



Great Plains

Manufacturing, Inc.
www.greatplainsmfg.com

Seed, Native Grass and Small Seeds Rate Charts

for the 3P605NT, 3P606NT, 605NT and 606NT
6-Foot No-Till Drills

The following pages are to assist in the proper setting of seeding rates for the 6-foot (1.8 m) no-till drills. 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.



Table of Contents

Introduction	1	Wheat (<i>Triticum</i>)	16
Models Covered	1	Wheatgrass (<i>Pascopyrum smithii</i> , <i>Agropyron elongatum</i>)	16
Document Family	1	Small Seeds Rate	17
Main Box Seed Rate	2	Small Seeds Rate Calibration	17
Setting Drive Type	2	Small Seeds Row Shut-Off	20
Main Box Seed Rate Handle	3	Small Seeds Rate Charts	21
Position Seed Cup Doors	3	Alfalfa, Red Alsike, Crimson Clover	21
Main Seed Row Shutoff	3	Kentucky Bluegrass, Fescue, Annual Rye Grass	21
Reading a Seed Rate Chart	4	Bermuda, Red Top, Lespedeza Unhulled, Sercia, Sand, Weeping Love Grass	21
Main Box Seed Rate Calibration	5	Red & Sweet Clover, Lespedeza Hulled	21
Rate Charts, Main Seed Box	8	Orchard Grass	21
Alfalfa (<i>Medicago sativa</i>)	8	Millet, Reed Canary	22
Bahia Grass (<i>Paspalum notatum</i>)	8	Ladino Clover, Canary Grass, Timothy, Canola	22
Barley (<i>Hordeum vulgare</i>)	8	Birdsfoot, Trefoil, Sudan	22
Buckwheat (<i>Fagopyrum esculentum</i>)	9	Native Grass Rate	23
Buffalograss (<i>Buchloe dactyloides</i>)	9	Series II Native Grass Drill Calibration	23
Bermuda Grass (<i>Cynodon dactylon</i>)	9	Seed Lubricant	25
K-31 Fescue (<i>Festuca</i>)	10	Native Grass Calibration Formulas and Example	26
Flax (<i>Linum usitatissimum</i>) or Sudan (<i>Sorghum bicolor</i> subsp. <i>drummondii</i>)	10	3P605NT and 3P606NT Meter Shaft Rates	27
Eastern Gamma Grass - Pete (<i>Tripsacum dactyloides</i>)	10	3P605NT and 3P606NT Standard Shaft Rates	27
Kentucky Blue Grass (<i>Poa pratensis</i>)	11	3P605NT and 3P606NT with Seed Rate Reduction	27
Millet (<i>Pennisetum glaucum</i> , <i>Setaria italica</i> , <i>Panicum miliaceum</i> , <i>Eleusine coracana</i>)	11	605NT and 606NT Meter Shaft Rates	28
Milo (<i>Sorghum</i>)	11	605NT and 606NT Standard Shaft Rates	28
Oats (<i>Avena sativa</i>)	12	605NT and 606NT with Seed Rate Reduction	28
Orchard Grass Potomac (<i>Dactylis glomerata</i>)	12	Brome Grass Seeding	29
Peas (<i>Pisum sativum</i>)	12	Brome Rate Charts	31
Pinto Beans (<i>Phaseolus vulgaris</i>)	13	3P605NT and 3P606NT Standard Brome Rates	31
Rape (<i>Brassica napus</i>)	13	3P605NT and 3P606NT Reduced Brome Rates	31
Rice, Long Grain (<i>Oryza sativa indica</i>)	13	Appendix	32
Rice, Short Grain (<i>Oryza sativa japonica</i> , <i>Oryza sativa sinica</i>)	14	Metric Rate Charts, Main Seed Box	32
Rye (<i>Secale cereale</i>)	14	Metric Rate Charts, Small Seeds Box	41
Perennial Rye Grass - Palmer (<i>Lolium perenne</i> , <i>Lolium multiflorum</i>)	14	Metric Native Grass Rates	43
Soybeans (<i>Glycine max</i>)	15	3P605NT and 3P606NT Metric Shaft Rates	44
Sunflower (<i>Helianthus annuus</i>)	15	605NT and 606NT Metric Shaft Rates	45
Tiffany Teff, Coated (<i>Eragrostis tef</i>)	15	Brome Seed Rates, Metric	46

© Copyright 2006, 2007, 2011 All rights Reserved

Great Plains Manufacturing, Inc. provides this publication "as is" without warranty of any kind, either expressed or implied. While every precaution has been taken in the preparation of this manual, Great Plains Manufacturing, Inc. assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained herein. Great Plains Manufacturing, Inc. reserves the right to revise and improve its products as it sees fit. This publication describes the state of this product at the time of its publication, and may not reflect the product in the future.

Trademarks of Great Plains Manufacturing, Inc. include: Singulator Plus, Swath Command, Terra-Tine.

Registered Trademarks of Great Plains Manufacturing, Inc. include:

Air-Pro, Clear-Shot, Great Plains, Land Pride, MeterCone, Nutri-Pro, Seed-Lok, Solid Stand, Whirlfilter, Yield-Pro.

Brand and Product Names that appear and are owned by others are trademarks of their respective owners.

Printed in the United States of America



Introduction

This manual is your guide to drill adjustments for achieving specific seed populations. It covers seeding rates for:

- the standard Main Seed Box (page 2),
- the optional Small Seeds Attachment (page 17), and;
- the optional Native Grass Box using native grass mixes (page 23), or brome grass (page 29), and optionally with Native Grass Rate Reduction.

Although some setup, operation and 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.

Models Covered

This rate manual applies to Great Plains drill models:

3P605NT-0975 ^a	9-row 7.5-inch (19.1 cm)
3P606NT-0975	9-row 7.5-inch (19.1 cm)
605NT-0975 ^a	9-row 7.5-inch (19.1 cm)
606NT-0975	9-row 7.5-inch (19.1 cm)

Document Family

151-061M	Operator Manual
151-061P	Parts Manual
151-122B	Seed Rate Manual (this document)

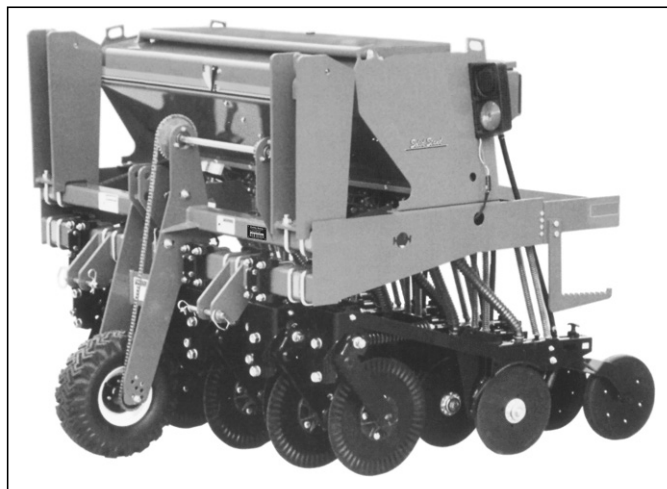


Figure 1
3P605NT or 3P606NT No-Till Drill

32704

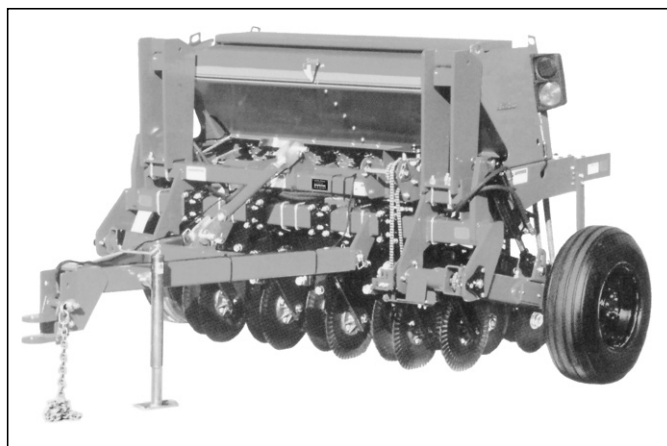


Figure 2
605NT or 606NT No-Till Drill

32703

a. Model 3P605NT and 605NT drills manufactured prior to 2007 use Seed Rate manual part number 151-061B.

Main Box Seed Rate

Accurately obtaining the desired seed population requires four steps:

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

Seed rate charts begin on page 8. The charts list proper Drive Type 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 factory-supplied new tires:

5.70 x 8 tire for 3P605NT and 3P606NT drills, and

7.00-15LT tires for 605NT and 606NT drills, 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 beginning on page 5, then readjust the rate as necessary.

Setting Drive Type

Refer to Figure 3

The charts list Drive Types as 1, 2, 3 or 4. Drive Type is determined by the handle ① on the gearbox cover at left front of the drill. Move the handle until the Drive Type number appears in the handle window ②.

For correct Drive Type, refer to the charts in the Seed Rate manual. Each Drive Type corresponds to a specific gear ratio.

Drive Type	Relative Speed
1	Slowest
2	2.06 times faster than Type 1
3	3.08 times faster than Type 1
4	5.02 times faster than Type 1

32790

Note: Drive Type affects both Main Box and optional Native Grass seed rates.

8 | 3P606NT & 606NT

Rate Charts, Main Seed Box
Charts in U.S. customary units
Metric charts begin on page 32

Alfalfa (Medicago sativa)

Rows	Drive Type: 1	Drive Type: 2	Drive Type: 3	Drive Type: 4
7.5 in	0 4 6 7 9 11 12 15 18 21 25 28 32 36 39 43 47 50 54 57 61 64 68	0 9 5 14 19 24 30 37 44 51 58 66 73 81 89 96 104 111 118 125 131 136	0 15 22 29 37 46 55 65 75 86 97 108 119 130 141 151 162 171 180 189 196	0 25 35 47 60 75 90 106 123 140 158 176 194 212 230 247 264 279 294 308 320

Bahia Grass (Paspalum notatum)

Rows	Drive Type: 1	Drive Type: 2	Drive Type: 3	Drive Type: 4
7.5 in	0 2 2 3 1 4 5 6 3 8 5 11 14 17 20 23 27 30 33 37 40 43 46 48 50 52	0 4 4 6 4 9 3 13 18 23 28 35 41 48 56 62 69 76 82 88 94 99 104 107	0 6 6 10 11 14 20 26 34 43 52 62 72 82 93 103 113 123 132 141 149 156 161	0 11 16 23 32 43 56 70 85 101 117 134 151 168 185 201 216 230 243 254 263

Barley (Hordeum vulgare)

Rows	Drive Type: 1	Drive Type: 2	Drive Type: 3	Drive Type: 4
7.5 in	0 4 7 6 3 8 4 11 14 17 20 24 27 31 35 39 42 45 49 51 54 56 57 58	0 10 13 17 22 28 35 42 49 56 64 72 79 86 93 100 105 110 115 118 120	0 14 19 26 34 43 52 62 72 83 94 105 116 126 137 147 156 165 173 180 186	0 22 32 43 56 70 85 101 118 135 153 171 189 206 223 239 255 269 282 283 303

32791

2011 09 06

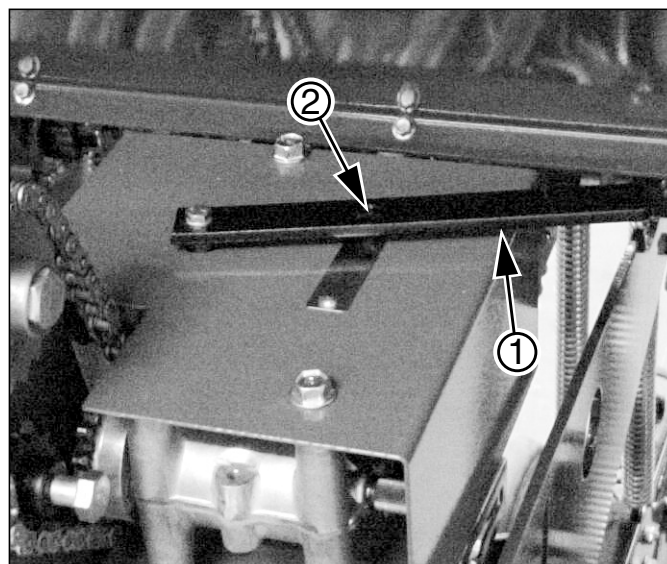


Figure 3
Gearbox Handle Adjustment

18476

Main Box Seed Rate Handle

Refer to Figure 4

There is a single main seed box rate handle for the entire 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 main seed flow (such as for adjusting level/depth) with handle set to zero.

To set the handle:

1. Loosen wing nut ① under handle.
2. Move indicator ② from current setting to about 10 higher than the new desired value from calibration or the Seed Rate Chart, then back to the desired value.
3. Tighten wing nut.

