

Adjusting Planting Depth

NOTE: Closing-wheel down force can affect seed placement and depth. Do not use more force than necessary to close seed furrow, especially in light soils.

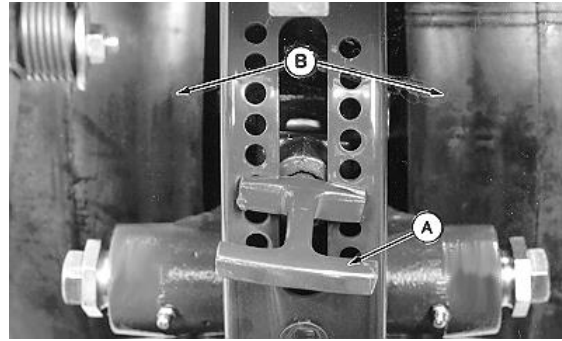
Do not include entire center ridge created by closing wheels as part of seed depth. Loose soil in this ridge serves as mulch.

Planting unit gauge wheels (B) control seed depth. Adjust planting depth as follows:

1. Raise machine to remove weight from unit gauge wheels.
2. Lift depth-adjusting handle (A) and move it forward to decrease planting depth or rearward to increase planting depth. If small increments are desired, "walk" handle from side to side. Each adjusting hole will change planting depth 6 mm (1/4 in.).
3. Adjust all rows to the same setting as a starting point.

NOTE: When operating in the field, lower machine when tractor is moving forward. This will prevent the openers and seed tubes from clogging in moist soil conditions.

4. Lower machine and drive a short distance at normal planting speed. Check planting depth on each row.



A-Depth-Adjusting Handle
B-Gauge Wheels

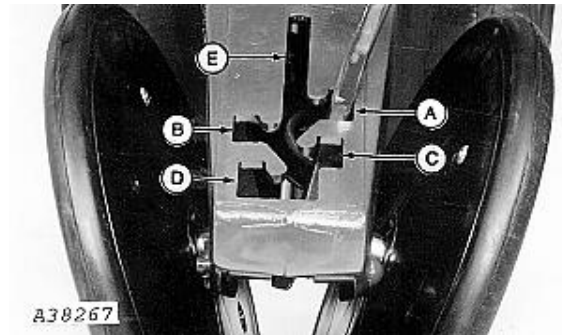
Adjusting Closing Wheel Down Force

Angled closing wheels trail behind seed opener and close the seed trench created by openers. The closing wheels firm soil on each side of seed, not directly over seed. Adjustable spring-force permits proper closing of seed trench.

AG,OUO6074,1203 -19-04AUG00-1/2

Place handle in slots (A), (B), (C) and (D) to adjust down force for varying ground conditions. Placing handle in middle slot (E) will allow closing wheels to FLOAT with only the weight of closing wheel system on soil surface.

- A-Slot A (Minimum)
- B-Slot B
- C-Slot C
- D-Slot D (Maximum)
- E-Slot E (Float)



AG,OUO6074,1203 -19-04AUG00-2/2

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

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

FORMULA:

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

A = Desired row width (centimeters or inches)

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

C = Seed population desired (hectares or acres)

D = Calculated comparison population value

The following example assumes corn will be planted (using vacuum meters with corn-30 cell disks) with planting units set on 71 cm (28 in.) rows and a desired seed population of 69,000 seeds/hectare (28,000 seeds/acre). Using seed chart for corn-30 cells, the

row width nearest the desired row width is 76 cm (30 in.).

EXAMPLES:

- $(71 \text{ cm} \div 76 \text{ cm}) \times 69,000 \text{ seed/ha} = 64,460 \text{ seeds/ha}$

Find population value in Metric chart nearest to calculated comparison population value (65,203 seeds/hectare).

Use the sprocket combinations in the corresponding rows (29-tooth driver and 27-tooth driven) to achieve desired population (69,000 seeds/hectare).

- $(28 \text{ in.} \div 30 \text{ in.}) \times 28,000 \text{ seeds/acre} = 26,133 \text{ seeds/acre}$

Find population value in Standard chart nearest to calculated comparison population value (26,318 seeds/acre).

Use the sprocket combinations in the corresponding rows (29-tooth driver and 27-tooth driven) to achieve desired population (28,000 seeds/acre).

