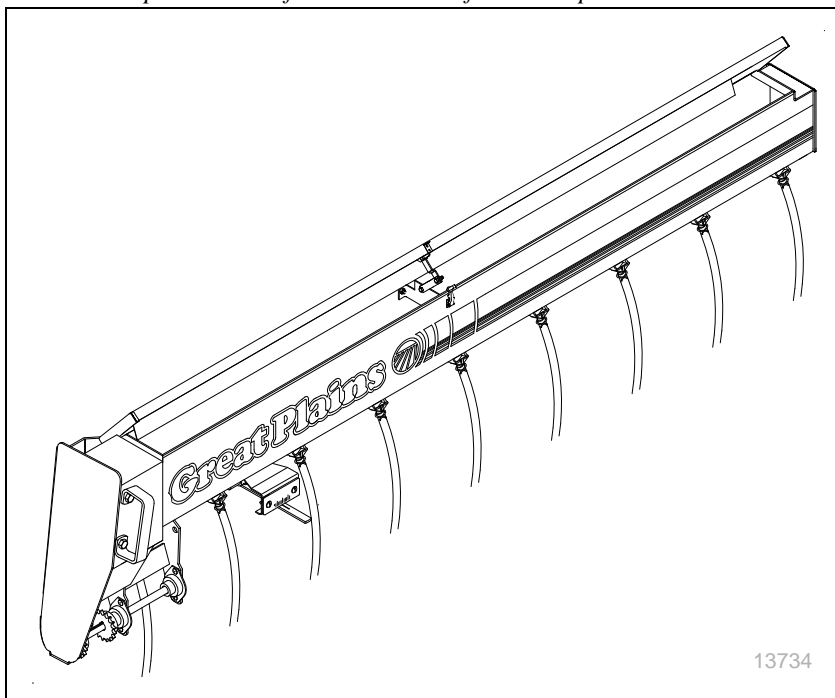


Installation and Operation Manual

1995+
2N-2410 and 2N-3010 Folding No-Till Drills
Small Seeds Attachment



Read the operator 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!



Illustrations may show optional equipment not supplied with standard unit or may depict similar models where a topic is identical.

ORIGINAL INSTRUCTIONS



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Printed 2017-04-19

133-029M

Dealer Contact Information

Name:

Street:

City/State:

Telephone:

Email:

Dealer's Customer

No.:



Dealer QRC

The QR Code (Quick Reference) to the left will take you to available dealers for Great Plains products. Refer to the Parts Manual QR Locator for detailed instructions.



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Printed in the United States of America



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" on page 3, thoroughly.*
- ▲ *Read all instructions noted on the decals.*
- ▲ *Keep decals clean. Replace damaged, faded and illegible decals.*



Wear Protective Equipment

Great Plains advises all users of treated seeds to use the following personal safety equipment.

- ▲ *Goggles, mask or full face respirator*
- ▲ *Gloves*
- ▲ *Cloth coveralls/outer clothing changed daily*
- ▲ *Waterproof boots or foot coverings*
- ▲ *Do not wear contaminated clothing. Wash protective clothing and equipment with soap and water after each use. Personal clothing must be laundered separately from household articles.*
- ▲ *Wear clothing and equipment appropriate for the job. Avoid loose-fitting clothing..*



Handle Treated Seed Properly

Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil and property.

- ▲ *Read and follow chemical manufacturer's instructions.*
- ▲ *Wear protective clothing.*
- ▲ *Handle all chemicals with care.*
- ▲ *If persons are exposed to treatments in a way that could affect their health, consult a doctor immediately with the chemical label or container in hand. Any delay could cause serious illness or death.*
- ▲ *Wash hands and face before eating after working with treated seed. Shower as soon as application is completed for the day.*
- ▲ *Apply only with acceptable wind conditions. Wind speed must be below 5 mph (8 km/h). Make sure wind drift of chemicals will not affect any surrounding land, people or animals.*
- ▲ *Never wash out a seed box within 100 feet (30 m) of any freshwater source or in a car wash.*



Safety Decals

Safety Reflectors and Decals

Your implement comes equipped with all lights, safety reflectors and decals in place. They were designed to help you safely operate your implement.

- ▲ *Read and follow decal directions.*
- ▲ *Keep all safety decals clean and legible.*
- ▲ *Replace all damaged or missing decals.*
- ▲ *When ordering new parts or components, also request corresponding safety decals.*

Order new decals from your Great Plains dealer. Refer to this section for proper decal placement.

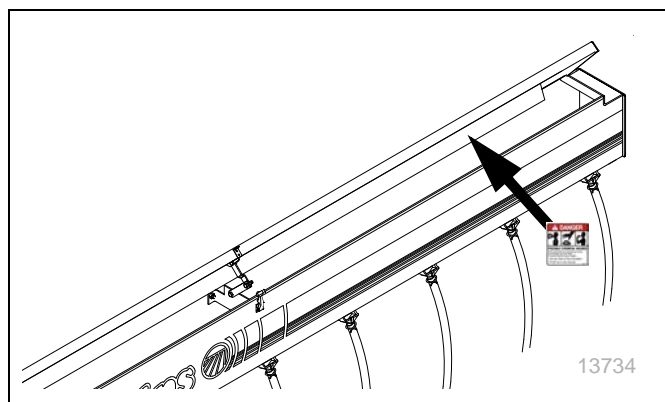
To install new decals:

1. Clean the area on which the decal is to be placed.
2. Peel backing from decal. Press firmly on surface, being careful not to cause air bubbles under decal.

Danger: Possible Chemical Hazard 838-467C



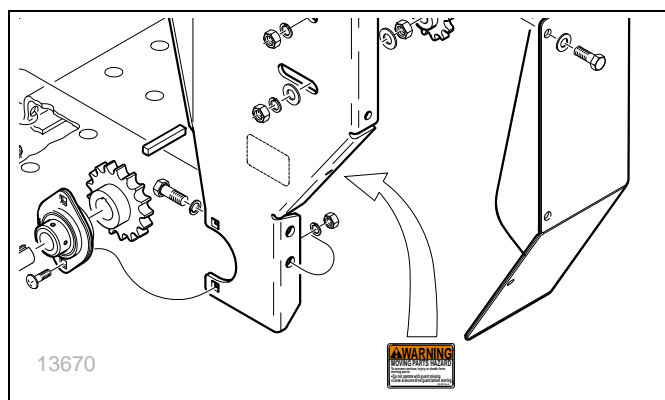
On the underside of each small seeds box lid;
2 total



Warning: Moving Parts Hazard 818-205C



On the drive guard mount weldment;
1 total





Introduction

Great Plains welcomes you to its growing family of new product owners. This Small Seeds Attachment has been designed with care and built by skilled workers using quality materials. Proper setup, maintenance and safe operating practices will help you get years of satisfactory use from the machine.

Kits Covered

This manual describes installation and operation of the following accessory products.

There are two versions of each kit. Standard kits are only compatible with newer drills having row units with Small Seeds tube openings. Y-tube kits deliver small seeds to the main row unit seed tube, are optional on newer drills, but are required for older drills lacking a row unit opening for a dedicated Small Seeds tube.

Kit	Description and Compatible Drill Models
133-017A	30 foot - 7 ¹ / ₂ in spacing for 2N-3010-4875
133-018A	30 foot - 7 ¹ / ₂ in spacing Y-Tube for 2N-3010-4875, 2N-2410-487595
133-019A	30 foot - 8 in spacing for 2N-3010-4408
133-020A	30 foot - 8 in spacing Y-Tube for 2N-3010-4408, 2N-3010-440895
133-021A	30 foot - 10 in spacing for 2N-3010-3610
133-022A	30 foot - 10 in spacing Y-Tube for 2N-3010-3610, 2N-3010-361095
133-023A	24 foot - 7 ¹ / ₂ in spacing for 2N-2410-3875
133-024A	24 foot - 7 ¹ / ₂ in spacing Y-Tube for 2N-2410-3875, 2N-2410-387595
133-025A	24 foot - 8 in spacing for 2N-2410-3608
133-026A	24 foot - 8 in spacing Y-Tube for 2N-2410-3608, 2N-2410-360895

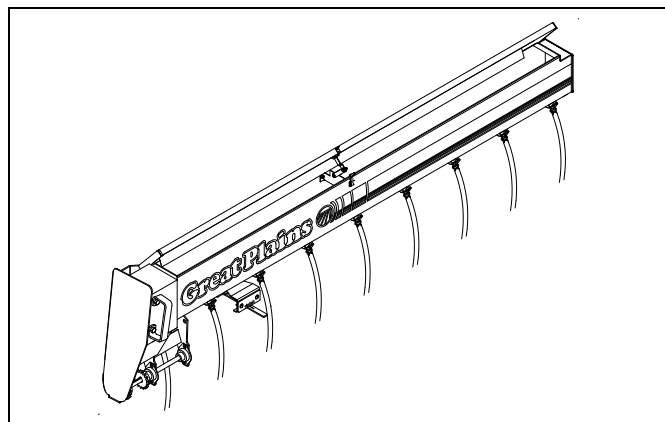


Figure 1
A Small Seeds Box

13734

Kit	Description and Compatible Drill Models
133-027A	24 foot - 10 in spacing for 2N-2410-2810
133-028A	24 foot - 10 in spacing Y-Tube for 2N-2410-2810, 2N-2410-281095

Document Family

Have current versions of the following documents available during installation.

133-029M	Installation and Operation Manual (this document)
196-126M	Drill Operator manual
196-126P	Drill Parts manual

Description of Unit

The Small Seeds Attachment adds drive systems, small seed boxes and small seed delivery tubes to Great Plains pull-type 2-section no-till (2SNT) drills, manufactured in 1995 or later.

Intended Usage

Use this Small Seeds Attachment for planting compatible crops only. This attachment is not designed for application of fertilizer or other agricultural chemicals.

Using This Manual

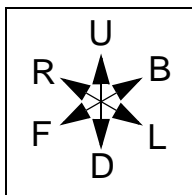
This manual will familiarize you with safety, assembly, operation, adjustments, troubleshooting and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.

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

Definitions

The following terms are used throughout this manual.

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



Useful information related to the preceding topic.

NOTICE

A crucial point of information related to the preceding topic. For safe and correct operation, read and follow the directions provided before continuing.

Owner Assistance

If you need customer service or repair parts, contact a Great Plains dealer. They have trained personnel, repair parts and equipment specially designed for Great Plains products.

Refer to Figure 3

Your machine's parts were specially designed and should only be replaced with Great Plains parts. Always use the serial and model number when ordering parts from your Great Plains dealer. The serial-number plate is located on the left hand end of the left wing frame.

Record your Small Grass Seed Attachment model and installation date here for quick reference:

Model Number: _____

Date Installed: _____

Further Assistance

Great Plains Manufacturing, Inc. and your Great Plains dealer want you to be satisfied with your new small seeds attachment. 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.

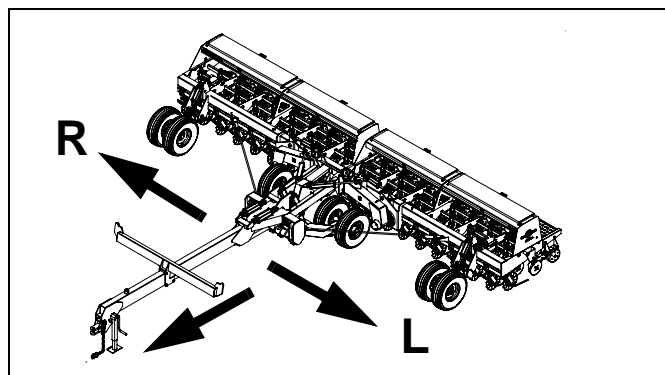


Figure 2
Left / Right Notation

14570

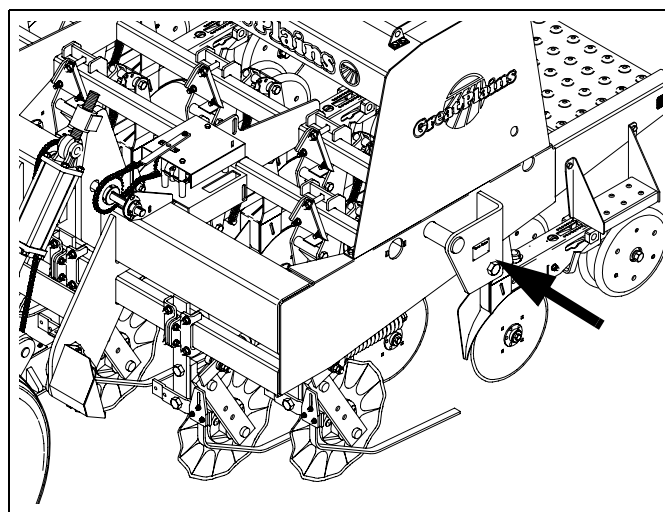


Figure 3
Drill Serial Number Plate

16537

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 and follow the contact information at the bottom of your screen for our service department.

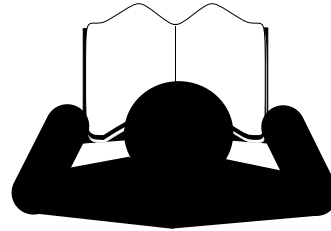


Assembly and Setup

This section helps you prepare your drill for use.

