

Rugged and reliable, a high-performance drive system that is easily fit for precision performance. Designed to fit a variety of planter platforms, the FlexSeeder™ allows OEM's, aftermarket professionals and farmers the ability to upgrade their planting systems with state of the art drive technology.

# Elliott FlexSeeder Aftermarket Offering

1st Edition Installation Guide A-677-14628-1 REV A

For more information go to: www.flexseeder.com

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# **1.0 Introduction**

# **Overview**

Thank you for considering the Elliott FlexSeeder for your planter system. The FlexSeeder is a rugged and reliable, high-performance drive system designed for precision seed placement. Capable of fitting on a variety of seeder platforms, the Elliott FlexSeeder allows aftermarket professionals and farmers the ability to upgrade their planting systems with state of the art drive technology at a fraction of the cost of new equipment. This eliminates chain and sprocket drives, with an individual on/off row control option for precision farming, maintenance-free operations plus substantial seed savings and higher harvest yields.

## Features & Benefits

• Eliminates overplanting in headlands and point

### rows

- Delivers increased yields
- Provides substantial seed savings
- Compatible with multiple planter makes/models
- No lubrication required
- No chain disengagement in no-till
- No chain/sprocket alignment issues
- No spring or winter maintenance required

• Easy installation

• Completely sealed system is pressure washer friendly

- In-line electric clutch provides individual on/off row control with minimal power requirements
- Industry standard wire connectors are

compatible with a variety of control/monitoring systems

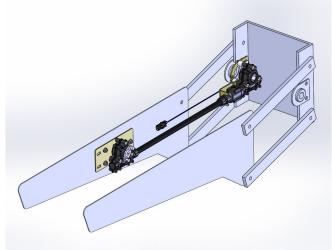
• Optional in-line insecticide drive capabilities with manual disconnect

# FlexSeeder Systems Specifications

• Available gearbox ratios: 2:1 & 3:1

- Multiple configurations to match existing manufacturer drive transmission ratios

- Gearbox input/output: 7/8" hex
- Seed meter gearbox rpm: 0-50 rpm
- In-line electric clutch: 12V DC (.287 amps)
- 2-pin Weather Pack connectors
- Compatible with most GPS systems
- Can be used in conjunction with hydraulic variable rate systems



# 2.0 Safety Information

# Read all safety information prior to starting the installation of your FlexSeeder System

Read all instructions, warnings, and cautions carefully. Follow all safety precautions to avoid personal injury or property damage during system installation and operations. Elliott cannot be responsible for damage or injury resulting from unsafe product use or incorrect product and/or system installation/operation. Contact your Dealer when in doubt as to safety precautions and operations. *Failure to comply with the following dangers, cautions, and warnings could cause equipment damage and personal injury.* 



DANGER: Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

**WARNING:** Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

**CAUTION:** Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

**NOTICE:** Indicates information considered important, but not hazard-related (e.g. messages related to property damage.)



**WARNING:** Read and follow all of the following warnings individually. Failure to so could result in death or serious injury.

- 1. Follow and obey all existing warning and caution signs on your equipment and in this manual.
- 2. Follow the proper lockout procedures on your tractor prior to beginning any retrofit.
- 3. Use proper Personal Protective Equipment (PPE) during installation and maintenance. Examples include gloves, eye protection, welding related equipment, and others.
- 4. Springs, hydraulics, compressors are all examples of components that might have stored energy that can be released at any time. Refer to your owners manual and follow the proper procedures to remove all potential or stored energy from your planter components/systems.
- 5. Use extreme caution when working on pressurized systems (Oil, Air, etc...). Refer to your owners manual and follow the proper procedures to relieve pressure in safe manor.
- 6. Use extreme caution when working with electrical components and devices. These components may contain high voltages.
- 7. Always wash your hands and forearms after working on Agricultural Equipment. It is possible to have been exposed to chemicals.

# **3.0 Interference Validation**

The FlexSeeder system has been designed and tested to fit a wide variety of planter models and makes. Due to the numerous aftermarket and OEM attachments, hardware, and modifications planters might have, it is difficult to validate all possible configurations in the field. When purchasing and installing the FlexSeeder system, be sure to verify that the FlexSeeder system and associated hardware does not interfere with any part of your planter. Please contact your dealer for further information concerning interference.

