

# FLEXBERM™ OWNER'S MANUAL

FOR PART NUMBER 321670

REVISED 11.20



# TABLE OF CONTENTS



| GENERAL INFORMATION HOW TO USE THIS MANUAL       |      |
|--|------|
| HOW TO USE THIS MANUAL                           | 1    |
| WARRANTY INFORMATION                             | 2    |
| SAFETY   |      |
| SIGNAL WORDS                                     |      |
| EQUIPMENT SAFETY GUIDELINES                      |      |
| SAFETY   |      |
| SAFETY SIGN LOCATIONS                            | _    |
| SAFETY SIGN CARE                                 |      |
|  |      |
| OPERATIONAL SAFETY                               | 7    |
| INSTALLATION                                     |      |
| INSTALLATION GUIDE                               | 9    |
| OPERATIONS                                       |      |
| WHAT TO EXPECT                                   | . 16 |
| ADJUSTMENTS                                      |      |
| TROUBLESHOOTING                                  |      |
| BOLT TORQUE CHART                                |      |
| DOLI TORQUE CHART                                | ∠ 1  |
| PARTS GUIDE                                      |      |
| - LEFT AND RIGHT HAND MOUNTING ASSEMBLY          | . 22 |
| - LEFT AND RIGHT HAND PIVOT ARM & BLADE ASSEMBLY | . 24 |
| - LEFT AND RIGHT HAND DOWN ARM & BLADE ASSEMBLY  |      |
| - FLEXBERM™ ASSEMBLY                             |      |

#### GENERAL INFORMATION



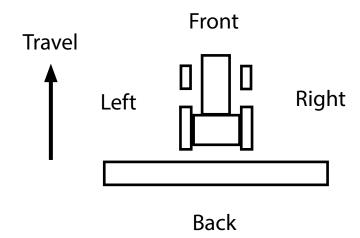
#### HOW TO USE THIS MANUAL

This manual is divided into sections. The first section contains a Table of Contents, General Information, Installation Guide and a Part Number Index. The remaining sections divide the machine into assemblies and sub-assemblies which illustrate and list all parts.

Hawkins Ag parts in this manual are specially designed for this machine and should be replaced with Hawkins Ag parts only.

Information in this manual was current at time of printing. However, due to Hawkins ongoing product improvement, production changes may cause your machine to appear slightly different in detail. Hawkins Ag reserves the right to change specifications or design without notice and without incurring obligation to install the same on machines previously manufactured.

Right-hand and left-hand as used in this manual are determined by facing the direction the machine will travel while in use.



## MANUAL REPLACEMENT INFORMATION

Replacement manuals are available. Call the Hawkins Ag Main Office at 308.708.8185, or download a printable PDF from our website, www.HawkinsAg.com.

#### MANUAL REVISIONS

When this manual is revised, the modification date is printed on the front cover and on the revised page(s).

## TOUCH-UP PAINT

Repaint parts where paint is worn or scratched to prevent rust. Aerosol touch-up paint is available. To order, call Hawkins Ag at 308.708.8185.



# INTRODUCTION

Thank you for your purchase of FlexBerm™ row units. Putting your trust in our equipment is something we don't take lightly and are humbled that you chose Hawkins Ag. Having designed all of our equipment with farmers like you in mind, we hope you enjoy years of productive use from it. Please read and understand this manual before operation.

## WARRANTY INFORMATION

AGROdeviate LLC (AGROdeviate) warrants each Hawkins Ag product it manufactures to be free from defects in material and workmanship for a period not to exceed one (1) year from the date of sale to the original owner. The warranty is valid provided written notice of the alleged defect is received by AGROdeviate during said period and within ten (10) working days after its discovery.

In addition, AGROdeviate warrants each TOOLBAR FRAMEWORK to be free from defects in material and workmanship for a period not to exceed three (3) years from the date of sale to the original owner. The warranty is valid providing written notice of the alleged defect is received by AGROdeviate during said period and within ten (10) working days after its discovery.

This warranty is subject to completion of Product Registration and submission to AGROdeviate. Warranty applies only if product is installed, operated, and maintained according to product manual and instructions. Warranty will be void if the product has been subject to misuse, misapplication, neglect, collision with obstruction, or alteration.

For products, parts, and components NOT manufactured by AGROdeviate, the warranty obligations of AGROdeviate shall be limited to the Original Equipment Manufacturers' warranty. Tires on AGROdeviate equipment are warranted through the respective tire manufacturer and their network of dealers.

All returns must be pre-approved by AGROdeviate and authorization issued before return. All returns must include a copy of the original invoice in order to be processed. Any returns without a copy of the original invoice will not be eligible to receive credit.

If determined that the product is defective in material and/or workmanship, the necessary parts will be replaced and/or repaired. All warranty repair or labor is to be performed by an AGROdeviate authorized party. AGROdeviate obligation under this warranty shall be limited to repairing or replacing parts deemed defective. Warranty does not cover travel expenses. AGROdeviate will bear no other costs including loss, incurred labor, rental fees, nor other.

All returns shall be pre-paid. If warranty is approved by AGROdeviate, return freight will be credited.

This warranty by AGROdeviate LLC is expressly in lieu of all other warranties, expressed or implied, including warranty of merchantability and fitness for use. We neither assume, nor authorize, any other entity to accept for us any liability relating to the sale of our products.