Pre-Start Checklist

1. Read and understand **“Important Safety Information”** on page 1.
2. Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
3. Check that all grease fittings are in place and lubricated. See **“Lubrication and Scheduled Maintenance”** on page 18.
4. Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See **“Safety Decals”** on page 3.



Location of Small Seeds Boxes

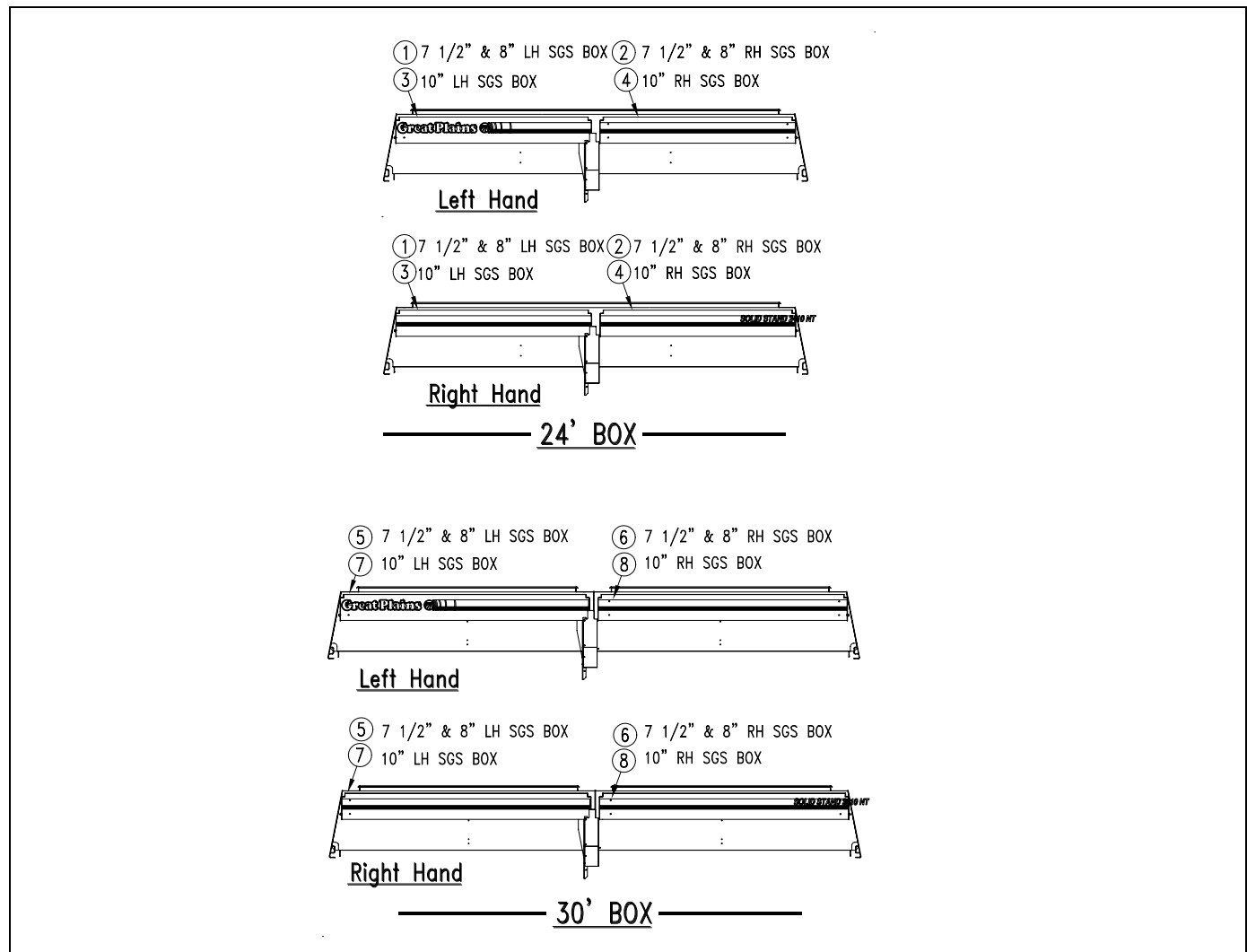


Figure 4
Location of Small Seeds Boxes

13368

Part Number		Size	Spacing	Box Assembly
1	133-013L	24 ft	7 1/2 & 8 in	Left Hand Box
2	133-014L	24 ft	7 1/2 & 8 in	Right Hand Box
3	133-015L	24 ft	10 in	Left Hand Box
4	133-016L	24 ft	10 in	Right Hand Box
5	133-009L	30 ft	7 1/2 & 8 in	Left Hand Box
6	133-010L	30 ft	7 1/2 & 8 in	Right Hand Box
7	133-011L	30 ft	10 in	Left Hand Box
8	133-012L	30 ft	10 in	Right Hand Box

Drive Bundles

Refer to Figure 5

While installing your Small Seeds attachment, you may need to refer back to the parts section of this manual for more details and for positive identification of related items not mentioned in these instructions.

If your drill is equipped with an Agitator attachment, a majority of the drive system is already in place. If your drill is not equipped with an Agitator, one of the following drive bundles must be ordered with any Small Grass Seeder assembly:

Part Number	Description
197-115A	30' Small Grass Seeds and Agitator Drive Assembly
197-116A	24' Small Grass Seeds and Agitator Drive Assembly

Drive Installation

Refer to Figure 5

If your drill does not have 197-115A or 197-116A refer to the following:

Install the two 1 inch bore bearings (4) on the end of the box frame and frame drive plate using the flanges (3) and $\frac{5}{16}$ in -18 x 1 inch round head square neck bolts (2) and hardware as shown.

Slide the 1 inch jackshaft (1) thru the bearing mounted on the end of the box frame. Slip the shaft through the 22 tooth sprocket (12) and the 30 tooth sprocket (13). Then slip it through the bearing attached to the frame drive plate.

Attach the drive chain (20) from the gearbox to the 1 inch jackshaft around the 30 tooth sprocket (13). Align and tighten the chain and idler sprockets.

If your drill is assembled with 197-115A or 197-116A Small Grass Seeders and Agitator Drive assembly refer to the following:

Remove the 1 inch jackshaft thru the box frame end panel. Attach the 19 tooth sprocket (12) to the jackshaft and jack shaft back thru the box frame end panel.

Final Drive Connection

Refer to Figure 5

Route the drive chain (21) back to the jack shaft sprocket and back to the 19 tooth sprocket (12). Attach the idler bracket (7) around the rear opener tube using the u-bolt (11) and hardware (8, 9, & 10). Fasten the idler sprockets (16) to the bracket (7) with the hardware shown (22, 17, 15, 5, & 6). After connecting the chain, check alignment of the sprockets. Position and adjust the idler sprockets as shown.

Once all chains are aligned, tighten all the hardware.

Drive Assembly

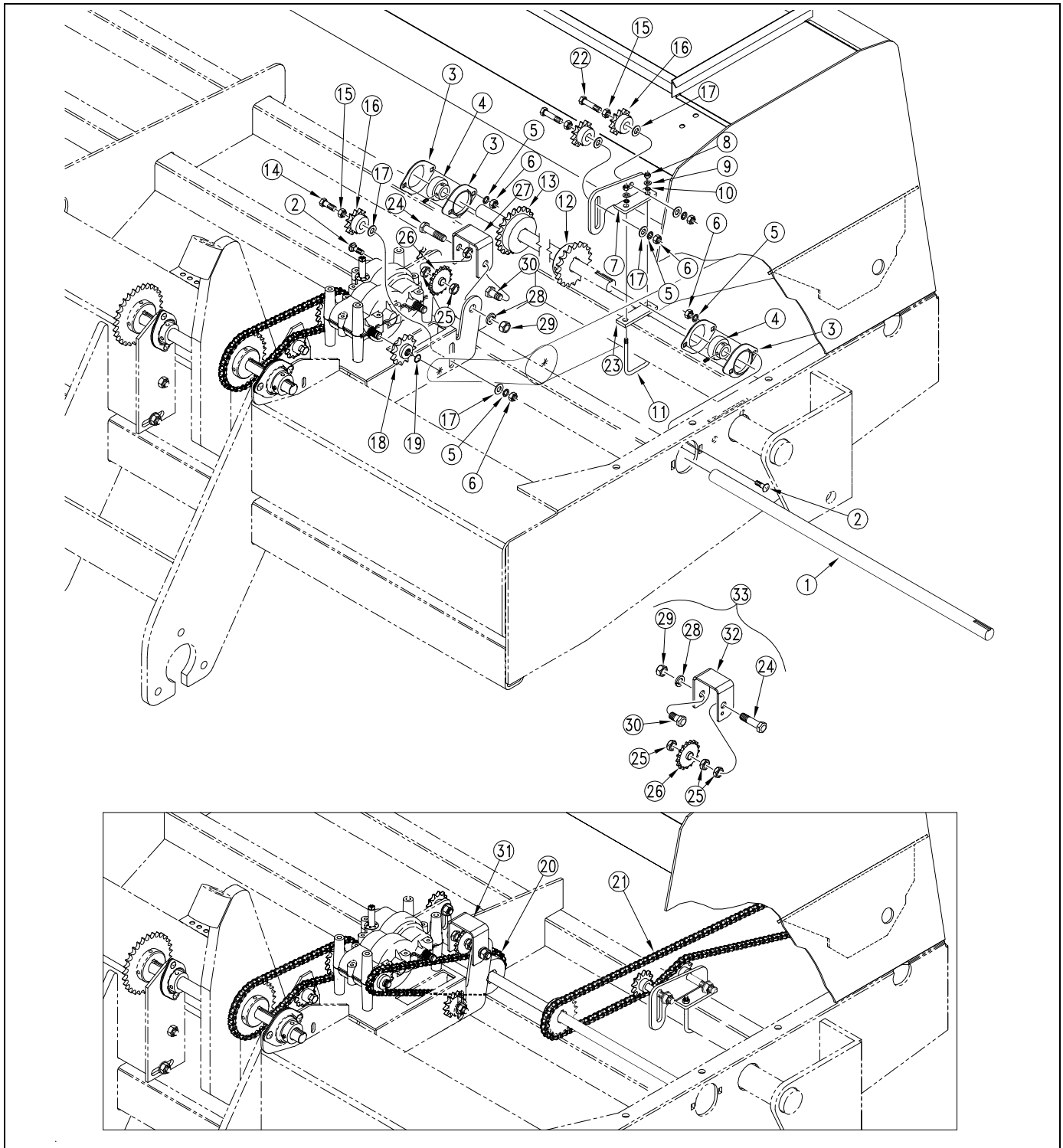


Figure 5
Drive Assembly

13647

Jackshaft Drive Assembly

Refer to Figure 6

Fasten the rear jack shaft bearing mount (2) to the front of the walkboard with $\frac{3}{8}$ in x $\frac{3}{4}$ in long bolts (3), flat washers (4), lock washers (5), and nuts (6).

Assemble the rear jack shaft (7), sprockets (8) and (9), and bearings (10) to the mounts as shown in Figure 6. Be sure the blind key way end of the shaft is located toward the outside mounting bracket and the sprockets are on the correct ends of the shaft. Align the jack shaft sprocket (8) with the 19 tooth sprocket on the Drive Assembly.

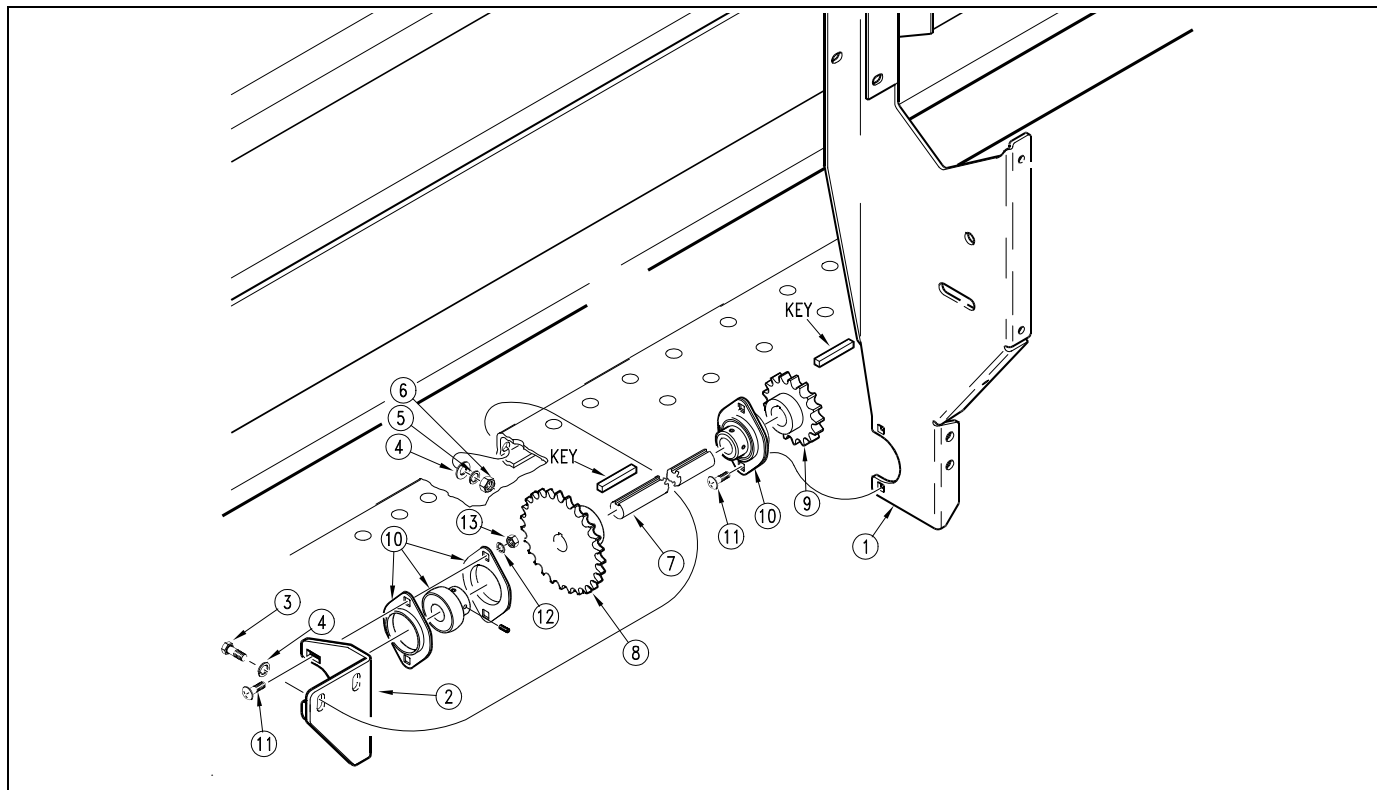


Figure 6
Jackshaft Drive Assembly

13669

Small Seeds Coupler Assembly

Refer to Figure 7

Slip the coupler connecting hub (3) into the shaft of the small seeds box that doesn't have a sprocket.