## **Testing for Interference:**

Although most interference issues can be identified prior to installation through visual inspection, it is suggested carry out the following steps after you have retrofitted your planter with the FlexSeeder system.

- 1. Insure that all FlexSeeder supplied mechanical stop parts have been installed correctly.
- 2. Lower the planter row to the planting position all the way until it reaches its end-stop. Inspect to insure that there is no interference with planter parts.
- 3. Raise the planter to the transport position all the way until it reaches its end-stop. Inspect to insure that there is no interference with planter parts.
- 4. Insure that there is not interference between the FlexSeeder and any planter parts during the entire travel of the row unit.
- 5. If your planter is capable of folding for transport, fold the planter and inspect to insure that there is no interference with planter parts.

**NOTICE:** FlexSeeder supplied mechanical stops will limit the motion of your planter. Elliott is not responsible for any damage that may occur to your planter due to these stops.

**NOTICE:** Damaged caused to the FlexSeeder system due to interference issues are not covered by Warranty and you will not be compensated for any damage to your planter.

**NOTICE:** Elliott is not responsible for and damage or costs incurred due to modifications made to your planter. Any modifications to your planter are your responsibility.

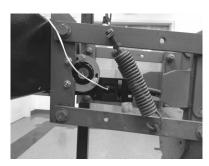
## **Typical Examples of interference:**

- 1. Springs
- 2. Pneumatic Cylinders
- 3. Downforce option hardware

# 3.1 Interference Validation-John Deere 7000/7100

Below is a guide to determining compatibility of the FlexSeeder system with certain downforce options. Elliott has made every effort to determine if your system is compatible with our system but we can not make any guarantees due to multiple modifications and configurations of most planters.

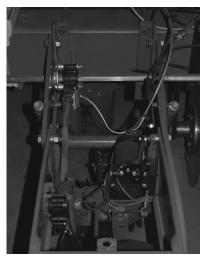
Down Force Option	Compatible?	Toolbar Position
None	Yes	А
JD Spring Pressure Attachment	Yes	А
JD Heavy Duty Down Pressure Spring	Yes	С
Heavy Duty Down Pressure Springs	Yes	А
Precision Planting Air Force	Yes	А
Precision Planting Delta Force	Yes	A



JD Spring Attachment



Heavy Duty Down Pressure Springs



Precision Planting Air Force

\*Tool Bar Position A, B, and C can be seen later in the installation instructions.

# 3.2 Interference Validation-John Deere 1700/7200/7300

Below is a guide to determining compatibility of the FlexSeeder system with certain downforce options. Elliott has made every effort to determine if your system is compatible with our system but we can not make any guarantees due to modifications to most planters.

# **Standard Plate**

Down Force Option	Compatible?	Toolbar Position*
None	Yes	А
Down Force Attachment (Light Duty)	Yes	А
Dual Down Force Attachment (Light Duty)	No (Unless internal spring removed)	А
Heavy Duty Down Force Attachment (Before 1992)	No (Unless internal spring removed)	А
Heavy Duty Down Force Attachment (After 1992)	Yes	А
Pneumatic Down Force (Spring Assembly)	Yes (If angled side on to the left)	А
Dual Pneumatic Down Force	No	N/A
Precision Planting Air Force	Yes (If angled side on to the left)	А
Precision Planting Delta Force	Yes	А

# **Narrow Plate**

Down Force Option	Compatible?	<b>Toolbar Position</b>
None	Yes	А
Down Force Attachment (Light Duty)	Yes	А
Dual Down Force Attachment (Light Duty)	No (Unless internal spring removed)	А
Heavy Duty Down Force Attachment (Before 1992)	No (Unless internal spring removed)	А
Heavy Duty Down Force Attachment (After 1992)	No	А
Pneumatic Down Force (Spring Assembly)	Yes (If angled side of support on to the left)	A
Dual Pneumatic Down Force	No	N/A
Precision Planting Air Force	Yes (If angled side of support on to the left)	A
Precision Planting Delta Force	Yes	А

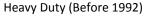


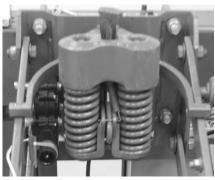
Light Duty



Dual Light Duty







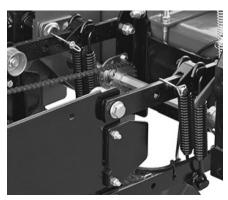
Heavy Duty (After 1992)

\*Tool Bar Position A, B, and C can be seen later in the installation instructions.