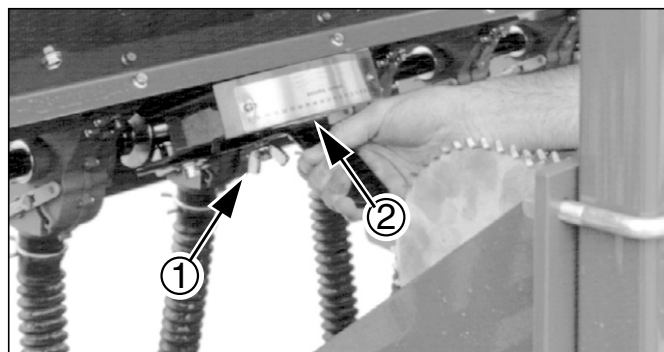


Figure 4
Main Box Seed Rate Handle

32792

Position Seed Cup Doors

Refer to Figure 5, which depicts the seed cup door handle in position ③.

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.

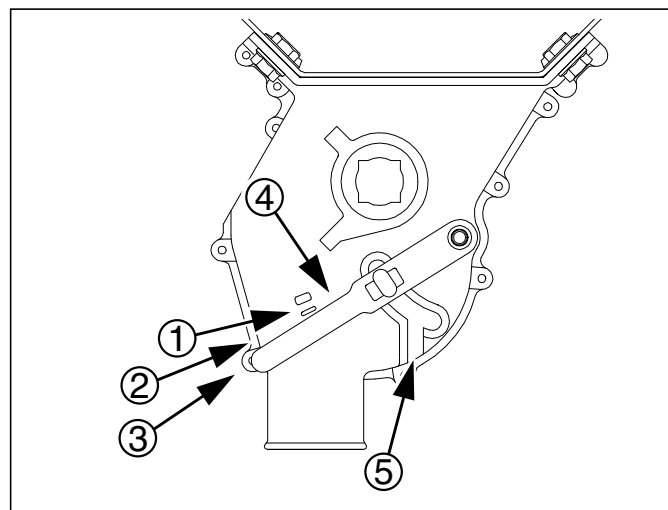


Figure 5
Seed Cup Door Handle

26211

Main Seed Row Shutoff

If alternate row spacings are desired, the unused rows can be shut off with optional plugs.

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

Refer to Figure 6

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.

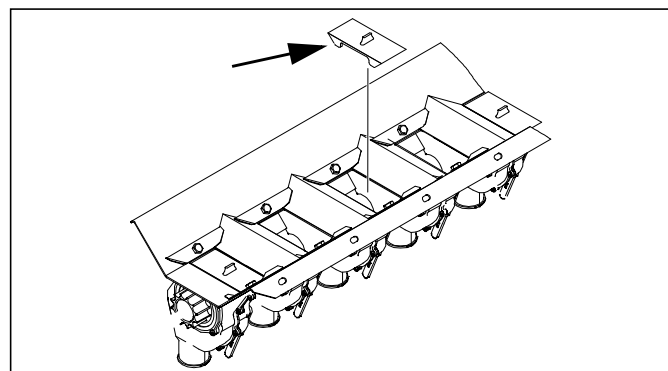


Figure 6
Seed Cup Plug

26279

Reading a Seed Rate Chart

- Find your seed. Charts are in alphabetical order by common North American seed name. Scientific names are provided. Charts covering more than one seed may be out of order. For Sudan, see Flax.

The example presumes you desire to plant:

Barley at 60 pounds per acre with a 7.5 in. drill.

There are multiple chart sections 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 Drive Type 2.

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 for the chart rate row chosen (at left above rates). This number (1-4) is used to determine the gearbox handle setting. See page 2.

In the example, this is

Drive Type 2

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

In the example the rate closest to 60 is:

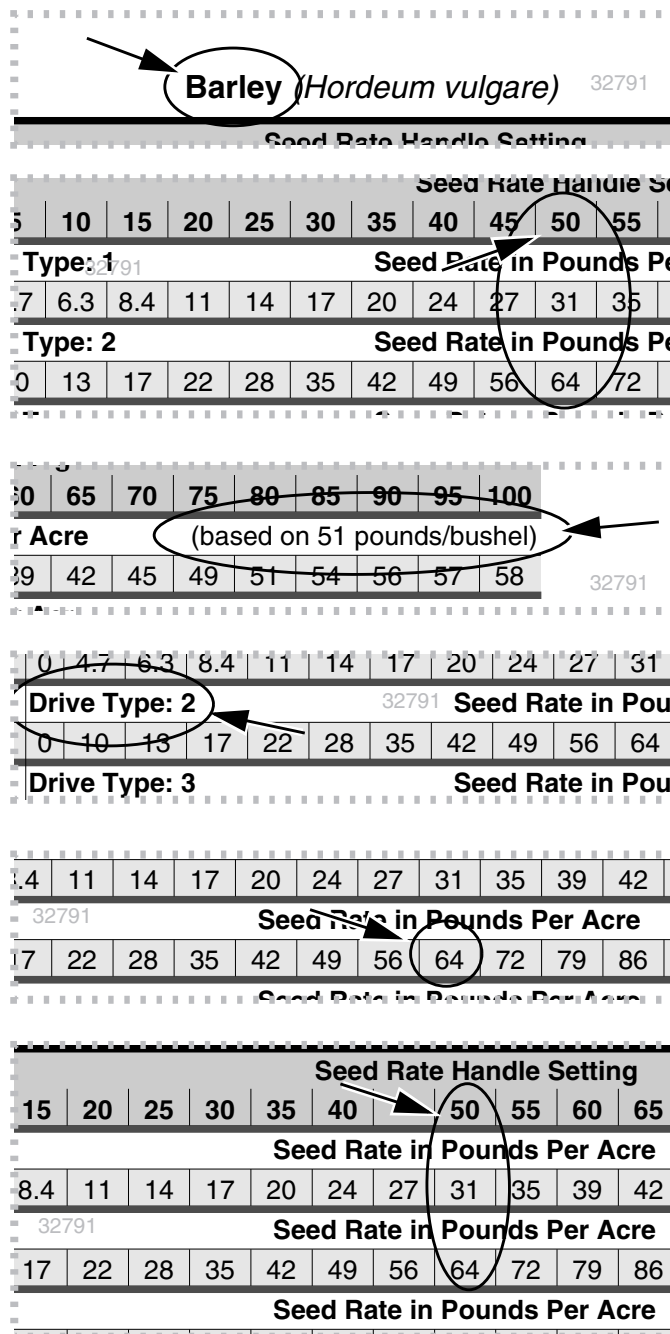
64

- 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 3.

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.



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.

Due to the large number of crank revolutions per acre (913 or 995) and per hectare (2256 or 2458), a practical calibration is a simulation of $\frac{1}{10}$ th acre or $\frac{1}{10}$ th hectare.

1. Estimate the sample sizes.

$$\text{RateSample} = \frac{\text{FieldRate}}{10}$$

$$\text{SamplePerRow} = \frac{\text{RateSample}}{\text{RowCount}}$$

$$\text{ExpectedSample} = \text{SamplePerRow} \times \text{SampledRows}$$

2. To perform this calibration, you need a scale that is accurate at the aggregate sample size, and three (3) light containers, each capable of holding the expected *SamplePerRow*. Record the empty container weights.
3. For a 3P605NT or 3P606NT drill, raise the drill so the gauge wheel is out of ground contact.

For a 605NT or 606NT drill, disengage the lock-out hub (see Operator manual), to permit independent rotation of the main jackshaft. The drill may be raised or lowered for calibration. Leave the lock-out hub engaged if rotating the tire for calibration.



Crushing Hazard:

Install lift locks on a raised 605NT or 606NT drill.

4. Remove the calibration crank from its storage stob. Store the retaining pin on the stob.

Refer to Figure 7 or Figure 8

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

Note: On the 605NT or 606NT you can also rotate the gearbox input jackshaft by means of a wrench or socket. You may need to remove the acremeter. Use same number of rotations when turning the gauge wheel jackshaft, gearbox input jackshaft or tire.

Note: On the 3P605NT or 3P606NT you can also rotate the gearbox drive shaft with wrench or socket.

6. 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.

Example: You want to apply barley at 60 pounds per acre with a 3P606NT drill. *RateSample* is:

$$6.0 = \frac{60}{10}$$

Example: the drill has 9 rows. *SamplePerRow* is:

$$0.67 = \frac{6.0}{9}$$

Example: 3 rows are to be used in the sampling. *ExpectedSample* is:

$$2.0 = 0.67 \times 3$$

The expected sample weight is 2.0 lb.

Example: 3 containers, each weighing 0.5lb:

$$\text{ContainerWeight} = 1.5 \text{ lb}$$

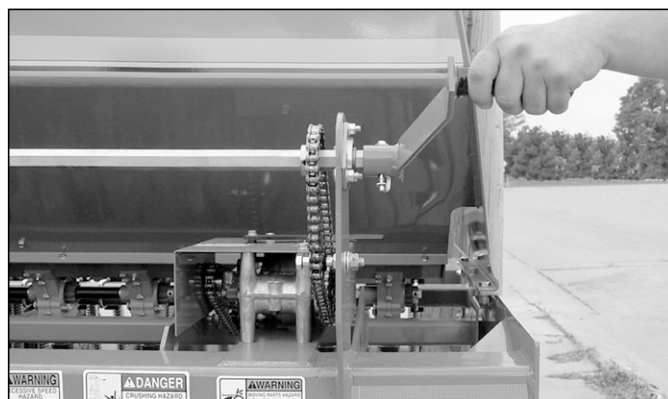


Figure 7
3P606NT Calibration Crank

32793



Figure 8
606NT Calibration Crank

23389

7. If not already done, set the Drive Type, Seed Rate Handle and Seed Cup Doors across the drill. If any optional seed boxes are loaded, disconnect their drive or set their rate to zero (unless you are simultaneously calibrating multiple boxes).
8. Load seed above the rows to be sampled. Load well more than the expected sample size.
9. Rotate the crank several turns 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 removed or you do not plan to rely on it for the calibration.
11. Empty the sample containers back into the seed box, and place them back under the three hoses to gather metered seed.
12. Turn crank at a steady rate until one tenth acre is tallied on acremeter. While turning, check that cups have ample seed coming into them.

Drill Model	Rotations Per Acre (ha)
3P606NT or 3P605NT	Crank: 913 (2256) rotations
3P606NT or 3P605NT	Tire: 1628 (4015) rotations
606NT or 605NT	Any: 995 (2459) rotations

13. Weigh metered seed. Subtract initial weight of container(s).
14. Divide the net seed weight by three. Multiply by number of openers on your drill, and then by ten, to determine the total of pounds per acre seeded.

$$NetWeight = GrossWeight - ContainerWeight$$

$$MeasuredRate = \frac{NetWeight}{3} \times OpenerCount \times 10$$

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.

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

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).

Example: you desire to plant barley at:

60 pounds per acre

which is between

45 and 50

on the Drive Type 2 chart.

Use an initial Seed Rate Handle (*InitialHandle*) scale setting of:

48

3P606NT crank rotations for one tenth acre:

91.3

Example: the containers weighed a total of 3.23 pounds after test:

1.73 lbs net

$$1.73 = 3.23 - 1.5$$

Example: *MeasuredRate* is:

52 lbs/ac

$$52 = \frac{1.73}{3} \times 9 \times 10$$

Example:

the target rate was 60 lbs/ac, and the initial scale 48:
the new scale setting is:

55

$$55 = \frac{60}{52} \times 48$$

17. With calibration complete, store calibration crank, re-engage hub if locked-out, reinstall any removed chains or sprockets, reconnect seed hoses and re-install acremeter (if removed - tighten only to snug).
18. Check that your tire(s) is(are) properly inflated. See **"Tire Inflation Chart"** in Operator Manual.

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.

Rate Charts, Main Seed Box

Charts in U.S. customary units.
Metric charts begin on page 32.

Alfalfa (*Medicago sativa*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 60 pounds/bushel)														
7.5 in	0	4.6	6.7	9.1	12	15	18	21	25	28	32	36	39	43	47	50	54	57	61	64	66	
	Drive Type: 2							Seed Rate in Pounds Per Acre														
7.5 in	0	9.5	14	19	24	30	37	44	51	58	66	73	81	89	96	104	111	118	125	131	136	
	Drive Type: 3							Seed Rate in Pounds Per Acre														
7.5 in	0	15	22	29	37	46	55	65	75	86	97	108	119	130	141	151	162	171	180	189	196	
	Drive Type: 4							Seed Rate in Pounds Per Acre														
7.5 in	0	25	35	47	60	75	90	106	123	140	158	176	194	212	230	247	264	279	294	308	320	

32291C

Bahia Grass (*Paspalum notatum*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 40 pounds/bushel)														
7.5 in	0	2.2	3.1	4.5	6.3	8.5	11	14	17	20	23	27	30	33	37	40	43	46	48	50	52	
	Drive Type: 2							Seed Rate in Pounds Per Acre														
7.5 in	0	4.4	6.4	9.3	13	18	23	28	35	41	48	55	62	69	76	82	88	94	99	104	107	
	Drive Type: 3							Seed Rate in Pounds Per Acre														
7.5 in	0	6.6	10	14	20	26	34	43	52	62	72	82	93	103	113	123	132	141	149	156	161	
	Drive Type: 4							Seed Rate in Pounds Per Acre														
7.5 in	0	11	16	23	32	43	56	70	85	101	117	134	151	168	185	201	216	230	243	254	263	

32292C

Barley (*Hordeum vulgare*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 51 pounds/bushel)													
7.5 in	0	4.7	6.3	8.4	11	14	17	20	24	27	31	35	39	42	45	49	51	54	56	57	58
	Drive Type: 2							Seed Rate in Pounds Per Acre													
7.5 in	0	10	13	17	22	28	35	42	49	56	64	72	79	86	93	100	105	110	115	118	120
	Drive Type: 3							Seed Rate in Pounds Per Acre													
7.5 in	0	14	19	26	34	43	52	62	72	83	94	105	116	126	137	147	156	165	173	180	186
	Drive Type: 4							Seed Rate in Pounds Per Acre													
7.5 in	0	22	32	43	56	70	85	101	118	135	153	171	189	206	223	239	255	269	282	293	303

32293C

Rate Charts, Main Seed Box, continued...