Insert the rubber coupler connecting plate (4) between the sprocket and the coupler connecting hub (3) and bolt it to the sprocket with three $\frac{1}{4}$ in x 1 inch long bolts (5), flat washers (2), and lock nuts (1); and to the coupler connecting hub with three more bolts (5), flat washers (2), and lock nuts (1).

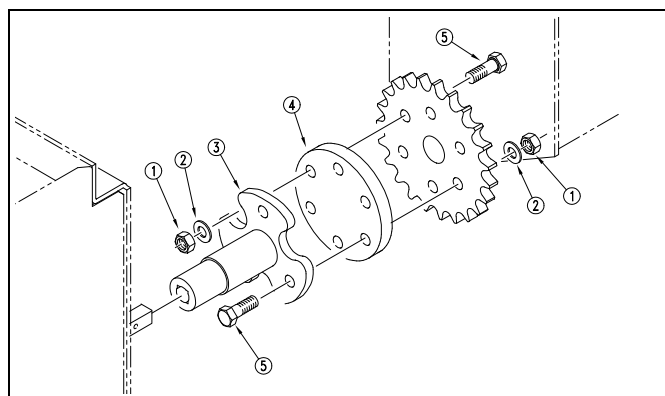


Figure 7
Coupler Assembly

13356

Seed Box Mounting

Refer to Figure 8

Attach the handle (2) to the left and right hand end mounts (1) using a $\frac{1}{2}$ in x $\frac{3}{4}$ in hex head bolt (3) with $\frac{1}{2}$ in washers and nuts. Fasten the u-channel mount (4) to the right hand Small Grass Seeds box (8) using $\frac{3}{8}$ in x $1\frac{1}{4}$ in bolts (7) with the small seeds mounting strap (5) with $\frac{3}{8}$ in washers and nuts (16, 17, 18). On the left hand boxes (the boxes with the drive system), (6) attach the drive guard mount (9) with mount strap (5) and $\frac{3}{8}$ in x $1\frac{1}{4}$ in bolts (7), $\frac{3}{8}$ in nuts and washers (16, 17, 18).

Attach the left hand and right hand box end mounts (1) to the small grass seeds boxes using $\frac{3}{8}$ in x $1\frac{1}{4}$ in bolts (7), $\frac{3}{8}$ in nuts with washers (16, 17, 18), and mount straps (5). Then loosely fasten the Small Grass Seeds boxes to the back of the drill box with $\frac{1}{2}$ in x $1\frac{1}{2}$ in bolts (11), $\frac{1}{2}$ in nuts and washers (12, 13, 14), and seed box mount straps (10). Bolt the end mounts to the walk boards loosely using the $\frac{1}{2}$ in x $1\frac{1}{4}$ inch bolts (15), $\frac{1}{2}$ in nuts and washers (12, 13, 14). Align the boxes and mounts to each other and the drill. Tighten all connections.

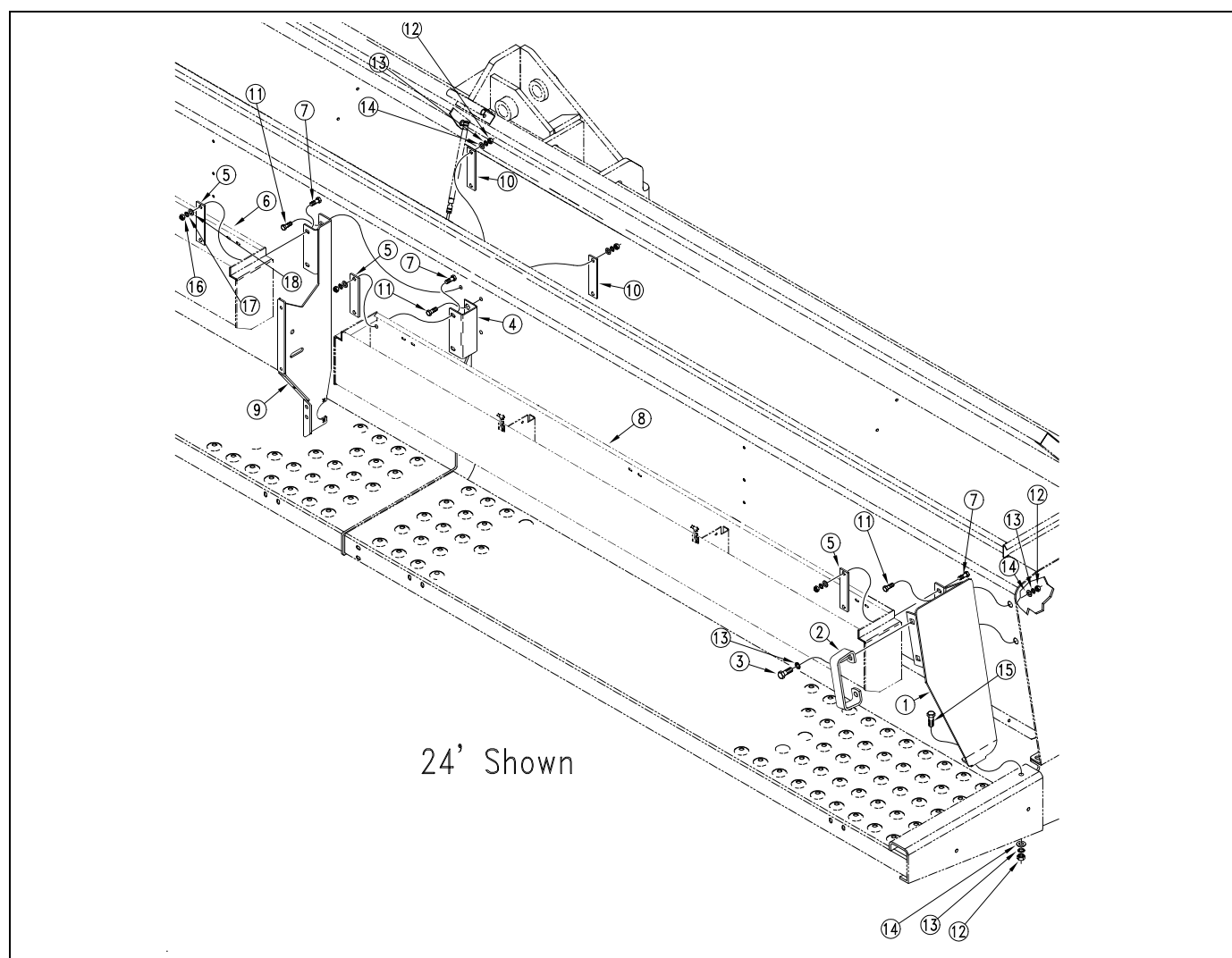


Figure 8
Seed Box Mounting Assembly

13363

Drive Chain Routing

Refer to Figure 9

Route and assemble the chains onto the sprockets as shown and tighten the idlers.

Bolt rear drive guard ① in place with the u-clips ② $\frac{1}{4}$ in x $\frac{5}{8}$ in long bolts ③ and lock washers ④.

Refer to the Hose Retainer Assembly Option or Y-Tube Option, depending on which you have ordered, for proper hose routing.

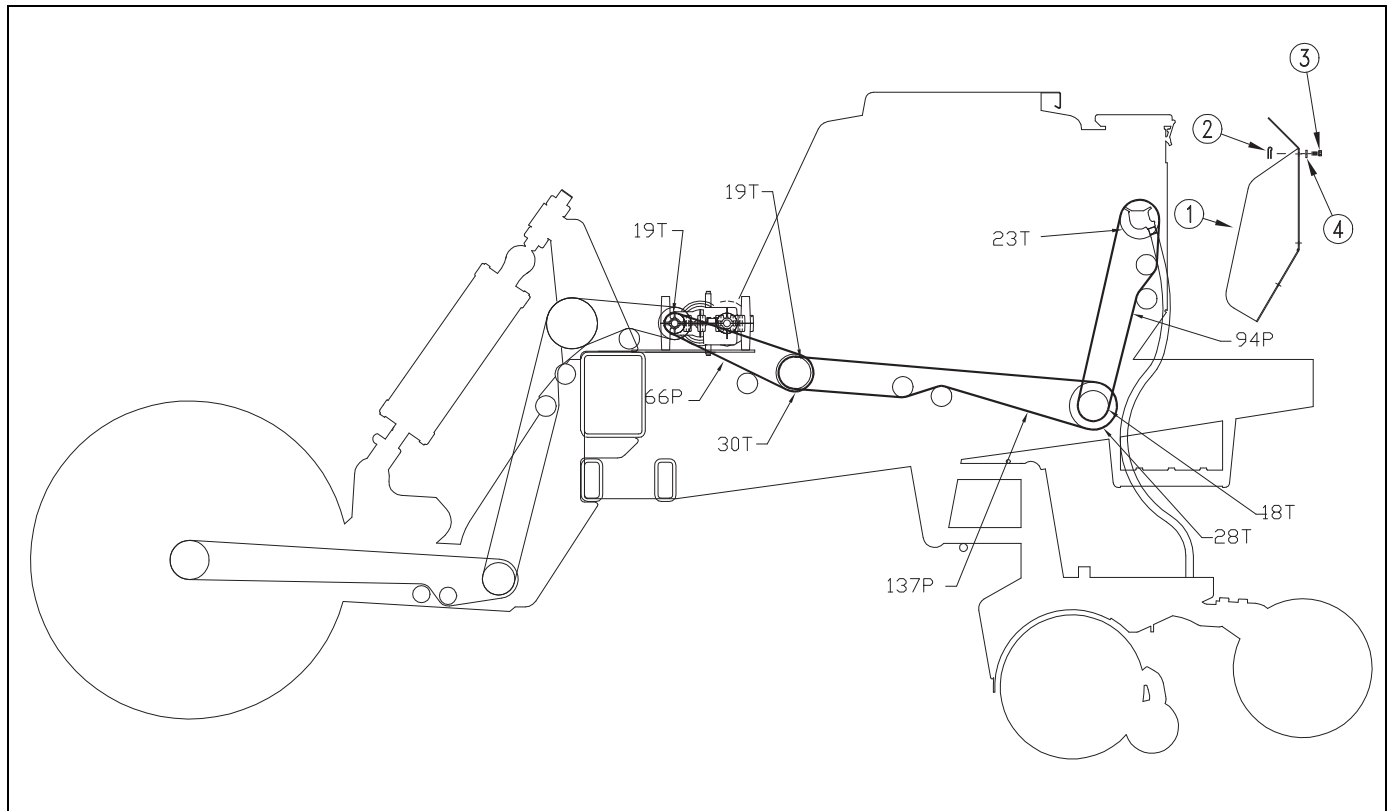


Figure 9
Chain Routing

113386

Seed Cup Covers

Refer to Figure 10

The same small seeds boxes are used for both the $7\frac{1}{2}$ inch and 8 inch spacings. If the 8 inch spacing is used a seed cup cover (part number 123-190D) will need to be installed to cover the unused openings (2 on the 24 foot drills and 4 on the 30 foot drills). Install them on the inside of the boxes and under the seed cup bolts.

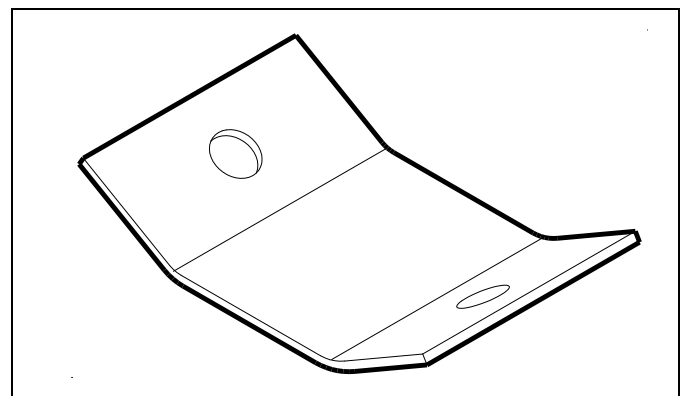


Figure 10
Seed Cup Cover

11655

Y-Tube Mount

The Small Seeds attachment has two options for small seeds placement, see Figure 11 or Figure 12.