# 3.3 Interference Validation-Kinze 3000(Pull row)

Below is a guide to determining compatibility of the FlexSeeder system with certain downforce options. Elliott has made every effort to determine if your system is compatible with our system but we can not make any guarantees due to modifications to most planters.

Down Force Option	Compatible?	Toolbar Position
None	Yes	А
Spring	Yes	С
Pneumatic	Yes	А
Precision Planting Air Force	Yes	А
Precision Planting Delta Force	Yes	A



Spring Down Force

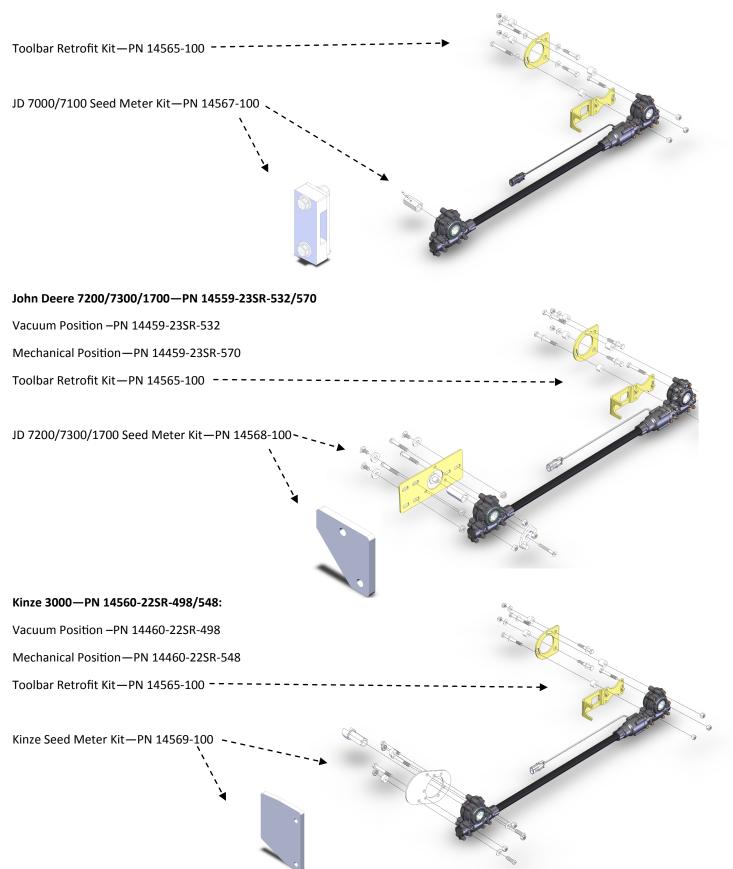


Pneumatic Down Force

\*Tool Bar Position A, B, and C can be seen later in the installation instructions.

# 4.0 System Components

John Deere 7000/7100-PN 14458-22SR-498:



# **5.0 Required Tools**

# John Deere 7000/7100

- 2: ½" wrenches or socket
- 2: 9/16" wrenches or socket
- 1: Hammer
- Plus whatever is required for disassembly

## John Deere 7200/7300/1700

- 2: ½" wrenches or socket
- 2: ¾" wrenches or socket
- 1: 1" wrench, socket, or crescent wrench
- 1: 3/16" Allen wrench
- 1: 5/32" Allen wrench
- Plus whatever is required for disassembly

## Kinze 3000

- 2: ½" wrenches or socket
- 2: 9/16" wrenches or socket
- 1: 5/32" Allen wrench
- 1: 1/8" pin punch
- 1: external snap ring pliers
- 1: Hammer
- Plus whatever is required for disassembly

# 6.0 Additional Parts Required

There are additional parts required outside of those provided in the FlexSeeder system.

- A 7/8" hex bar is required with the FlexSeeder system. If your planter does not have a 7/8" Hex bar, you must purchase one fit to the right lengths according to your planter.
- 7/8" support bearings are required with the FlexSeeder system. It is suggested that you use one with each row. This can purchased directly from your FlexSeeder system dealer.

