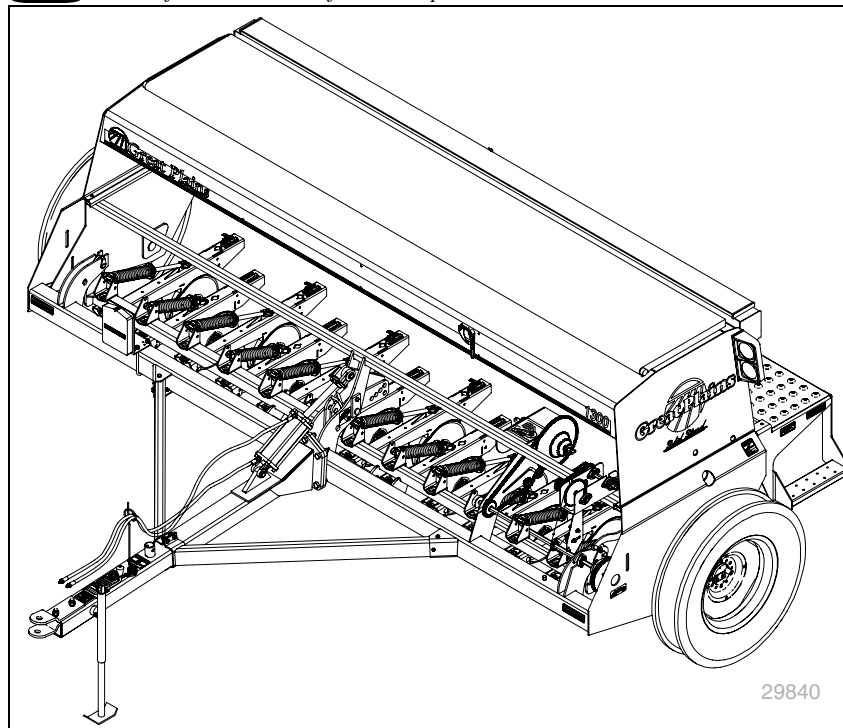


# 1300/1300F End-Wheel Drill

Small-Seeds Kit and Fertilizer Kit



*Read the installation manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!*



ORIGINAL INSTRUCTIONS



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Printed 2017-06-27

175-321M





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## Important Safety Information

### Look for Safety Symbol

The SAFETY ALERT SYMBOL indicates there is a potential hazard to personal safety involved and extra safety precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. In addition to design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.



### Be Aware of Signal Words

Signal words designate a degree or level of hazard seriousness.

**DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.



**WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.



**CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



### Prepare for Emergencies

- ▲ *Be prepared if a fire starts*
- ▲ *Keep a first aid kit and fire extinguisher handy.*
- ▲ *Keep emergency numbers for doctor, ambulance, hospital and fire department near phone.*



### Be Familiar with Safety Decals

- ▲ *Read and understand “Safety Decals” in Operator manual.*
- ▲ *Read all instructions noted on the decals.*
- ▲ *Keep decals clean. Replace damaged, faded and illegible decals.*



## Avoid High Pressure Fluids

Escaping fluid under pressure can penetrate the skin, causing serious injury.

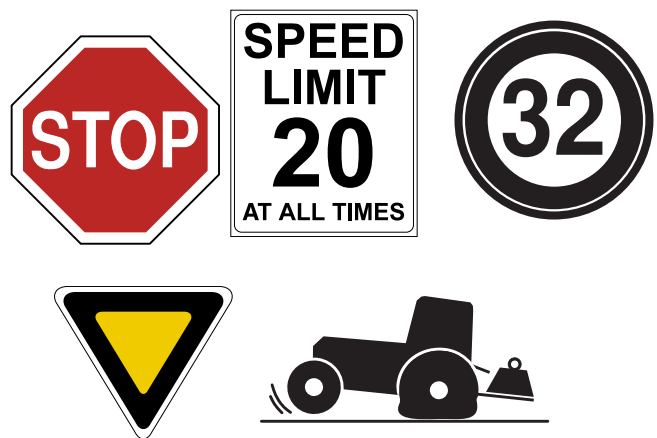
- ▲ *Avoid the hazard by relieving pressure before disconnecting hydraulic lines.*
- ▲ *Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.*
- ▲ *Wear protective gloves and safety glasses or goggles when working with hydraulic systems.*
- ▲ *If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.*



## Transport Machinery Safely

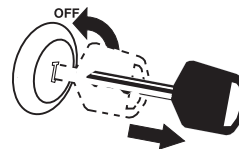
Maximum transport speed for product is 20 mph (32 kph). Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.

- ▲ *Do not exceed 20 mph (32 km/h). Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.*
- ▲ *Comply with state and local laws.*
- ▲ *Do not tow an product unless the towing vehicle is rated for, and ballasted for, the weight of the product.*
- ▲ *Carry reflectors or flags to mark product in case of breakdown on the road.*
- ▲ *Do not fold or unfold the product while the tractor is moving.*



## Practice Safe Maintenance

- ▲ *Understand procedure before doing work. Use proper tools and equipment. Refer to this manual for additional information.*
- ▲ *Work in a clean, dry area.*
- ▲ *Lower the product, put tractor in park, turn off engine, and remove key before performing maintenance.*
- ▲ *Make sure all system pressure is relieved.*
- ▲ *Inspect all parts. Make sure parts are in good condition and installed properly.*
- ▲ *Remove buildup of grease, oil or debris.*
- ▲ *Remove all tools and unused parts from product before operation.*





## Introduction

### Before Getting Started

Before you begin installation of your Small Seeds Attachment and Fertilizer attachments, read these instructions carefully and check that all parts and tools in kit are accounted for. All hand and specialty tools for installation are provided at owner's expense. Please retain these installation instructions for future reference and parts ordering information.

These installation instructions contain information for assembling the Small Seeds Attachment and Fertilizer attachment to the main planter unit. Please read all instructions in your 1300 and 1300F End Wheel Drill operator manual thoroughly before proceeding. Your operator manual includes information on operation, adjustment, troubleshooting, and maintenance for this attachment (some manual sections do not apply to all accessories).

### General Information

The small-seeds kit can be installed on 1300 and 1300F models. The fertilizer kit can be installed on 1300 models.

Reference Number	Small-Seeds and Fertilizer Kits
133-075A	Small-Seeds Kit, 1300 and 1300F, 6 in Row Spacing
133-076A	Small-Seeds Kit, 1300 and 1300F, 7-1/2 in Row Spacing
133-077A	Small-Seeds Kit, 1300 and 1300F, 10 in Row Spacing
175-209A	Fertilizer Kit, 1300, 6 in Row Spacing
175-210A	Fertilizer Kit, 1300, 7-1/2 in Row Spacing
175-211A	Fertilizer Kit, 1300, 10 in Row Spacing

Detailed lists of parts included for both kits. See page 5 for the small-seeds kit parts list. See page 13 for the fertilizer kit parts list. Use these parts lists to inventory parts received.

### Tools Required

General hand tools are required for installation.

Refer to page 23 for torque values chart.

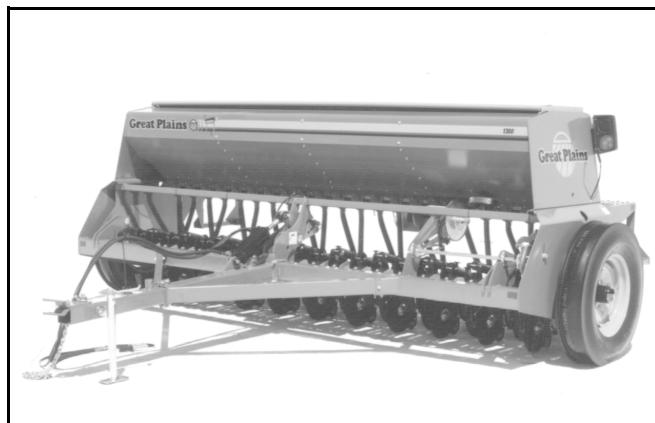


Figure 1  
1300/F End Wheel Drill

16677

### Document Family

All manuals related to this kit are available free of charge by visiting [www.greatplainsag.com](http://www.greatplainsag.com). Have machine model and serial numbers available when looking for the manual you need.

175-157M	1300 and 1300F End Wheel Drill Operator Manual
175-157P	1300 and 1300F End Wheel Drill Parts Manual
175-157B	1300 and 1300F End Wheel Drill Seed Rate Manual

## Using This Manual

This manual was written to help you install and prepare your new kit. The manual includes instructions for installation and setup. Read this manual and follow the recommendations for safe, efficient, and proper assembly and setup.

Read and understand “Important Safety Information” and “Operating Instructions” in the operator’s manual before installing your new kit. As a reference, keep the operator’s manual on hand while installing.

The information in this manual is current at printing. Some parts may change to assure top performance.

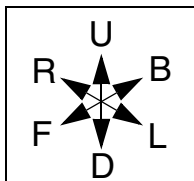
Use this kit only in conjunction with a Great Plains implement.

### NOTICE

*The notice signal word indicates a crucial point of information related to the current topic. Read and follow the directions to remain safe, avoid serious damage to equipment and ensure desired field results.*

## Right-Hand and Left-Hand

Right-hand and left-hand as used in this manual are determined by facing the direction the machine will travel. An orientation rose in some line art illustrations shows the directions of: Up, Back, Left, Down, Front, Right.



## Further Assistance

Great Plains Manufacturing, Inc. and your Great Plains dealer want you to be satisfied with your new product. If for any reason you do not understand any part of this manual or are otherwise dissatisfied, please take the following actions first:

1. Discuss the matter with your dealership service manager. Make sure they are aware of any problems so they can assist you.
2. If you are still unsatisfied, seek out the owner or general manager of the dealership.