Refer to Figure 11

The Y-tube is assembled between the seed box feeder cup and the standard seed hose by means of the connector hose (2), the three hose clamps (3) and the Y-tube (1). The small seeds hose (4) is then assembled between the small seeds feeder cup and the Y-tube (1) and held in place with the small hose clamps (5).

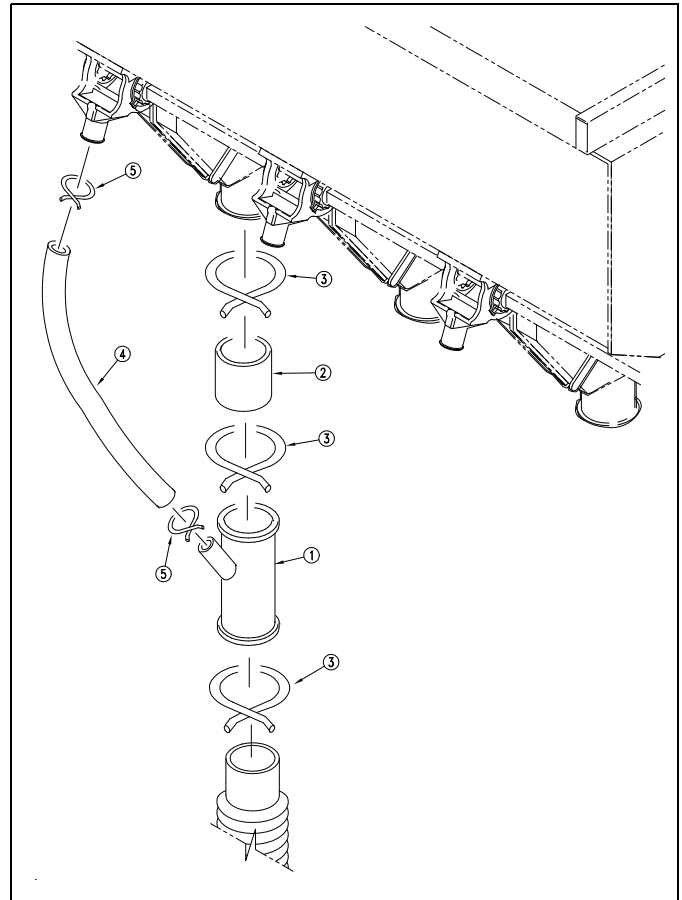


Figure 11
Y-Tube Mount

11086

Hose Retainer Assembly

Refer to Figure 12

Clamp the small grass seed hose (4) to feeder cup using a grass seed hose clamp (3). Route the hose in front of the walk board and clamp to the small seeds tube (1), which is installed in the opener using a thread cutting screw (2).

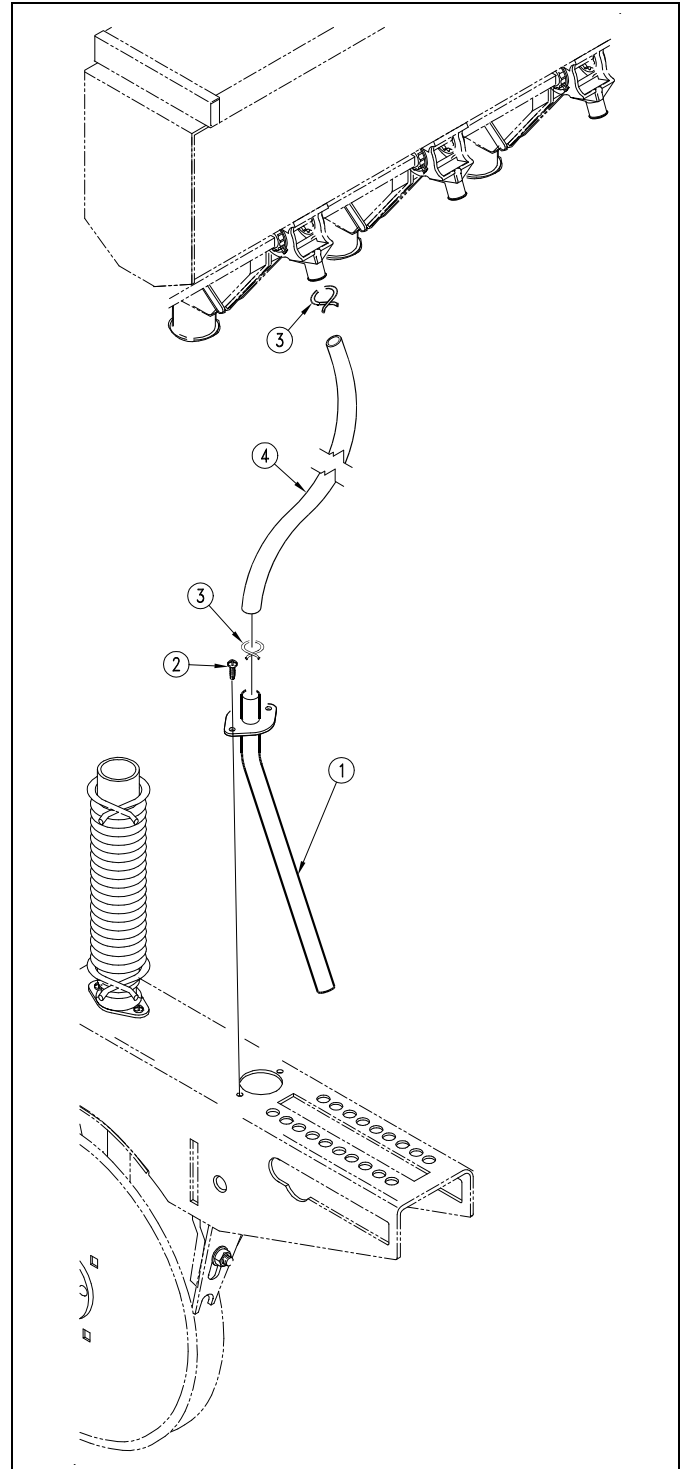


Figure 12
Hose Retainer Assembly

13478



Adjustments

Seeding Adjustments

Refer to Figure 5

1. Lower the drill hydraulically in order to activate the clutch.
2. Raise the drive wheel off the ground with a jack.
3. Rotate each end wheel to see that feed cups and drive are working properly, are not binding and are free from foreign matter.

The large differences in seed size and treatment can cause a wide variation in actual seeding rates. The seed rate charts on the following pages are based on average size seed. This may differ from the seed you are using. Use the seed rate charts as a guide.

Read the feed cup adjustment indicator number for the desired feeding rate (and row spacing) from the following seed rate charts. Complete the following procedure to calibrate the drill for your specific seed.

4. Move the feed cup adjustment lever to the indicator number obtained from the chart.
5. Place several pounds of seed over three of the feeder cups at the outboard end of the small seeds box.
6. Pull the seed tubes off of these three disk openers.
7. Place a container under the three seed tubes to gather the seed as it is metered.
8. Rotate the drive gauge wheel until one acre has been tallied on the acremeter. This will be approximately
 - 181 rotations for 30 foot drill and
 - 225 rotations for 24 foot drill.

Be sure to check the three feeder cups to make sure each cup has plenty of seed coming into it.

9. Weigh the seed which has been metered. Divide by three. This will give you the ounces/pounds metered by each feeder cup. Multiply by the number of openers on your drill to arrive at the total pounds-per-acre your drill would meter at that setting. If this figure is different than desired, reset your feed cup adjustment lever accordingly.
10. Repeat procedures step 4 through step 9 on each drill box.

You may want to repeat the calibration procedure if the results of your calibration vary greatly from the suggested setting contained in this manual.

There are many factors which will affect seeding rates: seed treatment, weight of seed, size of seed, surface condition of seed, tire configuration, pressure and slippage. Minor adjustments will probably be needed to compensate for these factors.

The seeding rates in the seed charts are based on drills having 11L x 15 rib implement end wheel tires.

NOTICE

Tire size and field conditions will also affect seeding rates. Be certain that your drill rib tires are 11L x 15 and that they have the proper inflation. When drilling, check the amount of seed you are using by noting acres drilled, amount of seed added to drill, and level of seed in drill box. If you suspect that you are drilling more or less than desired, and you have accurately calibrated the drill to your seed, you may need to adjust the seeding rate slightly to compensate for your field conditions.

Seed Rate Chart

Seed Variety	Row Spacing	Seed Rate Handle Settings and Rates in Pounds/Acre									
		10	20	30	40	50	60	70	80	90	100
Alfalfa: Red, Alsike & Ladino Clovers	7 ¹ / ₂ inch	3	6	10	15.5	19	23	29	33.5	39	43
	8 inch	2.5	5.5	9	14	17.5	21	26	31	36	39.5
	10 inch	2.25	5	7.5	12	14.5	17	21.5	25	29	32
Lespedeza Hulled, Serecia, Crimson, Clover, Birdsfoot Trefoil	7 ¹ / ₂ inch	2.5	5.5	8.5	16.5	20.5	25.5	32	36.5	45.5	50.5
	8 inch	2.25	5	8	15	19	23	29.5	33.5	41.5	46.5
	10 inch	2	4	6.5		15.5	19	24	27.5	34	38
Lespedeza Unhulled	7 ¹ / ₂ inch	1.75	3.5	5.5	9.5	12	14.5	16.5	19	21.5	24
	8 inch	1.5	3	5	8.5	11	13	15	17.5	19.5	22
	10 inch	1.25	2.5	4	7	9	10.5	12.5	14.5	16	18
Timothy, Red Top, Sand and Love Grass	7 ¹ / ₂ inch	1.75	3.5	5	7.5	9.5	11.5	14	16	18.5	20.5
	8 inch	1.5	3	4.5	6.5	8.5	10.5	12.5	14.5	17	19
	10 inch	1.25	2.5	3.5	5.5	7	8.5	10.5	12	14	15.5
Kentucky Bluegrass, Fescue	7 ¹ / ₂ inch	-	1.5	2.25	3.5	4.25	5	6	7	8	8.5
	8 inch	-	1.25	2	3	4	4.5	5.5	6.5	7	8
	10 inch	-	1	1.5	2.5	3	3.5	4.5	5	6	6.5
Reed Canary	7 ¹ / ₂ inch	1	2.25	3.5	5	6.5	8	9.5	10.5	12	13
	8 inch	-	2	3	4.5	5.5	7	8.5	10	11	12
	10 inch	-	1.75	2.5	3.5	4.5	6	7	8	9	10
German Millet	7 ¹ / ₂ inch	2.25	4.5	8.5	13	16.5	19.5	24	28.5	33	37
	8 inch	2	4	7.5	12	15	18	22	26	30.5	34
	10 inch	1.75	3.5	6	10	12	14.5	18	21	25	28
Sudan Grass	7 ¹ / ₂ inch	2.25	4.5	8.5	13	16.5	18	25	29.5	34.5	38.5
	8 inch	2	4	7.5	12	15	19	23	27	32	35.5
	10 inch	1.75	3.5	6	10	12	15.5	19	22	26	29



Maintenance and Lubrication

Maintenance

Proper servicing and maintenance is the key to long implement life. With careful and systematic inspection, you can avoid costly maintenance, downtime and repair.

Always turn off and remove the tractor key before making any adjustments or performing any maintenance.

General Maintenance

1. After using your drill for several hours, check all bolts to be sure they are tight.
2. Replace any worn, damaged or illegible safety decals by obtaining new decals from your Great Plains Dealer.

Storage

1. Clean the Small Seeds Attachment as necessary. Be sure that the seed boxes are completely cleaned before storing.
2. Store the drill inside if possible for longer life.

Chain Installation

Whenever mounting a chain, make sure the clip at the removable link is oriented to minimize snags.

Refer to Figure 13 (arrow shows chain direction)

Install clip with open end facing away from direction of chain travel (striped arrows in routing diagrams).

Chain Slack

Check slack within the first 8 hours of operation and tighten idlers as necessary.

Refer to Figure 14, which, for clarity, greatly exaggerates slack, and omits the idlers.

1. Measure the span ① for allowable slack:
Locate the longest span of each chain (usually the span which does not run through the idlers).
2. Determine the ideal slack:
Long chains (over 36in/91cm) $\frac{1}{4}$ inch per foot
Vertical short chains: $\frac{1}{4}$ inch per foot (2.1cm/m)
Horizontal short chains: $\frac{1}{2}$ inch per foot (4.2cm/m).
3. Measure the slack ② by acting at a right angle to the chain span at the center of the span, and deflecting in both directions. The slack is the distance of the movement.
4. Adjust the idlers for ideal slack.