## **GENERAL INFORMATION**



#### SAFETY

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.



# THIS SYMBOL MEANS: -ATTENTION! -BECOME ALERT! -YOUR SAFETY IS INVOLVED!

#### SIGNAL WORDS:

Note the use of signal words DANGER, WARNING, and CAUTION with the safety messages. The appropriate signal word for each has been selected using the following guidelines:



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



WARNING: Indicates a potentially hazardous situation that, 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 that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

If you have questions not answered in this manual, require additional copies, or the manual is damaged, please contact Hawkins Ag, 2120 4th Ave., Holdrege, NE 68949, 308.708.8185, or visit our website: www.hawkinsag.com.

#### **GENERAL INFORMATION**





## **SAFETY... YOU CAN LIVE WITH IT!**



## **EQUIPMENT SAFETY GUIDELINES**

Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or for you, follow them.

In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.

Replace any CAUTION, WARNING, DANGER or instruction safety decal that is not readable or is missing. Location of such decals is indicated in this booklet.

Do not attempt to operate this equipment under the influence of drugs or alcohol.

Review the safety instructions with all users annually.

This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. Do not allow persons to operate or assemble the unit until they have read this manual and have developed an understanding of the safety precautions and how it works.

To prevent injury or death, use a tractor with a Rollover Protective Structure (ROPS). Do not paint over, remove or deface any safety signs or warning decals on your equipment. Observe all safety signs and practice the instructions on them.

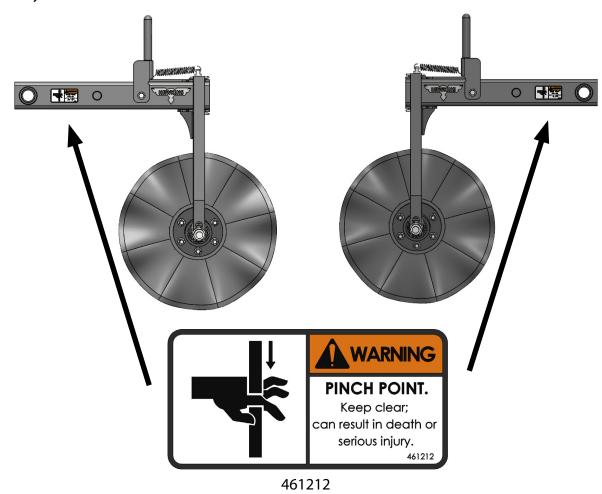
Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - DON'T TRY IT.





#### SAFETY SIGN LOCATIONS

These types of Safety Signs and locations on the equipment are shown in the illustration below. Good safety requires that you familiarize yourself with the various Safety Signs, the type of warning and the area, or particular function related to that area, that require your SAFETY AWARENESS.



REMEMBER: If Safety Signs have been damaged, removed, become illegible or parts replaced without decals, new decals must be applied. New decals are available from Hawkins Ag.

Hawkins Ag 2120 4th Ave. Holdrege, NE 68949

308.708.8185 www.hawkinsag.com

#### **SAFETY SIGNS**





#### **SAFETY SIGN CARE**

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Replaced parts that displayed a safety sign should also display the current sign.
- Safety signs are available from Hawkins Ag.

#### HOW TO INSTALL SAFETY SIGNS

- Be sure that the installation area is clean and dry.
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the decal over the specified area and carefully press the small portion with the exposed stick backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of decal backing paper.

#### **OPERATIONAL SAFETY**





## REMEMBER

Your best assurance against accidents is a careful and responsible operator. If there is any portion of this manual or function you do not understand, contact Hawkins Ag.



#### BEFORE OPERATION

- Carefully study and understand this manual.
- Do not wear loose-fitting clothing which may catch in moving parts.
- Always wear protective clothing and substantial shoes.
- It is recommended that suitable eye protection be worn.
- The operator may come in contact with certain materials which may require specific safety equipment (ie: extremely dusty, molds, fungus, bulk fertilizers).
- Keep bolts tightened to specific torque listed on page 26.
- Give the unit a visual inspection for any loose bolts, worn parts or cracked welds, and make necessary repairs. Follow the maintenance safety instructions included in this manual.
- Be sure that there are no tools lying on or near the equipment.
- Do not use the unit until you are sure that the area is clear, especially children and animals.
- Because it is possible that this equipment may be used in dry areas or in the presence of combustibles, special precautions should be taken to prevent fires and fire fighting equipment should be readily available.
- Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with your new equipment.
- Practice operation of your equipment and its attachments. Completely familiarize yourself and other operators with its operation before using.



## DURING OPERATION

- Keep hands, feet, and clothing clear of moving parts.
- Do not clean, lubricate or adjust your equipment while it is moving.
- Be especially observant of the operating area and terrain watch for holes, rocks or other hidden hazards. Always inspect the area prior to operation.
- Periodically clear the equipment of brush, twigs or other materials to prevent buildup of dry combustible materials.
- Do not walk or work under raised components or attachments unless securely positioned and blocked.
- Keep all bystanders, pets and livestock clear of the work area.
- Never stand alongside of unit with engine running or attempt to start engine and/or operate machine while standing alongside of unit.
- As a precaution, always recheck the hardware on equipment following every 100 hours of operation. Correct all problems. Follow the maintenance safety procedures.