Buckwheat (*Fagopyrum esculentum*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 48 pounds/bushel)														
7.5 in	0	3.9	5.7	7.9	10	13	16	20	23	27	30	34	37	41	44	47	50	52	54	55	57	
	Drive Type: 2							Seed Rate in Pounds Per Acre														
7.5 in	0	8.0	12	16	22	27	34	41	48	55	62	70	77	84	90	96	102	107	111	114	116	
	Drive Type: 3							Seed Rate in Pounds Per Acre														
7.5 in	0	15	18	24	31	39	49	60	72	85	97	110	123	136	148	159	170	179	187	192	197	
	Drive Type: 4							Seed Rate in Pounds Per Acre														
7.5 in	0	24	30	39	50	64	80	98	118	138	159	180	201	222	241	260	277	292	304	314	320	

32295C

Buffalograss (*Buchloe dactyloides*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 23 pounds/bushel)														
7.5 in	0	1.2	1.9	2.9	4.0	5.3	6.6	8.0	9.4	11	12	14	15	16	17	18	19	20	20	20	20	
	Drive Type: 2							Seed Rate in Pounds Per Acre														
7.5 in	0	2.4	4.0	6.0	8.3	11	14	16	19	22	25	28	31	33	36	38	39	40	41	41	41	
	Drive Type: 3							Seed Rate in Pounds Per Acre														
7.5 in	0	4.4	6.4	8.9	12	16	20	24	28	33	37	42	46	50	54	57	60	62	63	63	63	
	Drive Type: 4							Seed Rate in Pounds Per Acre														
7.5 in	0	7.2	10	15	20	26	32	39	46	54	61	68	75	82	88	93	97	101	103	103	103	

32296C

Bermuda Grass (*Cynodon dactylon*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 60 pounds/bushel)													
7.5 in	0	1.8	3.5	5.3	7.2	9.1	11	13	15	17	19	21	23	25	27	29	31	33	35	36	38
	Drive Type: 2							Seed Rate in Pounds Per Acre													
7.5 in	0	3.6	7.2	11	15	19	23	27	31	35	39	43	47	51	55	59	63	67	71	75	78
	Drive Type: 3							Seed Rate in Pounds Per Acre													
7.5 in	0	5.7	11	17	22	28	34	40	46	52	58	64	70	76	81	87	92	97	102	107	112
	Drive Type: 4							Seed Rate in Pounds Per Acre													
7.5 in	0	9.3	18	27	36	46	55	65	75	85	94	104	114	123	132	141	150	159	167	175	182

32294C

Rate Charts, Main Seed Box, continued...

K-31 Fescue (*Festuca*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 21 pounds/bushel)													
7.5 in	0	1.9	2.9	4.0	5.2	6.4	7.7	9.0	10	12	13	14	16	17	18	19	20	21	21	22	23
	Drive Type: 2							Seed Rate in Pounds Per Acre													
7.5 in	0	3.9	5.9	8.2	11	13	16	18	21	24	27	29	32	34	37	39	41	43	44	45	46
	Drive Type: 3							Seed Rate in Pounds Per Acre													
7.5 in	0	6.6	9.3	12	16	19	23	27	31	35	39	43	47	51	55	58	61	64	67	69	70
	Drive Type: 4							Seed Rate in Pounds Per Acre													
7.5 in	0	11	15	20	25	31	37	44	50	57	64	70	77	83	89	95	100	105	109	112	115

32297C

Flax (*Linum usitatissimum*) or Sudan
(*Sorghum bicolor* subsp. *drummondii*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 55 pounds/bushel)													
7.5 in	0	4.6	6.8	9.3	12	15	19	22	26	29	33	37	41	44	48	52	55	59	62	65	67
	Drive Type: 2							Seed Rate in Pounds Per Acre													
7.5 in	0	9.4	14	19	25	31	38	45	53	60	68	76	84	91	99	107	114	121	127	133	139
	Drive Type: 3							Seed Rate in Pounds Per Acre													
7.5 in	0	14	21	29	37	46	56	66	76	86	97	108	118	129	140	150	160	169	179	187	195
	Drive Type: 4							Seed Rate in Pounds Per Acre													
7.5 in	0	23	35	47	61	75	91	107	124	141	158	175	193	210	228	244	261	276	291	305	318

32298C

Eastern Gamma Grass - Pete
(*Tripsacum dactyloides*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1					Seed Rate in Pounds Per Acre															
7.5 in	0	3.8	5.3	7.0	9.0	11	14	16	19	21	24	26	29	31	34	36	38	40	41	42	43
	Drive Type: 2					Seed Rate in Pounds Per Acre															
7.5 in	0	7.9	11	14	18	23	28	33	38	44	49	54	60	65	69	74	78	81	84	86	88

32299C

Rate Charts, Main Seed Box, continued...

Kentucky Blue Grass (*Poa pratensis*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 23 pounds/bushel)														
7.5 in	0	1.5	2.1	2.9	3.7	4.6	5.6	6.7	7.7	8.8	10	11	12	13	14	15	16	17	17	18	18	
	Drive Type: 2							Seed Rate in Pounds Per Acre														
7.5 in	0	3.0	4.4	5.9	7.7	10	12	14	16	18	20	23	25	27	29	31	33	34	35	37	37	
	Drive Type: 3							Seed Rate in Pounds Per Acre														
7.5 in	0	4.8	7.2	10	12	15	18	21	24	27	30	33	36	39	42	44	47	49	51	53	55	
	Drive Type: 4							Seed Rate in Pounds Per Acre														
7.5 in	0	7.9	12	16	20	25	29	34	39	44	49	54	59	63	68	72	76	80	83	87	89	

32300C

Millet (*Pennisetum glaucum*, *Setaria italica*,
Panicum miliaceum, *Eleusine coracana*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 60 pounds/bushel)														
7.5 in	0	4.8	6.8	9.2	12	15	18	21	25	28	32	35	39	42	46	49	52	55	58	60	62	
	Drive Type: 2							Seed Rate in Pounds Per Acre														
7.5 in	0	10	14	19	24	30	37	43	51	58	65	73	80	87	94	101	107	113	118	123	127	
	Drive Type: 3							Seed Rate in Pounds Per Acre														
7.5 in	0	14	20	28	36	45	55	65	76	87	98	109	120	131	141	151	161	170	178	185	191	
	Drive Type: 4							Seed Rate in Pounds Per Acre														
7.5 in	0	22	33	45	59	74	90	107	124	142	160	178	196	213	230	247	262	277	290	301	311	

32301C

Milo (*Sorghum*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 60 pounds/bushel)													
7.5 in	0	4.6	7.1	10	14	17	22	26	31	36	40	45	50	55	60	64	68	72	75	78	80
	Drive Type: 2							Seed Rate in Pounds Per Acre													
7.5 in	0	9.4	15	21	28	36	44	54	63	73	83	93	103	113	122	131	140	148	154	160	165

32302C

Rate Charts, Main Seed Box, continued...

Oats (*Avena sativa*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 37 pounds/bushel)													
7.5 in	0	1.8	3.1	4.5	6.1	7.8	10	12	14	16	18	20	22	24	26	28	30	32	33	35	36
	Drive Type: 2							Seed Rate in Pounds Per Acre													
7.5 in	0	3.7	6.3	9.2	13	16	20	24	28	32	37	41	46	50	54	58	62	65	69	71	74
	Drive Type: 3							Seed Rate in Pounds Per Acre													
7.5 in	0	6.8	10	14	18	24	30	36	43	50	57	64	71	78	84	90	96	101	105	109	111
	Drive Type: 4							Seed Rate in Pounds Per Acre													
7.5 in	0	11	16	22	30	39	48	59	70	81	93	104	115	127	137	147	156	164	171	177	181

32303C

Orchard Grass Potomac (*Dactylis glomerata*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 18 pounds/bushel)													
7.5 in	0	1.1	1.5	2.0	2.7	3.3	4.1	4.9	5.8	6.7	7.6	8.5	9.4	10	11	12	13	13	14	14	15
	Drive Type: 2							Seed Rate in Pounds Per Acre													
7.5 in	0	2.3	3.1	4.2	5.5	6.9	8.5	10	12	14	16	18	19	21	23	25	26	27	28	29	30
	Drive Type: 3							Seed Rate in Pounds Per Acre													
7.5 in	0	3.3	4.6	6.1	7.9	10	12	14	17	20	22	25	27	30	32	35	37	39	41	43	44
	Drive Type: 4							Seed Rate in Pounds Per Acre													
7.5 in	0	5.4	7.4	10	13	16	20	24	28	32	36	40	45	49	53	57	61	64	67	70	72

32304C

Peas (*Pisum sativum*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 61 pounds/bushel)													
7.5 in	0	2.1	5.2	8.7	13	17	21	26	30	35	40	44	49	53	57	61	64	67	70	72	73
	Drive Type: 2							Seed Rate in Pounds Per Acre													
7.5 in	0	4.4	11	18	26	34	43	53	62	72	81	91	100	109	117	125	132	138	143	147	150
	Drive Type: 3							Seed Rate in Pounds Per Acre													
7.5 in	0	3.2	12	22	33	45	58	71	84	98	112	125	138	151	163	174	184	192	199	205	209
	Drive Type: 4							Seed Rate in Pounds Per Acre													
7.5 in	0	5.2	20	36	54	74	94	116	138	160	182	204	225	246	265	283	299	313	325	334	341

32305C

Rate Charts, Main Seed Box, continued...

Pinto Beans (*Phaseolus vulgaris*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 61 pounds/bushel)														
7.5 in	0	4.1	6.8	10	14	18	22	27	32	37	42	47	52	56	60	64	68	71	73	75	76	
	Drive Type: 2							Seed Rate in Pounds Per Acre														
7.5 in	0	8.5	14	21	28	37	46	56	65	76	86	96	106	115	124	132	140	146	151	155	157	
	Drive Type: 3							Seed Rate in Pounds Per Acre														
7.5 in	0	14	22	31	42	54	67	81	95	109	124	139	153	167	180	192	203	213	221	227	231	
	Drive Type: 4							Seed Rate in Pounds Per Acre														
7.5 in	0	23	35	51	68	88	109	131	155	178	203	226	250	272	294	313	331	347	360	369	376	

32306C

Rape (*Brassica napus*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 51 pounds/bushel)														
7.5 in	0	4.2	6.2	8.5	11	14	16	19	22	25	28	31	34	37	40	43	46	49	52	54	56	
	Drive Type: 2							Seed Rate in Pounds Per Acre														
7.5 in	0	8.6	13	18	23	28	34	39	45	52	58	64	70	77	83	89	95	101	106	111	116	
	Drive Type: 3							Seed Rate in Pounds Per Acre														
7.5 in	0	13	18	25	31	39	47	56	65	75	84	94	104	113	122	131	139	147	154	161	166	
	Drive Type: 4							Seed Rate in Pounds Per Acre														
7.5 in	0	22	30	40	51	64	77	91	106	122	137	153	169	184	199	214	227	240	252	262	271	

32307C

Rice, Long Grain (*Oryza sativa indica*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 47 pounds/bushel)													
7.5 in	0	0.9	3.3	5.8	8.3	11	14	16	19	21	24	26	29	31	33	35	37	39	40	41	42
	Drive Type: 2							Seed Rate in Pounds Per Acre													
7.5 in	0	1.8	6.7	12	17	22	28	33	39	44	49	54	59	64	68	72	76	79	82	85	87
	Drive Type: 3							Seed Rate in Pounds Per Acre													
7.5 in	0	3.0	10	18	25	33	40	48	56	63	71	78	85	92	99	106	113	119	125	130	136
	Drive Type: 4							Seed Rate in Pounds Per Acre													
7.5 in	0	4.9	17	29	41	53	66	78	91	103	115	127	139	151	162	173	183	194	203	213	221

32308C

Rate Charts, Main Seed Box, continued...