CORN - 30 CELLS

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

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

HIGH RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per M	Approximate Seed Population Per Hectare				Recommended Speed Range in KM/h
			76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	56	236 080	197 166	184 970	175 903	3.2 to 4.8
35	25	58	226 637	189 279	177 571	168 867	3.2 to 4.8
35	26	60	217 920	181 999	170 742	162 372	3.2 to 4.8
35	27	63	209 849	175 259	164 418	156 358	3.2 to 5.6
35	28	65	202 354	168 999	158 546	150 774	3.2 to 5.6
29	24	67	195 609	163 366	153 261	145 748	3.2 to 5.6
29	25	70	187 785	156 831	147 130	139 918	3.2 to 5.6
29	26	73	180 562	150 799	141 472	134 537	3.2 to 6.4
29	27	76	173 875	145 214	136 232	129 554	3.2 to 6.4
29	28	78	167 665	140 028	131 366	124 927	3.2 to 6.4
24	24	81	161 884	135 199	126 837	120 619	3.2 to 7.2
24	25	85	155 408	129 791	121 763	115 794	3.2 to 7.2
24	26	88	149 431	124 799	117 080	111 341	3.2 to 7.2
24	27	91	143 896	120 177	112 744	107 217	3.2 to 8.0
24	28	95	138 757	115 885	108 717	103 388	3.2 to 8.0
20	24	98	134 903	112 666	105 697	100 516	3.2 to 8.8
20	25	102	129 507	108 160	101 469	96 495	3.2 to 8.8
20	26	106	124 526	104 000	97 567	92 784	3.2 to 9.6
20	27	110	119 914	100 148	93 953	89 347	3.2 to 9.6
20	28	114	115 631	96 571	90 598	86 157	3.2 to 10.5
16	24	122	107 922	90 133	84 558	80 413	3.2 to 10.5
16	25	127	103 605	86 528	81 175	77 196	3.2 to 11.2
16	26	132	99 621	83 200	78 053	74 227	3.2 to 11.2
16	27	137	95 931	80 118	75 162	71 478	3.2 to 12.0
16	28	142	92 505	77 257	72 478	68 925	3.2 to 12.9

LOW RANGE INPUT SPROCKET

Sprocket Combinations (Number of Teeth) Driver Driven		Average Seeds Per M	Approximate Seed Population Per Hectare				Recommended Speed Range in KM/h
			76 cm Rows	91 cm Rows	97 cm Rows	102 cm Rows	
35	24	149	88 530	73 937	69 364	65 964	4.8 to 12.9
35	25	155	84 989	70 980	66 589	63 325	4.8 to 12.9
35	26	161	81 720	68 250	64 028	60 889	4.8 to 12.9
35	27	167	78 693	65 722	61 657	58 634	4.8 to 12.9
35	28	173	75 883	63 375	59 455	56 540	4.8 to 12.9
29	24	179	73 353	61 262	57 473	54 656	6.4 to 12.9
29	25	187	70 419	58 812	55 174	52 469	6.4 to 12.9
29	26	194	67 711	56 550	53 052	50 451	6.4 to 12.9
29	27	202	65 203	54 455	51 087	48 583	6.4 to 12.9
29	28	209	62 874	52 510	49 262	46 848	6.4 to 12.9
24	24	217	60 706	50 700	47 564	45 232	6.4 to 12.9
24	25	226	58 278	48 672	45 661	43 423	6.4 to 12.9
24	26	235	56 037	46 800	43 905	41 753	6.4 to 12.9
24	27	244	53 961	45 066	42 279	40 206	6.4 to 12.9
24	28	253	52 034	43 457	40 769	38 770	6.4 to 12.9
20	24	260	50 589	42 250	39 636	37 693	6.4 to 12.9
20	25	271	48 565	40 560	38 051	36 186	6.4 to 12.9
20	26	282	46 697	39 000	36 587	34 794	6.4 to 12.9
20	27	293	44 968	37 555	35 232	33 505	6.4 to 12.9
20	28	303	43 362	36 214	33 974	32 309	6.4 to 12.9
16	24	325	40 471	33 800	31 709	30 155	6.4 to 12.9
16	25	339	38 852	32 448	30 441	28 949	6.4 to 12.9
16	26	352	37 358	31 200	29 270	27 835	6.4 to 12.9
16	27	366	35 974	30 044	28 186	26 804	6.4 to 12.9
16	28	379	34 689	28 971	27 179	25 847	6.4 to 12.9