If your dealer is unable to resolve the problem or the issue is parts related, please contact:

**Great Plains Service Department**  
**1525 E. North St.**  
**P.O. Box 5060**  
**Salina, KS 67402-5060**

Or go to [www.greatplainsag.com](http://www.greatplainsag.com) and follow the contact information at the bottom of your screen for our service department.

## Callouts

(1) to (9)	Single-digit callouts identify components in the currently referenced Figure.
(11) and up	Two-digit callouts in the range 11 to 46 reference new parts from the list on page 5.





## Small Seeds Kit Installation

### Kit Contents

Callouts	Part Number	Part Description	Qty.
11	123-491D	HANDLE MOUNT L-H CHAIN GUARD	1
12	123-492D	HANDLE MOUNT RH CHAIN GUARD	1
13	123-939H	SMALL SEEDS TUBE WELDMENT	(6 IN) 26, (7.5 IN) 21, (10 IN) 16
14	133-070K	1300 SMALL SEEDS MOUNT L-H ASSEMBLY	1
15	133-071K	1300 SMALL SEEDS IDLER MOUNT ASSEMBLY	1
16	803-020C	NUT HEX 1/2-13 PLT	6
17	133-066H	1300 SMALL SEEDS BOX MOUNT R-H	1
18	133-067K	1300 SMALL SEEDS BOX ASSEMBLY, 6 IN SPACING	1
19	133-068K	1300 SMALL SEEDS BOX ASSEMBLY, 7.5 IN SPACING	1
20	133-069K	1300 SMALL SEEDS BOX ASSEMBLY, 10 IN SPACING	1
21	133-128H	SIDE DELIVERY TUBE	(6 IN) 26, (7.5 IN) 21, (10 IN) 16
22	136-030D	CHAIN RL #40 254 PITCHES	1
23	136-036D	CHAIN RL #40 70 PITCHES	1
24	171-059D	3/16 LIGHT PLATE MIN TILL	
25	800-321C	HOSE CLAMP NO. 12 3/4 ID	(6 IN) 52, (7.5 IN) 42, (10 IN) 32
26	801-002C	SCREW HEX SLOTTED 10-16x1/2 P. THD CT	(6 IN) 52, (7.5 IN) 42, (10 IN) 32
27	802-004C	HHCS 1/4-20X3/4 GR5	
28	802-034C	HHCS 1/2-13X1-1/4 GR5	4
29	802-258C	HHCS 1/2-13X1 GR5	4
30	802-388C	HFS 3/8-16X1 GR5	4
31	802-427C	HHCS 3/8-16X3-5/8	(6 IN) 26, (7.5 IN) 21, (10 IN) 16
32	803-006C	NUT HEX 1/4-20 PLT	
33	803-014C	NUT HEX 3/8-16 PLT	4
34	803-020C	NUT HEX 1/2-13 PLT	
35	803-169C	NUT HEX FLANGE LOCK 1/2-13 PLT.	4
36	803-209C	NUT 3/8	(6 IN) 26, (7.5 IN) 21, (10 IN) 16
37	804-006C	WASHER LOCK SPRING 1/4 PLT	
38	804-013C	WASHER LOCK SPRING 3/8 PLT	4
39	804-015C	WASHER LOCK SPRING 1/2 PLT	6
40	804-016C	WASHER FLAT 1/2 SAE PLT	4
41	804-075C	WASHER FLAT 1/4 USS PLT	
42	806-005C	U-BOLT 1/2-13X2X3 GR5	1
43	808-270C	SPROCKET 40B18 7/8 HEX W/2SS	1
44	816-358C	SGS HOSE 122 RIBS	(6 IN) 26, (7.5 IN) 21, (10 IN) 16
45	818-518C	DECAL MOVING CHAIN DANGER	1
46	838-467C	DECAL SMALL SEEDS DANGER	1

## Remove Handles and Lights

### For S/N CC2976-

**Refer to Figure 2 and Figure 3.**

1. Disconnect the lights from the machine wiring harness.
2. On the left and right sides of the machine, remove the hex flange bolts (1) and hex flange nuts (2) to remove handles (3) and light bracket (4) and light (5) assemblies. Keep the parts and hardware for later installation.



**NOTE:**

Do not disassemble the light bracket and lights.

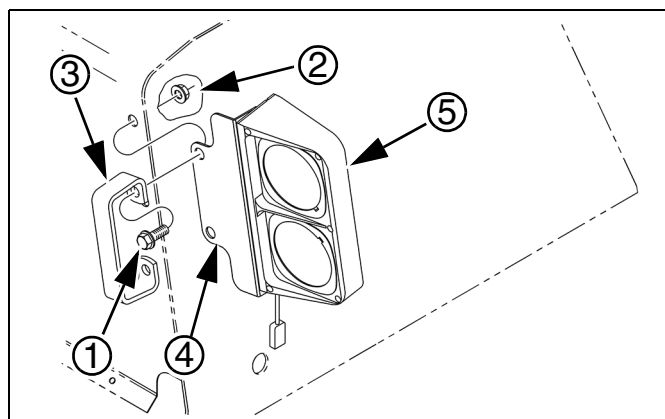


Figure 2:  
Handles and Lights  
S/N CC2976-

68387A

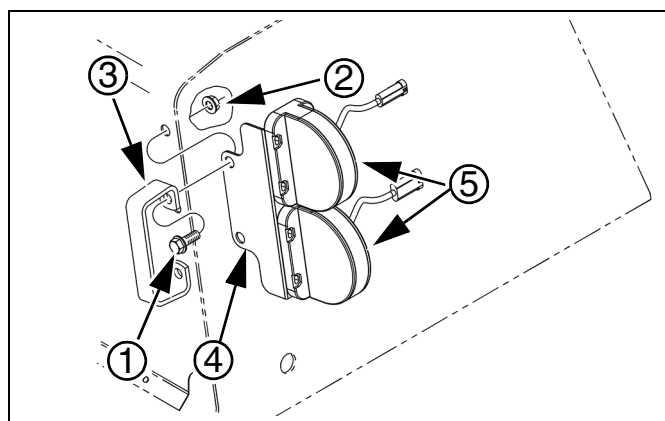


Figure 3:  
Handles and Lights  
S/N CC2495-CC2976

68387A

### For S/N CC2977+

**Refer to Figure 4.**

3. Disconnect the lights from the machine wiring harness.
4. On the left and right sides of the machine, remove the hex flange bolts (1) and hex flange nuts (2) to remove handles (3), spacers (4), and light bracket (5) and amber LED light (6) assemblies. Keep the parts and hardware for later installation.



**NOTE:**

Do not disassemble the light bracket and lights.

5. Remove the two screws (7) and red LED light (8). Keep the parts and hardware for later installation.

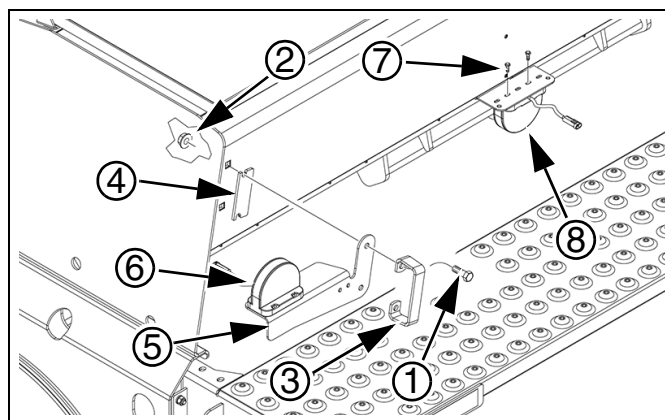


Figure 4:  
Handles and Lights  
S/N CC2977+

68387

## Install Light Plate Extension

### For S/N CC2977+

#### *Refer to Figure 5.*

6. Install a light plate extension (24) to the existing left light bracket (1). Secure with two bolts (27), flat washers (41), lock washers (37), and nuts (32).

The light plate extension may need to be adjusted to fit with the hose layout of the small seeds box. Use the necessary combination of holes on the bracket and plate.

**NOTE:**

The red LED lights, when installed, should not be more than 5 feet apart.

Repeat step 6 for the right light bracket.

**NOTE:**

Do not re-install the lights at this time. They will be installed after the small seeds box is mounted.

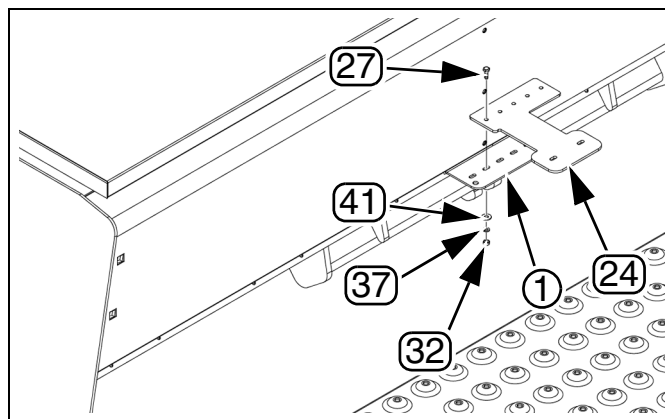


Figure 5:  
Light Plate Extension

68387E

## Small Seeds Box Installation

### Refer to Figure 7.

1. Align the hole (1) in the left-hand box mount (14) with the top handle mounting hole (1) in main seed box. Loosely install a 1/2-13x1-1/4 inch bolt (28) and flange lock nut (35).
2. At the bottom of the left-hand box mount, loosely install two 1/2-13x1 inch bolts (29), flat washers (40), lock washers (81), and nuts (35).
3. Align the hole in the right-hand box mount (17) with the top handle mounting hole (1) in main seed box. Loosely install a bolt (28) and flange lock nut (35).
4. At the bottom of the right-hand box mount, loosely install two 1/2-13x1 inch bolts (29), flat washers (40), lock washers (39), and nuts (35).
5. Put the small-seeds box (18), (19), or (20) in position on the box mounts.
6. At the top of the small seeds box, loosely install a 3/8-16x1 inch bolt (30), lock washer (38), and nut (33) on each side.
7. Tighten all hardware.
8. Install the small seeds danger decal (46) to the underside of the small-seeds box lid.