#### OPERATIONAL SAFETY





## FOLLOWING OPERATION

- Store the unit in an area away from human activity.
- Do not park equipment where it will be exposed to livestock for long periods of time. Damage and livestock injury could result.
- Do not permit children to play on or around the stored unit.
- Make sure all parked machines are on a hard, level surface.



#### PERFORMING MAINTENANCE

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- Before working on this machine, stop the towing vehicle, set the brakes, shut off the engine and remove the ignition keys.
- Be certain all moving parts on attachments have come to a complete stop before attempting to perform maintenance.
- Always use the proper tools or equipment for the job at hand.
- Use extreme caution when making adjustments.
- Follow the torque chart in this manual when tightening bolts.
- Replace all shields and guards after servicing and before moving.
- After servicing, be sure all tools, parts and service equipment are removed.
- Never replace hex bolts with less than Grade 5 bolts unless otherwise specified. Refer to bolt torque chart for head identification marking.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use.
- If equipment has been altered in any way from the original design, the manufacturer does not accept any liability for injury or warranty.
- A first aid kit should be kept readily accessible while performing maintenance on this equipment.

## INSTALLATION GUIDE



## **Needed Tools:**

- **Safety Glasses**
- Protective Gloves
- **Rubber Mallet**
- **Impact Driver**
- Socket Wrench

- 1/2" Combination Wrench
- 3/4" Impact Socket
- 3/4" Combination Wrench
- **Standard Pliers**

# **Included Parts:**



1 x 321650 **RH Mounting Arm Assembly** 

1 x 321682

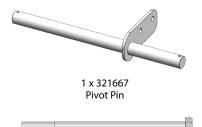
LH Pivot Arm & Blade Assembly



1 x 321671 LH Mounting Arm Assembly



1 x 321683 RH Pivot Arm & Blade Assembly



3 x 411201 1/2-13 X 7 1/2 Hex Head Bolt



1 x 321666 Pivot Pin Plate



2 x 321684 1 1/4 ID 14GA Machine Bushing



2 x 321684 1 1/4 ID 14GA Machine Bushing



6 x 413007 1/2" SAE Washer



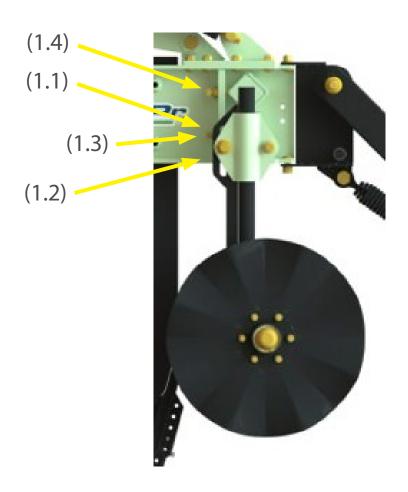
3 x 410008



12 x 321672 1/2-13 Hex Head Nut 1 1/4 ID 10GA Machine Bushing



## (1) Remove Orthman™ 1tRIPr™ Berm Builders



## For Each Side of the Row Unit

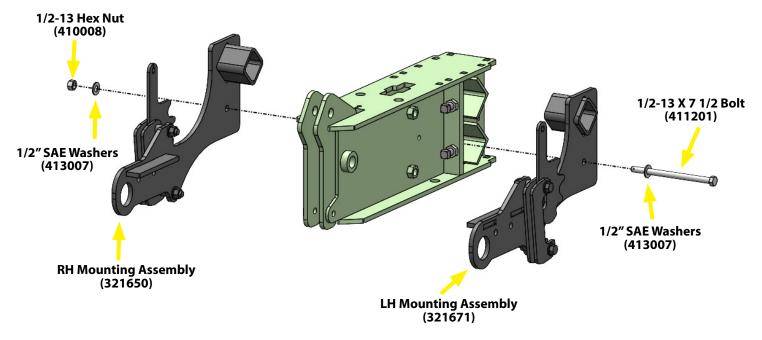
- 1.1 Loosen jam nut and set bolt.
- **1.2** Remove diamond mounting tube from row unit.
- **1.3** Tighten the lower jam nut and set bolt in place
- 1.4 Make sure the top jam nut and set bolt are loose and clear of the diamond receiver tube. These will be reused at the end of the FelxBerm™ install.



DO NOT place any body part beneath the residue manager as you remove it.



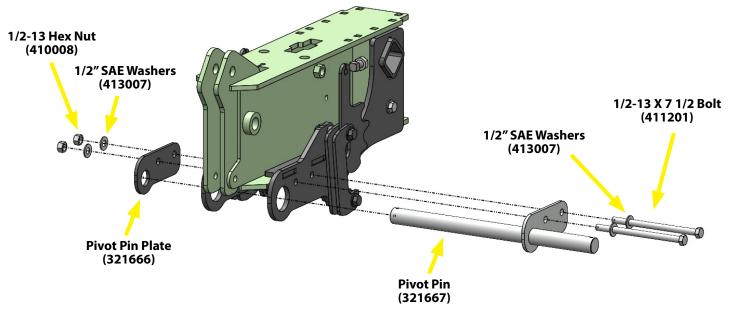
# (2) Install Mounting Plates and Hardware



- **2.1** Slide one (1) **LH Mounting Assembly (321671)** & one (1) **RH Mounting Assembly (321650)** through the top diamond tube slot on the row unit.
- 2.2 Add rear Mounting Assembly hardware one (1) 1/2-13 X 7 1/2 Bolt (411201), two (2) 1/2" SAE WASHERS (413007) & one (1) 1/2-13 HEX NUT (410008) to hold on Mounting Assemblies while the Pivot Pin is installed.



