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OPERATOR'S MANUAL

8325 ROWCROP CULTIVATOR

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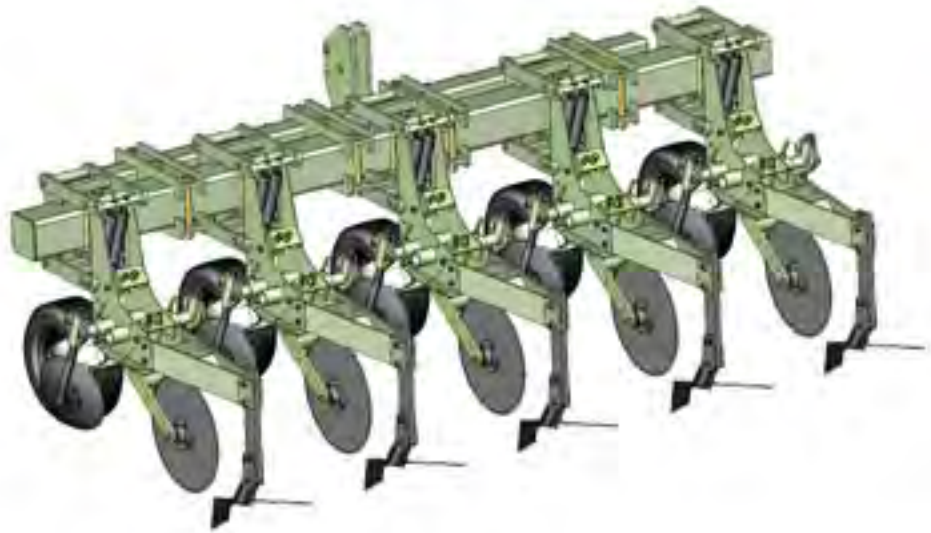
STILL THE STRONGEST

ORTHMAN MFG. INC.
75765 RD. 435
LEXINGTON, NE 68850

OM05-01-01

8325 ROWCROP CULTIVATOR

The Orthman 8325 rowcrop cultivator is a versatile implement providing producers with the benefit of performing numerous tasks with each field pass. Introduced in 1999, the 8325 is designed around the time tested 8300 series cultivators. Integrating 8325 row units with a time tested Orthman toolbar provides today's producer with an industry leading cultivator.

8325
(4 row - 30 inch configuration)

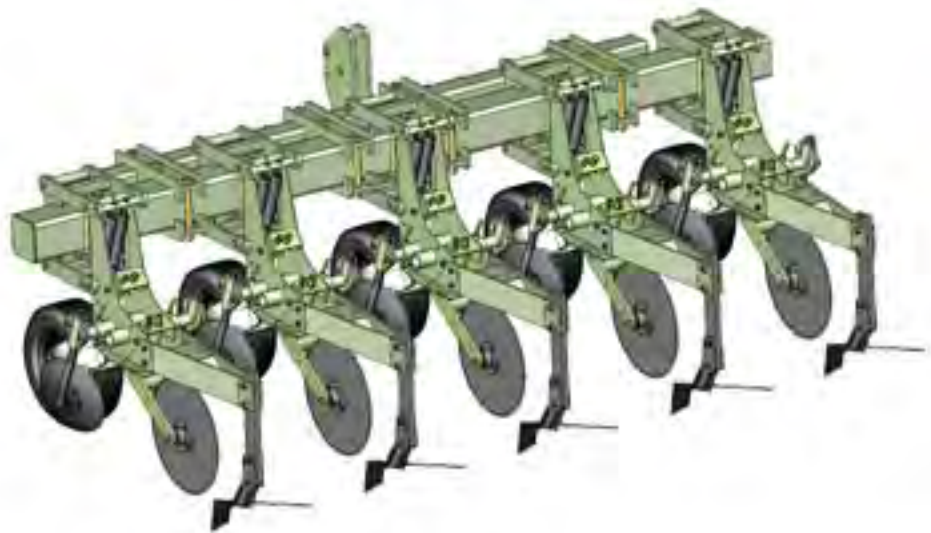
The 8325 row unit features a wraparound mount, parallel linkage, and adjustable down pressure springs to provide uniform down pressure to each row unit while allowing row units to work independent of the toolbar to follow terrain contours. An adjusting hand crank and depth indicators, for gauge wheel and center coulters depth adjustment, provide operators with accurate and timely depth manipulation. Self storing, forward swept, barring off discs allow for near crop tillage and optimum residue capacity with simple adjustment and storage. These features equate to the benefit of less time adjusting the implement and more time cultivating.

The 8325 provides a vast number of options in order to maximize each field pass. Three sweep and ridging wing options provide precise control of bed size and shape in conjunction with the cultivation. Optional fertilizer tubes or a single fertilizer knife can be utilized to apply fertilizer with the cultivation. An adjustable closed top fender is also available to protect a young crop while maintaining desired ground speed.

8325 ROWCROP CULTIVATOR

The 8325 cultivator is available in configurations ranging from 4 to 24 row, accommodating row spacings of 30 inches and wider. A wraparound mount and parallel linkage provides a long lasting row unit foundation. The 8325 row unit is designed for high speed, high residue cultivation with a wide range of options to provide the producer with features to meet the needs of virtually any row crop cultivation.

8325
(4 row - 30 inch configuration)



This manual is considered to be an integral piece of this implement and is designed to assist the operator with safety, operation, maintenance, troubleshooting, and component identification. This manual should accompany the implement if it were ever to be sold. It is the responsibility of the operator to read and comprehend the contents of this manual. This manual is designed to keep the operator safe and knowledgeable as well as prolong implement life, minimize downtime, and maximize profits.

We would like to thank you for placing your confidence in Orthman Mfg., Inc. Your 8325 rowcrop cultivator is manufactured to meet the highest standards. Your cultivator has been built with precision and strength to make your operation more dependable and profitable.

Thank you for purchasing Orthman.

STILL THE STRONGEST



WARRANTY

Orthman Mfg., Inc. warrants the whole goods products it manufactures to be free from defects in material or workmanship for a period of one (1) year from the date of sale of the product(s) to the original user. Products not manufactured, but supplied by Orthman Mfg., Inc. on Orthman products, are subject to, conform with, and are limited to the warranty of our suppliers.

Orthman Mfg., Inc. warrants the parts it manufactures to be free from defects in material or workmanship for a period of ninety (90) days from the date of delivery of the product(s) to the original user. Products not manufactured, but supplied by Orthman Mfg., Inc. on Orthman products, are subject to, conform with, and are limited to the warranty of our suppliers.

Warranty of Orthman whole goods and/or parts applies only to material and workmanship. Misuse, misapplication, neglect, alteration, accident, normal wear, or acts of God affecting Orthman products are not eligible for warranty.

Warranty of serial numbered goods will only be considered if the product has a completed Warranty Registration on file at Orthman. This Warranty Registration must be completed and returned to Orthman within thirty (30) days of the sale of the product(s) to the original user. **No serial numbered goods or related parts and/or labor will be warranted without a Warranty Registration on file.** Warranty issues falling within the first thirty days of a product's use will be handled at the discretion of Orthman. Warranty of parts will not require a Warranty Registration, but proof of date of delivery of the product to the original customer must be provided.

WARRANTY CLAIMS: A warranty claim and request to return defective product(s) must be presented to the Orthman Service Department by the selling dealer describing the defect in material or workmanship of an Orthman product(s) within ten (10) days of its discovery. This claim may be made via phone, e-mail, fax, or written request. Claims for warranty of serial numbered goods must include the Orthman product serial number and model number. Claims for warranty of parts will not require a product serial number or model number, but must be identified by an Orthman part number. Claims for warranty of whole goods or parts must also include proof of date of sale of the product to the original customer by an Orthman dealer.

The Orthman Service Department will proceed in making a preliminary decision as to the eligibility of the claim for warranty consideration. After the Orthman Service Department deems it necessary to proceed with warranty consideration, a Return Goods Authorization (RGA) will be completed by the Orthman Service Department in conjunction with the selling dealer. Upon completion of the RGA, the defective product(s) must be returned to Orthman to ensure warranty consideration. Defective product(s) must be returned to Orthman by either the selling dealer or the customer. Customer delivery of defective product(s) must be approved by Orthman and the selling dealer prior to delivery. The defective product(s) in question must be sent, freight prepaid, within sixty (60) days of the discovery of the product(s) failure and initial warranty claim. Replacement product(s) may be sent to the selling dealer, directly to the customer, or picked up at the Orthman facility. Replacement product(s), sent directly to the customer or picked up must be approved by Orthman and the selling dealer. At the discretion of the Orthman Service Department, replacement product(s) may be sent prior to, or after, the Orthman Service Department receives the defective product(s).

Any variation in the above procedure is at the sole discretion of the Orthman Service Department.

No products will be accepted at Orthman without all proper paperwork completed including Warranty Registration and RGA(s). Parts returned to Orthman without proper authorization will be returned to the sender at the sender's expense.

Orthman agrees to handle all warranty claims in a timely manner and will inform dealers of any revisions or modifications to the Orthman Warranty Policy. Eligible warranty claims will be processed by Orthman within sixty (60) days of receiving failed product(s) or a valid service or repair labor claim. Eligible warranty claims regarding returned product(s) or service and/or repair labor will be paid through a credit memo issued to the appropriate dealer's account as determined by the Orthman Service Department.

If a warranty claim is found to be ineligible for warranty coverage, the Orthman Service Department will be responsible to inform the dealer in order to determine the course of action to be taken. Orthman reserves the right to make changes in specification and design without notice and without incurring any obligations to owners of products previously sold.

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Lexington, Nebraska
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Orthman provides this manual without warranty of any kind, expressed or implied. This manual reflects the product at the time of publication. All information within is based upon current information on the publication date. Orthman assumes no responsibility for damages incurred due to the use of the illustrations, information, and specifications within this publication.



TABLE OF CONTENTS

Introduction

General Information - 8325 Rowcrop Cultivator.....1 - 1
 Warranty.....1 - 3
 Table of Contents.....1 - 4

⚠ Important Safety Information

Alert Symbol - Signal Words - Shutdown.....2 - 1
 Protection - Safety Guidelines.....2 - 2
 Transport - Safety Lights.....2 - 3
 Safe Operation.....2 - 4
 Practice Safe Maintenance.....2 - 5
 Prepare for Emergencies.....2 - 6
 Anhydrous Ammonia.....2 - 7
 Safety Decals.....2 - 8

Preparation and Setup

Preparing the Cultivator - Implement to Tractor Connection.....3 - 1
 Standard Row Unit Component Identification.....3 - 2

Tooling Options and Installation

Center Coulter.....4 - 1
 Barring Off Discs.....4 - 3
 • Three Piece Western Sweep.....4 - 5
 Adjustable Ridging Wing.....4 - 7
 Fertilizer Tubes.....4 - 8
 Fertilizer Knife.....4 - 9
 • Super Sweep.....4 - 10
 Adjustable Ridging Wing.....4 - 12
 Fertilizer Tubes.....4 - 13
 Fertilizer Knife.....4 - 14
 • Single Piece Sweep.....4 - 15
 Adjustable Ridging Wing.....4 - 17
 Fertilizer Knife.....4 - 18
 Closed Top Fenders.....4 - 19





TABLE OF CONTENTS

Field Settings

Toolbar Height.....5 - 1
Row Unit Depth.....5 - 2
Row Unit Down Pressure.....5 - 3
Center Coulter Depth.....5 - 4
Barring Off Discs.....5 - 5
Sweep Standard Depth.....5 - 6
Sweep Standard Pitch.....5 - 7
Ridging Wing Width.....5 - 8
Fertilization Applications.....5 - 9
Closed Top Fenders.....5 - 10

Troubleshooting

Tooling does not Penetrate Soil.....6 - 1
Row Unit Plugs with Field Residue.....6 - 2
Row Unit Covers Crop.....6 - 3
Implement does not Trail Straight.....6 - 4

Maintenance

Practice Safe Maintenance.....7 - 1
Lubrication.....7 - 2
Implement Inspection.....7 - 4
Torque Specifications.....7 - 5

Storage

Implement Storage.....8 - 1
Notes.....8 - 2



SAFETY ALERT SYMBOL

The **SAFETY ALERT SYMBOL** warns of potential hazards to personal safety and that extra precautions must be taken. When you see this symbol, carefully read the message(s) that follow. Follow all recommended precautions and safe operating practices in this manual.

(Hazard control and accident prevention are dependent upon safety awareness and proper training of personnel involved in the operation of this equipment.)

BE AWARE OF SIGNAL WORDS

Signal words designate a degree or level of hazard seriousness. These signal words include:

DANGER! WARNING! CAUTION!



RED

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



ORANGE

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



YELLOW

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



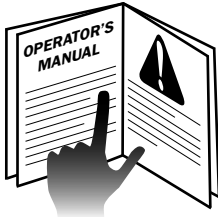
SHUTDOWN AND STORAGE



AVOID CRUSHING. Lower implement to the ground, place tractor in park, turn off engine, and remove key. Store implement on a clean, dry, and level surface. An uneven surface could cause implement to shift or fall, resulting in personal injury or death, as well as implement damage.



USE BAR STANDS TO SUPPORT THE IMPLEMENT. Securely support all implement components that must be raised. Store implement away from human activity.

CAUTION**⚠ FOR YOUR PROTECTION**

READ AND UNDERSTAND THIS MANUAL BEFORE OPERATING OR SERVICING IMPLEMENT. Read and understand manuals for all machinery used in conjunction with the 8325 cultivator.

Carefully **READ ALL SAFETY DECALS** in this manual as well as on the implement. Keep all decals in good, clean, and legible condition. Immediately replace damaged and/or missing decals. Keep implement clean so decals are easily visible. Replacement decals are available from your Orthman dealer.

Learn to operate the implement and all components properly. Do not let others operate implement without proper instruction. Unauthorized implement modifications may impair function and safety. If you do not understand any content in this manual or need assistance, contact your Orthman dealer.