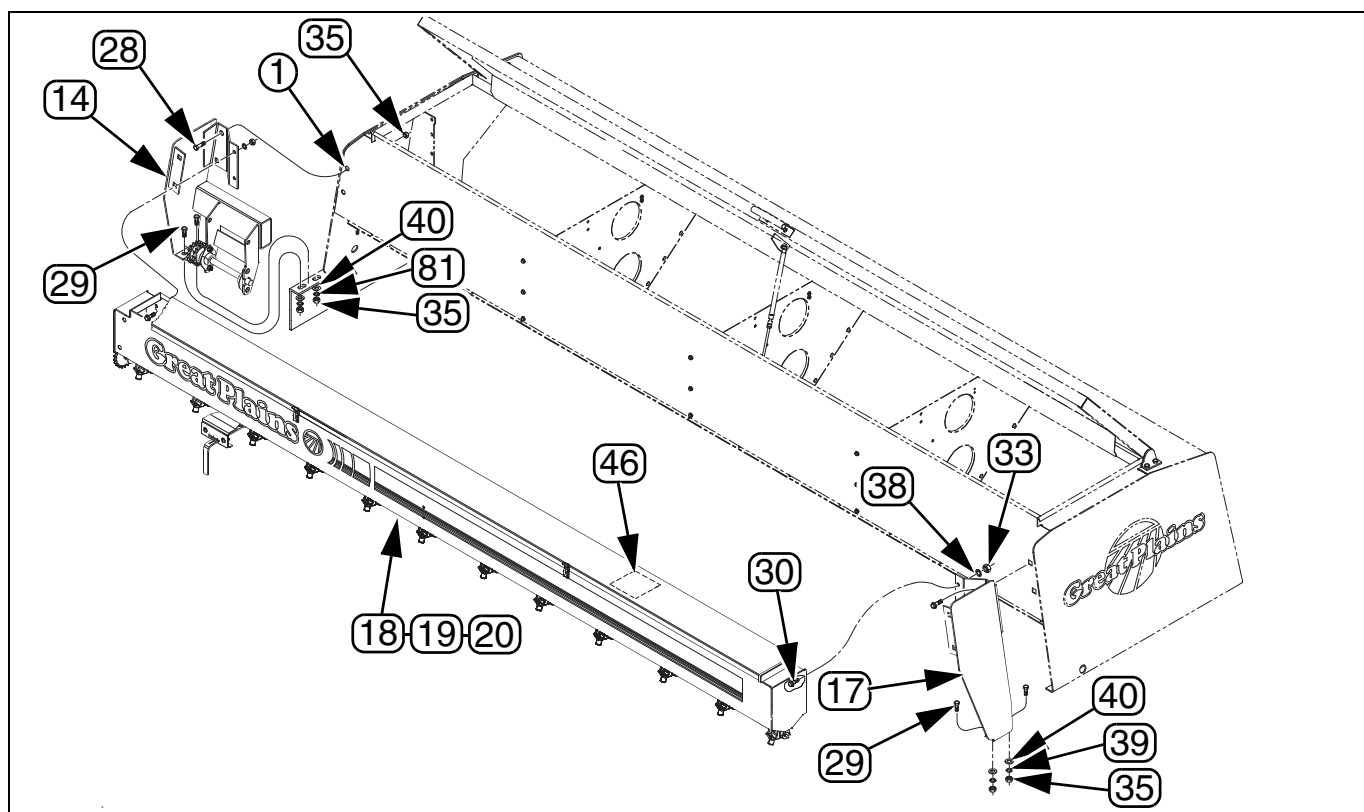


Figure 6  
Small Seeds Box Installation

36980

## Drive Installation

**Refer to Figure 7, Figure 8, and Figure 9.**

1. Mount the idler assembly (15) on drill frame (1) using 1/2-13x2x3 inch U-bolts (42) lock washers (39), and nuts (34). Position the idler assembly on drill frame at the dimensions shown in Figure 7.
2. Install and align the sprocket (43).
3. Route long chain (22) and the short (23) chain over sprockets as shown in Figure 8 and Figure 9.

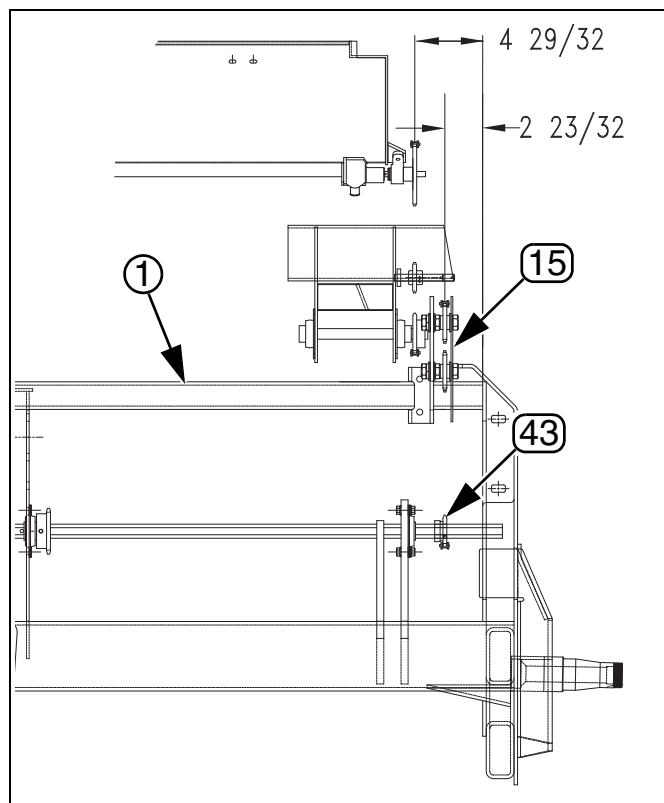


Figure 7  
Front Drive, Front View

17185

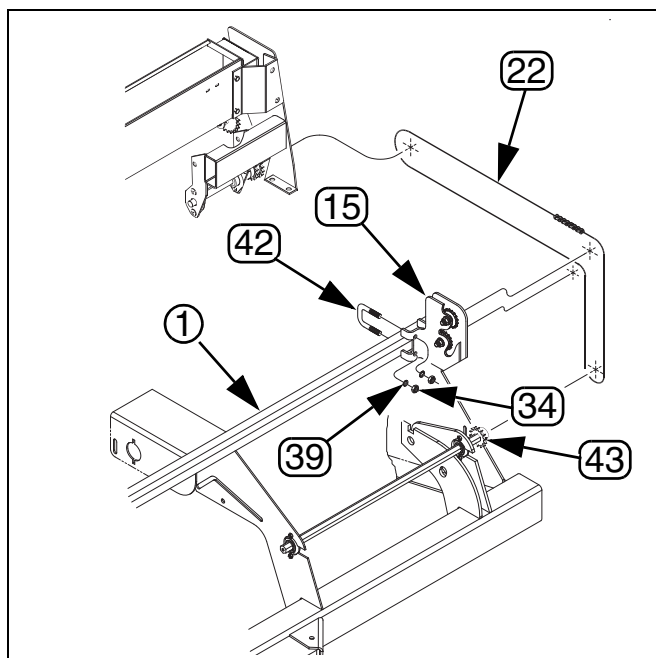


Figure 8  
Front Drive

17181

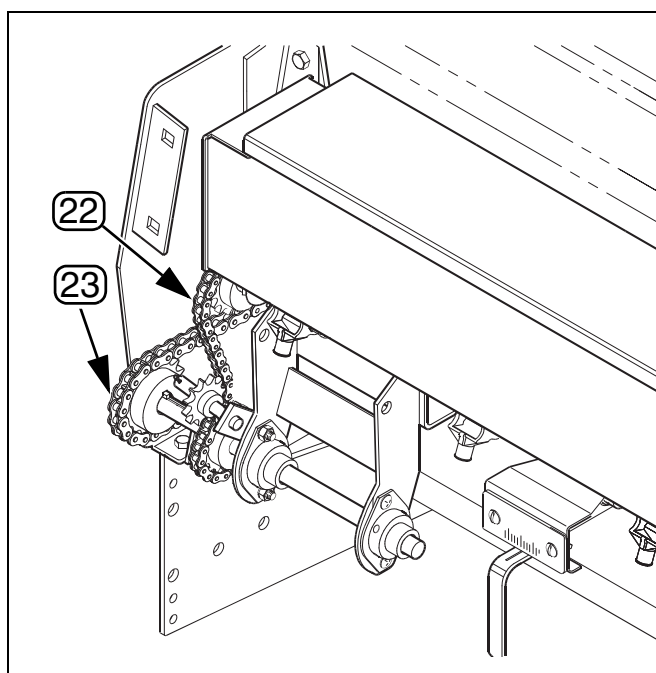


Figure 9  
Rear Drive, Rear View

17180

## Guards, Lights, and Handle Installation

### For S/N CC2976-

#### **Refer to Figure 10.**

1. Install the left-hand guard (11) onto the left-hand box mount (14). Install the light bracket and light assembly (1), then the handle (2). Secure with the hardware removed earlier.
2. Install the moving chain decal (45) on the left-hand chain guard as shown.