Rice, Short Grain (*Oryza sativa japonica*,
Oryza sativa sinica)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 43 pounds/bushel)													
7.5 in	0	2.5	4.6	6.9	9.3	12	14	17	20	23	25	28	31	33	36	38	40	42	44	46	47
	Drive Type: 2							Seed Rate in Pounds Per Acre													
7.5 in	0	5.2	9.5	14	19	24	30	35	41	47	52	58	63	69	74	79	83	87	91	94	97
	Drive Type: 3							Seed Rate in Pounds Per Acre													
7.5 in	0	11	16	21	28	35	43	51	59	68	77	85	94	102	110	117	123	128	133	136	138
	Drive Type: 4							Seed Rate in Pounds Per Acre													
7.5 in	0	18	26	35	45	57	70	83	97	111	125	139	153	166	179	190	200	209	217	222	225

32309C

Rye (*Secale cereale*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 57 pounds/bushel)													
7.5 in	0	3.8	6.6	10	14	18	22	27	31	36	41	46	51	56	61	65	69	73	76	79	81
	Drive Type: 2							Seed Rate in Pounds Per Acre													
7.5 in	0	7.8	14	20	28	36	45	55	65	75	85	95	105	115	124	133	142	149	156	162	167
	Drive Type: 3							Seed Rate in Pounds Per Acre													
7.5 in	0	13	21	31	42	54	67	81	96	111	126	142	157	173	188	202	216	228	240	250	259
	Drive Type: 4							Seed Rate in Pounds Per Acre													
7.5 in	0	22	35	50	68	88	109	132	156	181	206	231	257	282	306	329	352	372	391	407	422

32310C

Perennial Rye Grass - Palmer
(*Lolium perenne*, *Lolium multiflorum*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 36 pounds/bushel)														
7.5 in	0	2.4	3.6	4.9	6.3	7.9	10	11	13	15	17	19	21	22	24	26	27	29	30	31	31	
	Drive Type: 2							Seed Rate in Pounds Per Acre														
7.5 in	0	4.9	7.3	10	13	16	20	23	27	31	35	39	42	46	50	53	56	59	61	63	65	
	Drive Type: 3							Seed Rate in Pounds Per Acre														
7.5 in	0	10	12	15	19	24	29	35	41	47	54	61	67	73	79	85	90	94	97	99	101	
	Drive Type: 4							Seed Rate in Pounds Per Acre														
7.5 in	0	16	19	24	31	38	47	57	67	77	88	99	109	120	129	138	146	153	158	162	164	

32311C

Rate Charts, Main Seed Box, continued...

Soybeans (*Glycine max*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 58 pounds/bushel)														
7.5 in	0	4.0	6.9	10	14	18	22	26	31	35	40	44	49	53	57	61	64	67	70	72	74	
	Drive Type: 2							Seed Rate in Pounds Per Acre														
7.5 in	0	8.3	14	21	29	37	45	54	63	73	82	91	100	109	117	125	132	139	144	149	152	
	Drive Type: 3							Seed Rate in Pounds Per Acre														
7.5 in	0	11	21	31	43	55	67	80	93	106	120	133	146	158	170	182	193	203	212	220	228	
	Drive Type: 4							Seed Rate in Pounds Per Acre														
7.5 in	0	18	34	51	70	89	110	131	152	173	195	216	237	258	278	297	314	331	346	359	371	

32312C

Sunflower (*Helianthus annuus*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 28 pounds/bushel)													
7.5 in	0	0.3	1.7	3.2	4.8	6.5	8.3	10	12	14	16	18	20	22	23	25	27	28	30	31	32
	Drive Type: 2							Seed Rate in Pounds Per Acre													
7.5 in	0	0.6	3.4	6.5	10	13	17	21	25	29	33	37	41	44	48	52	55	58	61	64	66
	Drive Type: 3							Seed Rate in Pounds Per Acre													
7.5 in	0	2.5	5.4	9.0	13	17	22	27	33	38	44	50	55	61	66	71	76	80	84	88	90
	Drive Type: 4							Seed Rate in Pounds Per Acre													
7.5 in	0	4.1	8.9	15	21	28	36	45	54	63	72	81	90	99	108	116	124	131	137	143	147

32313C

Tiffany Teff, Coated (*Eragrostis tef*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 65 pounds/bushel)														
7.5 in	0	4.0	6.3	8.8	12	14	18	21	24	28	31	35	39	43	47	51	54	58	62	65	69	
	Drive Type: 2							Seed Rate in Pounds Per Acre														
7.5 in	0	8.3	13	18	24	30	36	43	50	57	65	72	80	88	96	104	112	119	127	134	142	
	Drive Type: 3							Seed Rate in Pounds Per Acre														
7.5 in	0	12	19	27	36	45	54	64	75	86	97	109	120	132	144	156	167	179	190	202	212	
	Drive Type: 4							Seed Rate in Pounds Per Acre														
7.5 in	0	20	32	44	58	73	88	105	122	140	158	177	196	215	235	254	273	292	311	329	346	

32314C

Rate Charts, Main Seed Box, continued...

Wheat (*Triticum*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 64 pounds/bushel)														
7.5 in	0	7.1	8.9	11	14	18	22	26	30	35	40	45	50	55	59	64	68	72	75	78	80	
	Drive Type: 2							Seed Rate in Pounds Per Acre														
7.5 in	0	15	18	23	29	37	45	53	63	72	82	93	103	113	122	131	140	147	154	159	164	
	Drive Type: 3							Seed Rate in Pounds Per Acre														
7.5 in	0	18	26	34	44	55	68	80	94	108	122	136	150	164	177	190	201	212	222	230	236	
	Drive Type: 4							Seed Rate in Pounds Per Acre														
7.5 in	0	30	42	56	72	90	110	131	153	176	199	222	245	267	289	309	329	346	362	375	385	

32315C

Wheatgrass (*Pascopyrum smithii*,
Agropyron elongatum)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1							Seed Rate in Pounds Per Acre (based on 23 pounds/bushel)													
7.5 in	0	0.9	1.7	2.4	3.2	4.0	4.9	5.8	6.6	7.5	8.4	9.3	10	11	12	13	14	14	15	16	16
	Drive Type: 2							Seed Rate in Pounds Per Acre													
7.5 in	0	1.9	3.4	4.9	6.6	8.3	10	12	14	15	17	19	21	23	25	26	28	29	31	32	33
	Drive Type: 3							Seed Rate in Pounds Per Acre													
7.5 in	0	3.5	5.3	7.4	10	12	15	17	20	23	25	28	31	33	36	39	41	43	45	47	49
	Drive Type: 4							Seed Rate in Pounds Per Acre													
7.5 in	0	5.7	8.7	12	16	20	24	28	32	37	41	46	50	55	59	63	67	70	74	77	79

32316C



Small Seeds Rate

Seeding rate from the optional Small Seeds Attachment is controlled entirely by the 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 and optional Native Grass.

Refer to Figure 9

To set Small Seeds rate, loosen the wing nut ① at the handle. Move the lever ② until the indicator is about 10 higher than the intended setting, then return it to that setting. Tighten nut.

Set the initial rate based on the charts starting on page 21.

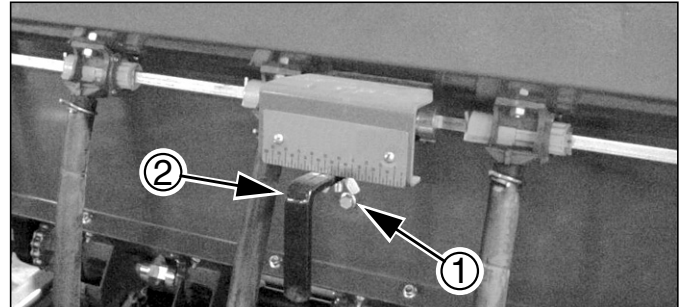


Figure 9
Small Seeds Rate Handle

32634

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.

Due to the large number of crank revolutions per acre (913 or 995) and per hectare (2256 or 2458), a practical calibration is a simulation of $\frac{1}{10}$ th acre or $\frac{1}{10}$ th hectare.

1. Estimate the sample sizes.

$$\text{RateSample} = \frac{\text{FieldRate}}{10}$$

$$\text{SamplePerRow} = \frac{\text{RateSample}}{\text{RowCount}}$$

$$\text{ExpectedSample} = \text{SamplePerRow} \times \text{SampledRows}$$

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. For a 3P605NT or 3P606NT drill, raise the drill so the gauge wheel is out of ground contact.

For a 605NT or 606NT drill, disengage the lock-out hub (see Operator manual), to permit independent rotation of the main jackshaft. The drill may be raised or lowered for calibration. Leave the lock-out hub engaged if rotating the tire for calibration.

Example: You want to apply alfalfa at 12 pounds per acre with a 3P606NT drill. *RateSample* is:

$$1.2 = \frac{12}{10}$$

Example: the drill has 9 rows.

SamplePerRow is:

$$0.133 = \frac{1.2}{9}$$

Example: 3 rows are to be used in the sampling.

ExpectedSample is:

$$0.40 = 0.133 \times 3$$

The expected sample weight is 0.4 lb.

Example: 3 containers each weighing 0.23 lb or:

$$0.70 \text{ lb total}$$

⚠ CAUTION

Crushing Hazard:

Install lift locks on a raised 605NT or 606NT drill.

4. Remove the calibration crank from its storage stob. Store the retaining pin on the stob.

Refer to Figure 10 or Figure 11

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

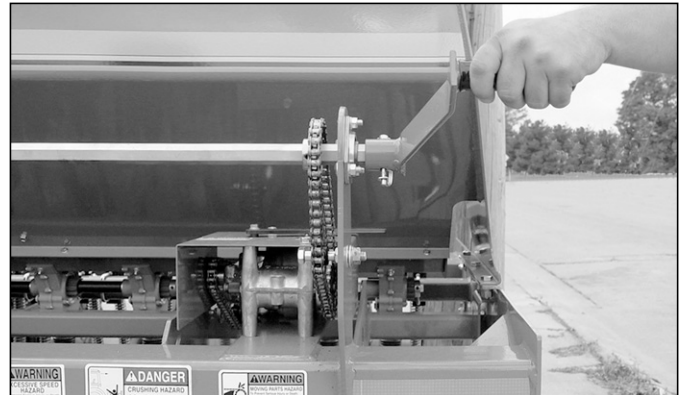


Figure 10
3P606NT Calibration Crank

32793

Note: On the 605NT or 606NT you can also rotate the gearbox input jackshaft by means of a wrench or socket. You may need to remove the acremeter. Use same number of rotations when turning the gauge wheel jackshaft, gearbox input jackshaft or tire.

Note: On the 3P605NT or 3P606NT you can also rotate the gearbox drive shaft with wrench or socket.

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 11
606NT Calibration Crank

23389

7. If not already done, set the Small Seeds Rate Handle.
8. Load seed above the rows to be sampled. Load well more than the expected sample size.
9. Rotate the crank several turns 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 removed or you do not plan to rely on it for the calibration.
11. Empty the sample containers back into the seed box, and place them back under the three hoses to gather metered seed.

Example: on the 3P606NT 9-row (7.5 in.) drill, planting alfalfa at 12 pounds/ac has an initial small seeds rate handle setting of:
60

12. Turn crank at a steady rate until one tenth acre is tallied on acremeter. While turning, check that cups have ample seed coming into them.

Drill Model	Rotations Per Acre (ha)
3P606NT or 3P605NT	Crank: 913 (2256) rotations
3P606NT or 3P605NT	Tire: 1628 (4015) rotations
606NT or 605NT	Any: 995 (2459) rotations

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

$$NetWeight = GrossWeight - ContainerWeights$$

14. Divide the net material weight by three. Multiply by number of openers on your drill, and then by ten, to determine the total of pounds per acre applied.

$$MeasuredRate = \frac{NetWeight}{3} \times RowCount \times 10$$

15. Divide the desired original field rate by the measured rate to calculate a scale adjustment factor.

$$CorrectionFactor = \frac{FieldRate}{MeasuredRate}$$

16. Multiply the scale setting just used times correction factor to obtain the next scale setting to use.

$$NextScale = PreviousScale \times CorrectionFactor$$

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 tire(s) is (are) properly inflated. See **"Tire Inflation Chart"** in Operator manual.

20. With calibration complete, store calibration crank, re-engage hub if locked-out, reinstall any removed chains or sprockets, reconnect seed hoses and re-install acremeter (if removed - tighten only to snug).

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.

3P606NTcrank rotations for one tenth acre is:
91.3

Example:
the three containers weighed a total of
1.13 pounds after test: 0.43 lbs net
 $0.43 = 1.13 - 0.70$

Example: 10.0 lbs/ac
 $12.8 = \frac{0.43}{3} \times 9 \times 10$

Example: the target rate was 12 lbs/ac:
the correction factor =1.2
 $0.94 = \frac{12}{12.8}$

Example: the previous scale setting was 60,
the next scale setting is 56
 $56 = 60 \times 0.94$

Small Seeds Row Shut-Off

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

1. Clean-out seed. The seed box must be empty prior to inserting plugs. See **"Small Seeds Box Clean-Out"** in Operator manual.
2. 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.
3. 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.
4. 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.