(Orthman Mfg., Inc. - 75765 Rd. 435 - Lexington, NE 68850 - (308) 324-4654)

⚠ EQUIPMENT SAFETY GUIDELINES

Safety is of primary concern when designing an Orthman implement. Orthman integrates as many safety features into the implement as possible. You can avoid many hazards and possible accidents by observing precautions in this safety section.

Insist that yourself, and others working with and around you, follow all safety precautions. Be cautious working on and around implement to avoid injury.

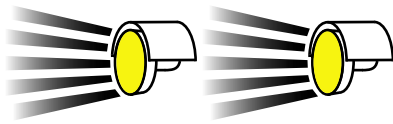
⚠ SAFE TRANSPORT

- Engage transport locking devices prior to transport.
- Plan your route to avoid traffic. Yield to traffic in all situations.
- Maximum transport speed is 20 mph (32 kph). Some conditions will require reduced speeds. Travel at speeds that allow for adequate control of stopping and steering.
- Operate implement from a position to provide maximum visibility. Know transport height and gross weight of implement. Be aware of overhead obstructions. Do not use bridges rated lower than your gross weight.



- Make sure a slow moving vehicle (SMV) placard is mounted to the implement and visible to other motorists. All Orthman implements are equipped with a SMV placard.
- Make allowances for increased implement size when transporting. Sudden braking can cause a towed load to swerve and/or rollover. Never use independent braking with implement in tow as loss of control and/or rollover can result. Reduce speed if towed implement is not equipped with brakes.
- Do not coast. Always keep tractor or towing vehicle in gear to provide engine braking when traveling downhill.
- Comply with state and local laws governing implement transport.

⚠ WARNING AND SAFETY LIGHTS



Slow moving vehicles and oversized implements create a hazard on public roads. They are difficult to see, especially at night.

Make sure all warning, safety lights, and turning signals are working and clean. Use safety lighting when using public roads day and night. Replace missing or damaged lights immediately. Comply with state and local laws governing implement safety lighting.

A safety lighting package, conforming to lighting standard ANSI/ASAE S279.12, is available for addition to all 8325 cultivators. Contact your Orthman dealer for safety lighting package information. Refer to toolbar operator's manual for safety lighting package instruction.

⚠ SAFE OPERATION

• **READ AND UNDERSTAND THIS MANUAL BEFORE OPERATING OR SERVICING IMPLEMENT.** Implement is to be operated by qualified personnel only. Never let children operate implement. A complete understanding of safety precautions, operation, and maintenance is mandatory before implement use.



• **AVOID CRUSHING.** Make sure all persons are clear of implement at all times implement is in use. Be aware of obstructions above below, and around implement while in operation or transport. Serious injury or death can result from being struck by implement.



• **AVOID ROLLOVER.** Do not fold or unfold implement and avoid sharp turns when on a hillside, as shift of weight could cause rollover. Operate implement at a safe distance from terrain irregularities and other obstructions that could cause rollover.



• **AVOID ELECTROCUTION.** Be aware of overhead power lines. Contact or close proximity to power lines can result in serious injury or death. Use extreme care when operating implement near power lines.

⚠ NO RIDERS

NEVER ALLOW RIDERS ON TRACTOR OR IMPLEMENT. Riders hinder operator visibility and can be thrown from implement and/or be struck by foreign objects resulting in serious injury or death.



⚠ PRACTICE SAFE MAINTENANCE



- Proper maintenance is your responsibility. Poor maintenance can lead to serious injury or death. Always use proper tools for the job.

- **AVOID CRUSHING.** Lower implement to the ground, place tractor in park, turn off engine, and remove key. Park implement on a clean, dry, and level surface. An uneven surface could cause implement to shift or fall, resulting in personal injury or death, as well as implement damage.

- **USE BAR STANDS TO SUPPORT THE IMPLEMENT.** Securely support all implement components that must be raised. Remove any buildup of grease, oil, or debris prior to performing maintenance.



- **AVOID CRUSHING.** Do not stand between tractor and implement when connecting or disconnecting implement. Serious injury or death can result from being trapped between the tractor and implement.



- **AVOID ENTANGLEMENT.** Never lubricate or service implement in motion. Keep away from power driven parts while in operation. Disengage power sources prior to performing maintenance. Serious injury or death can result from contact with power driven parts while in operation.



- Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.



- Escaping pressurized hydraulic fluid can penetrate skin, resulting in serious injury. Relieve hydraulic system pressure before connecting or disconnecting tractor. Use cardboard or wood, **NOT BODY PARTS**, to check for suspected hydraulic leaks. Wear protective gloves and safety glasses or goggles when working with hydraulic systems. If an accident occurs, see a doctor immediately for proper treatment.

⚠ PRACTICE SAFE MAINTENANCE



- **SERVICE TIRES SAFELY.** Tire and rim separation could result in serious injury or death. Do not over inflate. When inflating tires keep to the side, not in front or rear of the wheel assembly. Only mount or dismount tires if you possess proper equipment, otherwise contact a trained professional. Always maintain correct tire pressure. Inspect tires and wheels daily. Do not operate tires with low pressure, cuts, visible damage, or missing hardware.



- Make sure there is adequate ventilation. Never operate a combustion engine in an enclosed area. Exhaust fumes can cause asphyxiation.
- Keep all parts in good condition and properly installed. Replace damaged or missing parts immediately.
- Remove tools and unused parts from implement prior to operation.

⚠ PREPARE FOR EMERGENCIES



- Be prepared for a fire. Keep a fire extinguisher easily accessible at all times.
- Keep a stocked first aid kit and emergency phone numbers for your doctor, hospital, ambulance, and fire department readily accessible.
- Wear protective clothing and equipment. Wear clothing appropriate for the situation. Protect your eyes, ears, hands, and feet with the use of protective goggles, ear plugs, gloves, boots, etc.

⚠ SAFETY NEVER HURTS



READ AND UNDERSTAND THIS MANUAL BEFORE OPERATING OR SERVICING IMPLEMENT.



- Understand implement functions.
- Operate machinery from operator's seat only.
- Never leave engine running while implement is unattended.
- Never mount or dismount a moving tractor or implement.
- Never stand between tractor and implement when connecting or disconnecting implement.
- Keep away from power driven parts.
- Make sure ground is clear before lowering implement to the ground.
- Be aware of all surroundings before moving implement.

⚠ ANHYDROUS AMMONIA - NH₃

The 8325 row unit can be accessorized to provide the producer with the option of anhydrous ammonia or liquid fertilizer application.



• **ANHYDROUS AMMONIA (NH₃) APPEARS HARMLESS. DIRECT EXPOSURE TO NH₃ IS EXTREMELY DANGEROUS AND COULD RESULT IN SERIOUS INJURY AND/OR DEATH.**

• Wear protective goggles and gloves when working around NH₃. Be sure all persons involved in the operation are properly trained concerning dangers and precautions involved in the application of NH₃ or liquid fertilizer.

• Keep a clean supply of water easily accessible in case of exposure to NH₃.

• If you choose to apply NH₃, it is advisable to consult documented information regarding the safe handling and application of NH₃. Information is available from the following recognized sources:

1. American National Standards Institute - ANSI - www.ansi.org - (212) 642-4900
2. Material Safety Data Sheets - MSDS - www.msdsonline.com
3. National Safety Council - www.nsc.org/necas
4. The Fertilizer Institute - www.tfi.org
5. United States Department of Transportation - D.O.T. - www.dot.gov
6. Compressed Gas Association - www.cganet.com

SAFETY DECALS

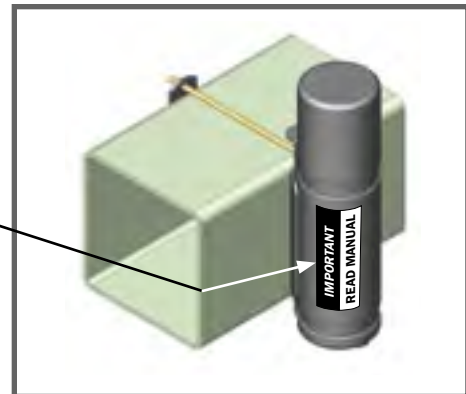
DANGER

WARNING

CAUTION

All Orthman implements are equipped with safety decals. Safety decals are designed to promote awareness and knowledge concerning safe operation and maintenance of the implement. Carefully **READ ALL SAFETY DECALS** in this manual as well as on the implement. Keep all decals in good, clean, and legible condition. Keep implement clean so decals are easily visible. Immediately replace damaged and/or missing decals. Replacement decals are available from your Orthman dealer.

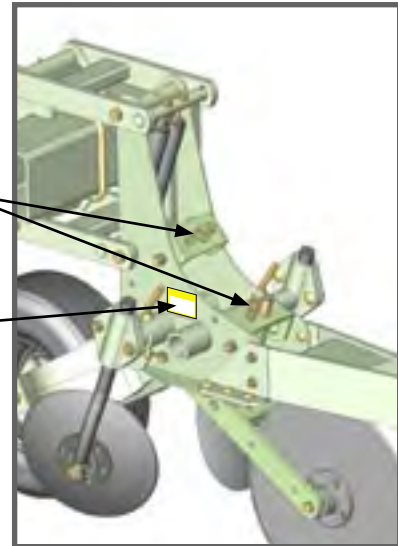
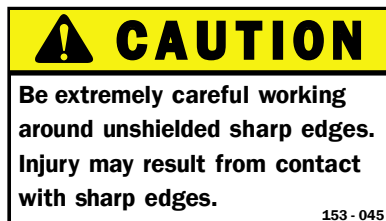
To install new decals: clean area where decal is to be placed and attach decal void of bubbles. Refer to this safety information section for proper decal placement.

8325
(found on toolbar) 153-141



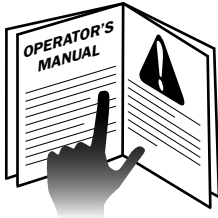
Orthman
(found on toolbar) 153-000

PREPARING THE CULTIVATOR

CAUTION
Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges. 153-045

CAUTION



The majority of the 8325 cultivator is assembled at Orthman Mfg., Inc. To ensure safe and efficient transport from the manufacturer, various tooling options may need to be installed upon delivery.

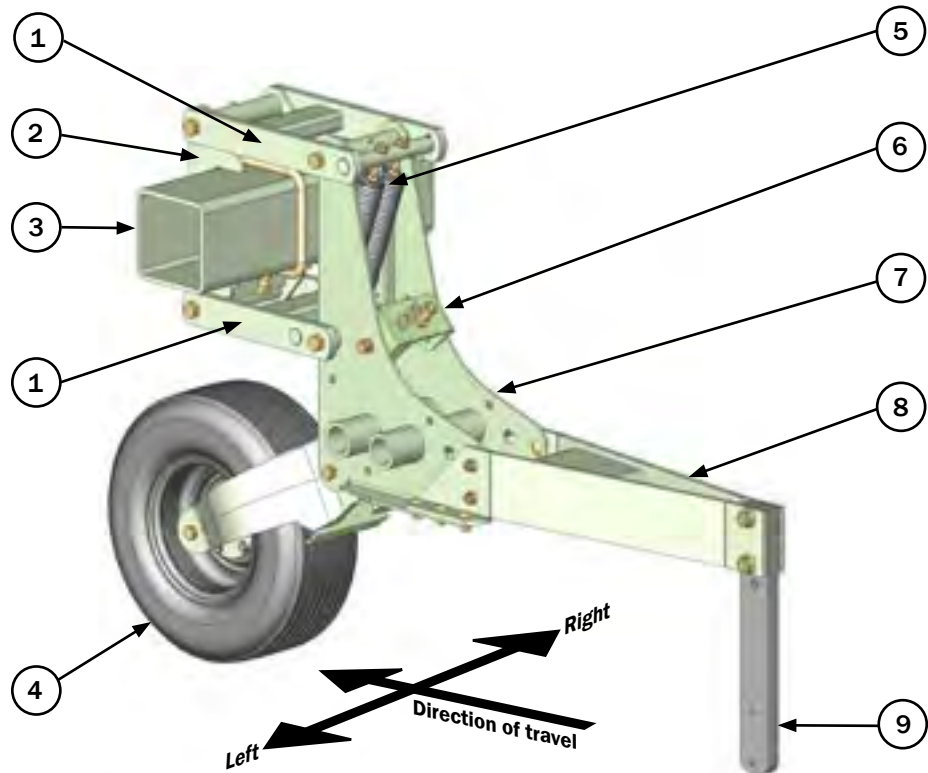
- All tooling options available to complement 8325 row units are illustrated and explained in the tooling options and installation section of this manual. All tooling field adjustments are illustrated and explained in the field settings section of this manual.
- If an Orthman toolbar is used in conjunction with 8325 row units, be sure to consult the toolbar operator's manual before attempting to operate the implement. Read and understand manuals for all machinery used in conjunction with the 8325 cultivator.
- Before each use, check hardware for wear and proper torque. Replace damaged or missing hardware with hardware of an identical grade to restore implement to original specifications.

IMPLEMENT TO TRACTOR CONNECTION



- **AVOID CRUSHING.** Do not stand between tractor and implement when connecting or disconnecting implement. Serious injury or death can result from being trapped between the tractor and implement.
- Once implement is securely connected to the tractor, tooling may need to be installed prior to proceeding with field setting adjustments. Lower implement to the ground, place tractor in park, turn off engine, and remove key. Park implement on a clean, dry, and level surface. An uneven working surface could cause implement to shift or fall, resulting in personal injury or death, as well as implement damage.
- **USE BAR STANDS TO SUPPORT THE IMPLEMENT.** Securely support all implement components that must be raised.