# 7.0 Step-by-Step Instructions - Planter Preparation

# Step 1:

- Please read your planter manual and follow all safety procedures for servicing.
- Please read all warnings listed on the safety information page of this instruction manual.



# Step 2:

 Implement must be lowered to ground or resting on hydraulic safety stops before beginning installation. Do not rely on hydraulic system alone to support implement.

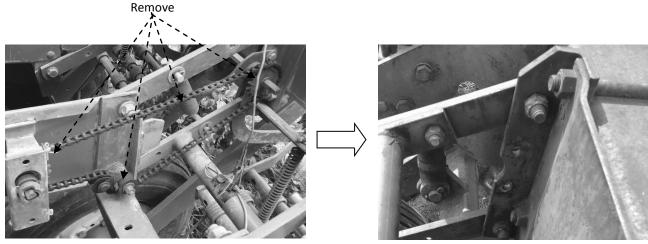


WARNING: Hydraulics can fail – resulting in serious injury or death. Use mechanical stops. Failure to do so could result in death or serious injury.

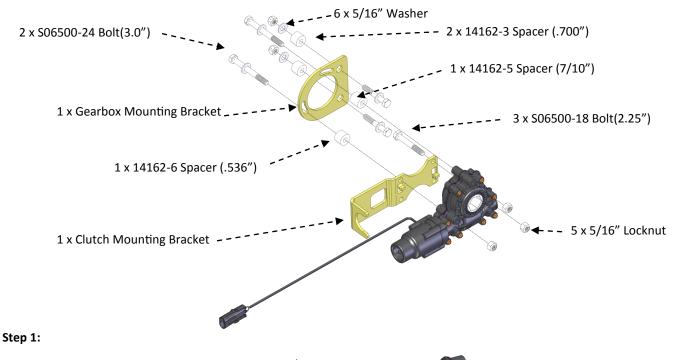


# Step 3:

 Remove seed meters, hoppers, hex bars, chains and sprockets, chain idler, and existing manufacturer seed meter brackets.



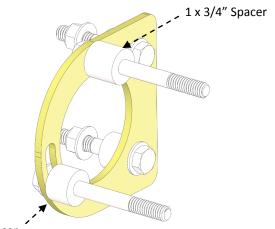
# 7.1 Step-by-Step Instructions - Toolbar End



- Attach the clutch mounting bracket to the clutch/gearbox assembly as seen the right. Insert the Weather Pack connector through the window in the clutch bracket. The tabs in the bracket will align itself to the gearbox.
- Use the S06500-18 Bolt and a 5/16" Locknut to secure the clutch bracket.

# Step 2:

- Assemble the Gearbox support bracket as seen on the right. Insure that the spacers are in the right configuration.
- Do not tighten the Locknuts completely. These are just to insure the bolts do not fall out of the gearbox bracket.

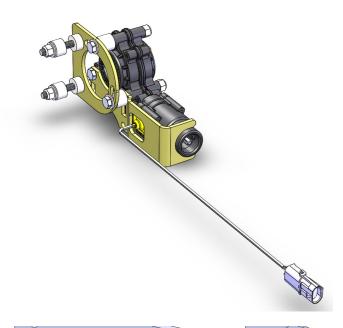


3 x 5/8" Spacer

# 7.1 Step-by-Step Instructions - Toolbar End

# Step 3:

- Combine the two assembles by inserting the two bolts through the remaining gearbox holes.
- Use the two remaining Locknuts to fixate the assembly together. Do not over torque the two locknuts. A loose fit here will make the reinsertion of the hex bar easier later in the retrofit process.

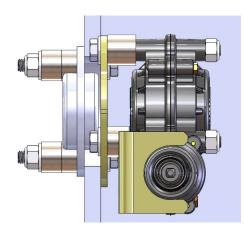


# Step 4:

- Install the assembly on the row unit as shown to the right with a carrier bearing.
- Depending on your down force setup you may fixate the assembly to the row unit in two different positions. See below for options.
- Depending on your toolbar U-bolt lengths, you may need to grind a bolt down slightly on JD 7200,7300, and 1700 series planters in order to mount the system.