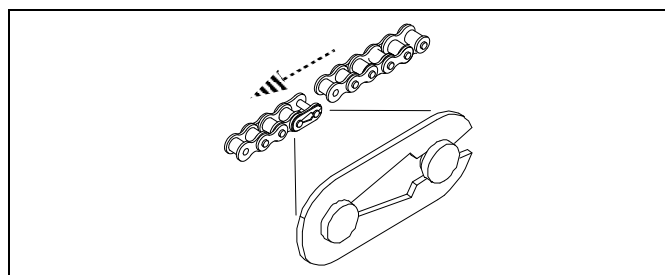
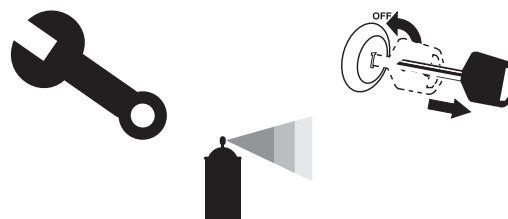


Figure 13
Chain Clip Orientation

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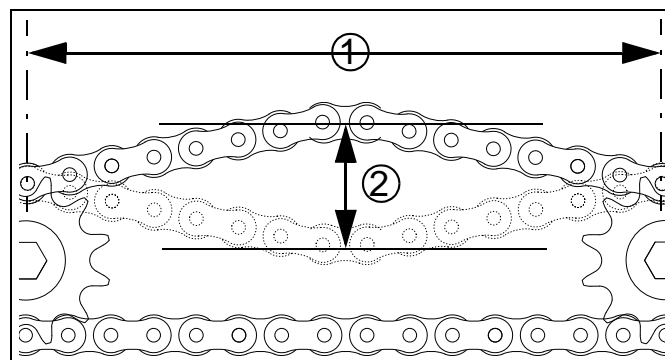







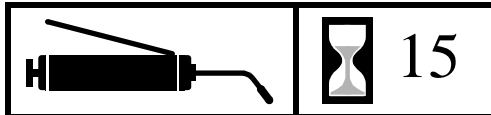
Figure 14
Measuring Chain Slack

27264

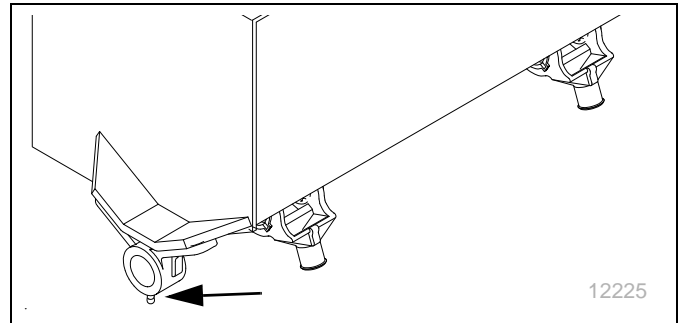
Lubrication and Scheduled Maintenance

 Multi-purpose spray lubricant	 Multi-purpose grease lubricant	 Multi-purpose oil lubricant	 Inspection 34208	 50 Intervals (operating hours) at which service is required
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Small Seeds Drive Sprocket Hanger Bearing



Type of Lubrication: Grease
Quantity: Until grease emerges

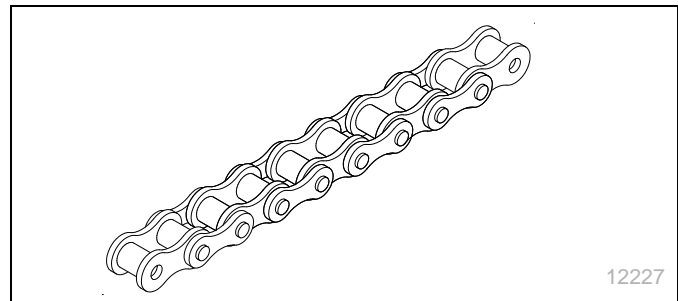


Drive Chains



This installation adds three (3) chains.




Type of Lubrication: Chain Lube
Quantity: Coat thoroughly.








Appendix A - Reference Information

Torque Values Chart

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

Bolt Size mm x pitch ^c	Bolt Head Identification					
						
	Class 5.8	Class 8.8	Class 10.9			
	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

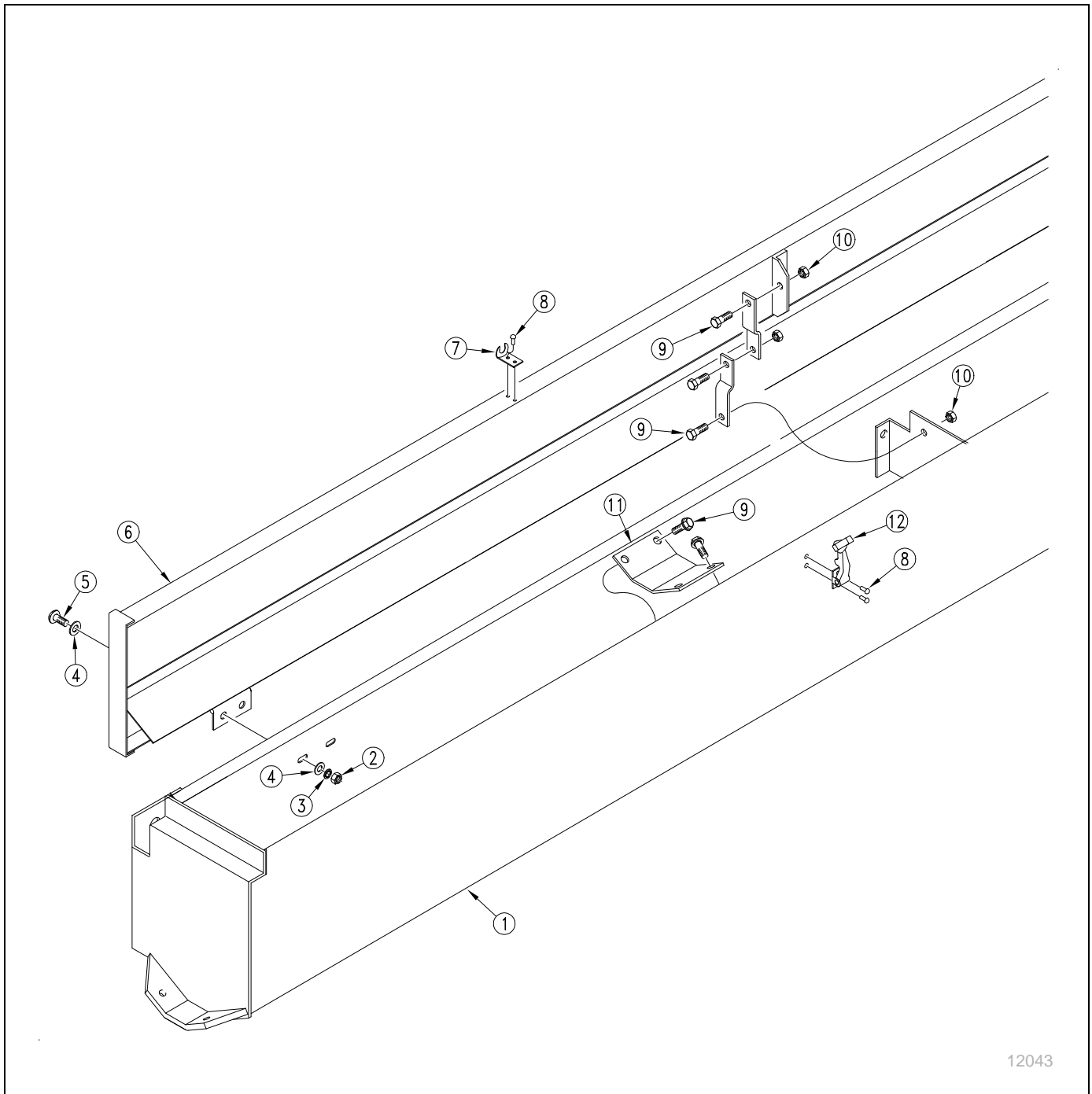
d. ft-lb = foot pounds

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

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Parts Diagrams

Small Seeds Box

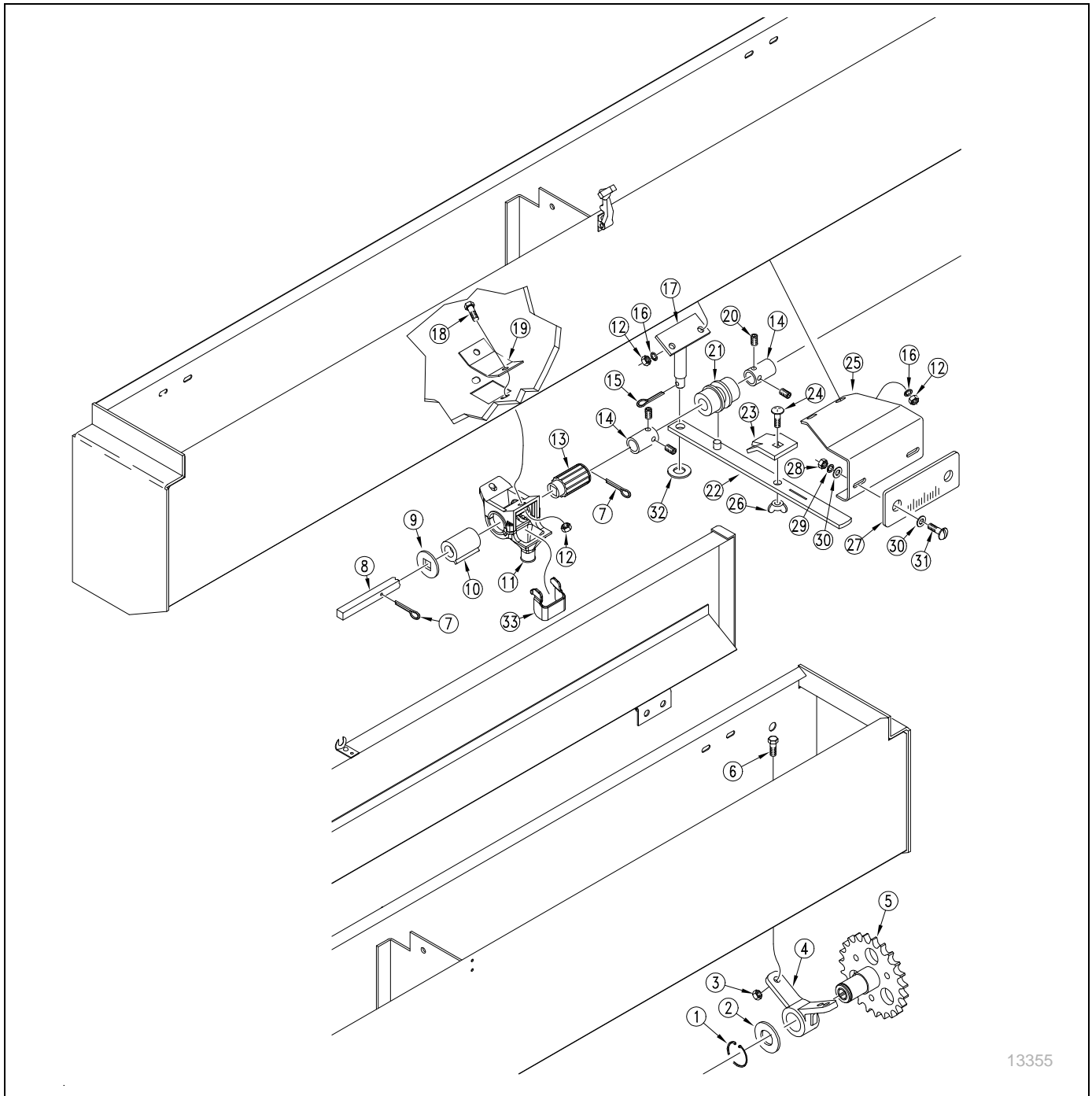


Small Seeds Box

Ref. Part No. Part Description

1.133-001H30' 7 1/2 SGS BOX WELDMENT	133-004H24' 7 1/2 SGS RH BOX WELDMENT
133-002H30' 10 SGS BOX WELDMENT	133-005H24' 10 SGS BOX WELDMENT
133-003H24' 7 1/2 SGS LH BOX WELDMENT	
2.803-001C NUT HEX 10-24 PLT	
3.804-054C WASHER LOCK #10	
4.804-046C WASHER FLAT #10 SAE PLT	
5.801-003C SCREW RD HD SLT 10-24X1/2 PLT	
6.123-472H 24' 2SNT SGS BOX LID WELDMENT	
6.123-471H 30' 2SNT SGS BOX LID WELDMENT	
7.816-113C LATCH KEEPER 37-15-061-17	
8.800-101C RIVET POP 1/8 .125 AD42BSLF	
9.802-078C HHCS 1/4-20X5/8 GR5	
10.803-007CNUT LOCK 1/4-20 PLT	
11.123-118DSEED ADJUSTMENT SUPPORT	
12.816-112CRUBBER LATCH 37-11-065-10	