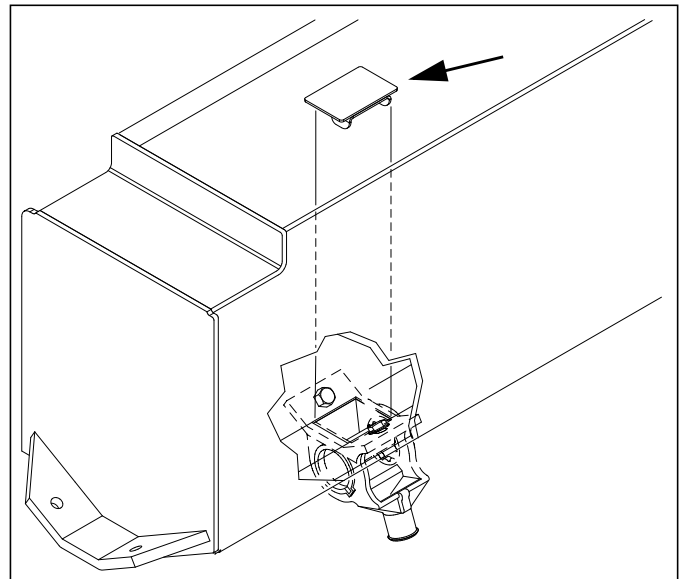


Figure 12
Small Seeds Tube Plug

27407

Small Seeds Rate Charts

U.S customary units. Metric charts begin on page 41.

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																				
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

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																				
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

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																				
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

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																				
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

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																				
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

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																				
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

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																				
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

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																				
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



Native Grass Rate

The Native Grass box is for seeding fluffy, native grass blends like Big Blue Stem, Indian Grass, Oats Grama, and mixes of these and similar seeds. For Brome grass, however, see “**Brome Grass Seeding**” on page 29.

Native Grass rate is controlled by gearbox Drive Type and a sprocket selection.

Note: Drive Type also affects main box rate.

Series II Native Grass Drill Calibration

This method for calibration works on any type of native grass no matter what seed type, weight, or density.

The drill's revolutions-per-acre at the native grass cup allows you to calibrate the output in pounds by cup sprocket revolution per acre.

This is the most consistent calibration procedure, and works on all types of native grasses.

To calibrate seed mix:

1. Record the weight of empty containers large enough to hold seed metered from the native grass box. The examples in this section presume that three rows are sampled. For very light grasses, you may want to sample more rows, or calibrate with Drive Type 4.
2. Fill three or more compartments at least $\frac{1}{2}$ full of seed in the native grass box. Pull seed hoses off openers under the compartments.

Note: It is necessary to calibrate seed mix before setting seed rate.

Note: On older model pull-type drills without the Calibration Kit accessory, engage the clutch by lowering the drill. Use a jack to raise the left end wheel. Set the lock-out hub to drive engaged.

3. To calibrate using calibration crank, raise a 3-point drill (Model 3P605NT or 3P606NT), disengage the gauge wheel lockout (Model 605NT or 606NT), and attach calibration crank to coupler on left-hand side jackshaft using retaining pin.
4. Turn crank (or gauge wheel) several times to fill seed cups with seed. Continue turning until seed falls to the ground from each cup.
5. Place the empty containers under the disconnected seed hoses to gather the seed as it is metered.

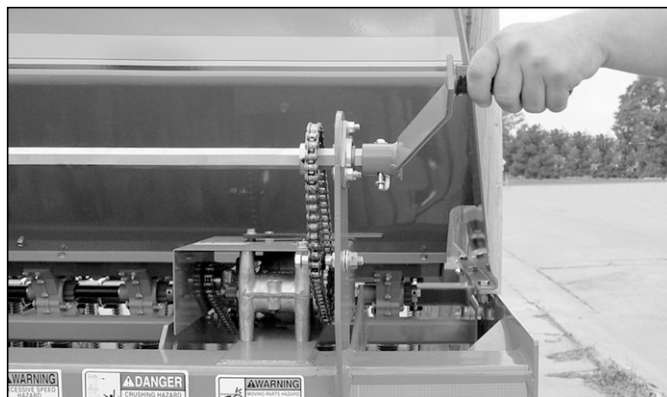


Figure 13
3P606NT Calibration Crank

32793



Figure 14
606NT Calibration Crank

23389

Note: Leave the lock-out hub engaged if rotating the tire for calibration.

Note: You can also rotate the gearbox input jackshaft by means of a wrench or socket. You may need to remove the acremeter. Use same number of rotations when turning the gauge wheel jackshaft, gearbox input jackshaft or tire.

Refer to Figure 15

6. Note:
- the Drive Type on the gearbox (1, 2, 3, 4),
 - the Final Drive sprocket ① (14T through 23T), and
 - whether Seed Rate Reduction is installed.
- This information is needed later.
7. Decide on an area to simulate. A full acre or hectare provides a larger and more accurate sample to weigh, but it represents a lot of cranking.

A sample size of $\frac{1}{10}$ th acre or hectare is easy to generate (and calculate), and may suffice. You can use any area fraction that is easy to calculate, and rely on the acremeter to report it. Note the reading on the acremeter before starting.

8. Rotate the calibration crank (or gauge wheel) for the number of revolutions for a full or fractional acre or hectare (see table at right).
9. Check that the seed cups have ample seed coming into them.
10. Weigh metered seed, and subtract the initial weight of the containers.
11. Divide this number by the number of cups metered).

$$\text{NetPerCup} = \frac{\text{NetSample}}{\text{SampledRows}}$$

12. Finally, multiply by the number of openers on the drill. This equals the pounds per the sampled area at this drive setting.

$$\text{WeightPerSampleArea} = \text{NetPerCup} \times 9$$

13. To adjust this number, divide the weight per area by the shaft revolutions for that same area (whether full or fractional). This is the metering weight per shaft revolution.

$$\text{WeightPerRevolution} = \frac{\text{WeightPerSampleArea}}{\text{CalibrationRevs}}$$

14. Divide desired rate of pounds per acre by the weight per shaft revolution (this is the number obtained from step 13).

$$\text{CupRevolutions} = \frac{\text{TargetSeedingRate}}{\text{WeightPerRevolution}}$$

15. Find this number (or the closest number to this) in the Standard or Reduced Rate drive setting charts. This gives the gearbox Drive Type and the final drive sprocket size.
- If also seeding from Main Box, chose a chart that allows a shared Drive Type.

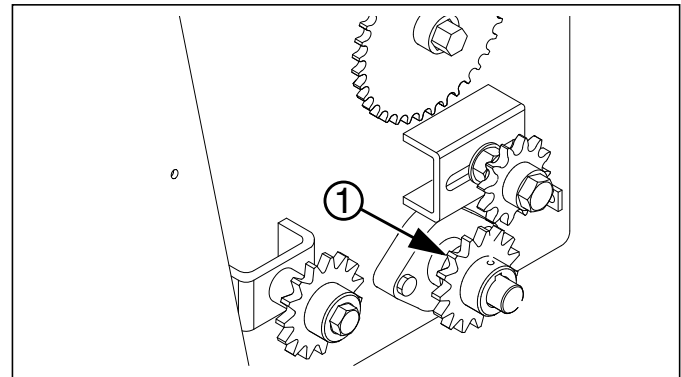


Figure 15
Native Grass Final Drive
Sprocket Change

18670

Drill Model	Rotations Per ...	
	Acre (ha)	$\frac{1}{10}$ th ac (ha)
3P606NT 3P605NT	Crank: 913 (2256)	91.3 (225.6)
3P606NT 3P605NT	Tire: 1628 (4015)	162.8 (401.5)
606NT 605NT	Any: 995 (2459)	99.5 (245.9)

Note: Refer to the drive setting charts on page 27, the numbers listed are the number of revolutions of the native grass meter shaft at a particular drive type and sprocket range.

Note: The charts are based on the standard drill. If a Seed Rate Reduction kit is installed, consult the kit manual for the rate correction factor.

NOTICE

Seed Rate Risk:

Native Grass Drive Type affects Main Box rate, if you are seeding simultaneously from Main and Native Grass boxes.

16. Determine which sprocket and drive type are required for the native grass box. The sprockets are stored on the right-hand side of the drill frame. The drive type is set by the gearbox handle.

To change sprockets, loosen the chain idlers and replace with desired sprocket.

NOTICE

Seeding Rate Risk:

Calibrate. All native grass mixes vary in weight, seed type, and density. You must calibrate each mix.

Factors that affect seeding rates are: weight of seed, size of seed, relative humidity and moisture content of the seed, ratio of inert material to seed, different proportions of seed types affecting density, tire configuration, tire pressure, and tire slippage. The charts in this manual are based on factory tires at recommended inflation.

Note: On older model drills, if all sprocket combinations result in rates higher than desired, a Seed Rate Reduction kit (202-580A) is available.

The Native Grass attachment includes, as standard equipment, an agitator.

NOTICE

Equipment Damage Risk:

Do not transport with seed loaded in the Native Grass box. Load seed at field. Transport with seed loaded compacts the seed at the meter inlets and can easily clog agitators and meters. Drive system operation in the field can then damage the agitator and drive components.

Seed Lubricant

Add graphite seed lubricant after loading seed in the Native Grass box. Use $\frac{1}{3}$ cup (80 mL) across the top of the seed mix. Graphite is available as Great Plains part numbers:

821-042C 1 pound (0.45 kg) bottle

821-060C 5 pound (2.3 kg) jug

For humid planting environments, double or triple graphite as needed.

When drilling, check the amount of seed you are using by noting the acres drilled, amount of seed added to drill, and the level of seed in the box. If you suspect you are drilling more or less seed than desired, and you have accurately calibrated the drill to your seed, change your sprocket arrangement to compensate for your field conditions.

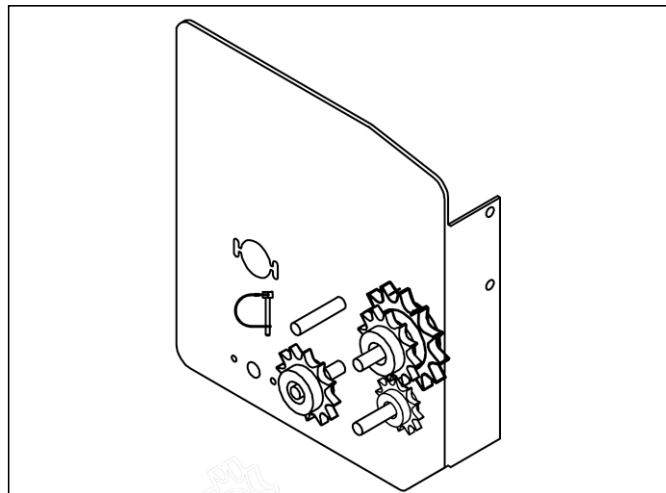


Figure 16
Sprocket Storage

25110

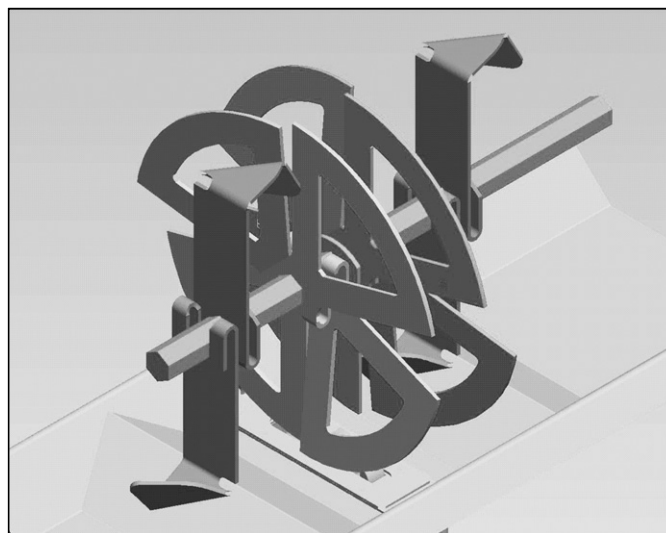


Figure 17
Native Grass Agitator Series II

25041

Native Grass Calibration Formulas and Example

For a metric example, see page 43.

Formulas	Example
Know your Desired seed rate in pounds per acre: <i>TargetRate</i>	Example target seed rate: <i>55 pounds per acre</i>
Choose the number of rows to sample.	Example: <i>3</i>
Weigh the empty sample container(s): <i>ContainerWeight</i>	Example container are three 1.5 pound buckets: <i>4.5 pounds</i>
For a larger sample, we set the Drive Type high.	Suggested calibration Drive Type: <i>4</i>
As there is only minor benefit in changing the final drive sprocket for calibration, we leave it as is.	Example final drive sprocket: <i>18T</i>
Examine the transmission for Standard vs. Seed Rate Reduction/	Example transmission: Rate Reduction not installed: <i>Standard</i>
Operate crank/gauge wheel for one tenth acre: <i>CalibrationRevs</i>	For this example, a model 606NT: <i>99.5 revolutions ($\frac{1}{10}^{th}$ of 995)</i>
Weigh the collected seed plus container(s): <i>GrossWeight</i>	Example: <i>GrossWeight = 8.25</i>
Obtain the net sample weight: <i>NetSample = GrossWeight – ContainerWeight</i>	Example: <i>8.25 - 4.5, or: NetSample = 3.75</i>
Determine the net sample weight per cup: <i>NetPerCup = $\frac{NetSample}{SampledRows}$</i>	Example: <i>3.75 ÷ 3, or: NetPerCup = 1.25</i>
Scale the sample to drill-wide: <i>NetFullWidth = NetPerCup × 9</i>	Example: <i>1.25 x 9, or: NetFullWidth = 11.25 pounds</i>
Scale the sample to a full acre: <i>NetPerAcre = NetFullWidth × 10</i>	Example: <i>11.25 x 10, or: NetPerAcre = 112.5</i>
Look up the number of meter shaft revolutions per acre: <i>CalCharRevs</i> for the current Drive Type, final sprocket and transmission configuration.	Example: <i>DT4, 18T and Standard is: 536.7 revolutions per acre. CalChartRevs = 536.7</i>
Determine the cup rate for this seed mix: <i>WeightPerRev = $\frac{NetPerAcre}{CalChartRevs}$</i>	Example: <i>112.5 ÷ 536.7, or: WeightPerRev = 0.210</i>
Determine the number of revolutions required for the target field rate weight metered per shaft revolution: <i>TargetRevs = $\frac{TargetRate}{WeightPerRev}$</i>	Example: <i>55 ÷ 0.210, or: TargetRevs = 262</i>
Look up the Drive Type and final sprocket for <i>TargetRevs</i>	Example: Drive Type: 2 Final Sprocket: 15 T

3P605NT and 3P606NT Meter Shaft Rates

These charts are rotations of the meter shaft per acre, and not seed rate charts. For metric charts, see page 44.