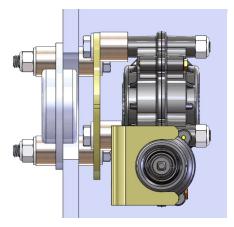
# 

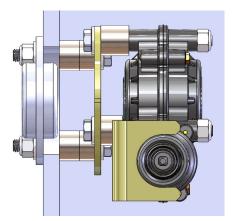
# Spacers Outside (Position A\*):



# 1 Spacer Inside (Position B\*):

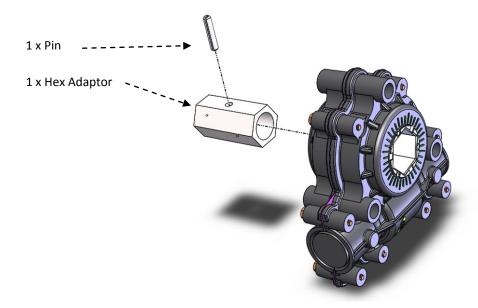
2 Spacers Inside (Position C\*):





\*Refer to compatibility matrix on page to identify required spacer positioning.

# 7.2 Step-by-Step Instructions - John Deere 7000/7100 Seed Meter Kit



## Step 1:

- Loosen the bracket from the planter frame and let latch hang. Insure the sprocket is removed the from dog box.
- Slide hex adaptor over shaft, line up holes, and insert pin.



## Step 2:

• Slide gearbox over hex. Push to end stop.



# 7.2 Step-by-Step Instructions - John Deere 7000/7100 Seed Meter Kit

# Step 3:

• Replace spring with large end next to gearbox and insert shaft into dog.



# Step 4:

• Replace latch to correct positions and tighten dog box.

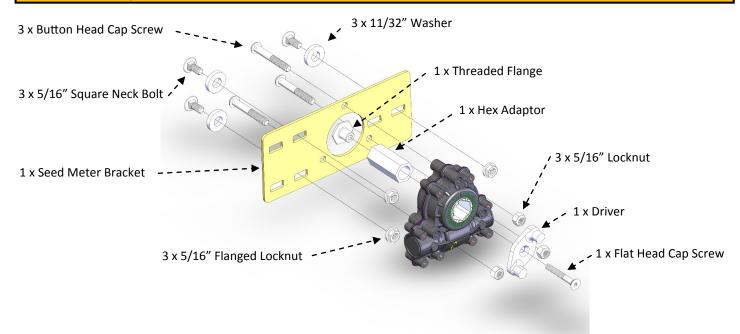


# Step 5:

Insure the latch can be placed in both the "engaged" and "disengaged" position.

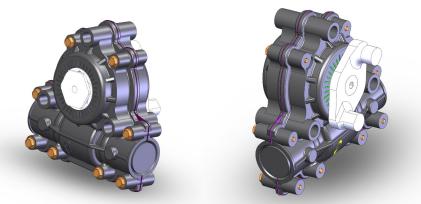


# 7.3 Step-by-Step Instructions—John Deere 7200/7300/1700 Seed Meter Kit



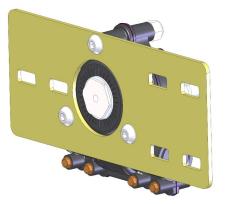
# Step 1:

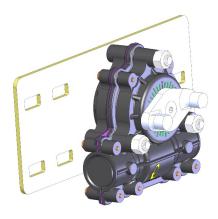
 Insert the hex adaptor through the gearbox. Use the threaded flange and the flat head cap screw to fixate the driver onto the gear box.



## Step 2:

- Attach the gearbox to the seed meter bracket with the 3 button head cap screws and the 5/16" locknuts.
- Tighten sufficiently so that nylon of lock nuts clears the threads of the bolt. Do not tighten to gearbox. Allowing some spacing here is beneficial to the durability.