Small Seeds Metering



Small Seeds Metering

Ref. Part No. Part Description

1.133-001H30' 7 1/2 SGS BOX WELDMENT

133-002H30' 10 SGS BOX WELDMENT

133-003H24' 7 1/2 SGS LH BOX WELDMENT

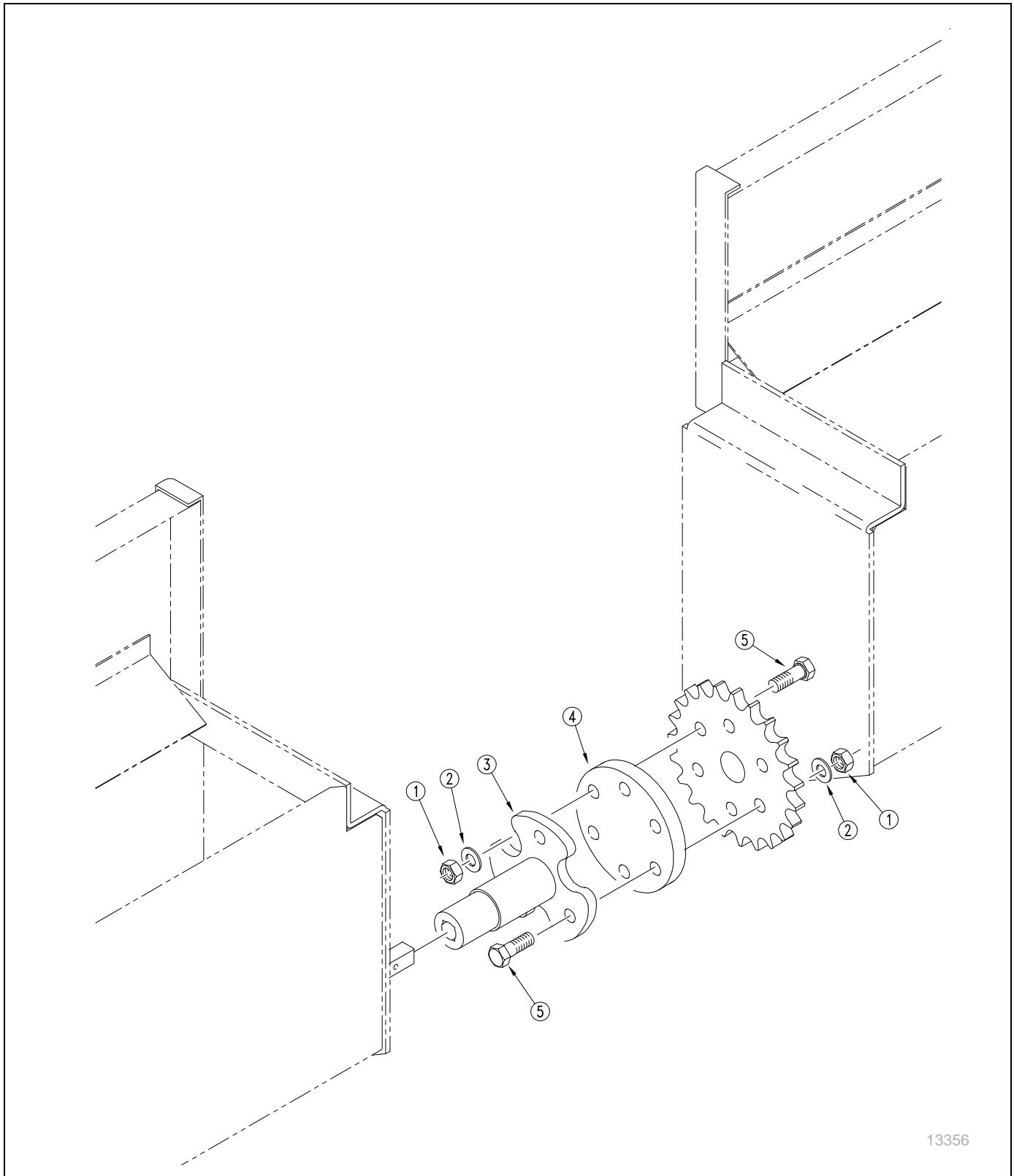
133-004H24' 7 1/2 SGS RH BOX WELDMENT

133-005H24' 10 SGS BOX WELDMENT

133-006HSGS END MOUNT WELDMENT LH

133-007HSGS END MOUNT WELDMENT RH	37.804-006CWASHER LOCK SPRING 1/4 PLT
2.123-472H24' 2SNT SGS BOX LID WELDMENT	38.123-116DSEED ADJUSTMENT SPOOL
123-471H30' 2SNT SGS BOX LID WELDMENT	39.804-044CWASHER MACH 1.38 X .876 X .048
3.123-356D10' EWNT SGS LID LATCH	40.817-026CHANGER DRIVE SHAFT
4.816-113CLATCH KEEPER 37-15-061-17	41.123-473HCOUPLER DRIVE SPROCKET WELD
5.800-101CRIVET POP 1/8 .125 AD42BSLF	42.803-088CNUT HEX LOCK 1/4-20 FLG
6.123-399D24' 2SNT 7 1/2 OUT SGS SHAFT	43.801-035CSCREW SET 5/16-18 SKT KP X 3/8
123-400D24' 2SNT 7 1/2INSIDE SGS SHAFT	44.123-190DSEED CUP COVER
123-401D24' 2SNT 10 SGS SHAFT	
123-402D30' 2SNT 7 1/2 SGS SHAFT	
123-402D30' 2SNT 7 1/2 SGS SHAFT	
7.817-010CGRASS SEEDER SPROCKET	
8.805-067CPIN COTTER 1/8 X 3/4	
9.804-012CWASHER FLAT 3/8 SAE PLT	
10.817-008CRPBY 817-504C	
11.817-009CGRASS SEEDER SLEEVE	
12.804-042CWASHER GRASS SEEDER CUP SHAFT	
13.803-007CNUT LOCK 1/4-20 PLT	
14.800-028CSNAP RING .875	
15.803-006CNUT HEX 1/4-20 PLT	
16.816-112CRUBBER LATCH 37-11-065-10	
17.123-118DSEED ADJUSTMENT SUPPORT	
18.123-050HADJUSTMENT HANDLE PIVOT	
19.805-019CPIN COTTER 5/32 X 1 PLT	
20.802-148CHFSS 1/4-20X1/2 GR5	
21.803-001CNUT HEX 10-24 PLT	
22.804-004CWASHER INTERNAL STAR #10 PLT	
23.804-046CWASHER FLAT #10 SAE PLT	
24.801-003CSCREW RD HD SLT 10-24X1/2 PLT	
25.890-349C3/8 SHAFT LOCKING COLLAR	
FORMERLY 123-436D	
26.123-476HREAR SEED RATE ADJ HANDLE WLD	
27.803-058CNUT WING 5/16-18	
28.123-113DLOCK TAB	
29.802-092CRHSNB 5/16-18X3/4 GR5	
30.801-001CSCREW RD HD 8-32 X 3/8 BRASS	
31.804-003CWASHER FLAT #8 BRASS	
32.803-035CNUT HEX 8-32 BRASS	
33.804-002CWASHER INTERNAL STAR #8 BRASS	
34.123-410DGAUGE MOUNTING BRACKET	
35.819-041CSEED ADJUSTMENT GUIDE	
36.802-078CHHCS 1/4-20X5/8 GR5	

Small Seeds Coupler

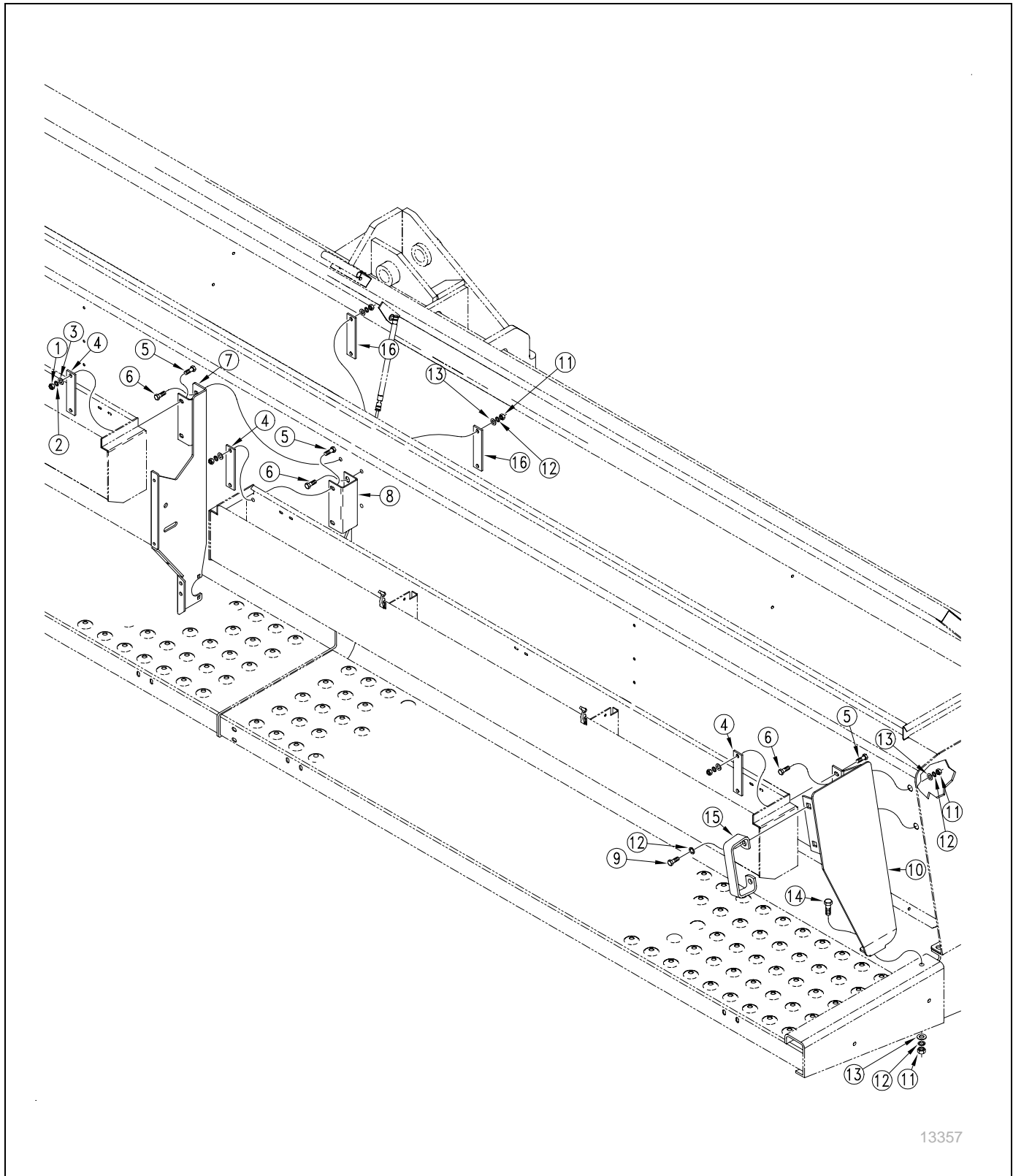


Small Seeds Coupler

Ref. Part No.	Part Description
---------------	------------------

1.803-255C	NUT HEX NYLOCK 1/4-20
2.804-007C	WASHER FLAT 1/4 SAE PLT
3.123-474H	COUPLER CONNECT HUB WELDMENT
4.816-119C	COUPLER CUSHION PLATE
5.802-005C	HHCS 1/4-20X1 GR5