STANDARD ROW UNIT
COMPONENT IDENTIFICATION



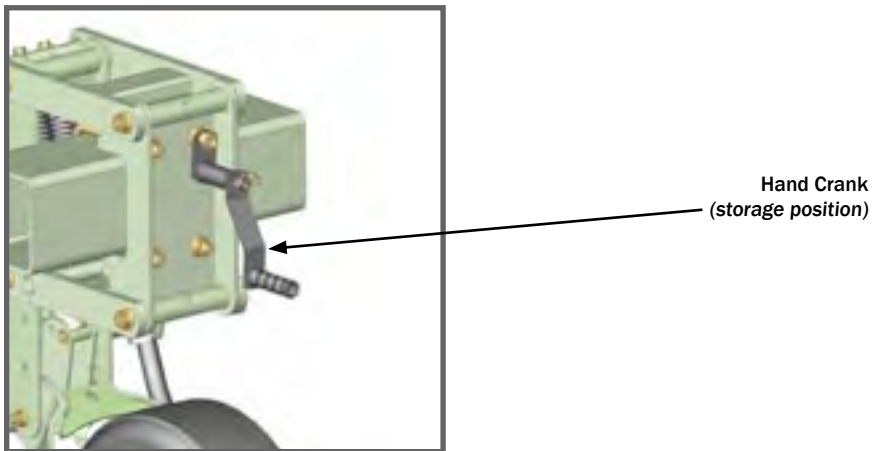
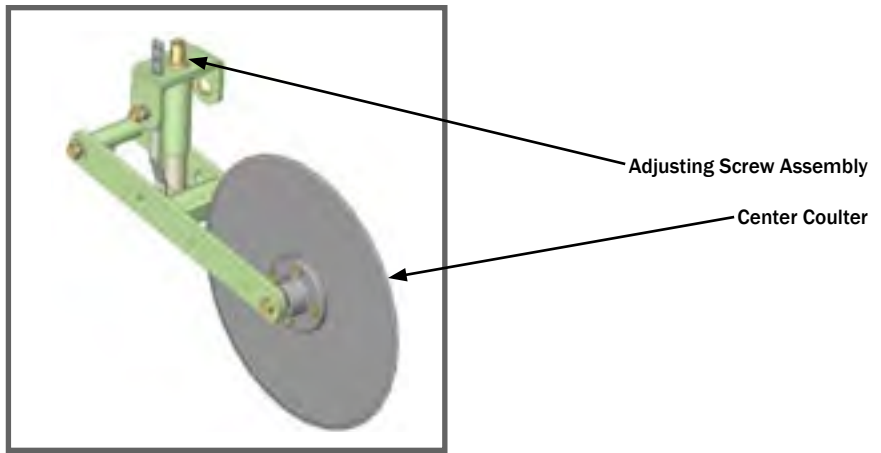
1. Parallel Linkages
2. Wraparound Mount
3. Toolbar
4. Gauge Wheel Assembly
5. Down Pressure Springs
6. Adjusting Screw Assembly
7. Row Unit Mainframe
8. A-frame Tail
9. Shank

NOTE: Right and left as referenced from this point on, is determined by facing the same direction the implement will travel while in use.

CENTER COULTER

CAUTION
Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges. 153-045

The 20 inch smooth center coulters are designed to cut surface and subsurface residue to reduce row unit tooling interference, aid in residue decomposition, and provide lateral implement stability. Center coulters depth adjustments are made by attaching and rotating the hand crank on the adjusting screw assembly.

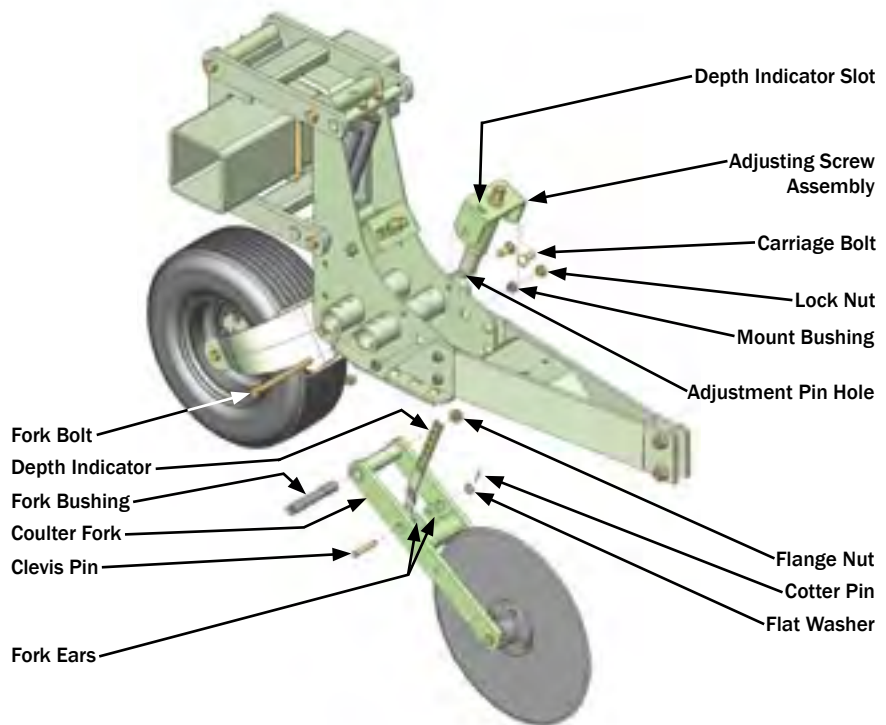


INSTALLATION - CENTER COULTER



AVOID CRUSHING. Lower implement to the ground, place tractor in park, turn off engine, and remove key. Park implement on a clean, dry, and level surface. An uneven surface could cause implement to shift or fall, resulting in personal injury or death, as well as implement damage.

USE BAR STANDS TO SUPPORT THE IMPLEMENT. Securely support all implement components that must be raised. Remove any buildup of grease, oil, or debris prior to installing center coulters.



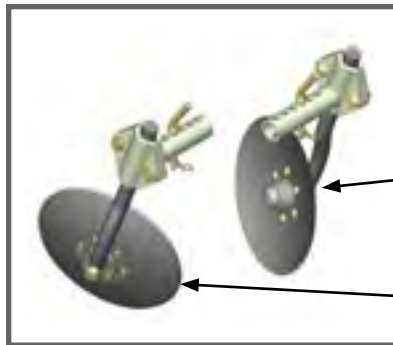
CAUTION
 Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.
 153-045

1. Mount adjusting screw assembly to mainframe with carriage bolts, mount bushings, and lock nuts.
2. Place fork bushing in coulter fork and align coulter fork with corresponding main frame holes. Mount coulter fork using fork bolt and flange nut.
3. Thread depth indicator up through depth indicator slot on adjusting screw assembly.
4. Align depth indicator, fork ears, and adjustment pin hole.
5. Insert clevis pin through depth indicator, fork ears, and adjustment pin hole. Secure clevis pin with flat washer and cotter pin. Spread cotter pin.
6. Tighten all hardware to proper torque specifications. (pg. 7 - 5)
7. Adjust center coulters depth with hand crank to assure assembly is in working order.

BARRING OFF DISCS

CAUTION
Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges. 153-045

Barring off discs provide near crop tillage. Barring off disc assemblies are quickly adjusted laterally and vertically. Depth adjustments depend on desired tillage depth and desired amount of residue flow. Generally, deeper discs generate more residue flow. Width adjustments allow for variations in tillage zone to crop relationship. Barring off disc assemblies can be conveniently stored on the row unit mainframe.



Right Hand Barring Off Disc Assembly

Left Hand Barring Off Disc Assembly



Installed Barring Off Discs

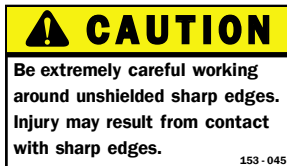
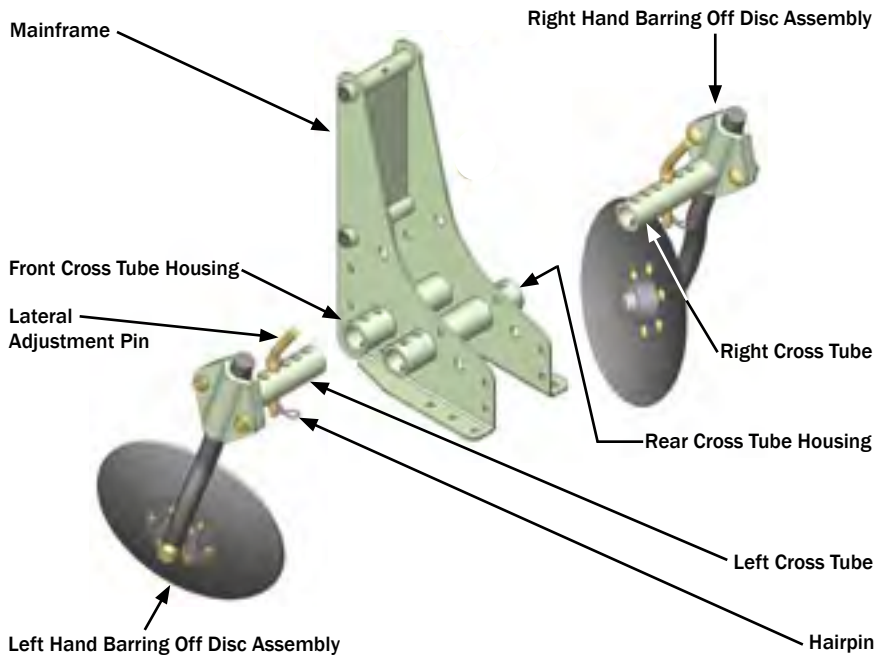


Stored Barring Off Discs

INSTALLATION - BARRING OFF DISCS



- **AVOID CRUSHING.** Lower implement to the ground, place tractor in park, turn off engine, and remove key. Park implement on a clean, dry, and level surface. An uneven surface could cause implement to shift or fall, resulting in personal injury or death, as well as implement damage.
- **USE BAR STANDS TO SUPPORT THE IMPLEMENT.** Securely support all implement components that must be raised. Remove any buildup of grease, oil, or debris prior to installing barring off discs.



1. Remove hairpin and lateral adjustment pin from left cross tube.
2. Insert left cross tube into front or rear cross tube housing.
3. After desired width is achieved, insert lateral adjustment pin through cross tube and cross tube housing to secure barring off disc assembly to the mainframe. Insert hairpin through lateral adjustment pin.
4. Repeat procedure to install right hand barring off disc assembly.

NOTE: In some row spacings, the left and right cross tubes may occupy the same cross tube housing. Mirrored installation on left and right sides of implement may help with implement trailing properly.

SELF STORAGE

1. Remove hairpin and lateral adjustment pin.
2. Rotate barring off disc assembly and cross tube 180°.
3. Insert lateral adjustment pin in previous location to secure barring off disc assembly. Insert hairpin through lateral adjustment pin.

CAUTION
Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges. 153-045

THREE PIECE WESTERN SWEEP

The three piece western sweep provides the producer with various cultivation options.

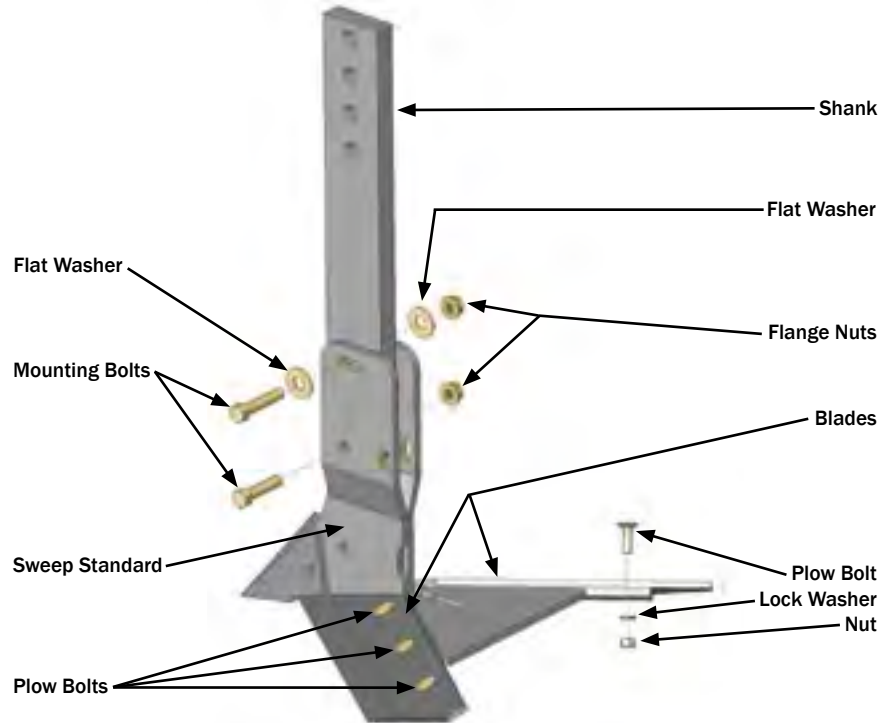
- Western sweep blade packages provide cutting widths ranging from 15 5/8 to 27 5/8 inches to eliminate undesired plant growth.
- Adjustable ridging wings can produce a precisely sized and shaped crop bed.
- Fertilizer tubes or a fertilizer knife allow for fertilizer application at various locations.



INSTALLATION THREE PIECE WESTERN SWEEP



- **AVOID CRUSHING.** Lower implement to the ground, place tractor in park, turn off engine, and remove key. Park implement on a clean, dry, and level surface. An uneven surface could cause implement to shift or fall, resulting in personal injury or death, as well as implement damage.
- **USE BAR STANDS TO SUPPORT THE IMPLEMENT.** Securely support all implement components that must be raised. Remove any buildup of grease, oil, or debris prior to installing three piece western sweeps.