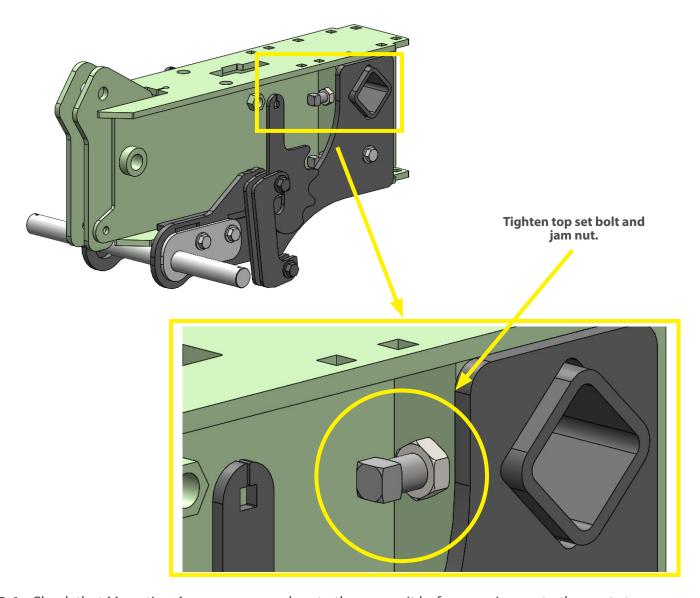
# (2) - Install Mounting Plates and Hardware



- **2.3** Insert one (1) **Pivot Pin (321667)** from the LEFT SIDE of the row unit thru the pivot pin hole on each of the Mounting Assemblies.
- **2.4** Add the rest of the Mounting Assembly hardware & one (1) **Pivot Pin Plate (321666)** Use two (2) **1/2-13 X 7 1/2 Bolts (411201)**, four (4) **1/2" SAE WASHERS (413007)** & two (2) **1/2-13 HEX NUTS (410008)** to hold on the **Mounting Assemblies (321650 & 321671)**.



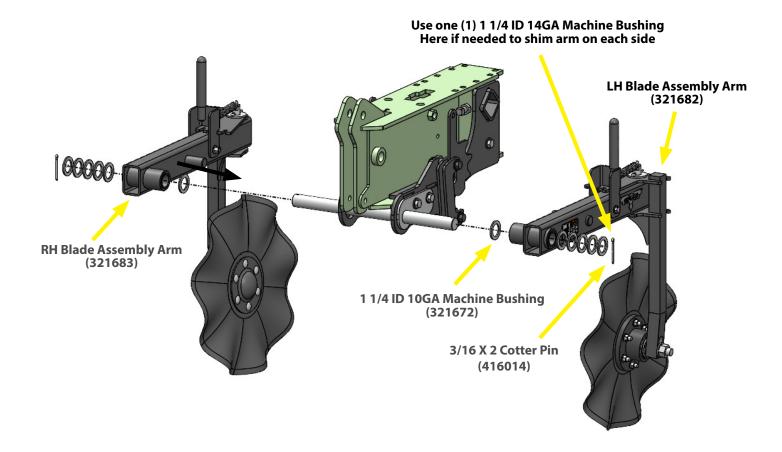
# (3) - Tighten Tension Bolt and Jam Nut



**3.1** - Check that Mounting Arms are squared up to the row unit before moving on to the next step.



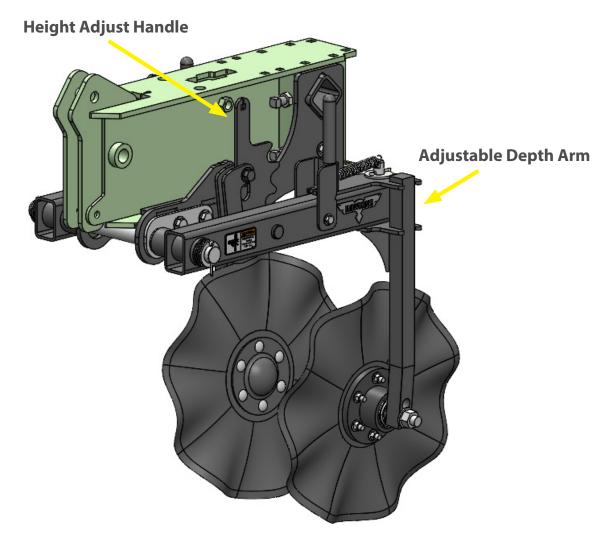
## (4) - Install Blade Assembly Arms and Hardware



- **3.1** Slide one (1) **1 1/4 ID 10GA Machine Bushing (321672)** on each side of the **Pivot Pin (321667)**.
- **3.2** Slide on one (1) **RH Blade Assembly Arm (321683)** & one (1) **LH Blade Assembly Arm (321682)** on to the **Pivot Pin (321667)**.
- **3.3** Slide five (5) **1 1/4 ID 10GA Machine Bushings (321672)** on each side of the **Pivot Pin (321667)**. Use one (1) **1 1/4 ID 14GA Machine Bushing (321684)** if needed to shim the arms in place.
- 3.4 Install one (1) 3/16 X 2 Cotter Pin (416014) on each side of Pivot Pin (321667).