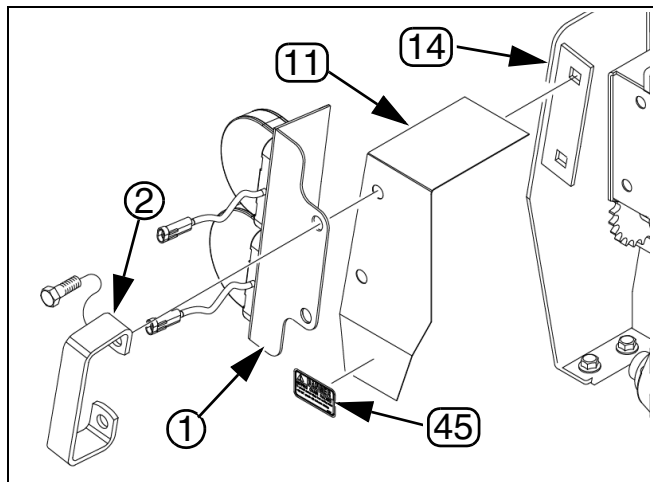


Figure 10  
Left-Hand Guard, Lights, and  
Handle Installation

68387D

#### **Refer to Figure 11.**

3. Install the right-hand guard (12), onto the right-hand box mount (17). Install the light bracket and light assembly (1), then the handle (2). Secure with the hardware removed earlier.
4. Connect the lights to the machine wiring harness and make sure the lights work correctly.

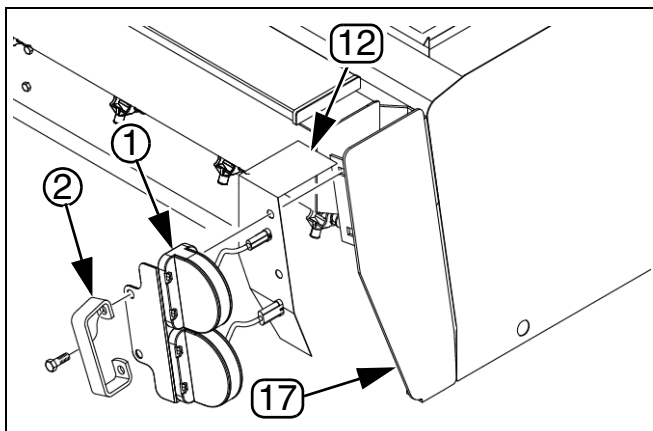


Figure 11  
Right-Hand Guard, Lights, and  
Handle Installation

68387C

**For S/N CC2977+****Refer to Figure 12.**

1. Install the left-hand guard (11), spacer (1), light bracket and amber light assembly (2), and handle (3) to the left-hand box mount (14). Secure with the hardware removed earlier.
2. Adjust the light plate extension (24) to fit the small seeds hose layout, if necessary, and install the red LED light (4) with the hardware removed earlier.

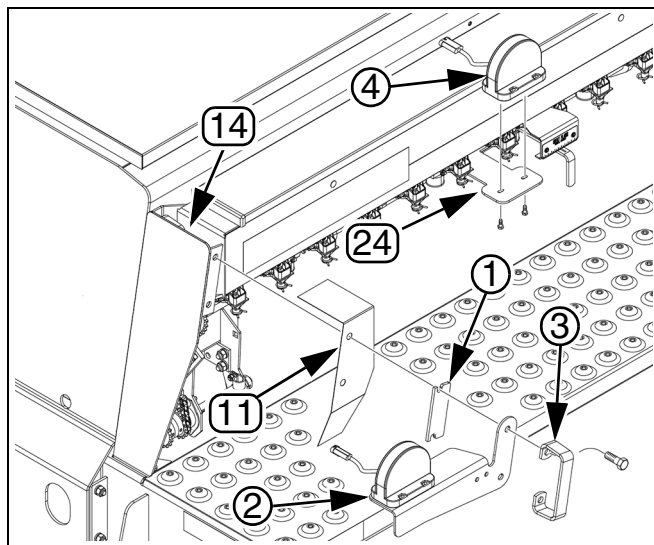


Figure 12  
Left-Hand Guard, Lights, and  
Handle Installation

68387F

**Refer to Figure 12.**

3. Install the right-hand guard (12), spacer (1), light bracket and amber light assembly (2), and handle (3) to the right-hand box mount (17). Secure with the hardware removed earlier.
4. Adjust the light plate extension (24) to fit the small seeds hose layout, if necessary, and install the red LED light (4) with the hardware removed earlier.
5. Connect the lights to the machine wiring harness and make sure the lights work correctly.

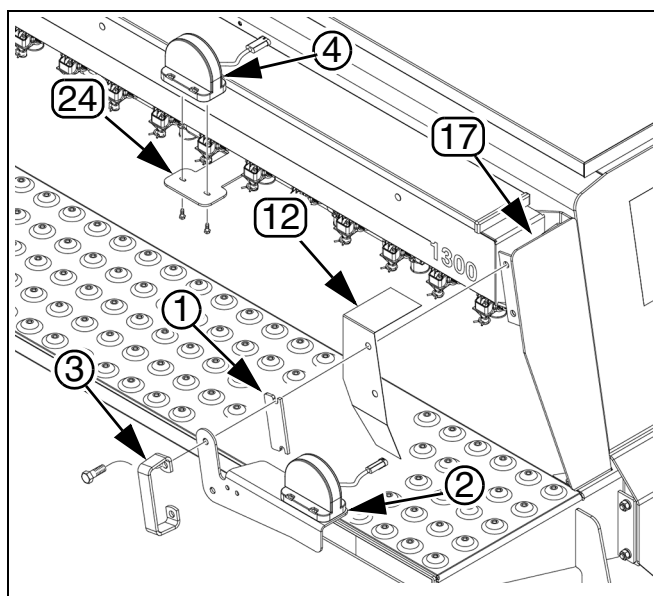


Figure 13  
Right-Hand Guard, Lights, and  
Handle Installation

68387F

## Seed Tube Installation

### Drills Without a Fertilizer Kit

**NOTE:**

For drills without a fertilizer kit use seed tube P/N 123-939H and use the following instructions.

**Refer to Figure 14.**

1. Insert the seed tube (13) into the hole on the top of the opener. Secure in place with a 10-16 x 1/2 inch screw (26).
2. Slide a hose clamp (25) over the seed hose (44). Slide the end of the seed hose over the seed tube and secure seed hose in place with the hose clamp.
3. Slide another hose clamp (25) over the other end of the seed hose (44). Slide the seed hose over the seed outlet which corresponds with the appropriate opener. Secure seed hose in place with the hose clamp.

Repeat the above steps to install the rest of the seed tubes and hoses.

### Drills With a Fertilizer Kit

**NOTE:**

For drills with a fertilizer kit use seed tube P/N 133-128H and use the following instructions.

**Refer to Figure 14.**

4. Set the side delivery (21) down over the top of the opener directly in front of the fertilizer tube. Line up the holes with the holes in the opener. Insert the 3/8-16x3-5/8 bolt (31) and secure bolt with a 3/8 inch lock nut (36).
5. Slide a hose clamp (25) over the hose (44). Slide the end of the hose over the seed tube on side delivery. Secure hose in place with the hose clamp.
6. Slide a hose clamp (25) over the other end of the hose. Slide the hose over the seed outlet which corresponds with the appropriate opener. Secure hose in place with the hose clamp.

Repeat the above steps to install the rest of the seed tubes and hoses.