24 Foot Small Seeds Box Mounting

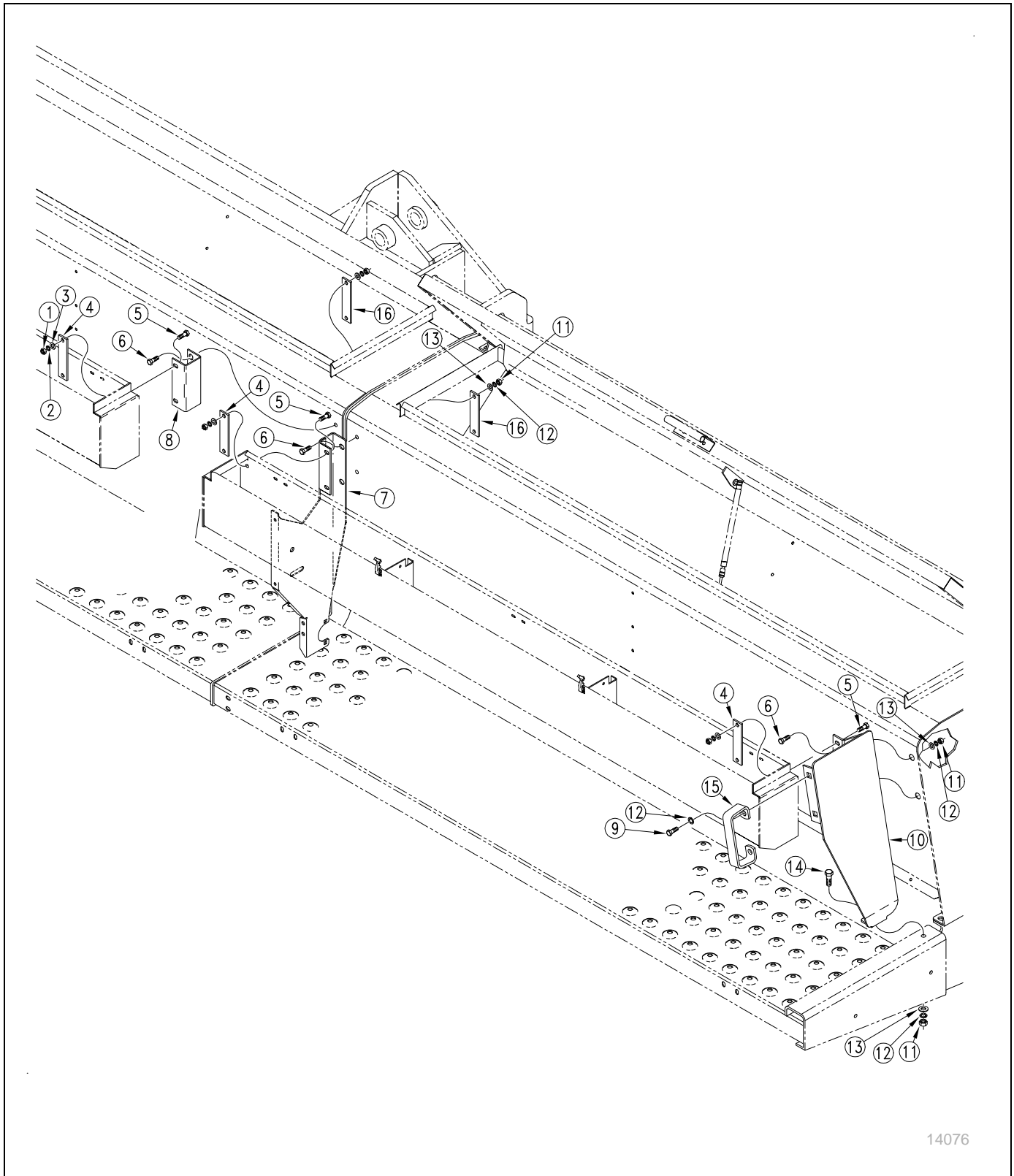


24 Foot Small Seeds Box Mounting

Ref. Part No. Part Description

1.803-014C	NUT HEX 3/8-16 PLT
2.804-013C	WASHER LOCK SPRING 3/8 PLT
3.804-012C	WASHER FLAT 3/8 SAE PLT
4.133-016D	SGS MOUNT REINFORCEMENT STRAP
5.802-079C	HHCS 3/8-16X1 1/4 GR5
6.802-091C	HHCS 1/2-13X1 1/2 GR5
7.113-008H	MANUAL MARKER LOCK ASSEMBLY
8.133-013D	SGS BOX CHANNEL MOUNT
9.802-032C	HHCS 1/2-13X3/4 GR5
10.133-007H	SGS END MOUNT WELDMENT RH
11.803-020C	NUT HEX 1/2-13 PLT
12.804-015C	WASHER LOCK SPRING 1/2 PLT
13.804-016C	WASHER FLAT 1/2 SAE PLT
14.802-034C	HHCS 1/2-13X1 1/4 GR5
15.119-190D	HANDLE
16.133-017D	SEED BOX REINFORCEMENT STRAP

30 Foot Small Seeds Box Mounting

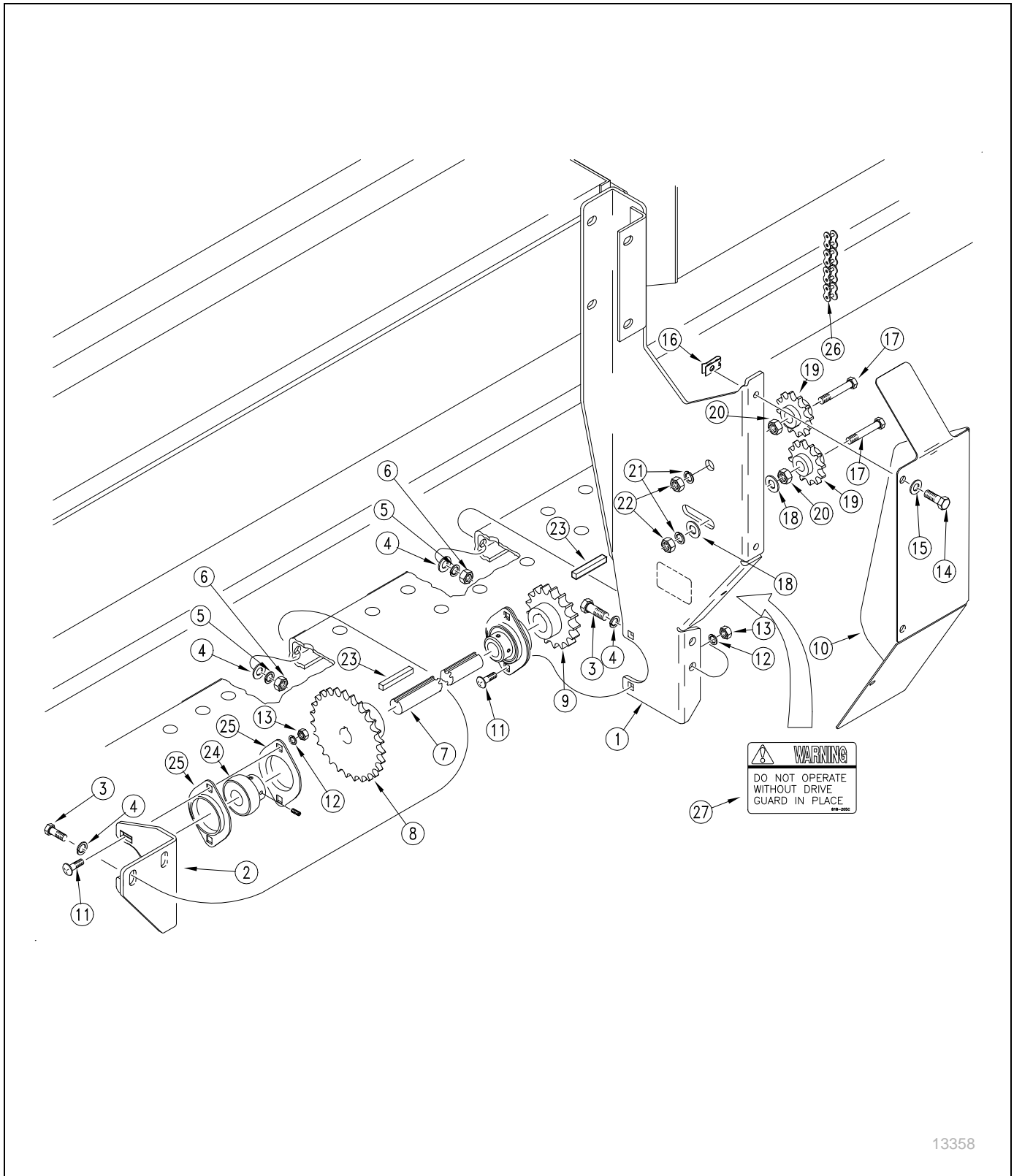


30 Foot Small Seeds Box Mounting

Ref. Part No.	Part Description
---------------	------------------

1.803-014C	NUT HEX 3/8-16 PLT
2.804-013C	WASHER LOCK SPRING 3/8 PLT
3.804-012C	WASHER FLAT 3/8 SAE PLT
4.133-016D	SGS MOUNT REINFORCEMENT STRAP
5.802-079C	HHCS 3/8-16X1 1/4 GR5
6.802-091C	HHCS 1/2-13X1 1/2 GR5
7.113-008H	MANUAL MARKER LOCK ASSEMBLY
8.133-013D	SGS BOX CHANNEL MOUNT
9.802-032C	HHCS 1/2-13X3/4 GR5
10.133-007H	SGS END MOUNT WELDMENT RH
11.803-020C	NUT HEX 1/2-13 PLT
12.804-015C	WASHER LOCK SPRING 1/2 PLT
13.804-016C	WASHER FLAT 1/2 SAE PLT
14.802-034C	HHCS 1/2-13X1 1/4 GR5
15.119-190D	HANDLE
16.133-017D	SEED BOX REINFORCEMENT STRAP

Jackshaft Drive

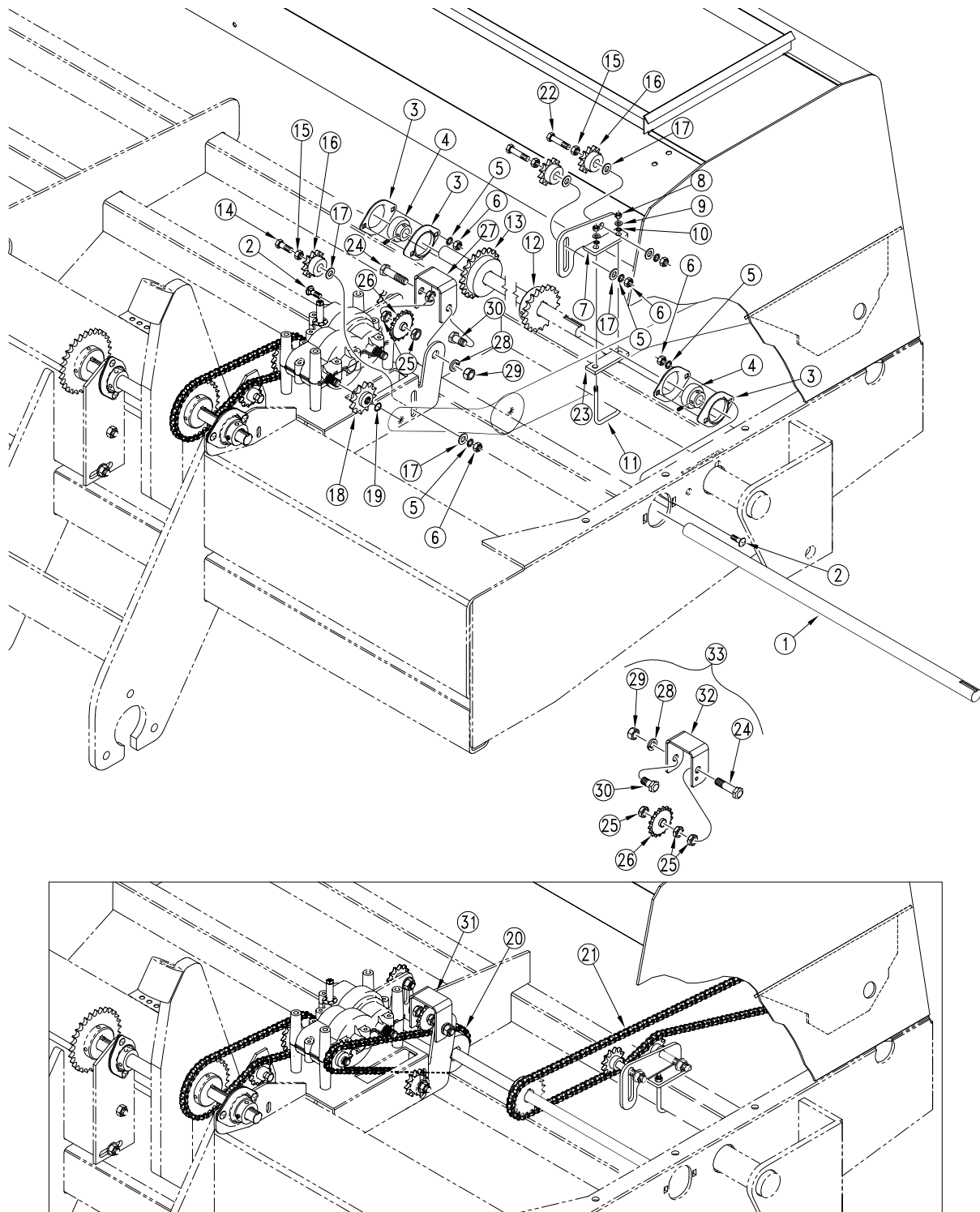


Jackshaft Drive

Ref. Part No. Part Description

1.133-008H	DRIVE GUARD MOUNT WELDMENT
133-030H	30' DRIVE GUARD MOUNT WELDMENT
2.123-385D	REAR BRG BRACKET
3.802-014C	HHCS 3/8-16X3/4 GR5
4.804-012C	WASHER FLAT 3/8 SAE PLT
5.804-013C	WASHER LOCK SPRING 3/8 PLT
6.803-014C	NUT HEX 3/8-16 PLT
7.123-533D	30' 2SNT SGS REAR JACK SHAFT
123-534D	24' 2SNT SGS REAR JACK SHAFT
8.808-072C	SPKT 40B28 X 3/4 B W/ KW & SS
9.808-118C	SPKT 40B18 X 3/4 B W/KW & 2SS
10.123-529D	2SNT SGS REAR DRIVE GUARD
11.802-092C	CRHSNB 5/16-18X3/4 GR5
12.804-009C	WASHER LOCK SPRING 5/16 PLT
13.803-008C	NUT HEX 5/16-18 PLT
14.802-078C	HHCS 1/4-20X5/8 GR5
15.804-006C	WASHER LOCK SPRING 1/4 PLT
16.800-013C	1/4-20 X 1 U TYPE FASTENER
17.802-039C	HHCS 1/2-13X3 GR5
18.804-016C	WASHER FLAT 1/2 SAE PLT
19.817-025C	NO. 40 12T IDLER SPKT.
20.803-036C	NUT HEX JAM 1/2-13 PLT
21.804-015C	WASHER LOCK SPRING 1/2 PLT
22.803-020C	NUT HEX 1/2-13 PLT
23.109-031D	JACK SHAFT - KEY
24.822-040C	BRG INS .75IDX1.85OD SPH LCK
25.822-041C	FLANGETTE 47 MST
26.136-010D	CHAIN RL #40 94 PITCHES
	FORMERLY 809-043C
27.818-205C	DECAL WARNING MOVING PARTS HAZ