# (5) - Check FlexBerm Movement



- **6.1** The **Height Adjust Handle** should take moderate force to move. If it moves easily or with little force, tighten hardware to keep Adjustable Depth Arm from moving during field use.
- **6.2** With the **Height Adjust Handle** disengaged, move the **Adjustable Depth Arm** through its full travel range to ensure no interference.



#### WHAT TO EXPECT IN THE FIELD



- FlexBerm™ operates best at speeds above 4 mph. Failure to operate above this speed will cause residue to not move properly.
- When set properly, FlexBerm<sup>™</sup> will create desired berm.
- FlexBerm<sup>™</sup> should move freely up and down (see Troubleshooting Guide (page 20) for issues with movement).
- When not in use, FlexBerm<sup>™</sup> can be disengaged and does not need to be uninstalled. To disengage, refer to Adjustments (page 17).

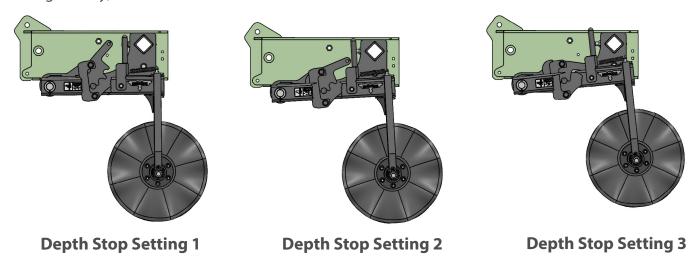
NOTE: These settings are recommendations only. Your soil, moisture, and other variables may require you to adjust slightly differently than recommended.



#### **ADJUSTMENTS**

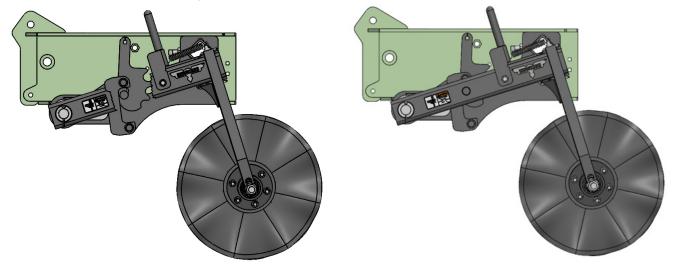
## **Adjust Blade Depth**

The FlexBerm has three (3) different options of depth stop settings. By rotating the handle, you are able to choose your minimum depth stop setting. (Views below have a section cut out to show depth settings clearly).



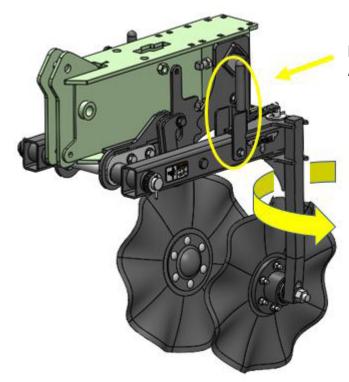
# Lock FlexBerm Up

You can also lock the FlexBerm up by rotating the handle out of the way. Lift the arm assembly up and rotate to hold the FlexBerm up as shown below.

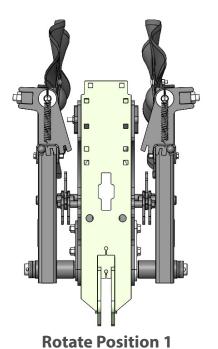


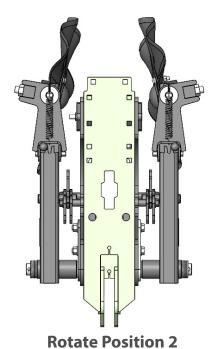


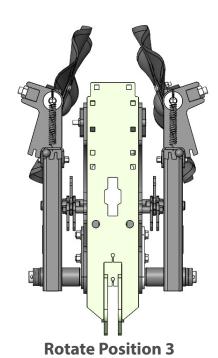
# **Adjust Blade Angle**



Pull handle back in direction shown And rotate blades as shown







**RETURN TO INDEX** 



#### FLEXBERM DO'S AND DON'TS

- DO NOT operate at low speeds. Ground speed affects how effective FlexBerm™ can build berms; we recommend operating at 4+ mph to build berms.
- DO NOT expect desired berms at the manufacturer's default settings. Ground conditions, residue conditions, and ground speed can affect the effectiveness of FlexBerm™
- DO work to regularly maintain your FlexBerm™ row units. Keep clean and free of debris, check that bearings move freely and smoothly, and hardware is tight and in good condition. With proper care, you can expect a longer and more effective lifespan for your Hawkins Ag equipment.