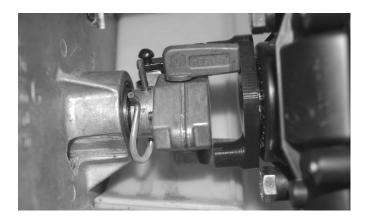
# 7.3 Step-by-Step Instructions—John Deere 7200/7300/1700 Seed Meter Kit

Step 3:

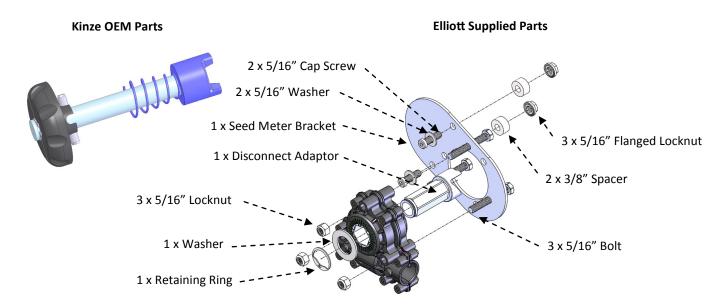
Mount the Assembly to the Planter. Insure the provided spacers are on the internal side of the row unit so the button head cap screws have some clearance. There are two potential positions depending on whether • you have mechanical seed meters of vacuum seed meters. Row unit wall between carriage bolt head and spacer **Mechanical Seed Meter Position** Vacuum Seed Meter Position

# Step 4:

 Reinsert the flex shafts into the gear boxes and install your seed meters. Insure that you have good alignment between the butterfly driver on your seed meter and the driver on your gear boxes.



# 7.4 Step-by-Step Instructions - Kinze 3000 Seed Meter Kit



## Step 1:

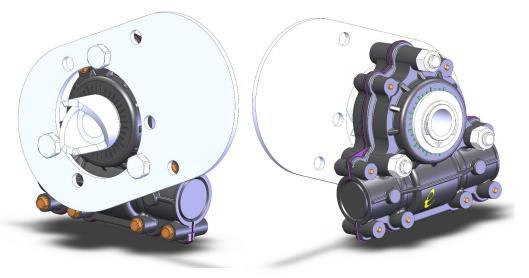
- Insert the Disconnect Adaptor through the gearbox as shown to the right.
- Slide the large washer over the adaptor and use a retaining ring tool to place the retaining ring in the groove of the adaptor.
- Insure that the retaining ring is all the way in the groove.





## Step 2A Mechanical Position:

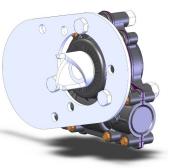
 If you have a mechanical seed meter, mount the gearbox to the seed meter bracket as shown to the right with the three 5/16" bolts. And the 5/16" locknuts.



# 7.4 Step-by-Step Instructions - Kinze 3000 Seed Meter Kit

# Step 2B Vacuum Position:

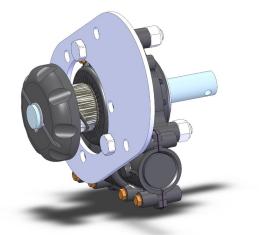
 If you vacuum seed meter, mount the gearbox to the seed meter bracket as shown to the right with the three 5/16" bolts. And the 5/16" locknuts.





# Step 4

- Remove the pin from the seed meter driver and remove driver and spring.
- Insert that handle and shaft assembly through the disconnect adaptor.







# Step 5

- Slide the spring back over the shaft of the handle with the large diameter closer to the gearbox.
- Slide the seed meter driver over the shaft.
- Use a vice to hold the seed meter driver while reinserting the pin so you do not put side loading on the gear box.

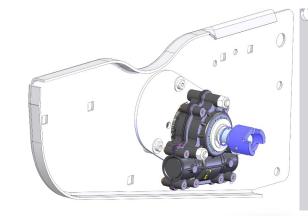
# Step 3

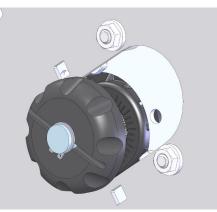
- Insert the 5/16" Cap screws through the bracket with the two remaining washers.
- Insert the 3/8" spacers on the other side of the bracket.

# 7.4 Step-by-Step Instructions - Kinze 3000 Seed Meter Kit

## **Step 6A Mechanical Position:**

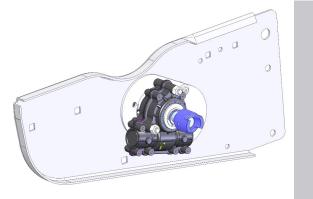
If you have a mechanical seed meter, mount the gear box/bracket assembly to the row unit the 5/16" flanged locknuts. The 3/8" spacers should be between the seed meter bracket and the row unit wall. See the images to the right for positioning.