These charts are used during calibration. Once the pounds per shaft revolution is known for your seed mix, the charts provide the Transmission, Drive Type, and Final Sprocket required.

3P605NT and 3P606NT Standard Shaft Rates

Transmission	Standard: 16 T Driving, 17 T Driven									
Final Sprocket	23 T	22 T	21 T	20 T	19 T	18 T	17 T	16 T	15 T	14 T
Drive Type	Seed Cup Revolutions Per Acre									
1	82	85	89	94	99	104	110	117	125	134
2	168	175	184	193	203	214	227	241	257	275
3	251	263	275	289	304	321	340	362	386	413
4	410	429	449	472	497	524	555	590	629	674

32794A

3P605NT and 3P606NT with Seed Rate Reduction

Transmission	Seed Rate Reduction: 12 T Driving, 22 T Driven									
Final Sprocket	23 T	22 T	21 T	20 T	19 T	18 T	17 T	16 T	15 T	14 T
Drive Type	Seed Cup Revolutions Per Acre									
1	47	49	52	54	57	60	64	68	72	78
2	97	102	106	112	118	124	131	140	149	160
3	146	152	160	168	176	186	197	210	223	239
4	238	249	260	273	288	304	322	342	365	391

32794B

605NT and 606NT Meter Shaft Rates

These charts are rotations of the meter shaft per acre, and not seed rate charts. For metric charts, see page 45.

These charts are used during calibration. Once the pounds per shaft revolution is known for your seed mix, the charts provide the Transmission, Drive Type, and Final Sprocket required.

605NT and 606NT Standard Shaft Rates

Transmission	Standard: 16 T Driving, 17 T Driven									
Final Sprocket	23 T	22 T	21 T	20 T	19 T	18 T	17 T	16 T	15 T	14 T
Drive Type	Seed Cup Revolutions Per Acre									
1	84	87	91	96	101	107	113	120	128	137
2	172	179	188	197	208	219	232	247	263	282
3	257	269	282	296	312	329	348	370	395	423
4	420	439	460	483	508	537	568	604	644	690

32794C

605NT and 606NT with Seed Rate Reduction

Transmission	Seed Rate Reduction: 12 T Driving, 22 T Driven									
Final Sprocket	23 T	22 T	21 T	20 T	19 T	18 T	17 T	16 T	15 T	14 T
Drive Type	Seed Cup Revolutions Per Acre									
1	48	51	53	56	59	62	65	70	74	80
2	99	104	109	114	120	127	135	143	153	163
3	149	156	163	172	181	191	202	214	229	245
4	243	254	267	280	295	311	329	350	373	400

32794D

Brome Grass Seeding

When the seeding material is strictly brome grass, you can set an initial rate based on the tables following, and then calibrate. You can also use the procedure for mixes (page 23), but what follows is usually easier.

Refer to Figure 18

1. Find the desired pounds per acre on the Brome Grass Rate Charts on page 31. Determine which Drive Type and Final Drive sprocket are required, and for low rates, if Seed Rate Reduction is needed.
2. Set the Drive Type with the gearbox handle (see “**Setting Drive Type**” on page 2). Install the sprocket from storage on the right-hand side of the Native Grass box. To change sprockets, loosen the chain idlers and remove chain. Replace with desired sprocket.

Due to the large number of crank revolutions per acre (913 or 995) and per hectare (2256 or 2458), a practical calibration is a simulation of $\frac{1}{10}$ th acre or $\frac{1}{10}$ th hectare.

1. Estimate the sample sizes.

$$\text{RateSample} = \frac{\text{FieldRate}}{10}$$

$$\text{SamplePerRow} = \frac{\text{RateSample}}{\text{RowCount}}$$

$$\text{ExpectedSample} = \text{SamplePerRow} \times \text{SampledRows}$$

2. To perform this calibration, you need a scale that is accurate at the aggregate sample size, and three (3) light containers, each capable of holding the expected *SamplePerRow*. Record the empty container weights. The total is *ContainerWeight*.
3. For a 3P605NT or 3P606NT drill, raise the drill so the gauge wheel is out of ground contact.

For a 605NT or 606NT drill, disengage the lock-out hub (see Operator manual), to permit independent rotation of the main jackshaft. The drill may be raised or lowered for calibration. Leave the lock-out hub engaged if rotating the tire for calibration.



Crushing Hazard:

Install lift locks on a raised 605NT or 606NT drill.

4. Remove the calibration crank from its storage stob. Store the retaining pin on the stob.

Refer to Figure 7 or Figure 8 on page 5

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

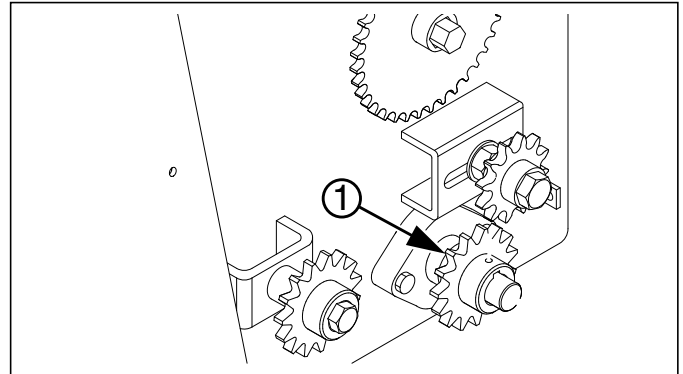


Figure 18
Native Grass Final Drive Sprocket

18670

Example: You want to apply brome at 50 pounds per acre with a 3P606NT drill. The nearest chart rate is:
Standard Transmission,
Drive Type: 3
Final Drive: 18T

RateSample is:

$$5.0 = \frac{50}{10}$$

Example: the 3P606NT drill has 9 rows.

SamplePerRow is:

$$0.56 = \frac{5.0}{9}$$

Example: 3 rows are to be used in the sampling.
ExpectedSample is:

$$1.67 = 0.56 \times 3$$

The expected sample weight is 1.67 lb.

Example: 3 containers, each weighing 0.5lb:

$$\text{ContainerWeight} = 1.5 \text{ lb}$$

Note: On the 605NT or 606NT you can also rotate the gearbox input jackshaft by means of a wrench or socket. You may need to remove the acremeter. Use same number of rotations when turning the gauge wheel jackshaft, gearbox input jackshaft or tire.

Note: On the 3P605NT or 3P606NT you can also rotate the gearbox drive shaft with wrench or socket.

6. Pull the Native Grass seed hoses off the top of three opener seed tubes, at the top of the openers. Place the hoses into sample containers.
7. If the Main Box or optional Small Seeds box are loaded, disconnect their drive or set their rates to zero (unless you are simultaneously calibrating multiple boxes).
8. Load seed above the rows to be sampled. Load well more than the expected sample size.
9. Rotate the crank several turns 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 removed or you do not plan to rely on it for the calibration.
11. Empty the sample containers back into the seed box, and place them back under the three hoses to gather metered seed.

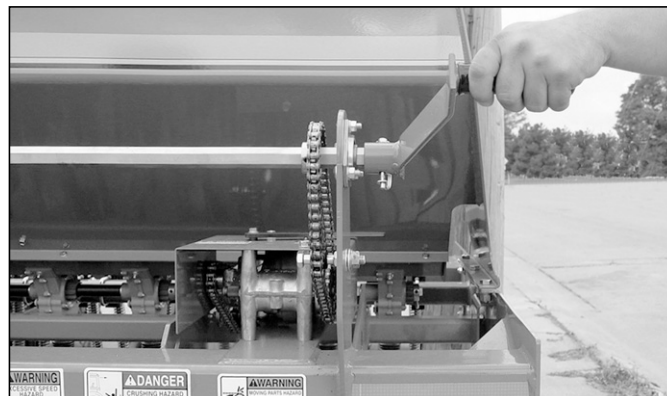


Figure 19
3P606NT Calibration Crank

32793



Figure 20
606NT Calibration Crank

23389

12. Turn crank at a steady rate until one tenth acre is tallied on acremeter. While turning, check that cups have ample seed coming into them.

Drill Model	Rotations Per Acre (ha)
3P606NT or 3P605NT	Crank: 913 (2256) rotations
3P606NT or 3P605NT	Tire: 1628 (4015) rotations
606NT or 605NT	Any: 995 (2459) rotations

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

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

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

$$\text{MeasuredRate} = \frac{\text{NetWeight}}{3} \times \text{OpenerCount} \times 10$$

3P606NT crank rotations for one tenth acre:
91.3

Example: the containers weighed a total of 3.40 pounds after test:

1.90 lbs net

$$1.90 = 3.40 - 1.5$$

Example:
on the 9-row 7.5 in. drill:

57 lbs/ac

$$57 = \frac{1.9}{3} \times 9 \times 10$$

15. If the calibration sample is more than a few percent different than the desired *FieldRate*, pick a new chart rate based on the difference factor.

$$\text{NewChart} = \frac{\text{TargetRate}}{\text{MeasuredRate}} \times \text{PreviousChart}$$

16. Find the chart rate closest to *NewChart*. Change the Final Drive sprocket and Drive Type as needed. If the correction went off the Standard chart to the low side, consider installing the Rate Reduction kit.

17. You may want to repeat calibration procedure at the new setting if your results varied greatly from the Seed Rate Chart.

Example:

$$\text{TargetRate} = 50$$

$$\text{PreviousChart} = 49.6$$

$$\text{MeasuredRate} = 57$$

The new chart rate is:

$$\text{NewChart} = 43.5$$

$$43.5 = \frac{50}{57} \times 49.6$$

The nearest chart rate to 4.35 is 42.5, or

Drive Type: 3

Final Sprocket: 21T

Brome Rate Charts

For metric charts, see page 46.

3P605NT and 3P606NT Standard Brome Rates

Transmission	Standard: 16 T Driving, 17 T Driven									
Final Sprocket	23 T	22 T	21 T	20 T	19 T	18 T	17 T	16 T	15 T	14 T
Drive Type	Seed Rate in Pounds Per Acre (7.5in Row Spacing)									
1	12.6	13.2	13.8	14.5	15.2	16.1	17.0	18.1	19.3	20.7
2	25.9	27.1	28.3	29.8	31.3	33.1	35.0	37.2	39.7	42.5
3	38.8	40.6	42.5	44.6	47.0	49.6	52.5	55.8	59.5	63.8
4	63.3	66.2	69.3	72.8	76.6	80.9	85.6	91.0	97.0	104.0

32795A

3P605NT and 3P606NT Reduced Brome Rates

Transmission	Seed Rate Reduction: 12 T Driving, 22 T Driven									
Final Sprocket	23 T	22 T	21 T	20 T	19 T	18 T	17 T	16 T	15 T	14 T
Drive Type	Seed Rate in Pounds Per Acre (7.5in Row Spacing)									
1	7.3	7.7	8.0	8.4	8.8	9.3	9.9	10.5	11.2	12.0
2	15.0	15.7	16.4	17.3	18.1	19.2	20.3	21.6	23.0	24.6
3	22.5	23.5	24.6	25.8	27.2	28.7	30.4	32.3	34.5	37.0
4	36.7	38.4	40.2	42.2	44.4	46.9	49.6	52.7	56.2	60.3

32795B



Appendix

Metric Rate Charts, Main Seed Box

See page 2 for instructions.