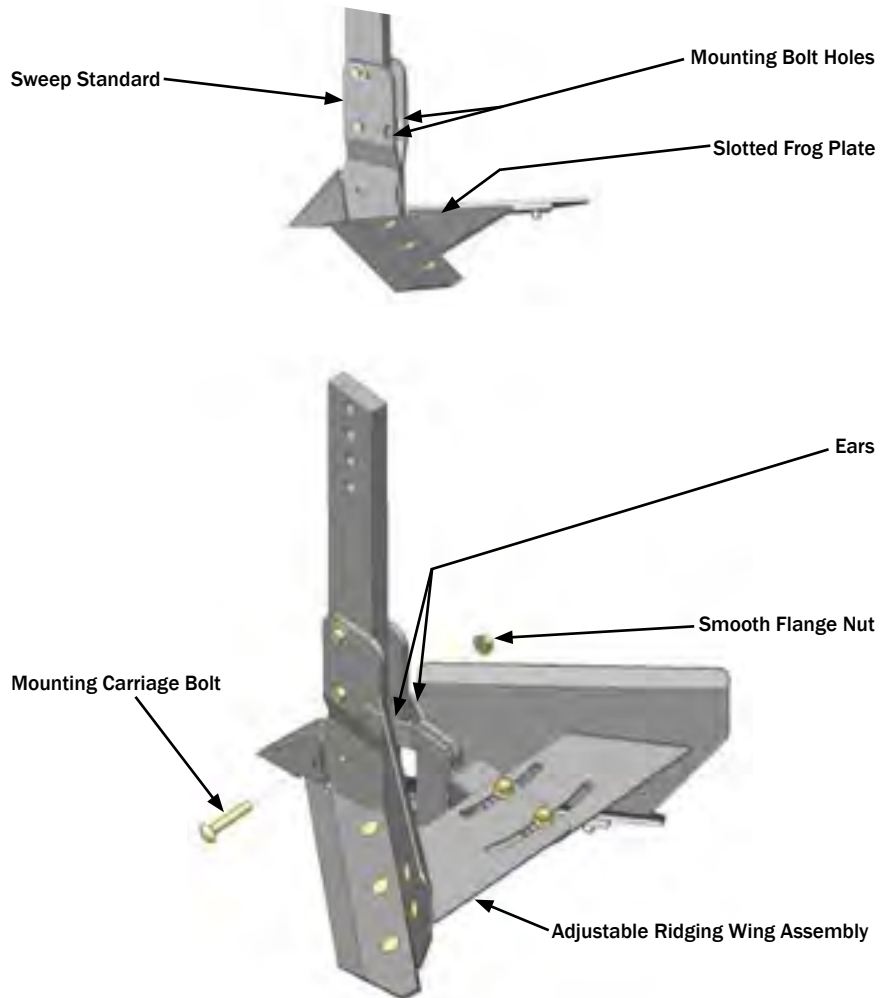


CAUTION
Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.
153 - 045

1. Mount sweep standard to shank with mounting bolts, flat washers, and flange nuts.
2. Install blades to sweep standard with plow bolts, lock washers, and nuts.
3. Tighten all hardware to proper torque specifications. (pg. 7 - 5)

NOTE: Sweep blade packages with blades 22" long and longer include four plow bolts and bolt holes per blade. The fourth bolt and bolt hole are designated for fertilization purposes only. (pg. 4 - 11 and 4 - 13)

INSTALLATION
THREE PIECE WESTERN SWEEP
ADJUSTABLE RIDGING WING



CAUTION
Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges. 153 - 045

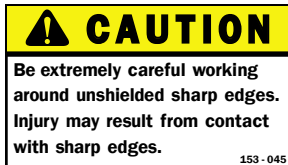
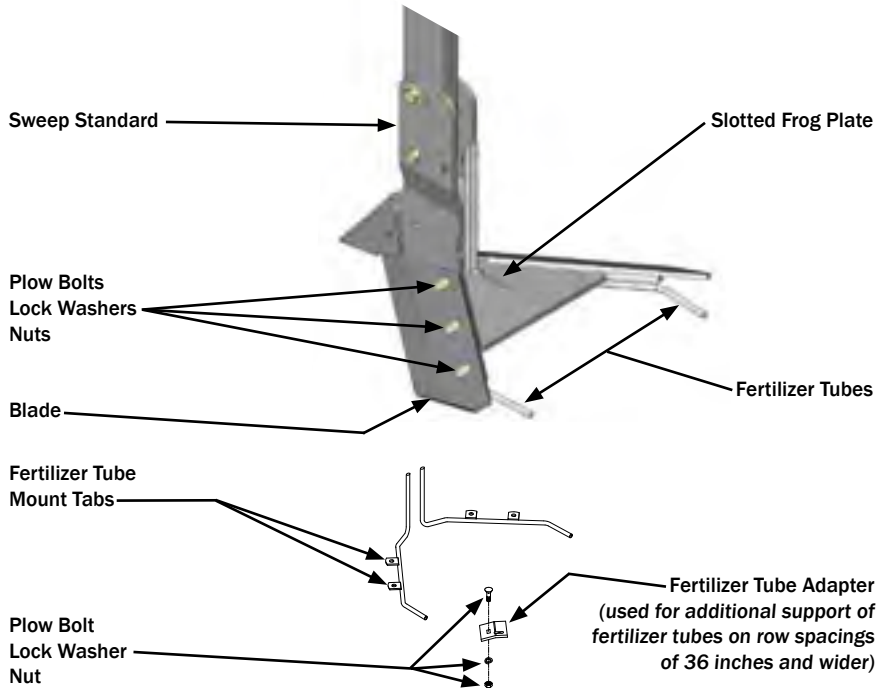
1. Insert tab on bottom of adjustable ridging wing assembly into sweep standard slotted frog plate.
2. Align adjustable ridging wing ears and mounting bolt holes on sweep standard.
3. Install mounting carriage bolt and smooth flange nut.
4. Tighten hardware to proper torque specifications. (pg. 7 - 5)

NOTE: Remove adjustable ridging wing when not in use.

**INSTALLATION
THREE PIECE WESTERN SWEEP
FERTILIZER TUBES**



If you choose to apply NH₃, it is advisable to consult documented information regarding the safe handling and application of NH₃. Refer to recognized sources. (pg. 2 - 7)



1. Remove two rearmost plow bolts on sweep standard and each blade.
2. Thread fertilizer tubes up through sweep standard slotted frog plate.
3. Align blade holes, sweep standard holes, and fertilizer tube mount tabs.
4. Install plow bolts.
5. Attach fertilizer tubes to bottom of sweep standard with lock washers, and nuts.
6. Tighten all hardware to proper torque specifications. (pg. 7 - 5)

NOTE: Sweep blade packages with blades 22" long and longer include four plow bolts and bolt holes per blade. The fourth bolt and bolt hole are designated for fertilization purposes only. (pg. 4 - 11 and 4 - 13)

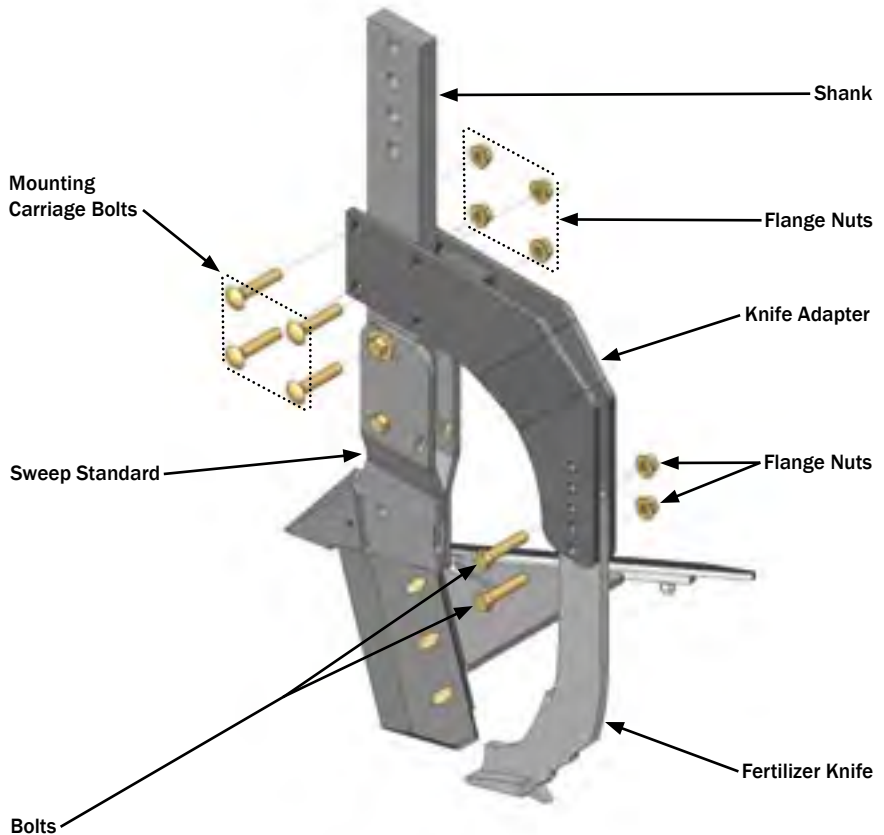
NOTE: It is not recommended to mount fertilizer tubes and adjustable ridging wing simultaneously.

The illustrations above are intended to provide instruction on mounting fertilizer tubes. Contact your Orthman dealer for detailed information on fertilizer tubes offered to match exact row configurations.

INSTALLATION
THREE PIECE WESTERN SWEEP
FERTILIZER KNIFE



If you choose to apply NH₃, it is advisable to consult documented information regarding the safe handling and application of NH₃. Refer to recognized sources. (pg. 2 - 7)



CAUTION
 Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.
 153 - 045

1. Mount knife adapter to shank with mounting carriage bolts and flange nuts.
2. Mount fertilizer knife to knife adapter with bolts and flange nuts.
3. Tighten all hardware to proper torque specifications. (pg. 7 - 5)

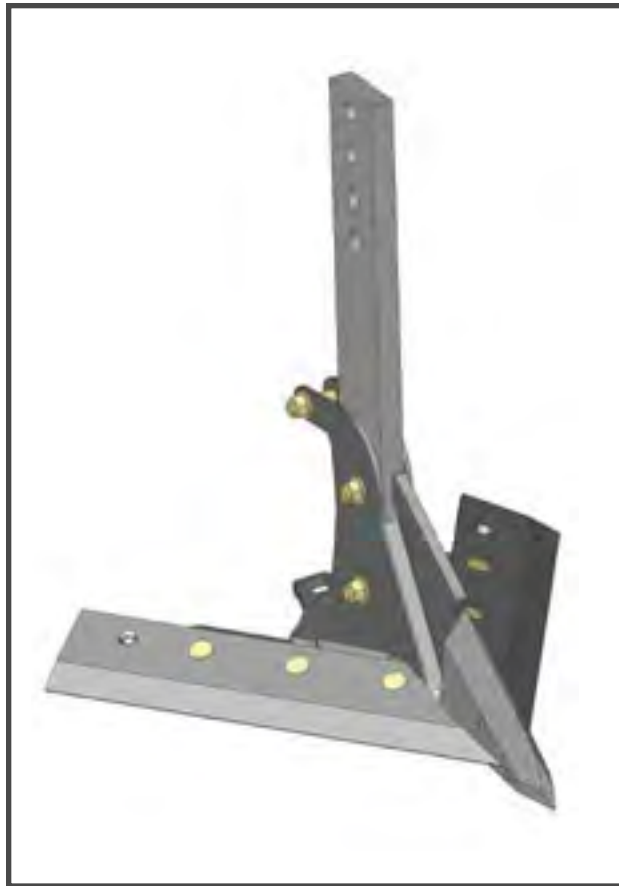
NOTE: Fertilizer knife and adjustable ridging wing cannot be mounted simultaneously.

SUPER SWEEP

CAUTION
Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges. 153 - 045

The super sweep provides the producer with various cultivation options.

- Super sweep blade packages provide cutting widths ranging from 18 to 26 inches to eliminate undesired plant growth.
- Adjustable ridging wings can produce a precisely sized and shaped crop bed.
- Fertilizer tubes or a fertilizer knife allow for fertilizer application at various locations.

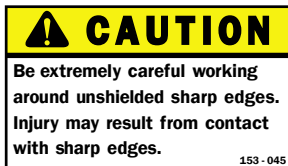
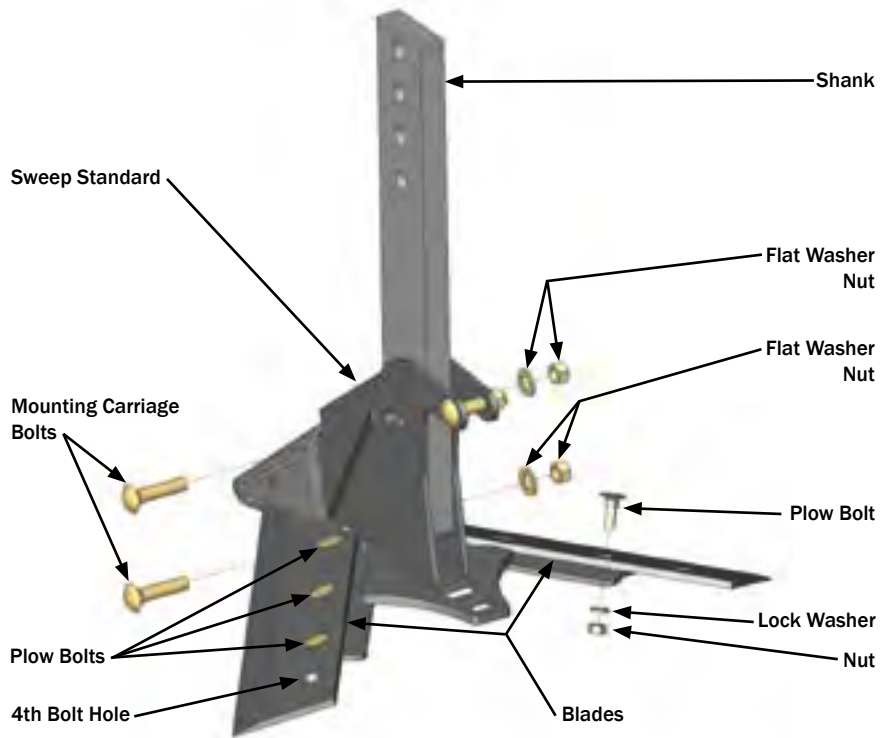


INSTALLATION SUPER SWEEP



• **AVOID CRUSHING.** Lower implement to the ground, place tractor in park, turn off engine, and remove key. Park implement on a clean, dry, and level surface. An uneven surface could cause implement to shift or fall, resulting in personal injury or death, as well as implement damage.