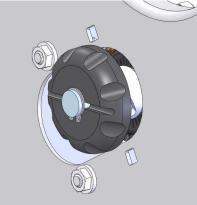




## Step 6B Vacuum Position:

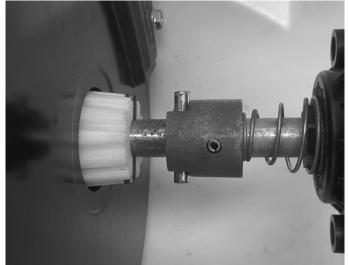
 If you have a vacuum seed meter, mount the gear box/ bracket assembly to the row unit the 5/16" flanged locknuts. The 3/8" spacers should be between the seed meter bracket and the row unit wall. See the images to the right for positioning.





## Step 7

 Reinsert the flex shafts into the gear boxes and install your seed meters. Insure that you have good alignment between the pin driver on your seed meter and the driver on your gear boxes.



# 7.5 Step-by-Step Instructions - Insert Hex Shaft

# Step 1:

- Slide hex bar through all gearboxes and support bearings.
- It is much easier to slide the hex bar through if all the gearboxes and support bearing are initially loosely mounted.
- Connect to hex bar coupler
- Tighten gear boxes and support bearings.



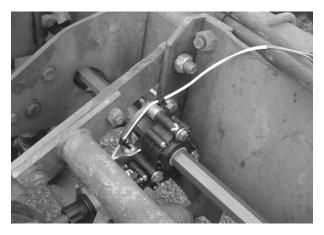
# Step 2:

• Insure that the hex bar does not interfere with any parts of the planter when rotated.

# 7.6 Step-by-Step Instructions - Wiring of Weather Pack Cable

# Step 1:

• Wire the Weather Pack cable/connector so that it will not have any strain/interference when the row unit is actuated.



**NOTICE:** Route and secure wires and connections to avoid crimping or damaging. This could result in damage to your system.

# 7.7 Step-by-Step Instructions - Install Mechanical Stops

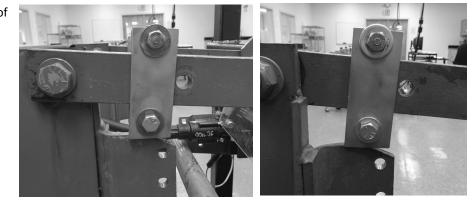
The FlexSeeder retrofit kits all include mechanical stops that will restrict the movement of the planter. This is done to avoid potentially harmful contact with the FlexSeeder system components. Please note that this will restrict motion of the planters.



**WARNING:** Installing the mechanical stops may require you to lift your planter off its mechanical stops. The suspended weight can cause dangerous pinch points. Use a stable jack to lift and lower the planter. Failure to do so could result in death or serious injury.

## John Deere 7000/7100

Install with hopper on, have the heads of the bolts on the inside, leave about 1/8" space between hopper and bolt head, tighten down.



## John Deere 7200/7300/1700

 Remove the row cleaners from your row. Reinstall the mechanical stops and row cleaners as shown to the right with longer bolts.

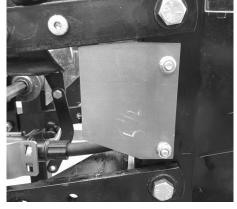




## Kinze 3000

 Replace the existing mechanical stop with the supplied stop. The more severe angle should be lower. Make use of the existing hardware.







# 7.8 Step-by-Step Instructions - Transmission Drive Ratio

If your planter requires transmission drive ratio adjustments, please contact your dealer for technical support.

## John Deere 7000/7100

• The FlexSeeder system provided for the John Deere 700/7100 models has 1:1 ratio between the hex bar RPM and the seed meter RPM. You should not have to altar your transmission in any way.

## John Deere 7200/7300/1700

• 7200, 7300, 7340, 1700, 1710, 1720, 1730, 1750, 1770 Flex Fold (*Perform only on planters with Finger Pick-Up, Radial Bean, or Feed Cup Meters*).

-Remove existing 18 tooth sprocket AA34369 and replace with new 27 tooth sprocket AA64826. Install new chain with approximately 4 additional links. It may be required to cut additional clearance for chain in transmission mud shield.