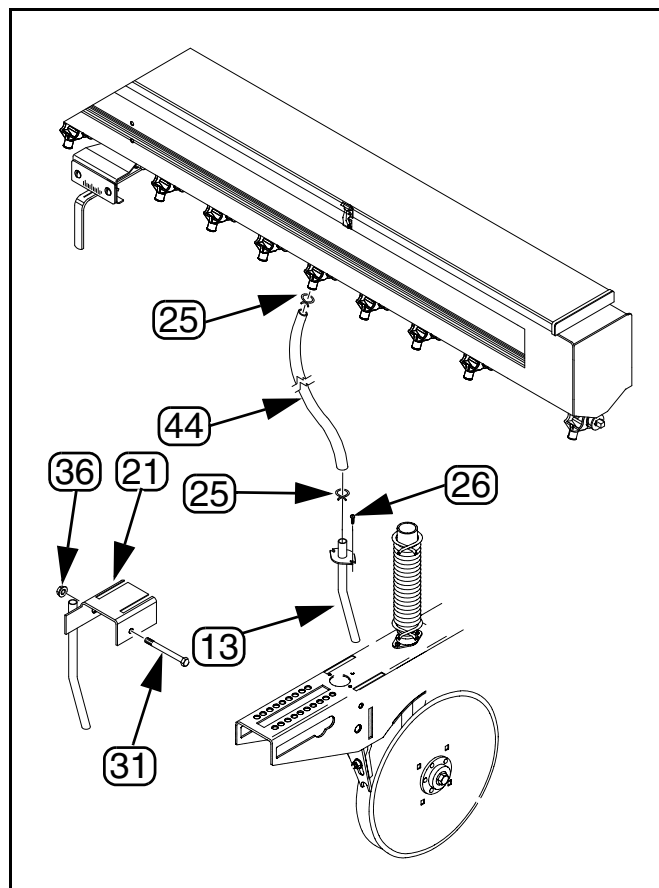


Figure 14  
Seed Tubes

20101





## Fertilizer Attachment Installation

### Kit Contents

Callouts	Part Number	Part Description	Qty.
47	133-065D	SMALL SDS TB REINFORCEMENT RING	(6 IN) 26, (7.5 IN) 21, (10 IN) 16
48	136-031D	CHAIN ROLLER #40 90 PITCHES	1
49	136-033D	CHAIN ROLLER #40 125 PITCHES	1
50	175-186K	1300 FERT DRIVE SUB ASSY	1
51	175-187K	1300 FERT TRAY ASSEMBLY, 6 INCH	1
52	175-188K	1300 FERT TRAY ASSEMBLY, 7 INCH	1
53	175-189K	1300 FERT TRAY ASSEMBLY, 10 INCH	1
54	175-190S	1300 SPILL FLAP SUB ASSEMBLY	1
55	175-191S	1300 SEED/FERT FLAP SUB ASSY	1
56	175-327D	1300 HINGE CLAMP STRIP END	2
57	195-181H	DIVIDER BOTTOM BRACKET CENTER	2
58	195-182H	DIVIDER BOTTOM BRACKET L-H	1
59	195-183H	DIVIDER BOTTOM BRACKET R-H	1
60	195-194D	DIVIDER CLIP, END MOUNTED	4
61	195-197D	HINGE CLAMP STRIP CENTER	2
62	195-205D	DIVIDER ANGLE BRACKET	6
63	195-206D	DIVIDER CLIP INNER	6
64	195-207D	DIVIDER CLIP OUTER	6
65	195-208D	RETAINER CLIP	12
66	800-008C	CLAMP HOSE 1-1/2 NO. 24	(6 IN) 26, (7.5 IN) 21, (10 IN) 16
67	800-009C	CLAMP HOSE 1-5/8 NO. 26	(6 IN) 26, (7.5 IN) 21, (10 IN) 16
68	801-002C	SCREW HEX SLT10-16X1/2 P. THD CT	(6 IN) 52, (7.5 IN) 42, (10 IN) 32
69	802-005C	HHCS 1/4-20X1 GR5	12
70	802-017C	HHCS 3/8-16X1 GR5	8
71	802-196C	HFSS 1/4-20X5/8 GR5	19
72	802-375C	HFSS 1/4-20X1 GR5	22
73	802-387C	HFS 5/16-18X3/4 GR5	12
74	802-442C	HFSS 5/16-18X1-1/4 GR5	21
75	803-007C	NUT LOCK 1/4-20 PLT	12
76	803-011C	NUT LOCK 5/16-18 PLT	6
77	803-020C	NUT HEX 1/2-13 PLT	4
78	803-088C	NUT HEX LOCK 1/4-20 FLG	41
79	803-199C	NUT HEX FLANGE 5/16-18 PLT	33
80	803-209C	NUT FLANGE LOCK 3/8-16 PLT	8
81	804-015C	WASHER LOCK SPRING 1/2 PLT	4
82	806-005C	U-BOLT 1/2-13 X 2 X 3 GR5	2
83	808-143C	SPROCKET 40B12 7/8 HEX BORE W/SS	1

Callouts	Part Number	Part Description	Qty.
84	816-007C	SEED HOSE X 59 RIBS 1.5-1.25	(6 IN) 26, (7.5 IN) 21, (10 IN) 16
85	817-321C	DIVIDER INSERT 33 X NO OFFSET	4
86	817-324C	KNOB 1/4-20 FEMALE THREAD	12
87	817-346C	PLASTIC FERTILIZER TUBE	(6 IN) 26, (7.5 IN) 21, (10 IN) 16
88	818-837C	DECAL FERTILIZER RATE 13' EW	1
89	818-838C	DECAL FERT CHAIN ROUTE 13'EW	1
90	890-179B	SILICON 35 YR CLEAR 10 OZ	1
91	890-308C	9 1/4-15 X 70LB GASS SPRING	3

## Divider Installation

### Refer to Figure 15

1. Replace gas spring (1) on all partitions one at a time.  
Remove and discard the gas spring. Remove and discard the ball studs (2) and lock nuts (3).
2. Install a new gas spring (91) to the seed box lid and the partition. Use the new ball studs provided with the gas cylinder and two 5/16-18 lock nut (76).



#### NOTE:

The rod end of the gas spring must be down.

3. Repeat procedure to replace remaining gas springs.

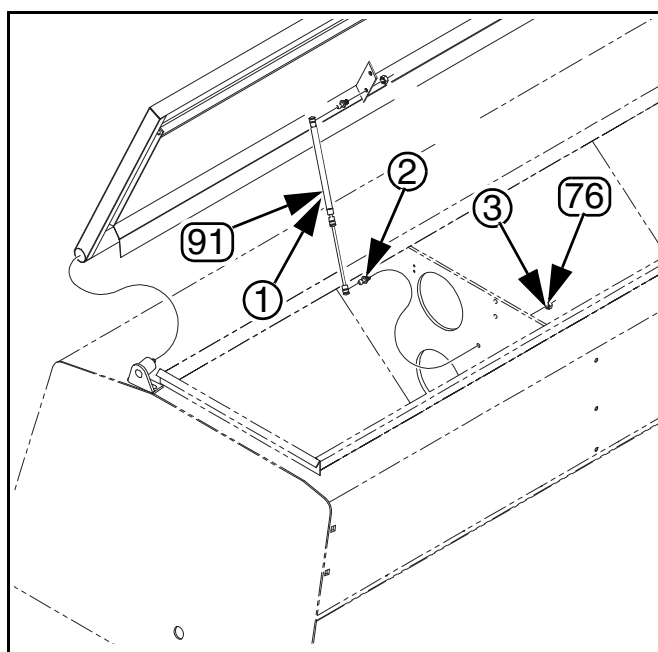


Figure 15  
Gas Springs

23411

**Refer to Figure 16**

4. Install a set of inner divider clips (63) and outer divider clips (64) on both sides of each box partition (1). Use 5/16-18 x 1 1/4 bolts (74) and 5/16-18 hex nuts (79) to fasten the divider clips to the partitions. Leave the bolts loose.
5. Attach a divider angle bracket (62) to each side of each partition (1) using 5/16-18 x 1 1/4 bolts (74) and 5/16-18 hex nuts (79).

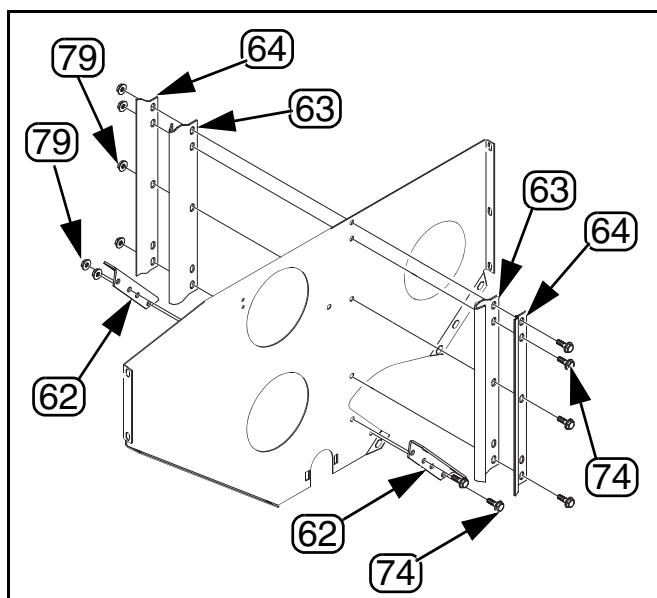


Figure 16  
Divider Clips

23407

**Refer to Figure 17**

6. Fasten the two end mounted divider clips (60) to each end of the main seed box (1). Use 5/16-18 x 3/4 bolts (73) and 5/16-18 hex nuts (79). Leave bolts loose.

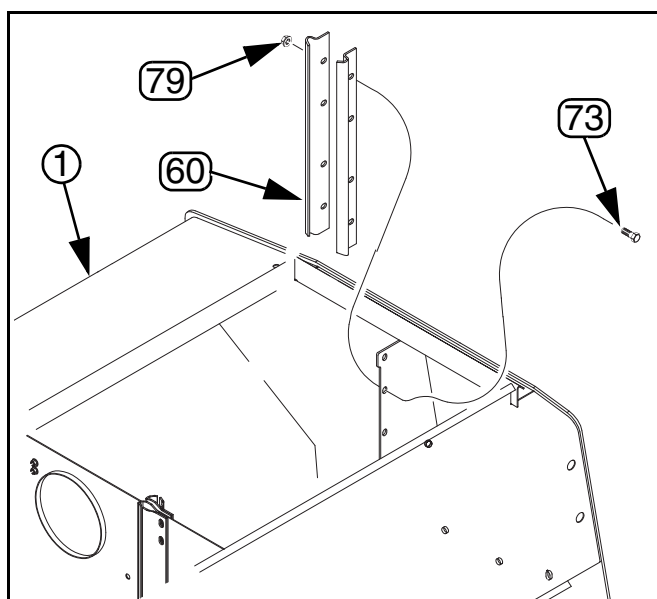


Figure 17  
Divider Clips

23408

**Refer to Figure 18**

7. Attach knobs (86) and retaining clips (65) to bottom divider brackets (58), (57), and (59) using 1/4-20 x 1 bolts (69) and 1/4-20 hex lock nuts (75).
8. Place left-hand bottom divider bracket (58) in box on left-hand side of drill. Secure left-hand bottom divider bracket to partition and box using 3/8-16 x 1 bolts (70) and 3/8-16 flange lock nuts (80).
9. Place center bottom divider brackets (57) in box in center of drill. Secure center bottom divider brackets to partitions using 3/8-16 x 1 bolts (70) and 3/8-16 lock nuts (80).
10. Place right-hand bottom divider bracket (59) in box on right-hand side of drill. Secure right-hand bottom divider bracket to partition and box using 3/8-16 x 1 bolts (70) and 3/8-16 lock nuts (80).