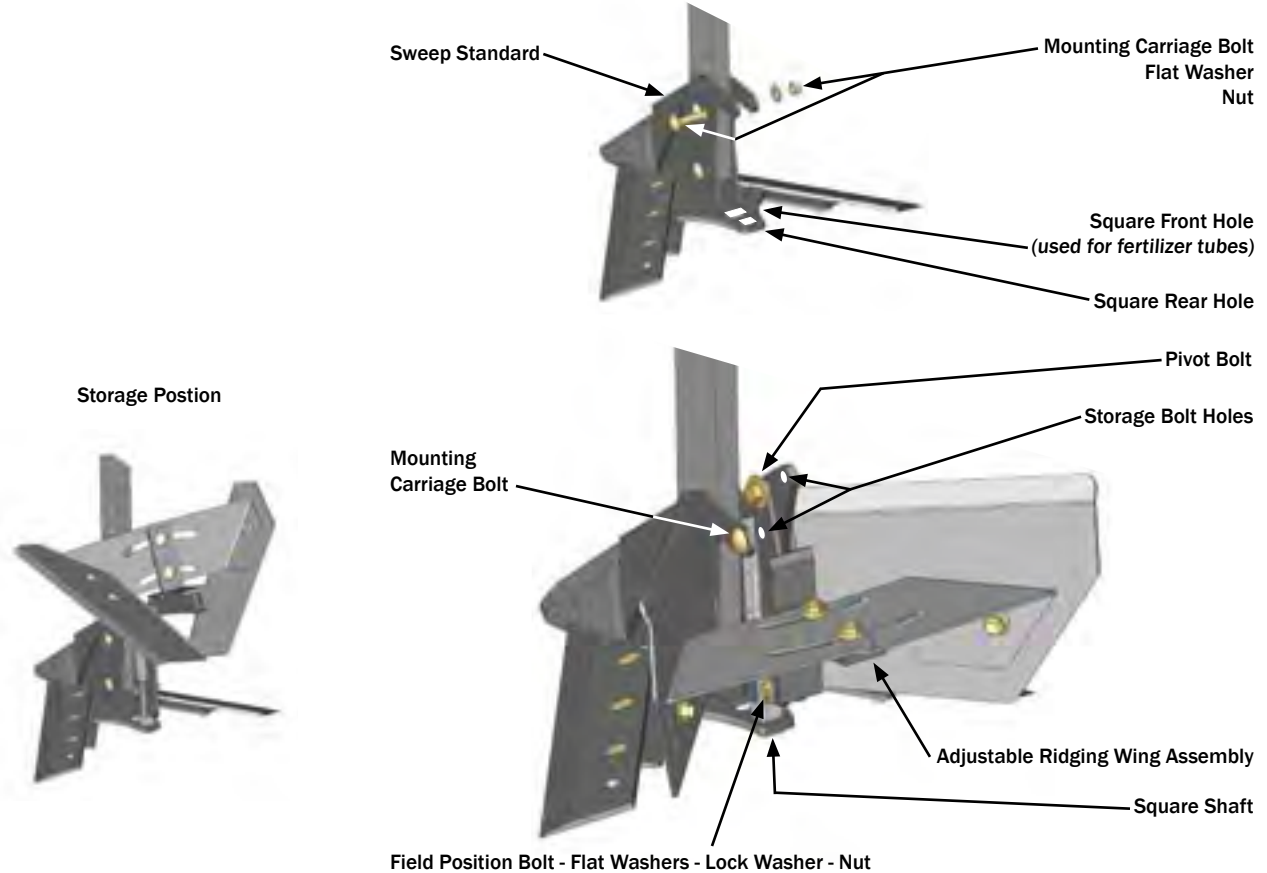
• **USE BAR STANDS TO SUPPORT THE IMPLEMENT.** Securely support all implement components that must be raised. Remove any buildup of grease, oil, or debris prior to installing super sweeps.



1. Mount sweep standard to shank with mounting carriage bolts, flat washers, and nuts.
2. Install blades to sweep standard with plow bolts, lock washers, and nuts.
3. Tighten all hardware to proper torque specifications. (pg. 7 - 5)

NOTE: Sweep blade packages with blades 22" long and longer include four plow bolts and bolt holes per blade. The fourth bolt and bolt hole are designated for fertilization purposes only.

**INSTALLATION
SUPER SWEEP
ADJUSTABLE RIDGING WING**



CAUTION
Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.
153 - 045

1. Place square shaft of adjustable ridging wing assembly into square rear hole on sweep standard.
2. Mount square shaft to sweep standard with mounting carriage bolt, flat washer, and nut.
3. Tighten all hardware to proper torque specifications. (pg. 7 - 5)

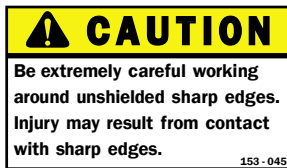
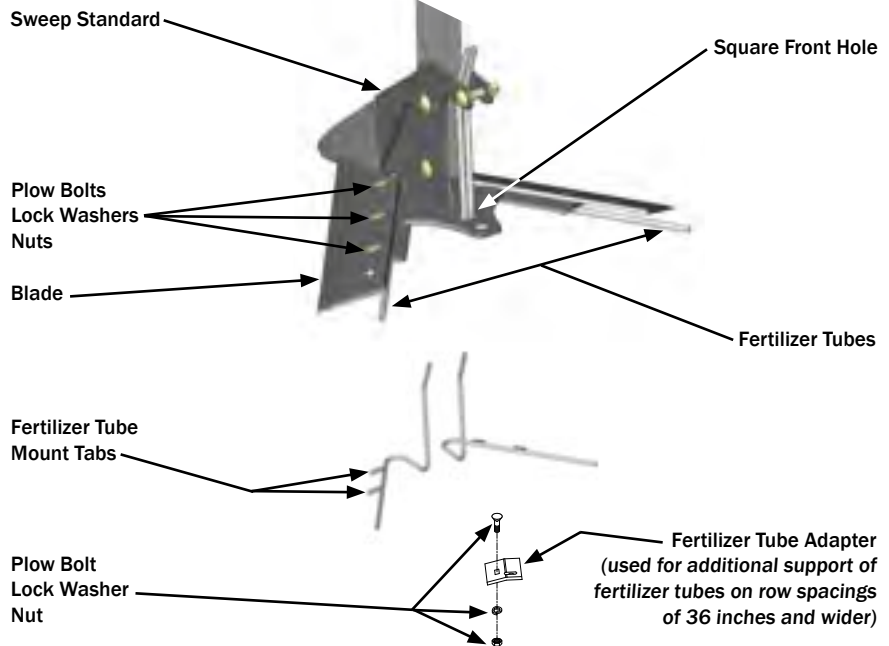
SELF STORAGE

1. Remove field position bolt, nut, and washers.
2. Loosen pivot bolt. Rotate adjustable ridging wing assembly upward.
3. Align storage bolt holes.
4. Install field position bolt in storage bolt holes with flat washers, lock washer, and nut.
5. Tighten all hardware to proper torque specifications. (pg. 7 - 5)

**INSTALLATION
SUPER SWEEP
FERTILIZER TUBES**



If you choose to apply NH₃, it is advisable to consult documented information regarding the safe handling and application of NH₃. Refer to recognized sources. (pg. 2 - 7)



1. Remove two rearmost plow bolts on sweep standard and each blade.
2. Thread fertilizer tubes up through square front hole on sweep standard.
3. Align blade holes, sweep standard holes, and fertilizer tube mount tabs.
4. Install plow bolts.
5. Attach fertilizer tubes to bottom of sweep standard with lock washers, and nuts.
6. Tighten all hardware to proper torque specifications. (pg. 7 - 5)

NOTE: Sweep blade packages with blades 22" long and longer include four plow bolts and bolt holes per blade. The fourth bolt and bolt hole are designated for fertilization purposes only. (pg. 4 - 11 and 4 - 13)

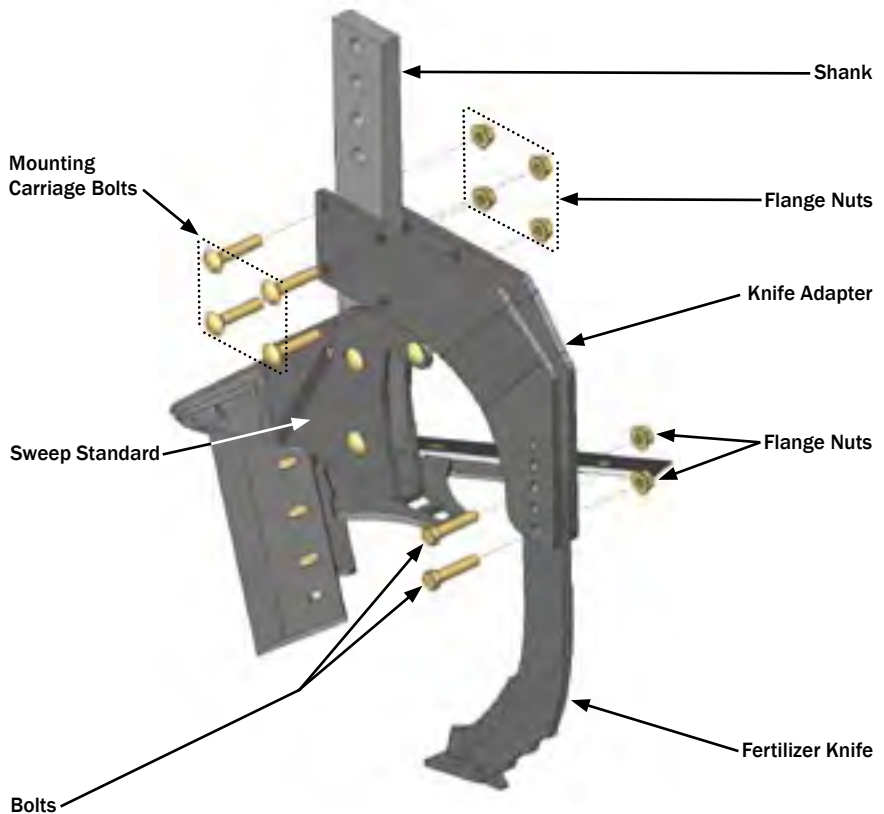
NOTE: It is not recommended to mount fertilizer tubes and adjustable ridging wing simultaneously.

The illustrations above are intended to provide instruction on mounting fertilizer tubes. Contact your Orthman dealer for detailed information on fertilizer tubes offered to match exact row configurations.

**INSTALLATION
SUPER SWEEP
FERTILIZER KNIFE**



If you choose to apply NH₃, it is advisable to consult documented information regarding the safe handling and application of NH₃. Refer to recognized sources. (pg. 2 - 7)



CAUTION
Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.
153-045

1. Mount knife adapter to shank with mounting carriage bolts and flange nuts.
2. Mount fertilizer knife to knife adapter with bolts and flange nuts.
3. Tighten all hardware to proper torque specifications. (pg. 7 - 5)

NOTE: Fertilizer knife and adjustable ridging wing cannot be mounted simultaneously.

SINGLE PIECE SWEEP

CAUTION
Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges. 153-045


The single piece sweep provides the producer with various cultivation options.

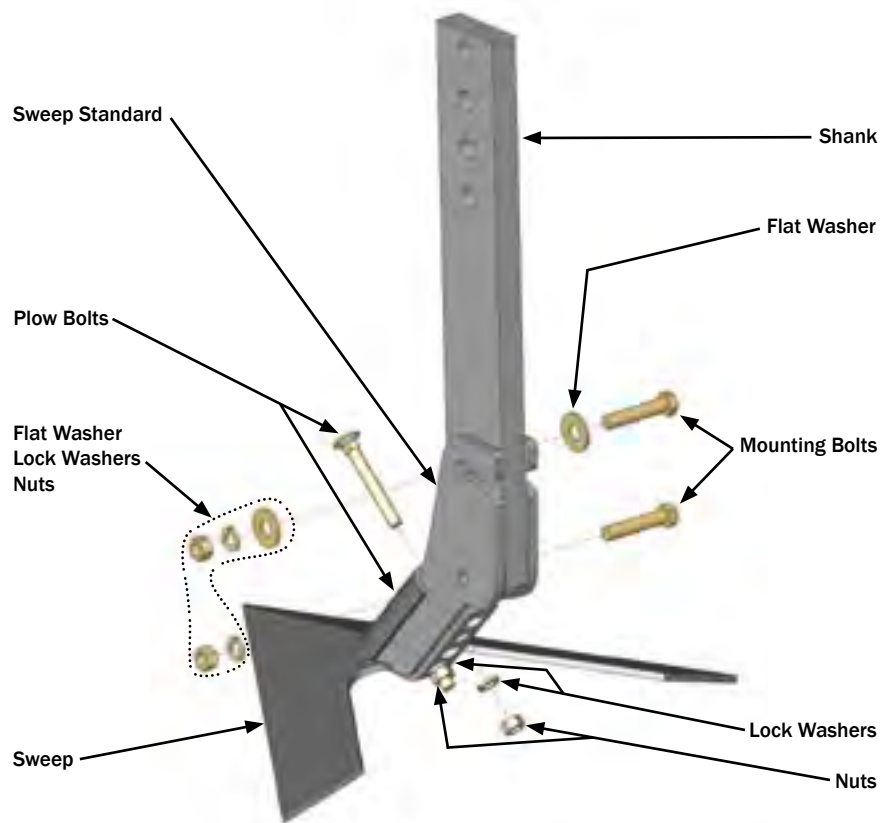
- Single piece sweep blade packages provide cutting widths ranging from 14 to 26 inches to eliminate undesired plant growth.
- Adjustable ridging wings can produce a precisely sized and shaped crop bed.
- A fertilizer knife allows for fertilizer application in the center of the furrow.