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

{Decal No. DB1083}

CORN - 30 CELLS

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

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

HIGH RANGE INPUT SPROCKET

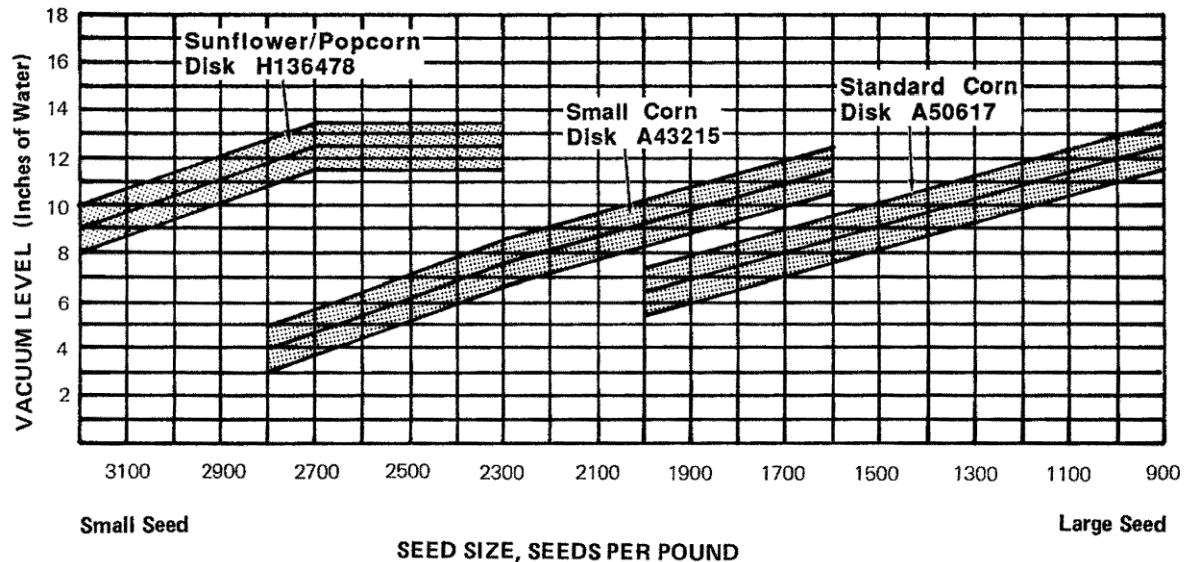
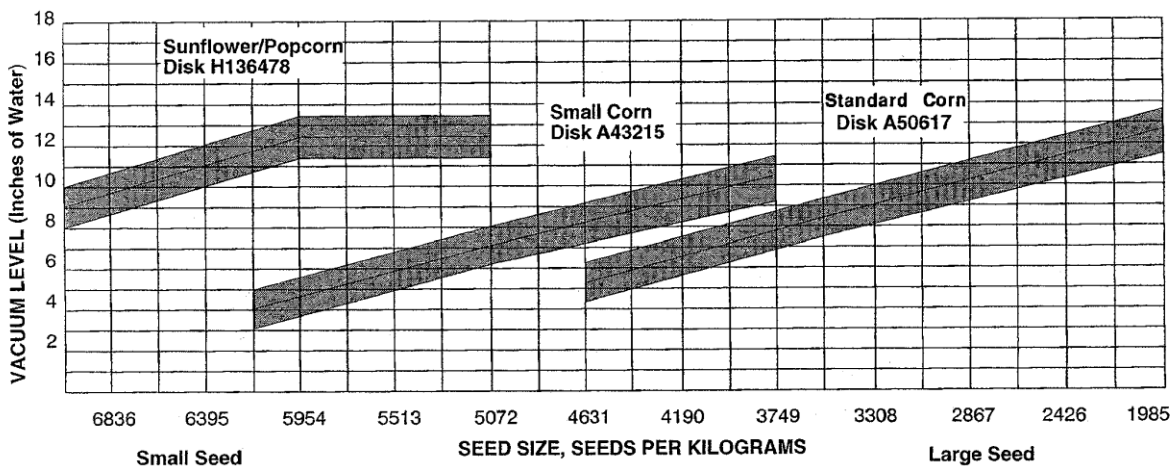
Sprocket Combinations (Number of Teeth) Driver Driven		Average Seed Spacing in in.	Approximate Seed Population Per Acre				Recommended Speed Range in mph
			30 In. Rows	36 In. Rows	38 In. Rows	40 In. Rows	
35	24	2-3/16	95,288	79,406	75,227	71,466	2 to 3
35	25	2-5/16	91,476	76,230	72,218	68,607	2 to 3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