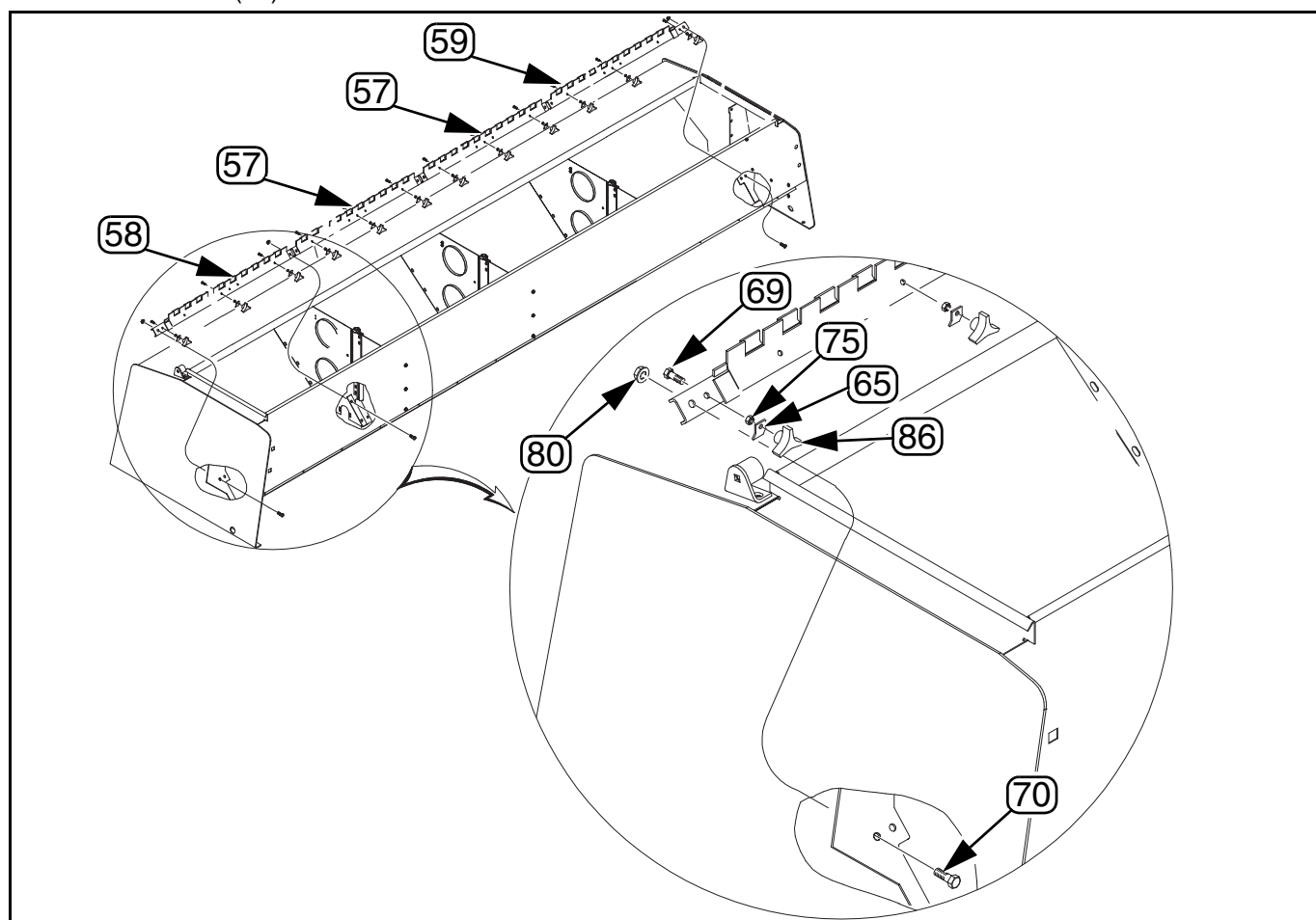


Figure 18  
Divider Brackets

23412

**Refer to Figure 19.**

11. Slide dividers (85) into divider clips on partitions.

**NOTE:**

The dividers in the kit provide a ratio of 60% seed to 40% fertilizer. Offset dividers (1) are available to change the seed/fertilizer ratio. See your Operator Manual for more information.

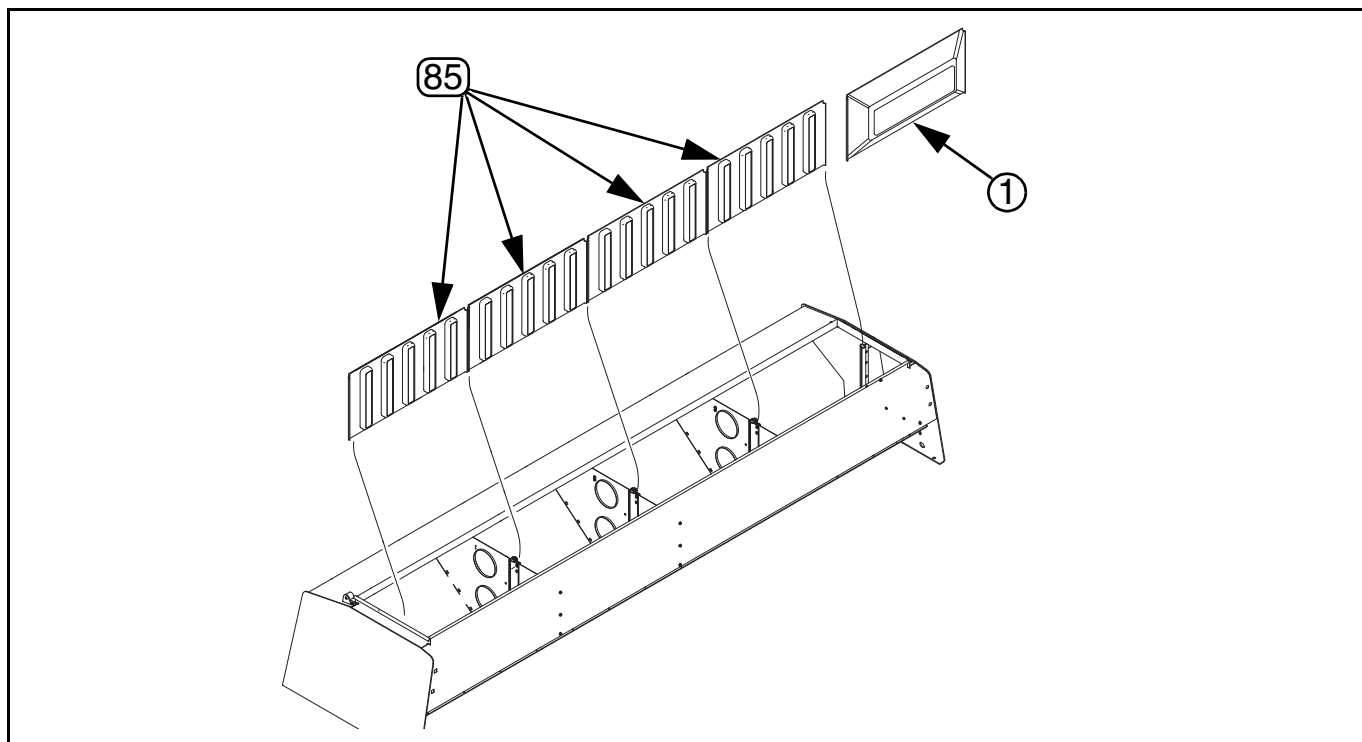


Figure 19  
Dividers

38008

**Refer to Figure 20**

12. Remove top two bolts from each partition divider clip (1).
13. Attach spill flap assembly (54) to the main seed box by securing a top bar partition brace (2) to each box partition divider clip. Use bolts removed earlier and fasten the top bar partition brace to partition divider clip.

**NOTE:**

Two people are required to complete the remainder of this part of the procedure. One person must have access to the under side of the main seed box. The other person must have access to the inside of the main seed box.

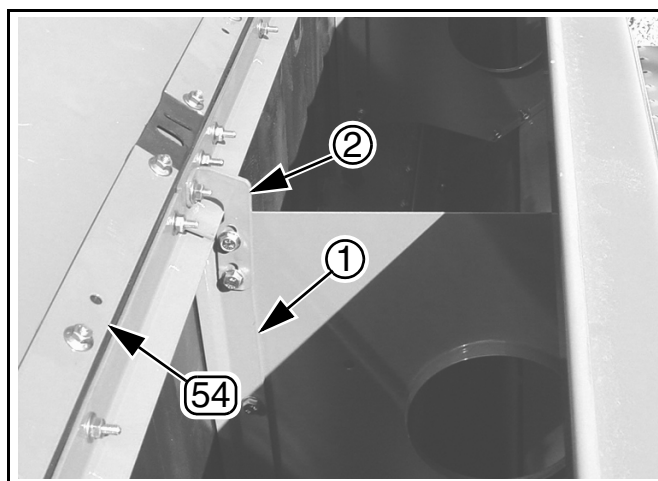


Figure 20  
Top Bar Partition Brace

23410

**Refer to Figure 21**

14. The fertilizer cap plate (1) fastened all the way across the bottom of the main seed box (2). Remove and discard all of the nuts (3) and bolts (4) that fasten the fertilizer cap plate to the main seed box, channel (5), and partitions. Remove and discard the fertilizer cap plate.

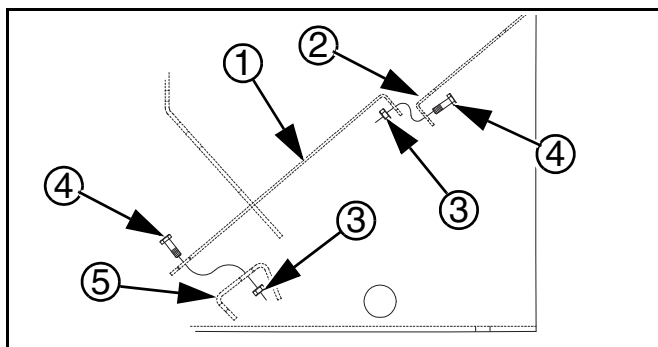


Figure 21  
Fertilizer Cap Plate Removal

38038

**Refer to Figure 16.**

15. Insert seed/fertilizer flap assembly (55) up through opening under main seed box (1). Using retaining clips installed earlier, fasten the top of the seed/fertilizer flap in the raised position. Insert rubber belting hinge (3) of the seed/fertilizer flap between bottom of partitions (2) and the channel (4).
16. Insert the front lip of the fertilizer tray (52), (51), or (53) up through opening under main seed box. Insert front lip over the channel (4) and under the rubber belting hinge (3) and partitions (2).
17. From inside main seed box, fasten the partitions (2) to rubber belting hinge, fertilizer tray, and channel. Use 5/16-18 x 3/4 bolts (73) and 5/16-18 hex flange nuts (79).