INSTALLATION
SINGLE PIECE SWEEP



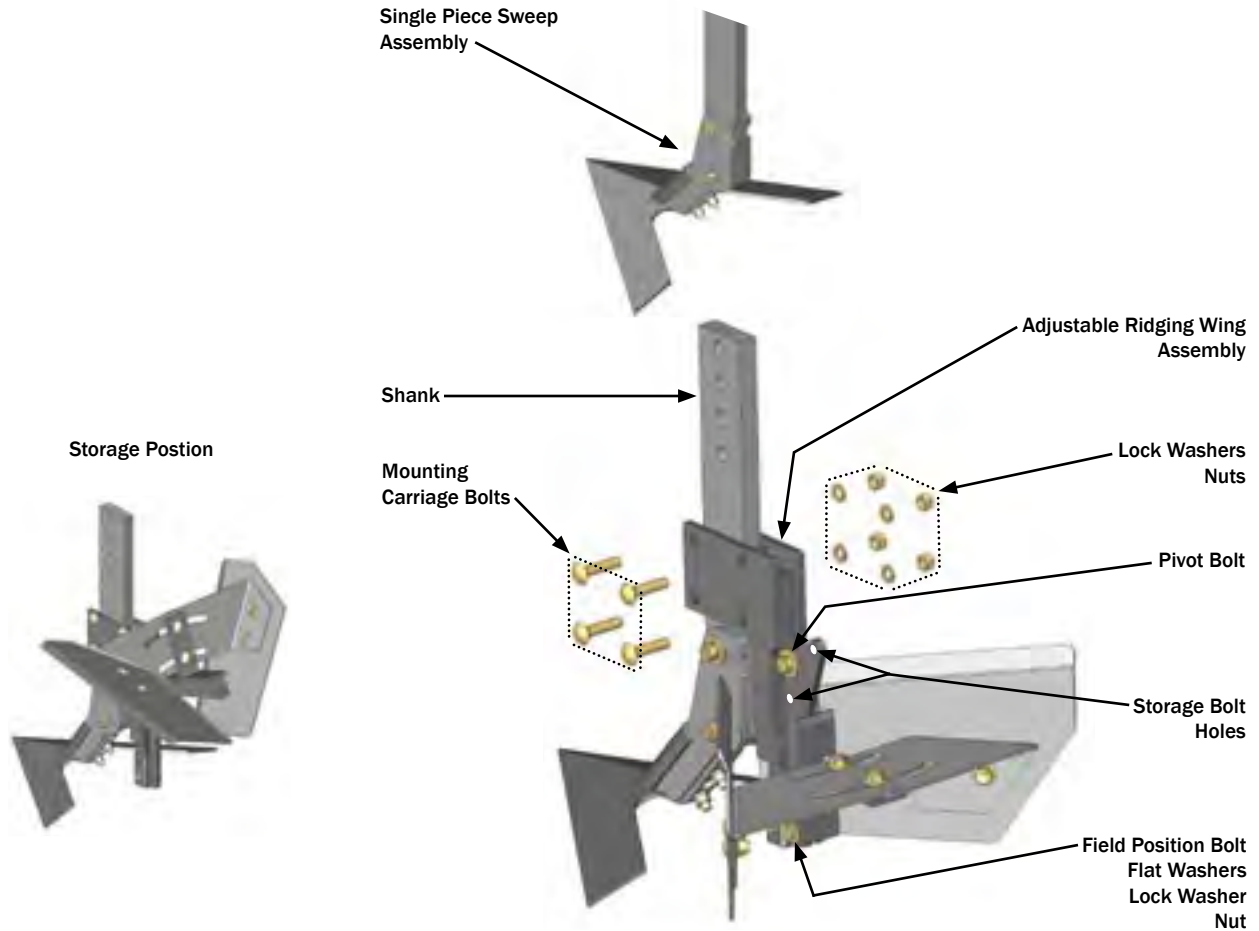
- 
• AVOID CRUSHING. Lower implement to the ground, place tractor in park, turn off engine, and remove key. Park implement on a clean, dry, and level surface. An uneven surface could cause implement to shift or fall, resulting in personal injury or death, as well as implement damage.
- USE BAR STANDS TO SUPPORT THE IMPLEMENT.** Securely support all implement components that must be raised. Remove any buildup of grease, oil, or debris prior to installing single piece sweeps.



CAUTION
Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.
153 - 045

1. Mount sweep standard to shank using mounting bolts, flat washers, lock washers, and nuts.
2. Mount sweep to sweep standard with plow bolts, lock washers, and nuts.
3. Tighten all hardware to proper torque specifications. (pg. 7 - 5)

**INSTALLATION
SINGLE PIECE SWEEP
ADJUSTABLE RIDGING WING**



CAUTION
Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.
153-045

1. Mount adjustable ridging wing assembly to shank with mounting carriage bolts, lock washers, and nuts.
2. Tighten all hardware to proper torque specifications. (pg. 7 - 5)

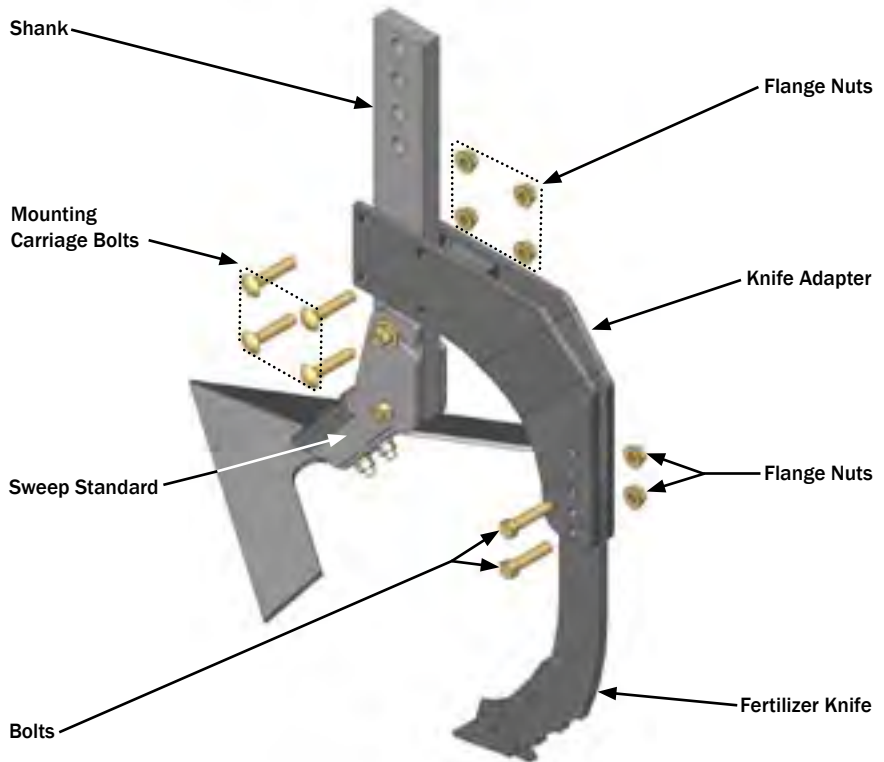
SELF STORAGE

1. Remove field position bolt, nut, and washers.
2. Loosen pivot bolt. Rotate adjustable ridging wing assembly upward.
3. Align storage bolt holes.
4. Install field position bolt in storage bolt holes with flat washers, lock washer, and nut.
5. Tighten all hardware to proper torque specifications. (pg. 7 - 5)

INSTALLATION
SINGLE PIECE SWEEP
FERTILIZER KNIFE



If you choose to apply NH₃, it is advisable to consult documented information regarding the safe handling and application of NH₃. Refer to recognized sources. (pg. 2 - 7)



CAUTION
 Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.
 153 - 045

1. Mount knife adapter to shank with mounting carriage bolts and flange nuts.
2. Mount fertilizer knife to knife adapter with bolts and flange nuts.
3. Tighten all hardware to proper torque specifications. (pg. 7 - 5)

NOTE: Fertilizer knife and adjustable ridging wing cannot be mounted simultaneously.

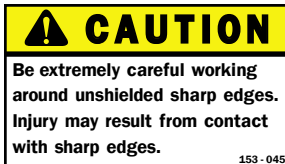
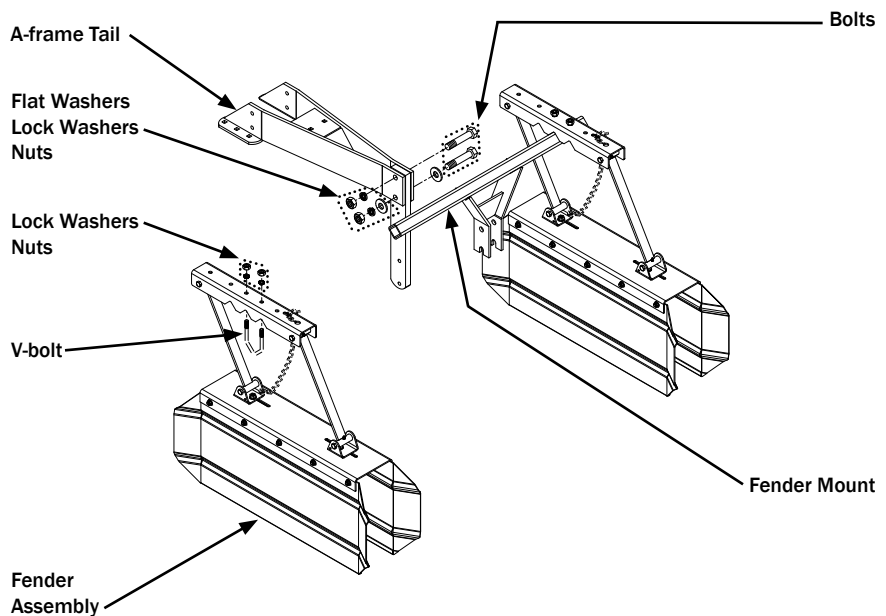
CLOSED TOP FENDERS

Closed top fenders allow for increased ground speeds while maintaining residue control when cultivating a young crop. Fenders can be adjusted vertically, laterally, fore, and aft to provide maximum crop protection.



• **AVOID CRUSHING.** Lower implement to the ground, place tractor in park, turn off engine, and remove key. Park implement on a clean, dry, and level surface. An uneven surface could cause implement to shift or fall, resulting in personal injury or death, as well as implement damage.

• **USE BAR STANDS TO SUPPORT THE IMPLEMENT.** Securely support all implement components that must be raised. Remove any buildup of grease, oil, or debris prior to installing closed top fenders.



1. Attach fender mount to A-frame tail with bolts, flat washers, lock washers, and nuts.
2. Loosen, but do not remove, V-bolt nuts on fender assembly.
3. Slide fender assembly laterally on fender mount to accommodate row spacing.
4. Tighten V-bolt nuts to secure fender to fender mount.
5. Tighten all hardware according to torque specifications. (pg. 7 - 5)

TOOLBAR HEIGHT



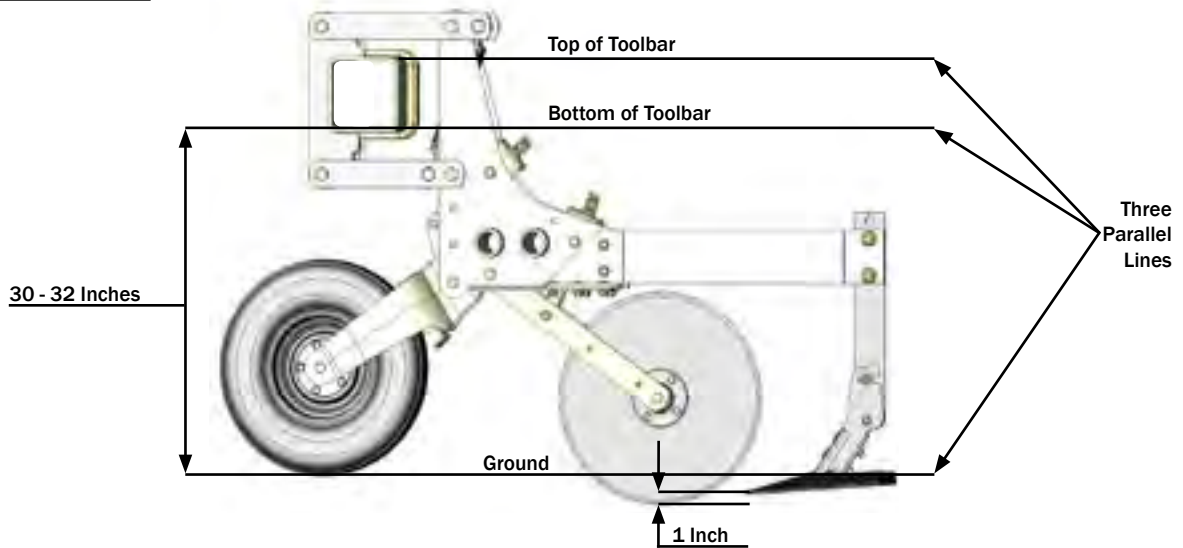
⚠ • PLACE TRACTOR IN PARK AND REMOVE KEY BEFORE DISMOUNTING TRACTOR TO ADJUST IMPLEMENT.

• NEVER ALLOW RIDERS ON TRACTOR OR IMPLEMENT. Riders hinder operator visibility and can be thrown from implement and/or be struck by foreign objects resulting in serious injury or death.