LOW RANGE INPUT SPROCKET

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

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

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

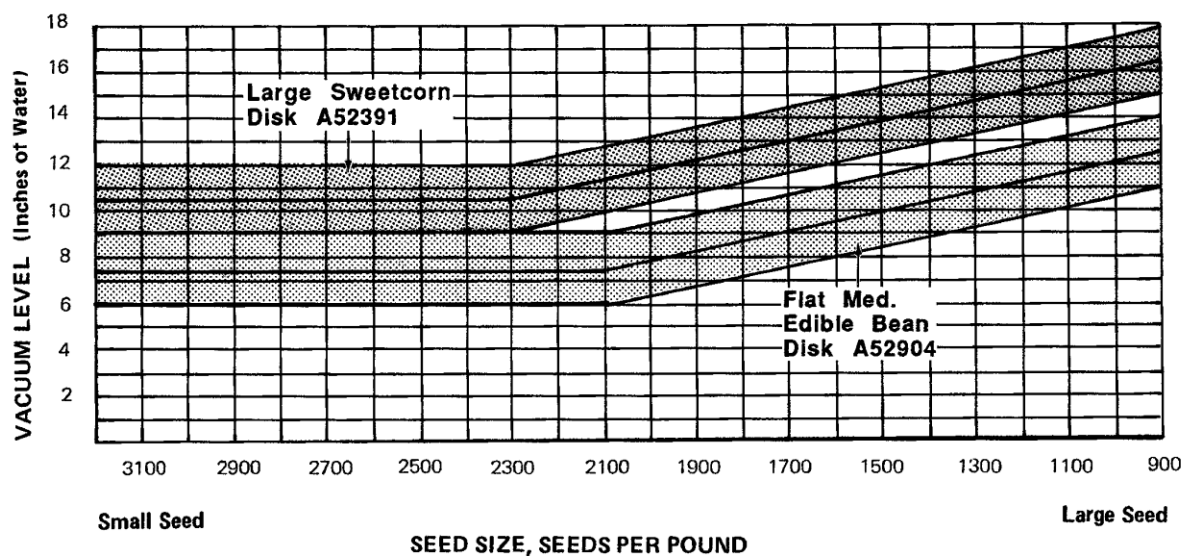
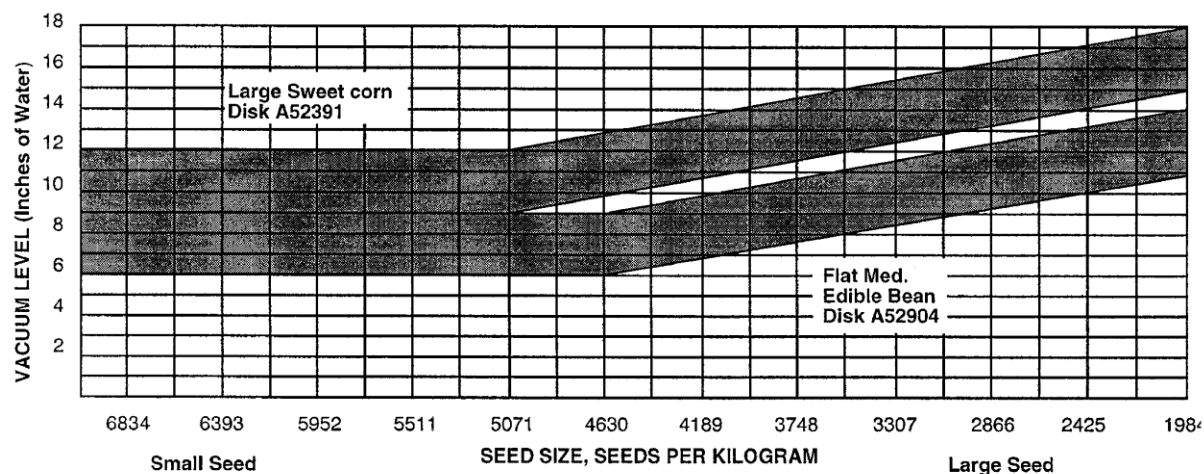