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

Alfalfa (*Medicago sativa*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare (based on 0.77 kg/litre)															
19.1 cm	0	5.2	7.5	10	13	16	20	24	28	32	36	40	44	48	52	57	61	64	68	71	74
	Drive Type: 2					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	11	15	21	27	34	41	49	57	65	74	82	91	99	108	116	124	132	140	146	153
	Drive Type: 3					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	17	24	32	41	51	62	73	85	97	109	121	134	146	158	170	181	192	202	212	220
	Drive Type: 4					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	28	40	53	67	84	101	119	138	157	177	197	218	238	258	277	295	313	330	345	359

32291D

Bahia Grass (*Paspalum notatum*)

	Seed Rate Handle Setting																							
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100			
Rows	Drive Type: 1						Seed Rate in Kilograms Per Hectare																(based on 0.51 kg/litre)	
19.1 cm	0	2.4	3.5	5.1	7.1	10	12	16	19	22	26	30	34	38	41	45	48	51	54	57	59			
	Drive Type: 2						Seed Rate in Kilograms Per Hectare																	
19.1 cm	0	5.0	7.1	10	15	20	25	32	39	46	54	62	69	77	85	92	99	105	111	116	120			
	Drive Type: 3						Seed Rate in Kilograms Per Hectare																	
19.1 cm	0	7.5	11	16	22	29	38	48	58	69	81	92	104	116	127	138	148	158	167	174	181			
	Drive Type: 4						Seed Rate in Kilograms Per Hectare																	
19.1 cm	0	12	17	25	36	48	62	78	95	113	131	150	170	189	207	225	242	258	272	284	294			

32292D

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

Barley (*Hordeum vulgare*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare (based on 0.66 kg/litre)															
19.1 cm	0	5.3	7.1	9.4	12	15	19	23	27	31	35	39	43	47	51	54	58	60	62	64	65
	Drive Type: 2					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	11	15	19	25	32	39	47	55	63	72	80	89	97	105	112	118	124	128	132	134
	Drive Type: 3					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	15	22	29	38	48	58	69	81	93	105	117	130	142	153	165	175	185	194	202	208
	Drive Type: 4					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	25	36	48	62	78	95	113	132	152	171	191	211	231	250	268	285	301	316	329	340

32293D

Buckwheat (*Fagopyrum esculentum*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare (based on 0.62 kg/litre)															
19.1 cm	0	4.4	6.4	8.9	12	15	18	22	26	30	34	38	42	46	49	53	56	58	60	62	63
	Drive Type: 2					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	9.0	13	18	24	31	38	46	53	62	70	78	86	94	101	108	114	120	124	128	130
	Drive Type: 3					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	17	20	26	34	44	55	68	81	95	109	124	138	152	166	179	190	200	209	216	220
	Drive Type: 4					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	27	33	43	56	72	90	110	132	155	178	202	225	249	271	291	310	327	341	352	359

32295D

Buffalograss (*Buchloe dactyloides*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare (based on 0.30 kg/litre)															
19.1 cm	0	4.4	6.4	8.9	12	15	18	22	26	30	34	38	42	46	49	53	56	58	60	62	63
	Drive Type: 2					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	9.0	13	18	24	31	38	46	53	62	70	78	86	94	101	108	114	120	124	128	130
	Drive Type: 3					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	17	20	26	34	44	55	68	81	95	109	124	138	152	166	179	190	200	209	216	220
	Drive Type: 4					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	27	33	43	56	72	90	110	132	155	178	202	225	249	271	291	310	327	341	352	359

32296D

Metric Rate Charts, Main Seed Box, continued...**Bermuda Grass (*Cynodon dactylon*)**

	Seed Rate Handle Setting																															
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100											
Rows	Drive Type: 1						Seed Rate in Kilograms Per Hectare																(based on 0.77 kg/litre)									
19.1 cm	0	2.0	3.9	6.0	8.0	10	12	15	17	19	21	24	26	28	30	32	35	37	39	41	43											
	Drive Type: 2						Seed Rate in Kilograms Per Hectare																									
19.1 cm	0	4.0	8.1	12	17	21	25	30	34	39	44	48	53	58	62	67	71	75	80	84	88											
	Drive Type: 3						Seed Rate in Kilograms Per Hectare																									
19.1 cm	0	6.4	12	19	25	31	38	45	51	58	65	72	78	85	91	97	103	109	115	120	125											
	Drive Type: 4						Seed Rate in Kilograms Per Hectare																									
19.1 cm	0	10	20	30	41	51	62	73	84	95	106	117	127	138	148	159	168	178	187	196	204											

32294D

K-31 Fescue (*Festuca*)

	Seed Rate Handle Setting																															
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100											
Rows	Drive Type: 1						Seed Rate in Kilograms Per Hectare																(based on 0.27 kg/litre)									
19.1 cm	0	2.1	3.2	4.5	5.8	7.2	8.6	10	12	13	15	16	17	19	20	21	22	23	24	25	25											
	Drive Type: 2						Seed Rate in Kilograms Per Hectare																									
19.1 cm	0	4.3	6.7	9.2	12	15	18	21	24	27	30	33	36	39	41	44	46	48	50	51	52											
	Drive Type: 3						Seed Rate in Kilograms Per Hectare																									
19.1 cm	0	7.4	10	14	18	22	26	30	35	39	44	48	53	57	61	65	69	72	75	77	79											
	Drive Type: 4						Seed Rate in Kilograms Per Hectare																									
19.1 cm	0	12	17	22	29	35	42	49	57	64	72	79	86	93	100	106	112	118	122	126	129											

32297D

**Flax (*Linum usitatissimum*) or Sudan
(*Sorghum bicolor* subsp. *drummondii*)**

	Seed Rate Handle Setting																															
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100											
Rows	Drive Type: 1						Seed Rate in Kilograms Per Hectare																(based on 0.71 kg/litre)									
19.1 cm	0	5.1	7.6	10	14	17	21	25	29	33	37	41	46	50	54	58	62	66	69	73	76											
	Drive Type: 2						Seed Rate in Kilograms Per Hectare																									
19.1 cm	0	11	16	22	28	35	43	51	59	67	76	85	94	102	111	119	128	135	143	149	155											
	Drive Type: 3						Seed Rate in Kilograms Per Hectare																									
19.1 cm	0	16	24	32	42	52	62	73	85	97	109	121	133	145	156	168	179	190	200	210	219											
	Drive Type: 4						Seed Rate in Kilograms Per Hectare																									
19.1 cm	0	26	39	53	68	85	102	120	138	158	177	197	216	236	255	274	292	310	326	342	356											

32298D

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

Eastern Gamma Grass - Pete
(*Tripsacum dactyloides*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare																
19.1 cm	0	4.3	5.9	7.9	10	13	15	18	21	24	27	30	33	35	38	40	42	44	46	47	48	
	Drive Type: 2					Seed Rate in Kilograms Per Hectare																
19.1 cm	0	8.8	12	16	21	26	31	37	43	49	55	61	67	73	78	83	87	91	94	97	98	

32299D

Kentucky Blue Grass (*Poa pratensis*)

	Seed Rate Handle Setting																														
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100										
Rows	Drive Type: 1						Seed Rate in Kilograms Per Hectare															(based on 0.30 kg/litre)									
19.1 cm	0	5.1	7.6	10	14	17	21	25	29	33	37	41	46	50	54	58	62	66	69	73	76										
	Drive Type: 2						Seed Rate in Kilograms Per Hectare																								
19.1 cm	0	11	16	22	28	35	43	51	59	67	76	85	94	102	111	119	128	135	143	149	155										
	Drive Type: 3						Seed Rate in Kilograms Per Hectare																								
19.1 cm	0	16	24	32	42	52	62	73	85	97	109	121	133	145	156	168	179	190	200	210	219										
	Drive Type: 4						Seed Rate in Kilograms Per Hectare																								
19.1 cm	0	26	39	53	68	85	102	120	138	158	177	197	216	236	255	274	292	310	326	342	356										

32300D

**Millet (*Pennisetum glaucum*, *Setaria italica*,
Panicum miliaceum, *Eleusine coracana*)**

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare (based on 0.77 kg/litre)															
19.1 cm	0	5.3	7.6	10	13	17	20	24	28	31	36	40	44	47	51	55	58	62	65	67	69
	Drive Type: 2					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	11	16	21	27	34	41	49	57	65	73	81	89	98	105	113	120	127	133	138	143
	Drive Type: 3					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	15	23	31	41	51	62	73	85	98	110	122	135	147	158	170	180	190	199	207	214
	Drive Type: 4					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	25	37	51	66	83	101	120	139	159	179	199	219	239	258	277	294	310	325	338	349

32301D

Metric Rate Charts, Main Seed Box, continued...**Milo (*Sorghum*)**

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1				Seed Rate in Kilograms Per Hectare														(based on 0.77 kg/litre)			
19.1 cm	0	5.1	7.9	11	15	20	24	29	34	40	45	51	56	62	67	72	76	80	84	87	90	
	Drive Type: 2				Seed Rate in Kilograms Per Hectare																	
19.1 cm	0	11	16	23	31	40	50	60	71	82	93	104	116	127	137	147	157	165	173	180	185	

32302D

32302D

Oats (*Avena sativa*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1						Seed Rate in Kilograms Per Hectare															(based on 0.48 kg/litre)
19.1 cm	0	2.0	3.4	5.0	6.8	8.8	11	13	15	18	20	22	25	27	29	32	34	36	37	39	40	
	Drive Type: 2						Seed Rate in Kilograms Per Hectare															
19.1 cm	0	4.2	7.0	10	14	18	22	27	32	36	41	46	51	56	61	65	69	73	77	80	83	
	Drive Type: 3						Seed Rate in Kilograms Per Hectare															
19.1 cm	0	7.7	11	15	21	27	33	40	48	56	64	72	79	87	94	101	107	113	118	122	124	
	Drive Type: 4						Seed Rate in Kilograms Per Hectare															
19.1 cm	0	12	18	25	34	43	54	66	78	91	104	117	129	142	154	165	175	184	192	198	203	

32303D

Orchard Grass Potomac (*Dactylis glomerata*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare																(based on 0.23 kg/litre)
19.1 cm	0	1.3	1.7	2.3	3.0	3.8	4.6	5.5	6.5	7.5	8.5	10	11	12	12	13	14	15	16	16	16	
	Drive Type: 2					Seed Rate in Kilograms Per Hectare																
19.1 cm	0	2.6	3.5	4.7	6.1	7.7	9.5	11	13	15	18	20	22	24	26	27	29	31	32	33	34	
	Drive Type: 3					Seed Rate in Kilograms Per Hectare																
19.1 cm	0	3.7	5.1	6.8	8.9	11	14	16	19	22	25	28	31	34	36	39	42	44	46	48	49	
	Drive Type: 4					Seed Rate in Kilograms Per Hectare																
19.1 cm	0	6.1	8.3	11	14	18	22	26	31	36	40	45	50	55	59	64	68	72	75	78	80	

32304D

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

Peas (*Pisum sativum*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare (based on 0.79 kg/litre)															
19.1 cm	0	2.4	5.9	10	14	19	24	29	34	39	44	49	54	59	64	68	72	75	78	80	82
	Drive Type: 2					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	4.9	12	20	29	38	49	59	70	80	91	102	112	122	131	140	148	155	160	165	168
	Drive Type: 3					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	3.6	14	25	37	51	65	79	95	110	125	140	155	169	182	195	206	215	224	230	234
	Drive Type: 4					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	5.9	22	40	61	82	106	130	154	179	204	229	253	276	297	317	335	351	365	375	382

32305D

Pinto Beans (*Phaseolus vulgaris*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare (based on 0.79 kg/litre)															
19.1 cm	0	4.6	7.6	11	15	20	25	30	36	41	47	52	58	63	68	72	76	80	82	84	86
	Drive Type: 2					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	10	16	23	32	41	51	62	73	85	96	108	119	129	139	148	157	164	169	173	176
	Drive Type: 3					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	16	24	35	47	60	75	90	106	123	139	156	172	187	202	215	228	238	247	254	258
	Drive Type: 4					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	26	40	57	76	98	122	147	173	200	227	254	280	305	329	351	371	389	403	414	421

32306D

Rape (*Brassica napus*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare (based on 0.66 kg/litre)															
19.1 cm	0	4.7	7.0	10	12	15	18	21	25	28	32	35	38	42	45	49	52	55	58	61	63
	Drive Type: 2					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	10	14	20	25	31	38	44	51	58	65	72	79	86	93	100	106	113	119	124	130
	Drive Type: 3					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	15	21	27	35	44	53	63	73	84	94	105	116	127	137	147	156	165	173	180	186
	Drive Type: 4					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	24	34	45	57	71	87	102	119	136	154	172	189	206	223	239	255	269	282	293	303

32307D

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

Rice, Long Grain (*Oryza sativa indica*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1																					

32308D

Rice, Short Grain (*Oryza sativa japonica*,
Oryza sativa sinica)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1						Seed Rate in Kilograms Per Hectare (based on 0.55 kg/litre)															
19.1 cm	0	2.8	5.2	7.7	10	13	16	19	22	25	29	32	35	38	40	43	45	48	50	51	53	
	Drive Type: 2						Seed Rate in Kilograms Per Hectare															
19.1 cm	0	5.8	11	16	21	27	33	40	46	52	59	65	71	77	83	88	93	98	102	105	108	
	Drive Type: 3						Seed Rate in Kilograms Per Hectare															
19.1 cm	0	12	18	24	31	39	48	57	67	76	86	96	105	114	123	131	138	144	149	153	155	
	Drive Type: 4						Seed Rate in Kilograms Per Hectare															
19.1 cm	0	20	29	39	51	64	78	93	109	124	140	156	172	186	200	213	225	235	243	249	252	