NOTE: When setting toolbar height, disregard row unit performance. In order for tooling options to be adjusted and work efficiently, toolbar height and orientation must be set first.

NOTE: Center coulter and rear tooling depth relationship is illustrated to assist in setting center coulter depth. (pg. 5 - 4)



The top and bottom of the toolbar must be parallel with the ground. Adjustment of tractor third link, lift assist wheels, and/or toolbar gauge wheels, if equipped, will allow the toolbar to run parallel to the ground.

The bottom of the toolbar should be approximately 30 to 32 inches above ground level. Use tractor lower hitch stop, lift assist wheels, and/or toolbar gauge wheels, if equipped, to set desired height.

Have an assistant pull the tractor and implement slowly forward in field position as you view the end of the toolbar from a safe distance. Observe angle and height of the toolbar while in motion. Make adjustments until toolbar travels parallel to the ground at a height between 30 and 32 inches.

TOOLBAR HEIGHT

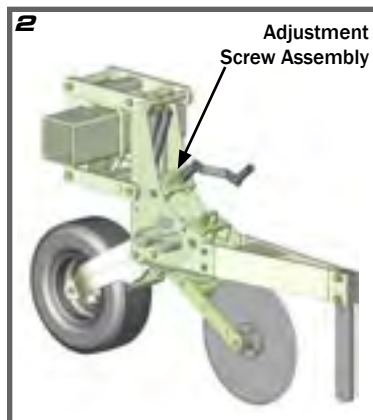
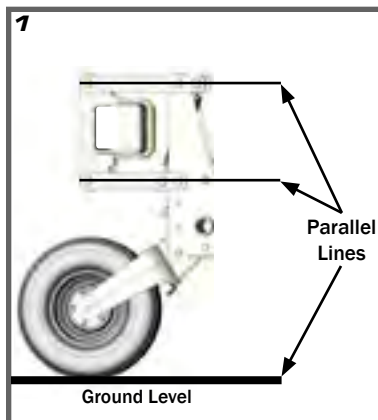
After desired toolbar orientation and height is established, set tractor lower hitch stop, lift assist wheels, and/or toolbar gauge wheels, if equipped.

NOTE: Larger implements may require lift assist wheels and/or toolbar gauge wheels as toolbar weight can cause the parallel linkage to “bottom out.” Gauge wheels displace some of the toolbar weight, allowing maximum parallel linkage travel. Smaller implements can be operated without gauge wheels and the tractor hitch will carry some toolbar weight. This is accomplished by setting a lower hitch stop on tractor three point hitch control.

ROW UNIT DEPTH

Effectively, row unit gauge wheels determine row unit tooling depth. Parallel linkages, with the ability to travel vertically, allow row units to operate independent of the toolbar. Down pressure springs provide individual row units with the force to drive row unit tooling into the soil, if necessary. Since row units can travel vertically, and springs provide downward force, the toolbar should only serve as a towing device, allowing a uniform cultivation regardless of variations in terrain.

To allow maximum vertical row unit travel, the parallel linkages should generally operate parallel with the top and bottom of the toolbar in the field position. (fig. 1) Adjust row unit gauge wheels with the hand crank and adjustment screw assembly so that parallel linkages are parallel with the top and bottom of the toolbar in the field position. (fig. 2) The hand crank is stored on the front of the toolbar. (fig. 3)

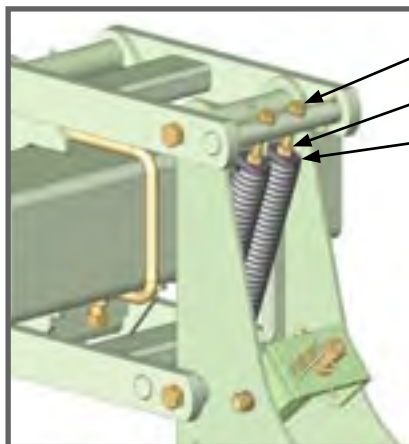


Adjust each row unit gauge wheel to uniform depth with the hand crank, adjustment screw assembly, and depth indicator. It is important to set each gauge wheel to the same depth so further rearward tooling adjustments will be uniform. After adjustments are complete, return hand crank to storage position.

ROW UNIT DOWN PRESSURE

Depending on soil conditions, down pressure springs provide row units with down force to drive row unit tooling into the soil while parallel linkages travel independent of the toolbar. Individual row unit down pressure can be adjusted to provide uniform cultivation from row unit to row unit regardless of terrain contours. After toolbar height is set (pg. 5 - 1), row unit depth is set (pg. 5 - 2), and parallel linkages generally operate parallel with the toolbar, the remaining row unit tooling options can be adjusted for field conditions.

Typically, row units operating in compacted ground require increased down pressure to drive row unit tooling into the soil. In softer conditions, down pressure is usually decreased as row unit tooling penetrates the soil without an increase in down pressure. Row unit down pressure springs should be adjusted to arrive at a setting where parallel linkages operate independent of the toolbar and the toolbar serves only as a towing device. (pg. 5 - 2)



Down Pressure Adjustment Bolt

Jam Nut

Spring Plug

Down Pressure Spring Adjustment:
(3/4 end wrench, 1 1/4 end wrench)

1. Loosen jam nut from spring plug.
2. Adjust down pressure adjustment bolt.
(clockwise - increase pressure)
(counterclockwise - decrease pressure)
3. Tighten jam nut against spring plug.

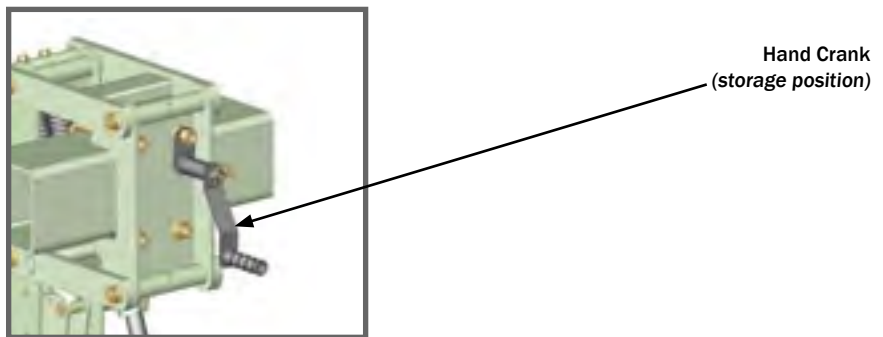
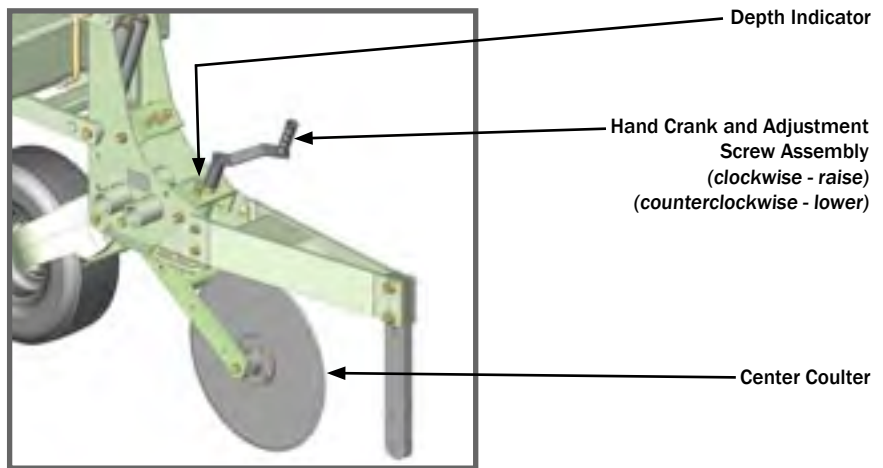
Typically, if a rigid toolbar is used with the **8325** row units, down pressure adjustment from row unit to row unit will vary slightly. Compacted soil will usually require an increased amount of down pressure.

If a folding or stacking toolbar is used, wing sections tend to float upward, unless mechanically restrained. (refer to toolbar operator's manual) Wing row units may require decreased down pressure to allow row units to perform consistently across the implement.

NOTE: Too much down pressure can be detrimental to the performance of row units. If too much down pressure is applied to individual row units, the row units can essentially "lift" the toolbar. This will cause parallel linkages to "bottom out" and row units will not travel independent of the toolbar. Adjust down pressure springs to arrive at a point that parallel linkages are parallel with toolbar, providing maximum linkage travel.

CENTER COULTER DEPTH

Center couler depth is quickly and easily adjusted with the hand crank and adjustment screw assembly. Center couler depth is typically adjusted so the lowest point of the couler is one inch deeper than the lowest point of the rear shank tooling. (pg. 5 - 1) This depth should allow the center couler to cut all surface and subsurface residue to reduce tooling interference, aid in residue decomposition, and provide lateral implement stability. The hand crank is stored on the front of the toolbar.



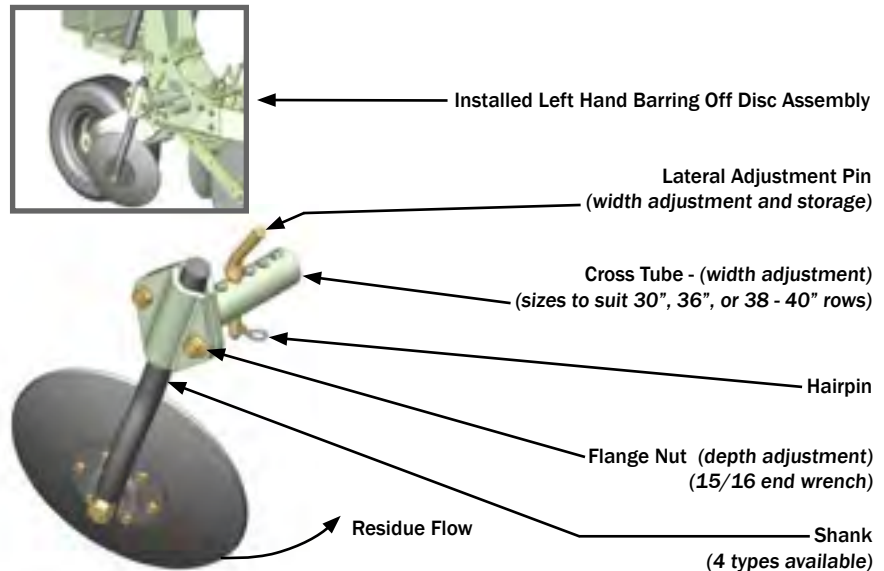
CAUTION
 Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.
 153 - 045

Rotating center couler adjustment screw clockwise will raise center couler out of the soil and vice versa. Adjust each center couler to uniform depth with the hand crank, adjustment screw assembly, and depth indicator. After adjustments are complete, return hand crank to storage position.

NOTE: It is possible for the center coulers to effectively hold row units out of the ground if center coulers are set too deep. Compacted field conditions and inappropriate center couler depth may cause adverse cultivator operation.

BARRING OFF DISCS

Barring off discs provide near crop tillage. Barring off disc assemblies are quickly adjusted laterally and vertically. Depth adjustments depend on desired tillage depth and desired amount of residue flow. Generally, deeper discs generate more residue flow. Width adjustments allow for variations in tillage zone to crop relationship. Barring off disc assemblies can be conveniently stored on the row unit mainframe.



CAUTION
 Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.
 153 - 045

DEPTH ADJUSTMENT

1. Loosen flange nut only.
2. Raise or lower shank and disc assembly to desired depth.
3. Tighten flange nut to torque specification. (pg. 7 - 5)

WIDTH ADJUSTMENT

1. Remove hairpin and lateral adjustment pin from cross tube.
2. Laterally adjust cross tube and barring off disc assembly to desired width.
3. Replace lateral adjustment pin in cross tube. Replace hairpin in lateral adjustment pin.

SELF STORAGE

1. Remove hairpin and lateral adjustment pin from cross tube.
2. Rotate barring off disc assembly and cross tube 180°.
3. Insert lateral adjustment pin in previous location. Replace hairpin to secure barring off disc assembly.

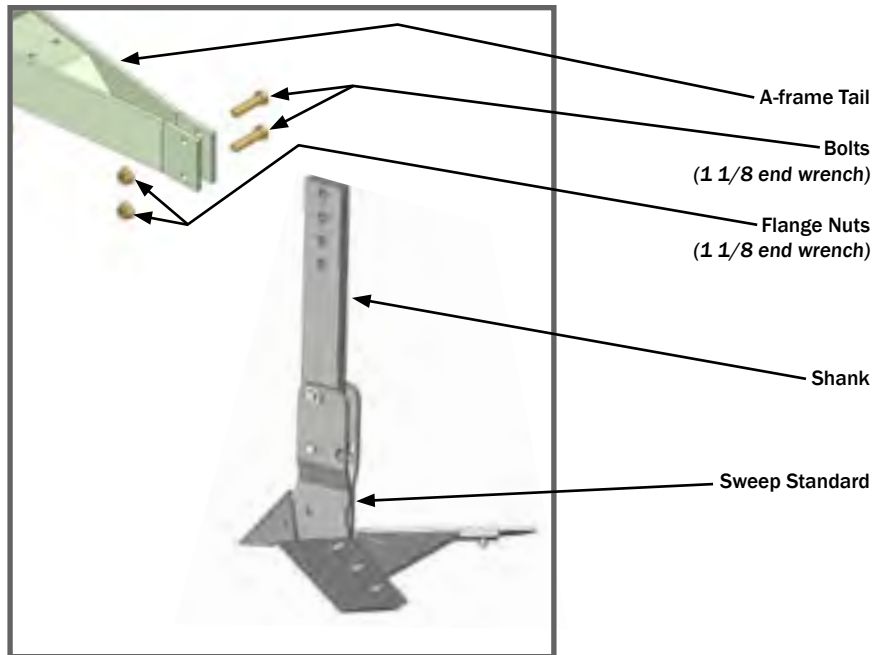
NOTE: Contact your Orthman dealer for detailed information on cross tube lengths and shank styles offered to exact row configurations.