Use seed supplier's information to calculate seed size in seeds/kg or seeds/lb.

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

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

Vacuum Level for Corn Using A52391 or A52904 Seed Disks



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

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

EXAMPLE: If there are 5637 seeds/kg (2556 seeds/lb), according to the chart, vacuum level should be set at 10 in. when using Large Sweet Corn Disk or 7 in. when using Flat Medium Edible-Bean Disk.

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Most corn seed can be planted near 100 percent of desired population when using small corn or standard corn seed disks (WHICH HAVE seeds/kg (1500 seeds/lb) and 7040 seeds/kg (3200 seeds/lb).

SEED CELLS) listed on preceding page and adjusting vacuum level appropriately.

Occasionally, seed spacing can be improved on hillsides and when planting some corn seed which is difficult to singulate with cell-type seed disks, by using a flat-seed disk. Difficult seeds to plant include varieties with mixed sizes, mixed shapes, combinations of sizes and shapes, long and slender seeds, seeds with a sharp point (germ) and others. The flat disk HAS NO SEED CELLS and requires use of a double eliminator and knockout wheel. The double eliminator is used to knock off excess seed while knockout wheel is used to keep vacuum holes free of debris.

Large Sweet Corn Disk and Medium Edible-Bean Disk are two flat-seed disks which can be used for improved seed spacing for seed between 3300

NOTE: Because the Medium Edible-Bean Disk singulates more seeds per revolution than the Large Sweet Corn Disk, it operates at a slower RPM, lower vacuum levels can be used. Being able to use a lower vacuum level can make a difference when having to decide whether one or two vacuum blowers are required.

Because the Large Sweet Corn Disk has 40 holes per revolution and the Medium Edible-Bean Disk has 50 holes per revolution, different knockout wheel assemblies are required. Use knockout wheel AA37348 for Large Sweet Corn Disk and knockout wheel AA38844 for Medium Edible-Bean Disk.

Set seed transmission according to population rate charts for Large Sweet Corn and Flat Edible-Bean Disks.

{Decal No. DB1095}

FINGER PICK-UP

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

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

HIGH RANGE INPUT SPROCKET

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

LOW RANGE INPUT SPROCKET

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

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

Checking Seed Population

NOTE: When planting at a shallow depth with the closing wheels raised, seeds may tend to roll or bounce. This will affect seed spacing accuracy.

1. Attach chain (B) to one or more sets of closing wheels, so seed trench remains open.

2. Set depth-adjusting handle (A) two settings from minimum setting.

3. Plant a short distance and check to see if seeds are visible in trench. Adjust depth-adjusting handle if necessary.

4. Plant approximately 91 m (100 yd).

5. Consult charts and determine what distance equals 1/1000 of a hectare, 1/1000 of an acre or 1/200 of an acre as it relates to the row width being planted.



A-Depth-Adjusting Handle

B-Chain

Distance to Plant for Population Check									
	Row Width Being Planted								
Fraction of Acre	15 in.	18 in.	19 in.	20 in.	22 in.	30 in.	36 in.	38 in.	40 in.
1/1000 if population is more than 100,000 seeds/acre	34.8 ft	24.0 ft	27.6 ft	26.1 ft	23.8 ft	17.4 ft	14.5 ft	13.8 ft	13.1 ft
1/200 if population is less than 100,000 seeds/acre	174 ft	145 ft	138 ft	131 ft	119 ft	87 ft	72.5 ft	69 ft	66 ft

Distance to Plant for Population Check										
	Row Width Being Planted									
Fraction of Hectare	38 cm	46 cm	48 cm	51 cm	56 cm	70 cm	76 cm	91 cm	97 cm	101 cm
1/1000	26.24 m	21.88 m	20.72 m	19.68 m	17.90 m	14.29 m	13.12 m	10.94 m	10.36 m	9.84 m

6. Mark distance selected with flags (A).

NOTE: When planting at a shallow depth with closing wheels raised, seeds may tend to roll or bounce. This will affect seed spacing accuracy.