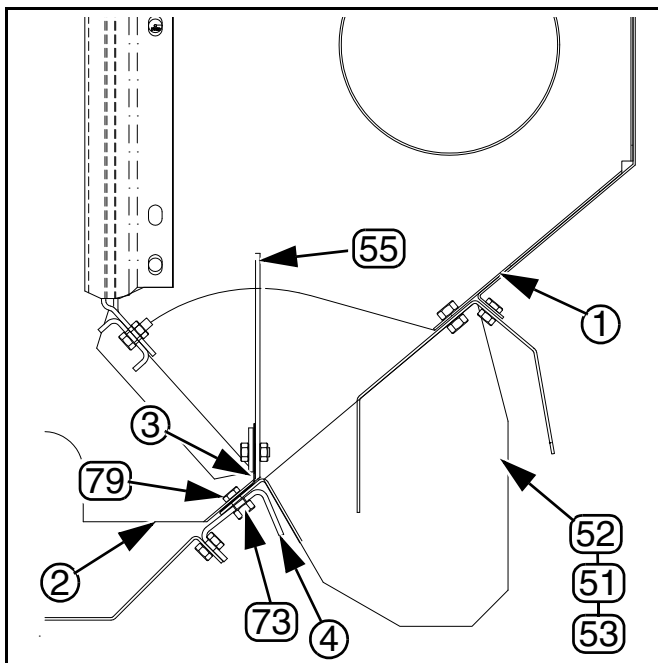


Figure 22  
Fertilizer Tray Installation

38000

**Refer to Figure 23**

18. Place the two center clamp strips (61) on the rubber belting hinge (1). The two center clamp strips must be on either side of the center partition (2).
19. Place an end clamp strip (56) at both ends of the rubber belting hinge.
20. Secure the four hinge clamp strips, rubber belting hinge, fertilizer tray and channel using 1/4-20 x 1 bolts (69) and 1/4-20 hex flange lock nuts (78).
21. Attach the rear of fertilizer tray to the main seed box using 1/4-20 x 5/8 bolts (71) and 1/4-20 hex flange lock nuts (78).
22. Tighten all bolts.
23. Carefully inspect the inside of the fertilizer compartment for gaps that could leak fertilizer. Use the silicone (90) (not shown) provided in the kit to seal any gaps.

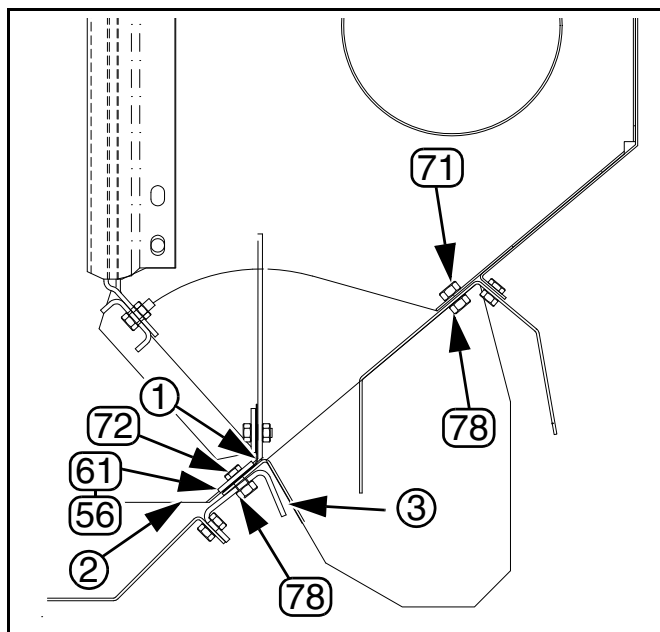


Figure 23  
Fertilizer Tray Installation

23414

## Fertilizer Drive Assembly

### Refer to Figure 24

1. Remove jackshaft (1) from left-hand side of drill.

#### NOTE:

If necessary, remove other components so that jackshaft can be removed. For proper assembly, keep all pieces for reuse and note locations of all other pieces used.

2. Slide 12T sprocket (83) and chain (90 pitches) (48) onto jackshaft. Replace jackshaft and reassemble components.
3. Secure fertilizer drive sub assembly (50) to main frame (2) using two 1/2-13 x 2 x 3 U-bolts (82), 1/2 lock washers (81), and 1/2-13 hex nuts (77).
4. Attach chain to the new sprocket, two 12T idler sprockets (3), and 18T sprocket (4).

#### NOTE:

Be sure to route the chain as shown in the illustration.

5. Route chain (125 pitches) (49) along 12T sprocket (5) and 12T idler sprocket (6) as shown in the illustration. Attach chain to sprocket located on the fertilizer tray.

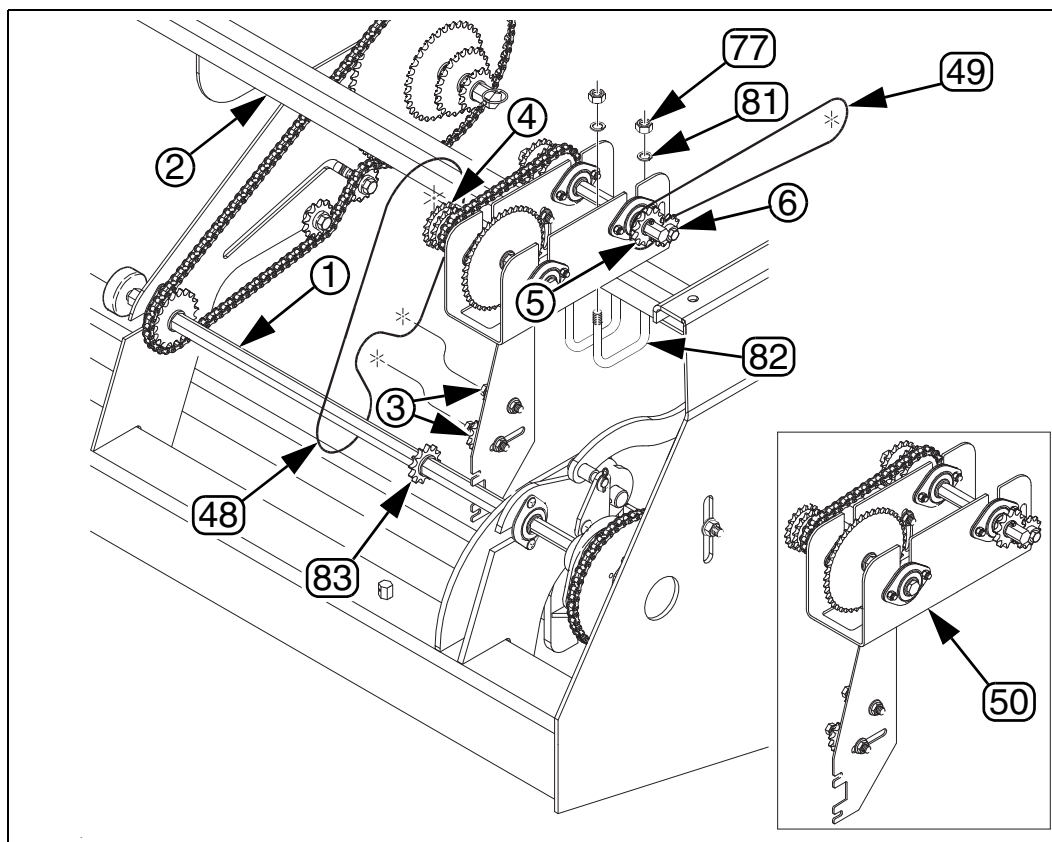


Figure 24  
Fertilizer Drive Assembly

23413



## Fertilizer Hose Installation

### Refer to Figure 25

1. Secure plastic fertilizer tube (87) and small seeds reinforcement ring (47) to rear of opener using two hex screws (68).
2. Fasten the seed hose (84) to the plastic fertilizer tube using 1 1/2 inch spring hose clamp (66).
3. Secure other end of seed hose to fertilizer tray using 1 5/8 hose clamp (67).
4. Repeat the procedure at each of the other openers.