Small Grass Seeder Drive



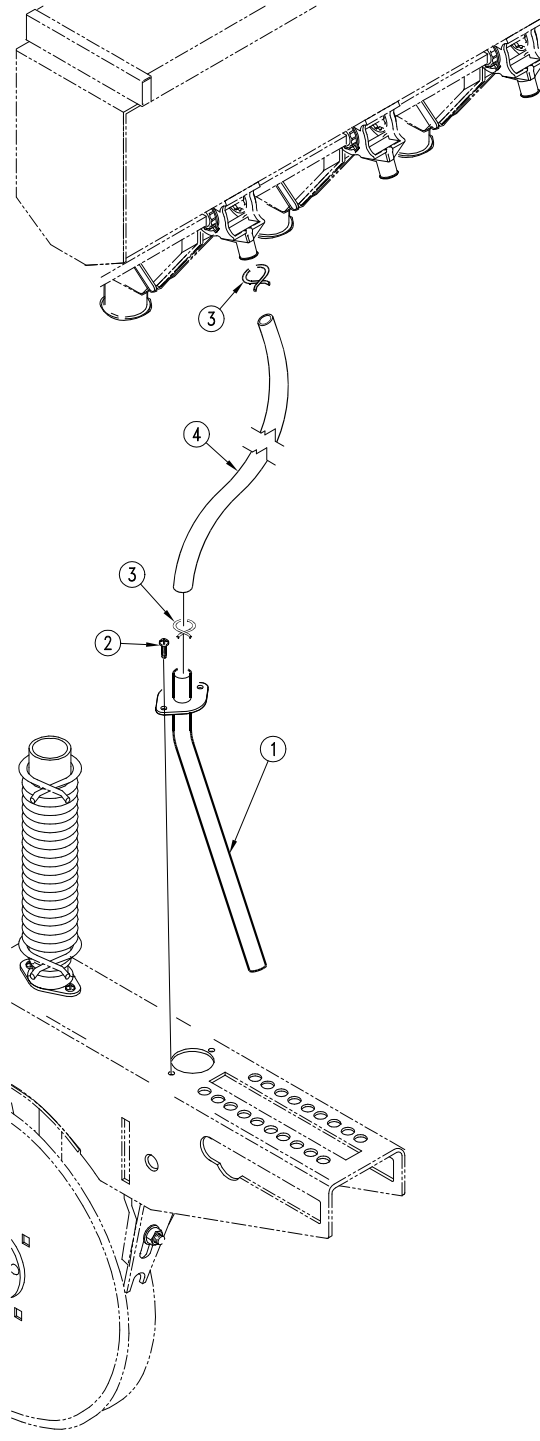
13647

Small Grass Seeder Drive

Ref. Part No. Part Description

1.123-525D	SML SDS & AG SHAFT LH&RH 30'
123-526D	SML SDS & AG SHAFT LH&RH 24'
2.802-282C	RHSNB 5/16-18X1 GR5
3.822-032C	FLANGETTE 52 MST
4.822-060C	BRG INS 1.00IDX2.04OD SPH
5.804-009C	WASHER LOCK SPRING 5/16 PLT
6.803-008C	NUT HEX 5/16-18 PLT
7.123-527D	2SNT SGS IDLER MOUNT
8.803-014C	NUT HEX 3/8-16 PLT
9.804-012C	WASHER FLAT 3/8 SAE PLT
10.804-013C	WASHER LOCK SPRING 3/8 PLT
11.806-001C	CU-BOLT 3/8-16 X 2 X 4
12.808-125C	SPKT 40B19X1 B MAX .875 THRU FORMERLY 152-312D ALSO FORMERLY 808-052C
13.808-183C	SPKT 40B22 1 BORE W/KW & SS
14.802-039C	HHCS 1/2-13X3 GR5
15.803-036C	NUT HEX JAM 1/2-13 PLT
16.817-025C	NO. 40 12T IDLER SPKT.
17.804-017C	WASHER FLAT 1/2 USS PLT
18.808-160C	SPKT 40B12 X 36T SPLINE BORE
19.800-141C	SNAP RING EXT F/PEERLESS G.B.
20.809-060C	CHAIN #40 X 66 PITCHES
21.136-108D	CHAIN RL #40 137 PITCHES FORMERLY 809-140C
22.802-226C	HHCS 1/2-13X2 3/4 GR5
23.133-020D	SGS IDLER MOUNT SPACER

Small Seeds Hose Retainer Assembly



13478

Small Seeds Hose Retainer Assembly

Ref. Part No.	Part Description
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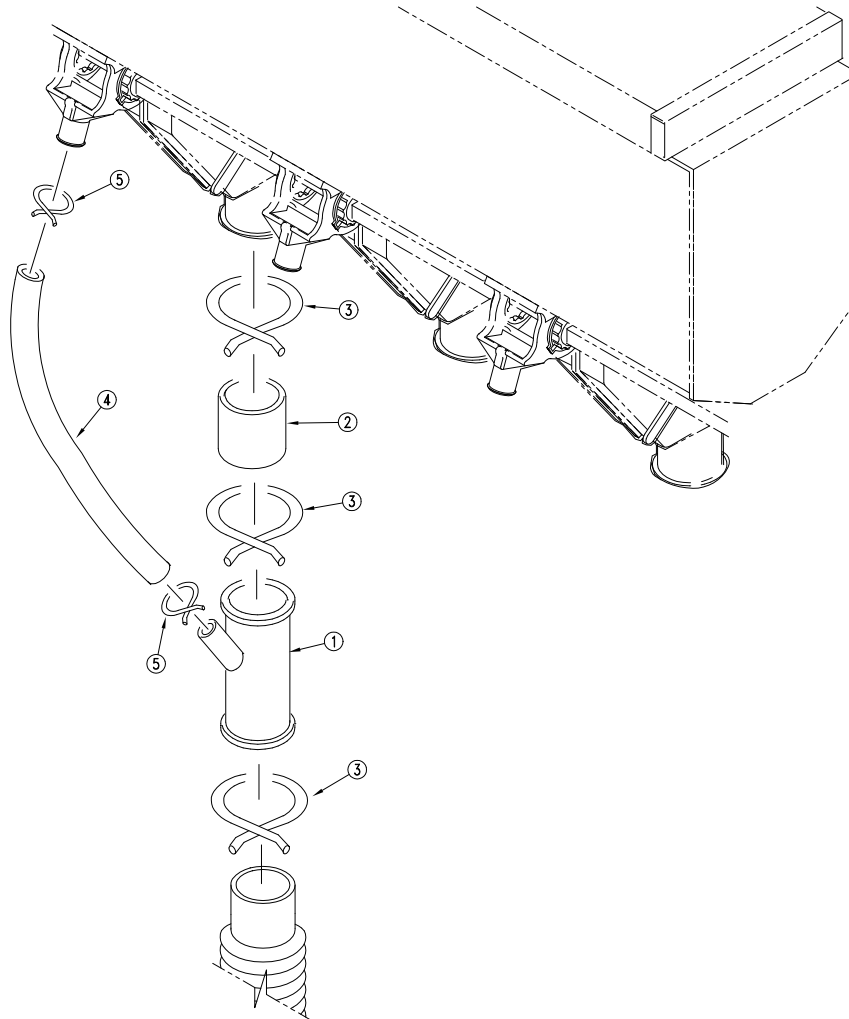
1.123-939H	SMALL SEEDS TUBE WELDMENT
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2.801-002C	SCREW HEX SLT10-16X1/2P.TH D CT
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3.800-029C	SINGLE WIRE HOSE CLAMP #14
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4.123-521D	GRASS SEED HOSE, 40IN.
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Small Seeds Y-Tube Assembly



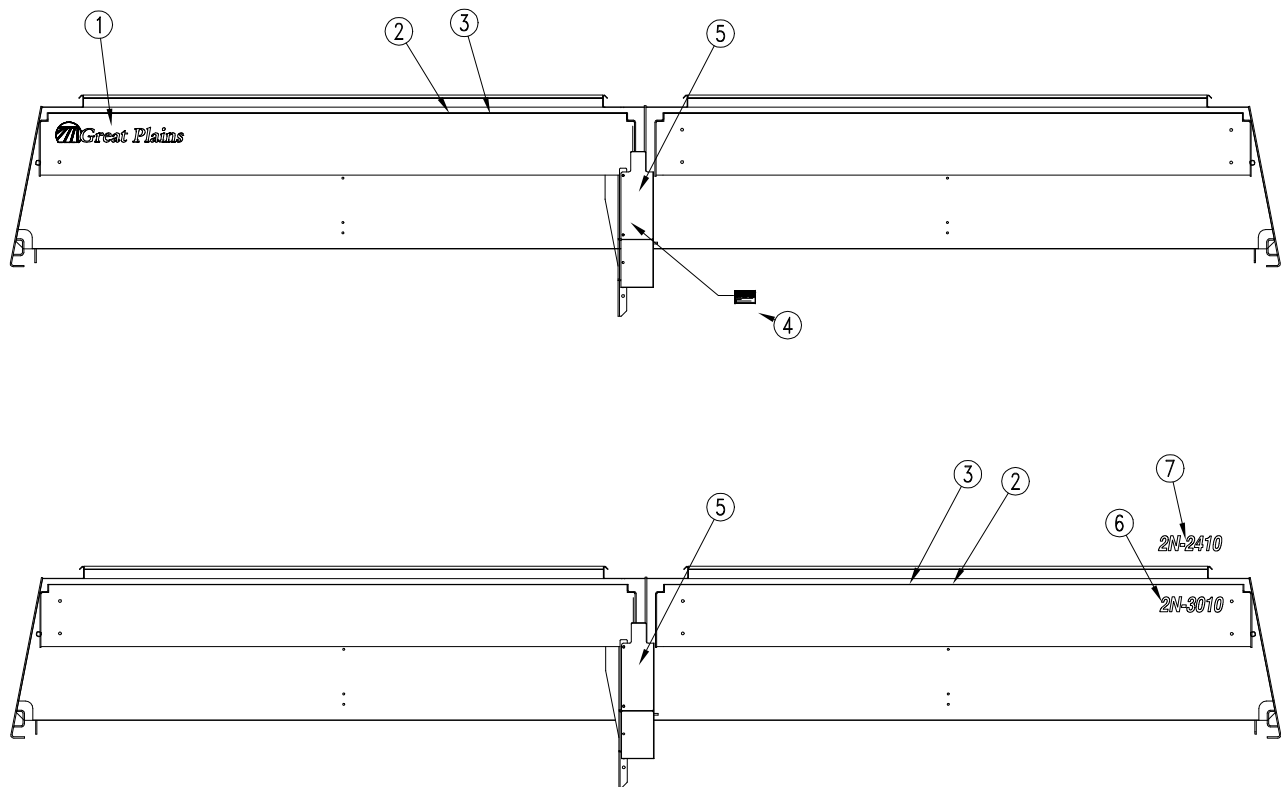
11086

Small Seeds Y-Tube Assembly

Ref. Part No. Part Description

1.817-127C	1 1/4 DIA PLAST OPNR DROP TUBE
2.816-284C	EWNT DROP TUBE CONNECTING HOSE
	FORMERLY 123-299D
3.800-008C	CLAMP HOSE 1 1/2 NO. 24
4.123-306D	EWNT Y GRASS SEED HOSE
5.800-029C	SINGLE WIRE HOSE CLAMP #14

Small Seeds Attachment Decal Placement



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Decal Placement

Ref. Part No. Part Description

1.838-161C	DECAL GP W/ LOGO AND STRIPE 4X24 (2000 and above)
1.818-415C	DECAL GP W/ LOGO AND STRIPE (1999 and below)
2.818-207C	DECAL-GRSSDR SD RATE ADJ INST
3.818-031C	DECAL GRASS SEEDER SEED RATE
4.818-414C	DECAL W/ 4 COLOR STRIPE
5.818-205C	DECAL WARNING MOVING PARTS HAZ
6.838-195C	DECAL 2N-3010 (2000 and above)
6.818-434C	DECAL SOLID STAND 3010 NT (1999 and below)
7.838-193C	DECAL 2N-2410 (2000 and above)
7.818-435C	DECAL SOLID STAND 2410 NT (1999 and below)

Warranty Warranty

Great Plains Manufacturing, Incorporated warrants to the original purchaser that this seeding equipment will be free from defects in material and workmanship for a period of one year from the date of original purchase when used as intended and under normal service and conditions for personal use; 90 days for commercial or rental purposes. This Warranty is limited to the replacement of any defective part by Great Plains Manufacturing, Incorporated and the installation by the dealer of any such replacement part. Great Plains reserves the right to inspect any equipment or part which are claimed to have been defective in material or workmanship.

This Warranty does not apply to any part or product which in Great Plains' judgement shall have been misused or damaged by accident or lack of normal maintenance or care, or which has been repaired or altered in a way which adversely affects its performance or reliability, or which has been used for a purpose for which the product is not designed. This Warranty shall not apply if the product is towed at a speed in excess of 20 miles per hour.

Claims under this Warranty must be made to the dealer which originally sold the product and all warranty adjustments must be made through such dealer. Great Plains reserves the right to make changes in materials or design of the product at any time without notice.

This Warranty shall not be interpreted to render Great Plains liable for damages of any kind, direct, consequential, or contingent, to property. Furthermore, Great Plains shall not be liable for damages resulting from any cause beyond its reasonable control. This Warranty does not extend to loss of crops, losses caused by harvest delays or any expense or loss for labor, supplies, rental machinery or for any other reason.

No other warranty of any kind whatsoever, express or implied, is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale.

This Warranty is not valid unless registered with Great Plains Manufacturing, Incorporated within 10 days from the date of original purchase.

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G		right-hand, defined 5		
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