# **OPERATION**



## TROUBLESHOOTING

| Troubleshooting                       |  |  |  |  |  |
|---------------------------------------|--|--|--|--|--|
| Problem                               | Possible Cause   | Solution   |  |  |  |
|                                       | Blade not making contact with the ground.              | Adjust blade depth to hold blades in ground.                                       |  |  |  |
| Blade is not turning.                 | Residue build-up is preventing the blade from turning. | Remove residue build-up from FlexBerm™.  |  |  |  |
|                                       | Bearing hub bolt is bent or warped.                    | Replace bearing hub bolt.  |  |  |  |
| Arms are not floating up and down     | Hardware is binding.                                   | Clear residue build-up from the row cleaner.                                       |  |  |  |
| properly.                             | Arm is bent or warped.                                 | Replace arm.   |  |  |  |
| Double Adjustment Handle keeps        | Handle hardware may be loose.                          | Refer to page 15 and tighten hardware.   |  |  |  |
| Depth Adjustment Handle keeps moving. | Handle may not be in line.                             | Refer to page 17 and make sure handle is set correctly according to desired depth. |  |  |  |
|                                       | Spring is broken.                                      | Replace spring. Refer to pages 23 & 24 & contact Hawkins for replacement spring    |  |  |  |
| Blade Assembly rotates freely.        | Handle may not be engaged.                             | Refer to page 18 to make sure handle is fully engaged.                             |  |  |  |
| Little to no berm showing in field.   | Blade angle may not be aggressive enough.              | Refer to page 18 and set the blade at a more aggressive angle.                     |  |  |  |
| Too much berm showing in the field.   | Blade angle may be set too aggressively.               | Refer to page 18 and set the blade at a less aggressive angle.                     |  |  |  |

# **BOLT TORQUE**



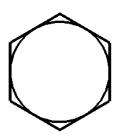
## **CHECKING BOLT TORQUE**

The table shown below gives correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same grade bolt.

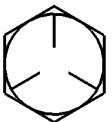
|               | Torque Specifications |              |       |        |       |        |  |
|---------------|-----------------------|--------------|-------|--------|-------|--------|--|
| Bolt Diameter |                       | Bolt Torque* |       |        |       |        |  |
|               | SAE Gra               | ade 2        | SAE G | rade 5 | SAE G | rade 8 |  |
| INCH          | lb-ft                 | (N.m)        | lb-ft | (N.m)  | lb-ft | (N.m)  |  |
| 1/4           | 6                     | (8)          | 9     | (12)   | 12    | (17)   |  |
| 5/16          | 10                    | (13)         | 19    | (25)   | 27    | (36)   |  |
| 3/8           | 20                    | (27)         | 33    | (45)   | 45    | (63)   |  |
| 7/16          | 30                    | (41)         | 53    | (72)   | 75    | (100)  |  |
| 1/2           | 45                    | (61)         | 80    | (110)  | 115   | (155)  |  |
| 9/16          | 70                    | (95)         | 115   | (155)  | 165   | (220)  |  |
| 5/8           | 95                    | (128)        | 160   | (215)  | 220   | (305)  |  |
| 3/4           | 165                   | (225)        | 290   | (390)  | 400   | (540)  |  |
| 7/8           | 170                   | (230)        | 420   | (570)  | 650   | (880)  |  |
| 1             | 226                   | (345)        | 630   | (850)  | 970   | (1320) |  |

#### **BOLT HEAD IDENTIFICATION**

Grade 2



**Grade 5** 

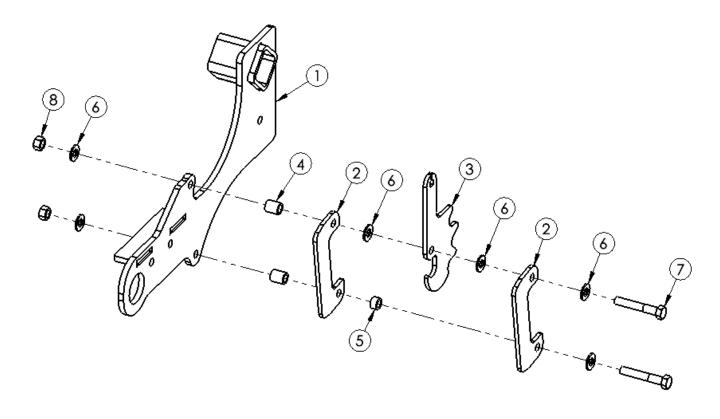








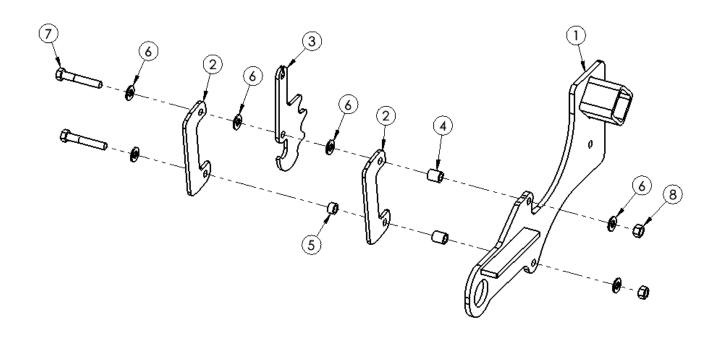
# LEFT HAND MOUNTING ASSEMBLY



| Item Number | Part # | Description                | Quantity |
|-------------|--------|----------------------------|----------|
| 1           | 321663 | LH MOUNTING ARM ASSEMBLY   | 1        |
| 2           | 321662 | HEIGHT ADJUST LIMIT PLATE  | 2        |
| 3           | 321661 | HEIGHT ADJUST HANDLE       | 1        |
| 4           | 321615 | HEIGHT ADJUST SPACER       | 2        |
| 5           | 321616 | HEIGHT ADJUST LIMIT SPACER | 1        |
| 6           | 413007 | 1/2" SAE WASHER            | 6        |
| 7           | 411551 | 1/2-13 X 3 HEX HEAD BOLT   | 2        |
| 8           | 410008 | 1/2-13 CENTER LOCK NUT     | 2        |