7. Count seeds (B) between flags.

8. If 1/1000 of an acre was marked off, multiply number of seeds counted by 1000.

If 1/200 of an acre was marked off, multiply number of seeds counted by 200.

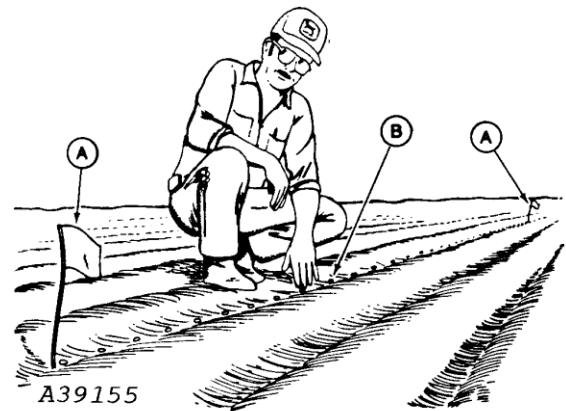
If 1/1000 of a hectare was marked off, multiply number of seeds counted by 1000.

If in-field checks indicate that machine is planting at a rate significantly different than seed transmission rate chart indicates, investigate the following in the order listed:

1. Ensure that ALL transmission sprockets are set according to rate chart.
2. Excessive unit bounce can cause low population and reduced spacing control. Increase unit down force or drive slower to reduce excessive unit bounce.
3. Ensure that machine drive-wheel slippage is close to normal. Crop residue, tire inflation pressure, soil conditions and unit down force can cause variations in drive-wheel slippage.

FOR VACUUM METER ONLY:

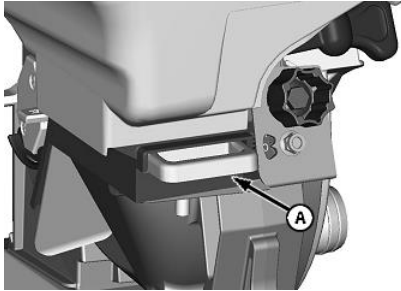
If all other settings are correct and if population is too high, vacuum level can be reduced in one inch increments until correct population is achieved. If actual population is too low, vacuum level can be increased in half inch to one inch increments until correct population is achieved.



A-Flag
B-Seeds

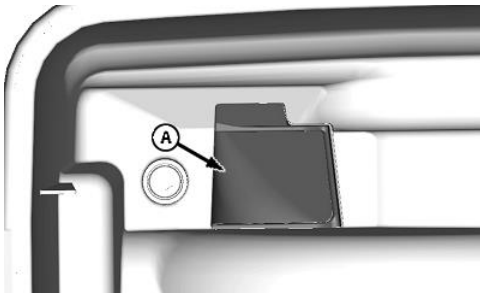
Access The Vacuum Meter

1. NOTE:



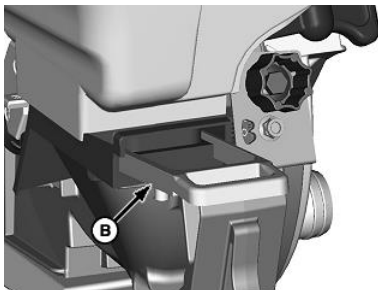
A82646-UN-23MAY14

Open Position



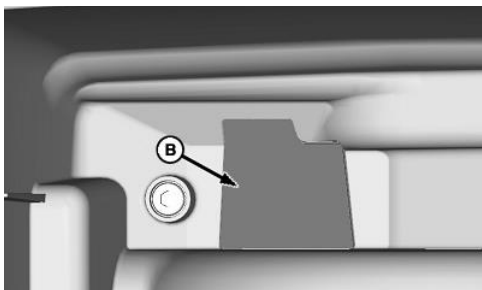
A82647-UN-23MAY14

Open Position



A82648-UN-23MAY14

Closed Position



A82649-UN-23MAY14

Closed Position

A - Gate, Open Position

B - Gate, Closed Position

If planter is equipped with a mini hopper proceed to step 3.

