	0.3	0.9	1.6	2.3	2.3	3.6	4.3	5.0	5.6	6.3	7.0	7.0	8.3	9.0	9.7	10.4	11.0	11.7	12.3	13.0

**Ladino Clover, Canary Grass,
Timothy, Canola**

Metric	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Kilograms per Hectare																				
15.2cm (6in)	0	0.0	1.2	2.4	3.7	5.3	6.9	8.6	10.4	12.1	13.7	15.5	17.5	19.2	20.7	22.9	24.5	26.4	28.6	30.8	32.9
19.1cm (7.5in)	0	0.0	1.0	1.8	2.9	4.4	4.4	4.4	8.3	9.7	11.0	12.5	14.1	15.4	16.8	18.4	19.8	21.2	23.0	24.7	26.5
25.4cm (10in)	0	0.0	0.7	1.7	2.1	2.8	4.1	5.1	6.1	7.1	8.1	9.1	10.3	11.3	12.3	13.5	14.5	15.5	16.8	18.1	19.4

Birdsfoot, Trefoil, Sudan

Metric	Small Seeds Cup Lever Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Seeding Rate in Kilograms per Hectare																				
15.2cm (6in)	0	0.0	1.9	3.7	5.9	7.7	7.7	12.1	12.1	16.6	18.9	18.9	23.9	26.4	28.8	28.8	33.7	36.2	38.5	40.9	43.3
19.1cm (7.5in)	0	0.0	1.6	1.6	1.6	1.6	7.9	9.7	11.5	11.5	15.2	17.4	17.4	17.4	17.4	25.4	27.0	29.1	31.1	32.8	32.8
25.4cm (10in)	0	0.0	1.1	2.1	3.5	4.5	5.7	7.1	8.5	9.7	11.2	12.7	12.7	15.5	17.0	18.6	19.8	21.3	22.8	24.1	25.6



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