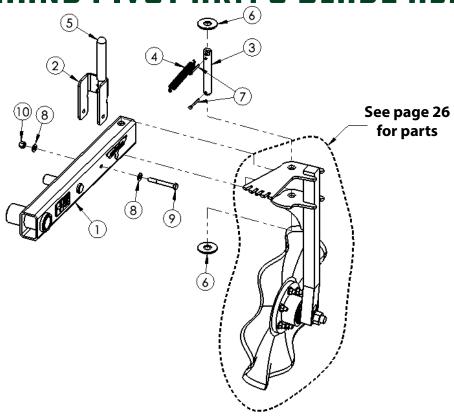
# RIGHT HAND MOUNTING ASSEMBLY



| Item Number | Part # | Description                | Quantity |
|-------------|--------|----------------------------|----------|
| 1           | 321664 | RH MOUNTING ARM ASSEMBLY   | 1        |
| 2           | 321662 | HEIGHT ADJUST LIMIT PLATE  | 2        |
| 3           | 321661 | HEIGHT ADJUST HANDLE       | 1        |
| 4           | 321615 | HEIGHT ADJUST SPACER       | 2        |
| 5           | 321616 | HEIGHT ADJUST LIMIT SPACER | 1        |
| 6           | 413007 | 1/2" SAE WASHER            | 6        |
| 7           | 411551 | 1/2-13 X 3 HEX HEAD BOLT   | 2        |
| 8           | 410008 | 1/2-13 CENTER LOCK NUT     | 2        |



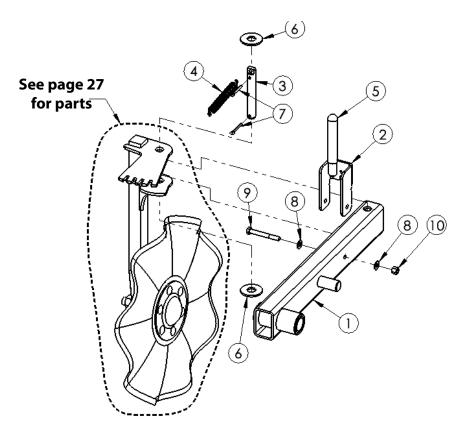
# LEFT HAND PIVOT ARM & BLADE ASSEMBLY



| Item Number | Part # | Description              | Quantity |
|-------------|--------|--------------------------|----------|
| 1           | 321668 | LH PIVOT ARM             | 1        |
| 2           | 321657 | ANGLE ADJUSTMENT ARM     | 1        |
| 3           | 321644 | ANGLE ADJUSTMENT PIN     | 1        |
| 4           | 321651 | Ø3/4" X 3 SPRING         | 1        |
| 5           | 321673 | Ø3/4" RUBBER GRIP        | 1        |
| 6           | 413012 | 3/4" USS WASHER          | 2        |
| 7           | 416012 | 3/16 X 1 1/2 COTTER PIN  | 2        |
| 8           | 413009 | 3/8" SAE WASHER          | 2        |
| 9           | 411150 | 3/8-16 X 3 HEX HEAD BOLT | 1        |
| 10          | 305106 | 3/8-16 NYLON LOCK NUT    | 1        |



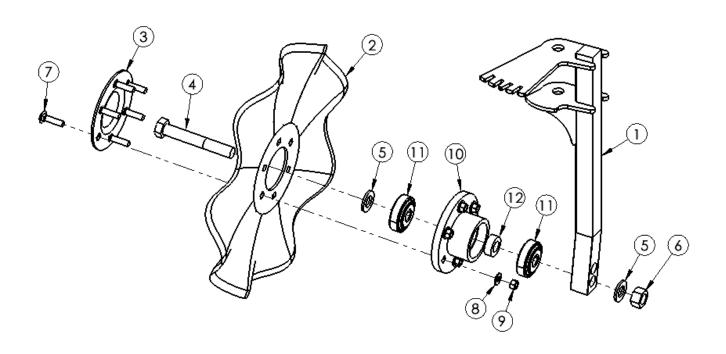
# RIGHT HAND PIVOT ARM & BLADE ASSEMBLY



| Item Number | Part # | Description              | Quantity |
|-------------|--------|--------------------------|----------|
|             | 321669 | RH PIVOT ARM             | 1        |
|             | 321657 | ANGLE ADJUSTMENT ARM     | 1        |
|             | 321644 | ANGLE ADJUSTMENT PIN     | 1        |
|             | 321651 | Ø3/4" X 3 SPRING         | 1        |
|             | 321673 | Ø3/4" RUBBER GRIP        | 1        |
|             | 413012 | 3/4" USS WASHER          | 2        |
|             | 416012 | 3/16 X 1 1/2 COTTER PIN  | 2        |
|             | 413009 | 3/8" SAE WASHER          | 2        |
|             | 411150 | 3/8-16 X 3 HEX HEAD BOLT | 1        |
|             | 305106 | 3/8-16 NYLON LOCK NUT    | 1        |