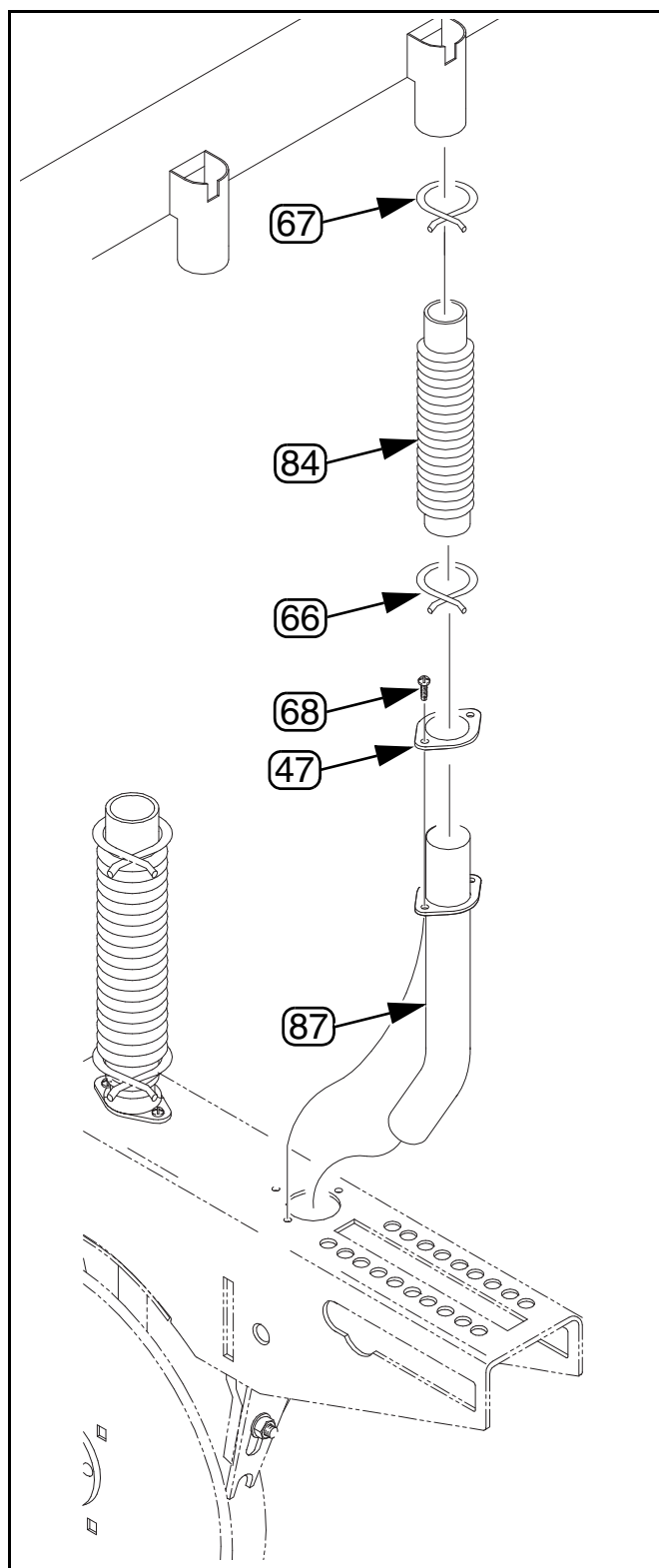


Figure 25  
Fertilizer Hose

16459

## Decal Installation

1. Install the fertilizer rate decal (88) on the under side of the lid for the main seed box.
2. Install the chain routing decal (89) on the inside of the mainframe on the left-hand end of the machine. Make sure the chain routing decal is near the fertilizer drive assembly.

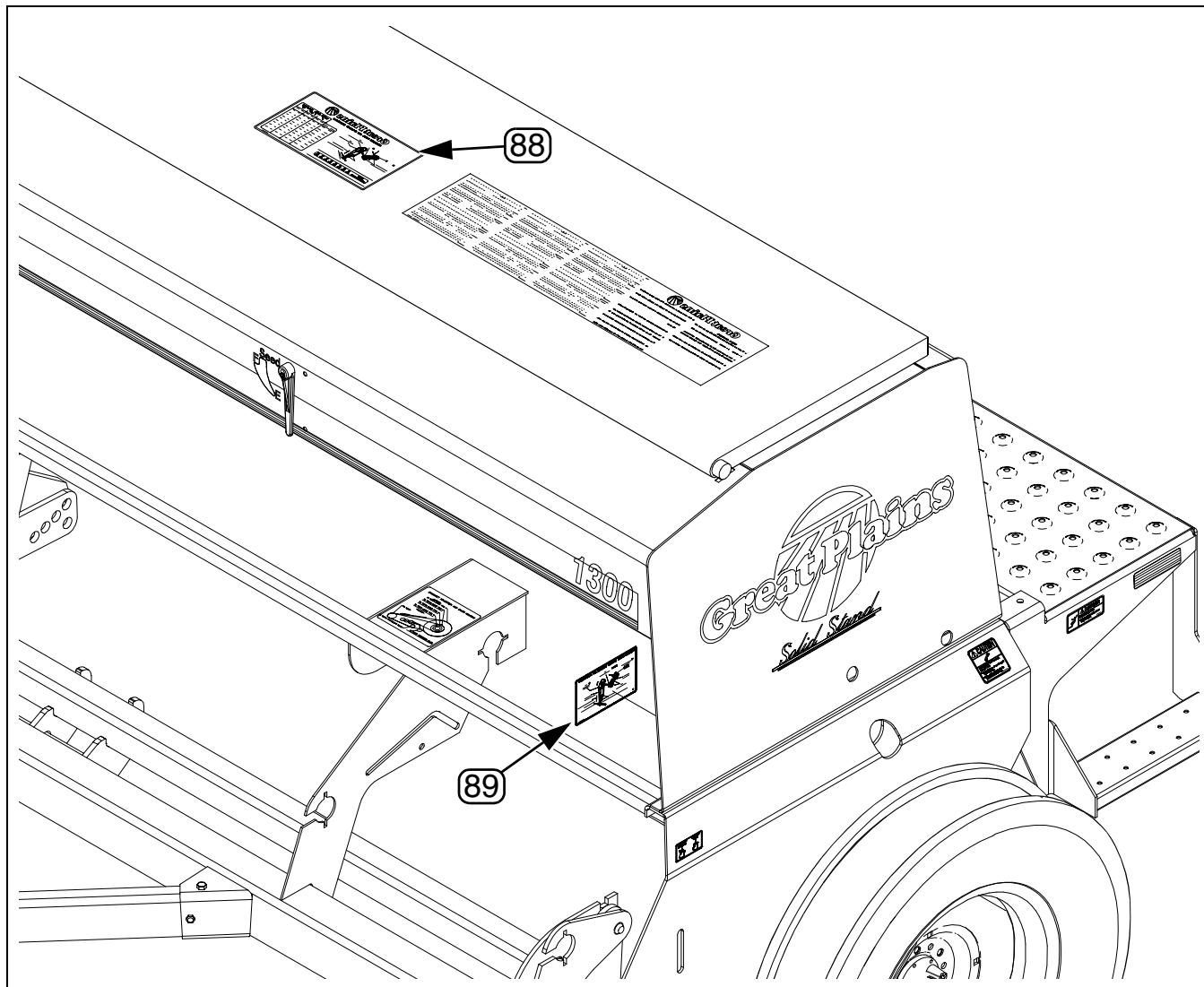








Figure 26  
Decal Installation

38010

## Torque Values Chart

Bolt Size	Bolt Head Identification						
							
	Grade 2	Grade 5		Grade 8			
in-tpi <sup>a</sup>	N-m <sup>b</sup>	ft-lb <sup>d</sup>	N-m	ft-lb	N-m	ft-lb	
<sup>1</sup> / <sub>4</sub> -20	7.4	5.6	11	8	16	12	
<sup>1</sup> / <sub>4</sub> -28	8.5	6	13	10	18	14	
<sup>5</sup> / <sub>16</sub> -18	15	11	24	17	33	25	
<sup>5</sup> / <sub>16</sub> -24	17	13	26	19	37	27	
<sup>3</sup> / <sub>8</sub> -16	27	20	42	31	59	44	
<sup>3</sup> / <sub>8</sub> -24	31	22	47	35	67	49	
<sup>7</sup> / <sub>16</sub> -14	43	32	67	49	95	70	
<sup>7</sup> / <sub>16</sub> -20	49	36	75	55	105	78	
<sup>1</sup> / <sub>2</sub> -13	66	49	105	76	145	105	
<sup>1</sup> / <sub>2</sub> -20	75	55	115	85	165	120	
<sup>9</sup> / <sub>16</sub> -12	95	70	150	110	210	155	
<sup>9</sup> / <sub>16</sub> -18	105	79	165	120	235	170	
<sup>5</sup> / <sub>8</sub> -11	130	97	205	150	285	210	
<sup>5</sup> / <sub>8</sub> -18	150	110	230	170	325	240	
<sup>3</sup> / <sub>4</sub> -10	235	170	360	265	510	375	
<sup>3</sup> / <sub>4</sub> -16	260	190	405	295	570	420	
<sup>7</sup> / <sub>8</sub> -9	225	165	585	430	820	605	
<sup>7</sup> / <sub>8</sub> -14	250	185	640	475	905	670	
1-8	340	250	875	645	1230	910	
1-12	370	275	955	705	1350	995	
1 <sup>1</sup> / <sub>8</sub> -7	480	355	1080	795	1750	1290	
1 <sup>1</sup> / <sub>8</sub> -12	540	395	1210	890	1960	1440	
1 <sup>1</sup> / <sub>4</sub> -7	680	500	1520	1120	2460	1820	
1 <sup>1</sup> / <sub>4</sub> -12	750	555	1680	1240	2730	2010	
1 <sup>3</sup> / <sub>8</sub> -6	890	655	1990	1470	3230	2380	
1 <sup>3</sup> / <sub>8</sub> -12	1010	745	2270	1670	3680	2710	
1 <sup>1</sup> / <sub>2</sub> -6	1180	870	2640	1950	4290	3160	
1 <sup>1</sup> / <sub>2</sub> -12	1330	980	2970	2190	4820	3560	

Bolt Size	Bolt Head Identification					
						
	Class 5.8	Class 8.8		Class 10.9		
mm x pitch <sup>c</sup>	N-m	ft-lb	N-m	ft-lb	N-m	ft-lb
M 5 X 0.8	4	3	6	5	9	7
M 6 X 1	7	5	11	8	15	11
M 8 X 1.25	17	12	26	19	36	27
M 8 X 1	18	13	28	21	39	29
M10 X 1.5	33	24	52	39	72	53
M10 X 0.75	39	29	61	45	85	62
M12 X 1.75	58	42	91	67	125	93
M12 X 1.5	60	44	95	70	130	97
M12 X 1	90	66	105	77	145	105
M14 X 2	92	68	145	105	200	150
M14 X 1.5	99	73	155	115	215	160
M16 X 2	145	105	225	165	315	230
M16 X 1.5	155	115	240	180	335	245
M18 X 2.5	195	145	310	230	405	300
M18 X 1.5	220	165	350	260	485	355
M20 X 2.5	280	205	440	325	610	450
M20 X 1.5	310	230	650	480	900	665
M24 X 3	480	355	760	560	1050	780
M24 X 2	525	390	830	610	1150	845
M30 X 3.5	960	705	1510	1120	2100	1550
M30 X 2	1060	785	1680	1240	2320	1710
M36 X 3.5	1730	1270	2650	1950	3660	2700
M36 X 2	1880	1380	2960	2190	4100	3220

a. in-tpi = nominal thread diameter in inches-threads per inch

b. N·m = newton-meters

c. mm x pitch = nominal thread diameter in mm x thread pitch

d. ft-lb = foot pounds

Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.

25199







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