32309D

Rye (*Secale cereale*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1						Seed Rate in Kilograms Per Hectare (based on 0.73 kg/litre)															
19.1 cm	0	4.3	7.4	11	15	20	25	30	35	41	46	52	57	63	68	73	77	82	85	88	91	
	Drive Type: 2						Seed Rate in Kilograms Per Hectare															
19.1 cm	0	8.8	15	23	31	41	51	61	72	84	95	107	118	129	139	150	159	168	175	182	187	
	Drive Type: 3						Seed Rate in Kilograms Per Hectare															
19.1 cm	0	15	24	35	47	60	75	91	107	124	142	159	177	194	210	226	242	256	269	280	290	
	Drive Type: 4						Seed Rate in Kilograms Per Hectare															
19.1 cm	0	25	39	57	76	99	123	148	175	203	231	259	288	316	343	369	394	417	438	457	473	

32310D

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

Perennial Rye Grass - Palmer
(Lolium perenne, Lolium multiflorum)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare																(based on 0.46 kg/litre)
19.1 cm	0	2.7	4.0	5.5	7.1	8.9	11	13	15	17	19	21	23	25	27	29	30	32	33	34	35	
	Drive Type: 2					Seed Rate in Kilograms Per Hectare																
19.1 cm	0	5.5	8.2	11	15	18	22	26	30	35	39	43	48	52	56	59	63	66	68	71	72	
	Drive Type: 3					Seed Rate in Kilograms Per Hectare																
19.1 cm	0	11	13	17	21	26	32	39	46	53	61	68	75	82	89	95	101	105	109	112	113	
	Drive Type: 4					Seed Rate in Kilograms Per Hectare																
19.1 cm	0	18	22	27	35	43	53	63	75	87	99	111	123	134	145	155	164	171	178	182	184	

32311D

Soybeans (*Glycine max*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare (based on 0.75 kg/litre)															
19.1 cm	0	4.5	7.8	11	16	20	25	29	34	40	45	50	55	59	64	68	72	76	79	81	83
	Drive Type: 2					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	9.3	16	24	32	41	51	61	71	81	92	102	112	122	131	140	148	156	162	167	171
	Drive Type: 3					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	12	23	35	48	61	75	90	104	119	134	149	163	177	191	204	216	228	238	247	255
	Drive Type: 4					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	20	38	57	78	100	123	146	170	194	219	243	266	289	311	333	353	371	388	403	416

32312D

Sunflower (*Helianthus annuus*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare (based on 0.36 kg/litre)																
19.1 cm	0	0.3	1.9	3.5	5.3	7.3	9.3	11	13	16	18	20	22	24	26	28	30	32	33	35	36	
	Drive Type: 2					Seed Rate in Kilograms Per Hectare																
19.1 cm	0	0.7	3.8	7.3	11	15	19	23	28	32	37	41	45	50	54	58	62	65	68	71	74	
	Drive Type: 3					Seed Rate in Kilograms Per Hectare																
19.1 cm	0	2.8	6.1	10	15	20	25	31	37	43	49	56	62	68	74	80	85	90	94	98	101	
	Drive Type: 4					Seed Rate in Kilograms Per Hectare																
19.1 cm	0	4.6	10	16	24	32	41	50	60	70	81	91	101	111	121	130	139	147	154	160	165	

32313D

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

Tiffany Teff, Coated (*Eragrostis tef*)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare (based on 0.84 kg/litre)															
19.1 cm	0	4.5	7.0	10	13	16	20	23	27	31	35	39	44	48	52	57	61	65	69	73	77
	Drive Type: 2					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	9.3	14	20	27	33	41	48	56	64	73	81	90	99	108	116	125	134	142	151	159
	Drive Type: 3					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	14	22	30	40	50	61	72	84	96	109	122	135	148	161	175	188	201	214	226	238
	Drive Type: 4					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	23	35	50	65	82	99	118	137	157	177	198	220	241	263	285	306	327	348	369	388

32314D

Wheat (*Triticum*)

	Seed Rate Handle Setting																					
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare (based on 0.82 kg/litre)																
19.1 cm	0	8.0	10	13	16	20	24	29	34	40	45	51	56	61	67	72	76	80	84	87	89	
	Drive Type: 2					Seed Rate in Kilograms Per Hectare																
19.1 cm	0	16	20	26	33	41	50	60	70	81	92	104	115	126	137	147	157	165	172	179	183	
	Drive Type: 3					Seed Rate in Kilograms Per Hectare																
19.1 cm	0	21	29	38	50	62	76	90	105	121	137	153	168	184	199	213	226	238	249	258	265	
	Drive Type: 4					Seed Rate in Kilograms Per Hectare																
19.1 cm	0	34	47	63	81	101	123	147	172	197	223	249	274	300	324	347	368	388	405	420	432	

32315D

Wheatgrass (*Pascopyrum smithii*,
Agropyron elongatum)

	Seed Rate Handle Setting																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	Drive Type: 1					Seed Rate in Kilograms Per Hectare (based on 0.30 kg/litre)															
19.1 cm	0	1.1	1.9	2.7	3.6	4.5	5.5	6.4	7.4	8.4	9.5	10	11	12	13	14	15	16	17	18	18
	Drive Type: 2					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	2.2	3.8	5.5	7.4	9.3	11	13	15	17	19	22	24	26	28	29	31	33	35	36	37
	Drive Type: 3					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	3.9	6.0	8.3	11	13	16	19	22	25	28	31	35	38	40	43	46	48	51	53	54
	Drive Type: 4					Seed Rate in Kilograms Per Hectare															
19.1 cm	0	6.3	10	14	18	22	27	31	36	41	46	51	56	61	66	70	75	79	83	86	89

32316D

Metric Rate Charts, Small Seeds Box

See page 17 for instructions.

Charts in U.S. customary units begin on page 21.

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 Kilograms per Hectare																				
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

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 Kilograms per Hectare																				
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

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 Kilograms per Hectare																				
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

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 Kilograms per Hectare																				
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

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 Kilograms per Hectare																				
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

Metric 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 Kilograms per Hectare																				
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

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 Kilograms per Hectare																				
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

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 Kilograms per Hectare																				
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

Metric Native Grass Rates

For U.S. customary units, see page 26.

Formulas	Metric Example
Know your Desired seed rate in pounds per acre: <i>TargetRate</i>	Example target seed rate: <i>62 kg per hectare</i>
Choose the number of rows to sample.	Example: <i>3</i>
Weigh the empty sample container(s): <i>ContainerWeight</i>	Example container are three 680 gram buckets: <i>2.04 kg</i>
For a larger sample, we set the Drive Type high.	Suggested calibration Drive Type: <i>4</i>
As there is only minor benefit in changing the final drive sprocket for calibration, we leave it as is.	Example final drive sprocket: <i>18T</i>
Examine the transmission for Standard vs. Seed Rate Reduction/	Example transmission: Rate Reduction not installed: <i>Standard</i>
Operate crank/gauge wheel for one tenth hectare: <i>CalibrationRevs</i>	For this example, a model 606NT: <i>246 revolutions ($\frac{1}{10}^{th}$ of 2459)</i>
Weigh the collected seed plus container(s): <i>GrossWeight</i>	Example: <i>GrossWeight = 6.27</i>
Obtain the net sample weight: $NetSample = GrossWeight - ContainerWeight$	Example: <i>6.27 - 2.04, or: NetSample = 4.23</i>
Determine the net sample weight per cup: $NetPerCup = \frac{NetSample}{SampledRows}$	Example: <i>4.23 ÷ 3, or: NetPerCup = 1.41</i>
Scale the sample to drill-wide: $NetFullWidth = NetPerCup \times 9$	Example: <i>1.41 x 9, or: NetFullWidth = 12.69 pounds</i>
Scale the sample to a full hectare: $NetPerHa = NetFullWidth \times 10$	Example: <i>12.69 x 10, or: NetPerAcre = 126.9</i>
Look up the number of meter shaft revolutions per ha: <i>CalCharRevs</i> for the current Drive Type, final sprocket and transmission configuration.	Example: <i>DT4, 18T and Standard is: 1326 revolutions per ha. CalChartRevs = 1326</i>
Determine the cup rate for this seed mix: $WeightPerRev = \frac{NetPerHa}{CalChartRevs}$	Example: <i>126.9 ÷ 1326, or: WeightPerRev = 0.096</i>
Determine the number of revolutions required for the target field rate weight metered per shaft revolution: $TargetRevs = \frac{TargetRate}{WeightPerRev}$	Example: <i>55 ÷ 0.210, or: TargetRevs = 648</i>
Look up the Drive Type and final sprocket for <i>TargetRevs</i>	Example: Drive Type: 2 Final Sprocket: 15 T

3P605NT and 3P606NT Metric Shaft Rates

These charts are rotations of the meter shaft per hectare, and not seed rate charts. For charts in U.S. customary units, see page 27.

These charts are used during calibration. Once the kg per shaft revolution is known for your seed mix, the charts provide the Transmission, Drive Type, and Final Sprocket required.

3P605NT and 3P606NT Standard Shaft Rates (Metric)

Transmission	Standard: 16 T Driving, 17 T Driven									
Final Sprocket	23 T	22 T	21 T	20 T	19 T	18 T	17 T	16 T	15 T	14 T
Drive Type	Seed Cup Revolutions Per Hectare									
1	202	211	221	232	244	258	273	290	309	331
2	414	433	454	476	501	529	560	596	635	681
3	621	650	681	715	752	794	841	893	953	1021
4	1014	1060	1110	1166	1227	1295	1372	1457	1554	1665

32794E

3P605NT and 3P606NT with Seed Rate Reduction (Metric)

Transmission	Seed Rate Reduction: 12 T Driving, 22 T Driven									
Final Sprocket	23 T	22 T	21 T	20 T	19 T	18 T	17 T	16 T	15 T	14 T
Drive Type	Seed Cup Revolutions Per Hectare									
1	117	122	128	134	141	149	158	168	179	192
2	240	251	263	276	291	307	325	345	368	394
3	360	377	394	414	436	460	487	518	552	592
4	587	614	643	676	711	751	795	845	901	965

32794F

605NT and 606NT Metric Shaft Rates

These charts are rotations of the meter shaft per hectare, and not seed rate charts. For charts in U.S. customary units, see page 28.

These charts are used during calibration. Once the kg per shaft revolution is known for your seed mix, the charts provide the Transmission, Drive Type, and Final Sprocket required.

605NT and 606NT Standard Shaft Rates (Metric)

Transmission	Standard: 16 T Driving, 17 T Driven									
Final Sprocket	23 T	22 T	21 T	20 T	19 T	18 T	17 T	16 T	15 T	14 T
Drive Type	Seed Cup Revolutions Per Hectare									
1	206	216	226	237	250	264	279	297	316	339
2	424	443	465	488	513	542	574	610	650	697
3	636	665	697	732	770	813	861	915	976	1045
4	1038	1085	1137	1194	1256	1326	1404	1492	1591	1705

32794G

605NT and 606NT with Seed Rate Reduction (Metric)

Transmission	Seed Rate Reduction: 12 T Driving, 22 T Driven									
Final Sprocket	23 T	22 T	21 T	20 T	19 T	18 T	17 T	16 T	15 T	14 T
Drive Type	Seed Cup Revolutions Per Hectare									
1	120	125	131	138	145	153	162	172	183	196
2	246	257	269	283	298	314	333	353	377	404
3	369	385	404	424	446	471	499	530	565	606
4	601	629	659	692	728	769	814	865	922	988

32794H

Brome Seed Rates, Metric

For charts in U.S. customary units, see page 31.

3P605NT and 3P606NT Standard Brome Rates

Transmission	Standard: 16 T Driving, 17 T Driven									
Final Sprocket	23 T	22 T	21 T	20 T	19 T	18 T	17 T	16 T	15 T	14 T
Drive Type	Seed Rate in Kilograms Per Hectare (19.1 cm Row Spacing)									
1	14.1	14.8	15.5	16.3	17.0	18.0	19.1	20.3	21.6	23.2
2	29.0	30.4	31.7	33.4	35.1	37.1	39.2	41.7	44.5	47.6
3	43.5	45.5	47.6	50.0	52.7	55.6	58.8	62.5	66.7	71.5
4	70.9	74.2	77.7	81.6	85.9	90.7	95.9	102.0	108.7	116.6

32795C

3P605NT and 3P606NT Reduced Brome Rates

Transmission	Seed Rate Reduction: 12 T Driving, 22 T Driven									
Final Sprocket	23 T	22 T	21 T	20 T	19 T	18 T	17 T	16 T	15 T	14 T
Drive Type	Seed Rate in Kilograms Per Hectare (19.1 cm Row Spacing)									
1	8.2	8.6	9.0	9.4	9.9	10.5	11.0	11.8	12.5	13.4
2	16.8	17.6	18.4	19.4	20.3	21.5	22.7	24.2	25.8	27.6
3	25.2	26.4	27.6	29.0	30.5	32.2	34.1	36.2	38.7	41.4
4	41.1	43.0	45.0	47.3	49.8	52.6	55.6	59.1	63.0	67.6

32795D

Great Plains Manufacturing, Inc.

Corporate Office: P.O. Box 5060
Salina, Kansas 67402-5060 USA