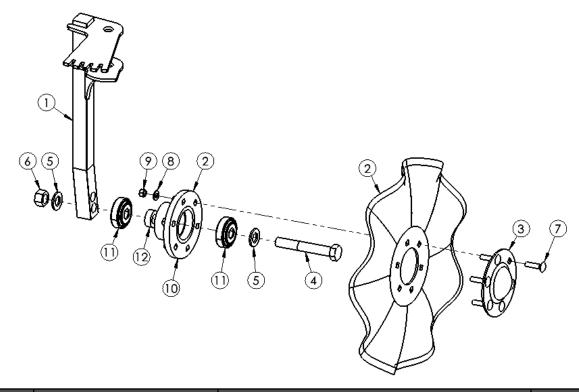
# LEFT HAND DOWN ARM & BLADE ASSEMBLY



| Item Number | Part # | Description                  | Quantity |
|-------------|--------|------------------------------|----------|
| 1           | 321647 | LH DOWN ARM                  | 1        |
| 2           | 321677 | 18" X 8 WAVE 6 ON 4.25 BLADE | 1        |
| 3           | 321676 | HUB CAP                      | 1        |
| 4           | 411594 | 3/4-10 X 5 HEX HEAD BOLT     | 1        |
| 5           | 413072 | 3/4" SAE WASHER              | 2        |
| 6           | 410012 | 3/4-10 CENTER LOCK NUT       | 1        |
| 7           | 305105 | 3/8-16 X 1 1/2 CARRIAGE BOLT | 6        |
| 8           | 413009 | 3/8" SAE WASHER              | 6        |
| 9           | 410006 | 3/8"-16 CENTER LOCK NUT      | 6        |
| 10          | 305006 | SINGLE HUB                   | 1        |
| 11          | 305017 | 3/4" ID BEARING              | 2        |
| 12          | 305015 | 3/4" BEARING SPACER          | 1        |



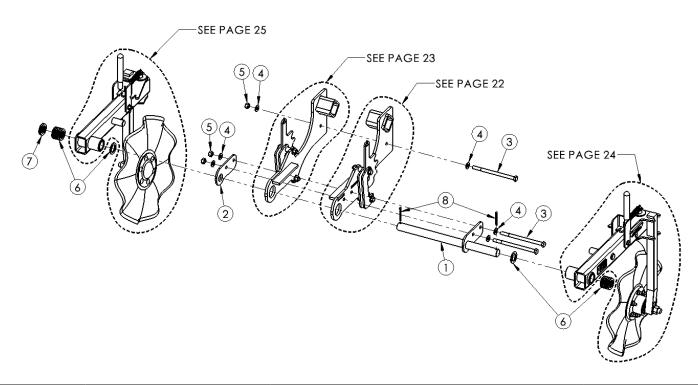
# RIGHT HAND DOWN ARM & BLADE ASSEMBLY



| Item Number | Part # | Description                  | Quantity |
|-------------|--------|------------------------------|----------|
| 1           | 321648 | RH DOWN ARM                  | 1        |
| 2           | 321677 | 18" X 8 WAVE 6 ON 4.25 BLADE | 1        |
| 3           | 321676 | HUB CAP                      | 1        |
| 4           | 411594 | 3/4-10 X 5 HEX HEAD BOLT     | 1        |
| 5           | 413072 | 3/4" SAE WASHER              | 2        |
| 6           | 410012 | 3/4-10 CENTER LOCK NUT       | 1        |
| 7           | 305105 | 3/8-16 X 1 1/2 CARRIAGE BOLT | 6        |
| 8           | 413009 | 3/8" SAE WASHER              | 6        |
| 9           | 410006 | 3/8-16 CENTER LOCK NUT       | 6        |
| 10          | 305006 | SINGLE HUB                   | 1        |
| 11          | 305017 | 3/4" ID BEARING              | 2        |
| 12          | 305015 | 3/4" BEARING SPACER          | 1        |



# FLEXBERM™ ASSEMBLY



| Item Number | Part # | Description                   | Quantity |
|-------------|--------|-------------------------------|----------|
| 1           | 321667 | PIVOT PIN                     | 1        |
| 2           | 321666 | PIVOT PIN PLATE               | 1        |
| 3           | 411201 | 1/2-13 X 7 1/2 HEX HEAD BOLT  | 3        |
| 4           | 413007 | 1/2" SAE WASHER               | 6        |
| 5           | 410008 | 1/2-13 CENTER LOCK NUT        | 3        |
| 6           | 321672 | 1 1/4 ID 10GA MACHINE BUSHING | 12       |
| 7           | 321684 | 1 1/4 ID 14GA MACHINE BUSHING | 2        |
| 8           | 416014 | 3/16 X 2 COTTER PIN           | 2        |



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