• 1760, 1760NT and 1770 12 Row Narrow (Perform only on planters with Finger Pick-Up, Radial Bean, or Feed Cup Meters).

-Loosen chains and slide shaft out of the way. Remove the 27 tooth sprocket AA39181. Install the new 18 tooth sprocket AA35198 and lock with the hex clamps. Reinstall shaft and remove four or five chain links before reinstalling chain.

• 1770NT 12 Row and 16 Row (Perform only on planters with Finger Pick-Up, Radial Bean, or Feed Cup Meters).

-Loosen chains and slide lower shaft out of the way to remove existing sprocket . Install the new 24 tooth sprocket AA54877. Reinstall shaft. Slide upper shaft out of the way and install new 27 tooth sprocket AA54875. Reinstall shaft. Lengthen chain with two links and reinstall.

• 1780 and Deere/Bauer (Perform only on planters with Finger Pick-Up, Radial Bean, or Feed Cup Meters).

-Replace sprocket B with the 21 tooth AA40165. Replace sprocket C with the 36 tooth AA63703. Replace sprocket D with the 29 tooth AA63702. Replace sprocket E with the 19 tooth AA43587. Adjust chain length and tighten. Low range and high ranges may run a little fast.

# Kinze 3000

• The FlexSeeder system provided for the Kinze 3000 models has 1:1 ratio between the hex bar RPM and the seed meter RPM. You should not have to altar your transmission in any way.

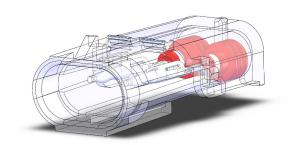
# 7.9 Step-by-Step Instructions - Final Inspection

# Step 1:

• Actuate complete planter row to both maximums. Insure there is no physical interference of any components as well as no strain on the Weather Pack cable connector. Replace Seedmeters and hoppers and insure engagement capability.

# Step 2:

- Install your GPS according to the GPS manufacturer's instructions. Elliott Manufacturing cannot offer technical support for your GPS system as these systems are not manufactured by Elliott Manufacturing. Al I questions concerning the setup and operation of the GPS system should be directed to the GPS manufacturer.
- Consult your dealer or GPS manufacturer for the correct wire harnesses. The FlexSeeder system is connected to your GPS controllers with a 2-Pin Weather Pack connector.
- Insure that your GPS system is recognizing your FlexSeeder system clutches.



# Step 3:

- Once you have completed the installation of your FlexSeeder systems, you will need to confirm performance and your seed populations. Please follow your GPS manufacturers instructions for doing so.
- It is strongly suggested that you manually and visually verify spacing and on/off control during the first few passes with your planter. Measure the spacing between seeds to validate population. Insure that the you are not over planting in end rows or that you are under planting upon re-entry.



# 8.0 Service Parts

Service Part Description	Part Number
Aftermarket JD 7000/7100 FlexSeeder System w/ Clutch	PN 14558-22SR-498
Aftermarket JD 7200/7300/1700 Mechanical FlexSeeder System w/ Clutch	PN 14559-23SR-532
Aftermarket JD 7200/7300/1700 Vacuum FlexSeeder System w/ Clutch	PN 14559-23SR-570
Aftermarket Kinze 3000 Mechanical FlexSeeder System w/ Clutch	PN 14560-22SR-498
Aftermarket Kinze 3000 Vacuum FlexSeeder System w/ Clutch	PN 14560-22SR-548
Aftermarket Toolbar w/ Clutch Kit	PN 14565-100
JD 7000/7100 Seed Meter Kit	PN 14567-100
JD 7200/7300 Seed Meter Kit	PN 14568-100
Kinze 3000 Seed Meter Kit	PN 14569-100
2:1 Gearbox	PN 13932-102
3:1 Gearbox	PN 13932-103
JD 7000/7100 Mechanical Flexible Shaft w/clutch	PN 14582-498
JD 7200/7300/1700 Mechanical Flexible Shaft w/clutch	PN 14582-532
JD 7200/7300/1700 Vacuum Flexible Shaft w/clutch	PN 14582-570
Kinze 3000 Mechanical Flexible Shaft w/clutch	PN 14582-498
Kinze 3000 Vacuum Flexible Shaft w/clutch	PN 14582-548

• Contact your local dealer for pricing.