NOTE: If bridging occurs, ensure that handle is open and add more talc to seed.

1.6 and 3 bushel hoppers are equipped with shutoff gates. Move gate to the open position (A) when meter is in use.

-
2. Move gate to closed position (B) before opening meter cover for cleanout or inspection.

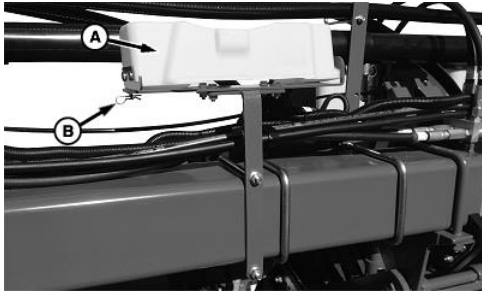


3. A77659-UN-06NOV13

A - Vacuum Hose

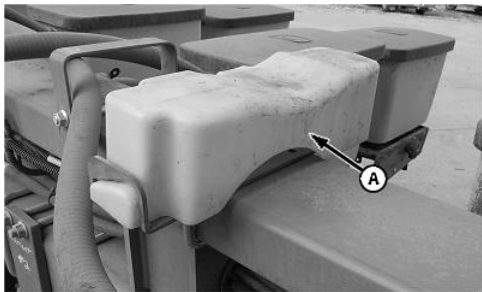
Remove vacuum hose (A) from metering unit.

4. NOTE: Storage brackets have different locations on each planter.



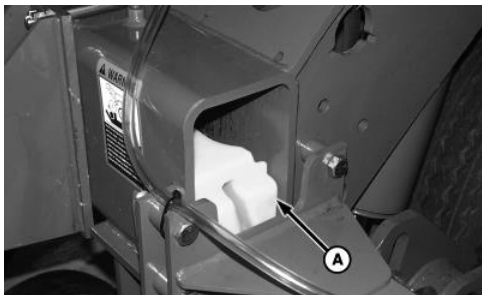
A82677-UN-29MAY14

Example On a Frame



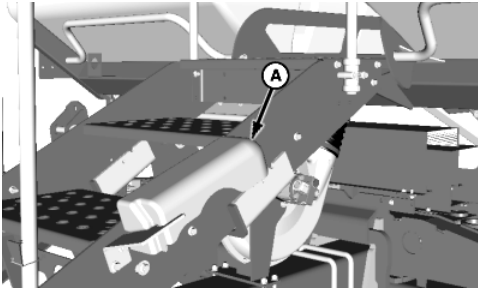
A82663-UN-29MAY14

Example On a Frame



A51029-UN-07NOV02

Example Inside a Frame



A50099-UN-04SEP02

Example On a Ladder

A - Catch Pan

B - Spring Pin

Locate catch pan (A).

5. Remove spring pin (B) and catch pan.

6.  CAUTION:

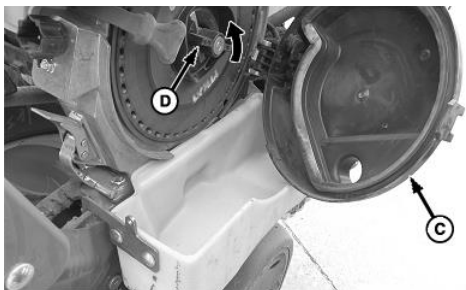


A34471

A34471-UN-11OCT88



A82664-UN-29MAY14



A82665-UN-29MAY14

A - Plastic Edge

B - Hooked Plate

C - Meter Cover

D - Handle

Avoid chemical injury to eyes, skin, or lungs. If using seed treatments, use caution when opening meter domes and handling parts coated with seed treatment. Read and follow safety instructions on the chemical treatment label.

Install catch pan onto row unit with plastic edge (A) into position near parallel arms.

-
7. Install hooked plate (B) into indented edge as shown.
 8. Open meter cover (C), rotate handle (D) into unlocked position, and remove seed disk.