SWEEP STANDARD DEPTH

Adjust each row unit gauge wheel to uniform depth with the hand crank, adjustment screw assembly, and depth indicator. It is important to set each gauge wheel to the same depth so further rearward tooling adjustments will be uniform. After adjustments are complete, return hand crank to storage position. (pg 5 - 2)

Lowering the gauge wheel will lift the row unit out of the soil and the sweep will operate at a shallower depth. Raising the gauge wheel will allow the row unit to further penetrate soil and the sweep will operate at an increased depth. Row unit gauge wheel depth adjustment is used for finite adjustments to cultivator tooling depth. (pg. 5 - 2)

Sweep standard depth is adjusted coarsely by raising or lowering the rear shank relative to the A-frame tail.

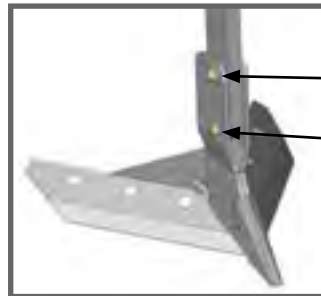


CAUTION
 Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.
 153 - 045

1. Remove flange nuts and bolts.
2. Align desired shank and A-frame tail bolt holes.
3. Replace bolts and flange nuts.
4. Tighten hardware to proper torque specification. (pg. 7 - 5)

SWEEP STANDARD PITCH

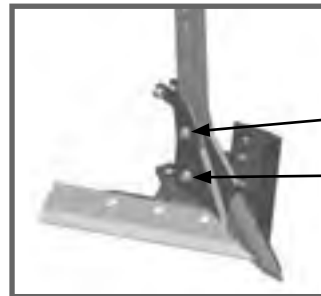
Sweep standard pitch angle of the three piece western sweep, super sweep, and single piece sweep can be adjusted to meet cultivation needs. Increasing sweep pitch angle generally provides increased soil penetration and action.



THREE PIECE WESTERN SWEEP

Pitch Adjustment Bolt
(3/4 end wrench)

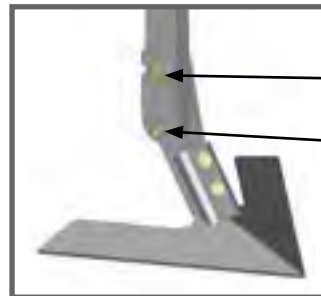
Pivot Bolt
(3/4 end wrench)



SUPER SWEEP

Pitch Adjustment Bolt
(3/4 end wrench)

Pivot Bolt
(3/4 end wrench)



SINGLE PIECE SWEEP

Pitch Adjustment Bolt
(3/4 end wrench)

Pivot Bolt
(3/4 end wrench)

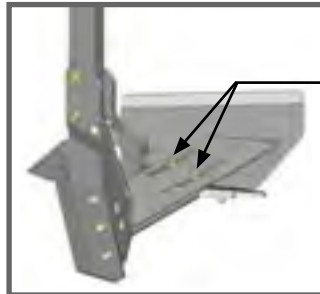
CAUTION
Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.
153 - 045

1. Loosen nuts on pitch adjustment and pivot bolts.
2. Adjust sweep standard pitch to meet cultivation needs.
3. Tighten nuts on pitch adjustment and pivot bolts torque specifications.
(pg. 7 - 5)

NOTE: When applying NH₃, sweep standard pitch angle generally needs to be adjusted so each sweep blade or sweep is near parallel with ground level to aid in NH₃ sealing.

RIDGING WING WIDTH

Adjustable ridging wings can produce a precisely sized and shaped crop bed by adjusting wing width. Increasing wing width and sweep standard pitch generally provides more soil action. (pg. 5 - 7)



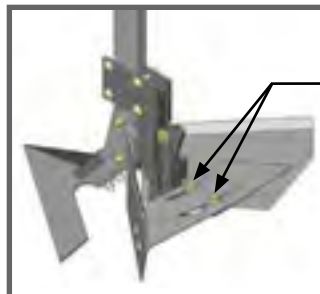
THREE PIECE WESTERN SWEEP

Width Adjustment Bolts and Flange Nuts
(3/4 end wrench)



SUPER SWEEP

Width Adjustment Bolts and Flange Nuts
(3/4 end wrench)



SINGLE PIECE SWEEP

Width Adjustment Bolts and Flange Nuts
(3/4 end wrench)

CAUTION
Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.
153 - 045

1. Loosen flange nuts on width adjustment bolts.
2. Adjust wing width to provide desired size and shape of crop bed.
3. Tighten flange nuts on width adjustment bolts to torque specification.
(pg. 7 - 5)

FERTILIZATION APPLICATIONS



If you choose to apply NH₃, it is advisable to consult documented information regarding the safe handling and application of NH₃. Refer to recognized sources. (pg. 2 - 7)

CAUTION

Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.

153 - 045

THREE PIECE WESTERN SWEEP



Fertilizer Tubes



Fertilizer Knife

SUPER SWEEP



Fertilizer Tubes



Fertilizer Knife

SINGLE PIECE SWEEP



Fertilizer Knife

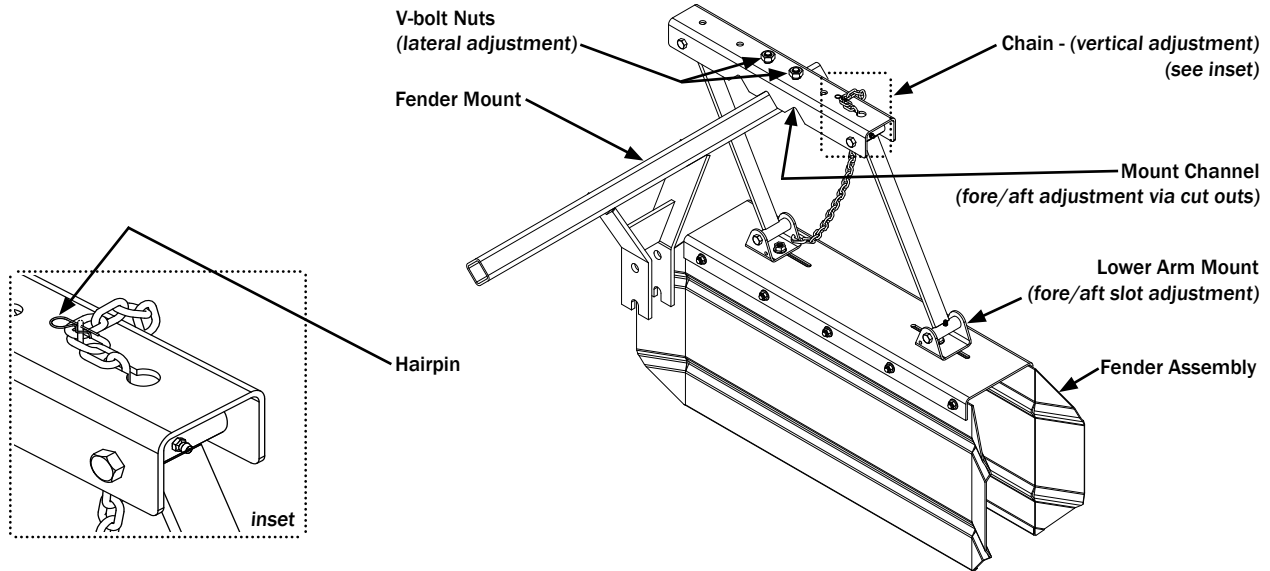
Contact your Orthman dealer for detailed information on fertilizer tubes offered to match exact row configurations.

Fertilizer knife depth adjustments are accomplished by adjusting the height of the knife relative to the knife adapter or adjusting the height of the knife adapter relative to the shank. (3/4 end wrench)

NOTE: When applying NH₃, sweep standard pitch angle generally needs to be adjusted so each sweep blade or sweep is near flush with ground level to aid in NH₃ sealing.

CLOSED TOP FENDERS

Closed top fenders allow for increased ground speeds while maintaining residue control when cultivating a young crop. Fenders can be adjusted vertically, laterally, fore, and aft to provide maximum crop protection in various conditions.



CAUTION
 Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.
 153-045

VERTICAL ADJUSTMENT (see inset)

1. Remove hairpin and chain from vertical pin.
 2. Lengthen or shorten chain to achieve desired fender height.
 3. Replace chain and hairpin on vertical pin.
- NOTE:** Fenders should be vertically adjusted to operate slightly above ground level to prevent dragging and premature wear.

LATERAL ADJUSTMENT

1. Loosen V-bolt nuts and slide fender assembly laterally to desired position.
2. Tighten V-bolt nuts.

FORE AND AFT ADJUSTMENT

- A.
 1. Remove V-bolt nuts and V-bolt.
 2. Adjust fender assembly fore/aft (coarse adjustment) to align desired channel cut out with fender mount.
 3. Replace V-bolt nuts and V-bolt.
 - B.
 1. Loosen both lower arm mount nuts.
 2. Slide arm mounts fore/aft (finite adjustment) on fender to desired position.
- NOTE:** Both arm mounts must be adjusted equal distances in the same direction.
3. Tighten both lower arm mount nuts.
 4. Tighten all hardware according to torque specifications. (pg. 7 - 5)

TROUBLESHOOTING

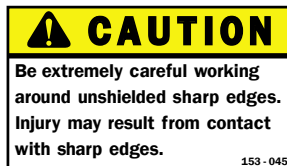


• **AVOID CRUSHING.** Lower implement to the ground, place tractor in park, turn off engine, and remove key. Park implement on a clean, dry, and level surface. An uneven surface could cause implement to shift or fall, resulting in personal injury or death, as well as implement damage.

• **USE BAR STANDS TO SUPPORT THE IMPLEMENT.** Securely support all implement components that must be raised. Remove any buildup of grease, oil, or debris prior to working on implement.

PROBLEM: Tooling does not penetrate soil.

SOLUTION OPTIONS:



1. Increase sweep standard pitch angle. Increasing sweep standard pitch angle can assist in driving row unit tooling into the soil. (pg. 5 - 7)
2. Increase row unit depth. Gauge wheels effectively determine row unit depth. Raising gauge wheels should allow row unit tooling to further penetrate soil. (pg. 5 - 2)
3. Adjust tractor third link so the top and bottom of the toolbar is parallel with ground level. (pg. 5 - 1)
4. Make sure the bottom of the toolbar is between 30 - 32 inches from ground level. Adjustment of tractor hitch height and toolbar gauge wheels should allow the toolbar to achieve desired height. (pg. 5 - 1)
5. Adjust center coulter depth. Center coulters should be adjusted to cut one inch deeper than the lowest point of the sweep standard. (pg. 5 - 1)
It is possible for the center coulter to hold the row unit out of the ground if the center coulter is adjusted to run too deep. (pg. 5 - 4)
6. Adjust down pressure springs so parallel linkages are parallel with the toolbar. An excessive amount of down pressure can lift the toolbar, preventing an operating height between 30 - 32 inches. (pg. 5 - 3)

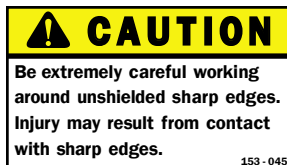
TROUBLESHOOTING



- **AVOID CRUSHING.** Lower implement to the ground, place tractor in park, turn off engine, and remove key. Park implement on a clean, dry, and level surface. An uneven surface could cause implement to shift or fall, resulting in personal injury or death, as well as implement damage.
- **USE BAR STANDS TO SUPPORT THE IMPLEMENT.** Securely support all implement components that must be raised. Remove any buildup of grease, oil, or debris prior to working on implement.

PROBLEM: Row unit plugs with field residue.

SOLUTION OPTIONS:



1. Adjust center coulters depth. Center coulters should be adjusted to cut one inch deeper than the lowest point of the sweep standard. (pg. 5 - 1)
If the center coulters is not adjusted to cut field residue slightly lower than the sweep point, the sweep is likely to plug and drag field residue. (pg. 5 - 4)
2. Raise barring off discs to reduce residue flow through the row unit. Generally, shallower discs reduce residue flow. (pg. 5 - 5)
3. Adjust sweep depth so the sweep runs below surface residue. Sweep depth is adjusted with row unit gauge wheel depth (pg. 5 - 2) or rear shank. (pg. 5 - 6)
4. Alter ground speed to change rate at which residue travels through row unit tooling. Slower speeds generally allow residue to gently work through row unit tooling.
5. Reduce sweep pitch. Adjusting sweep pitch so each sweep blade or sweep is near parallel with ground level should reduce soil action. (pg. 5 - 7)

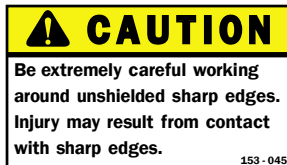
TROUBLESHOOTING



- **AVOID CRUSHING.** Lower implement to the ground, place tractor in park, turn off engine, and remove key. Park implement on a clean, dry, and level surface. An uneven surface could cause implement to shift or fall, resulting in personal injury or death, as well as implement damage.
- **USE BAR STANDS TO SUPPORT THE IMPLEMENT.** Securely support all implement components that must be raised. Remove any buildup of grease, oil, or debris prior to working on implement.

PROBLEM: Row unit covers crop.

SOLUTION OPTIONS:



1. Install closed top fenders to protect crop. (pg. 4 - 19, 5 - 10)
2. Reduce ground speed. Slower speeds generally reduce soil and residue action.
3. Decrease sweep depth to reduce soil action. Sweep depth is adjusted with the row unit gauge wheel (pg. 5 - 2) or rear shank. (pg. 5 - 6)
4. Reduce sweep pitch. Adjusting sweep pitch so each sweep blade or sweep is near parallel with ground level should reduce soil action. (pg. 5 - 7)
5. Adjust, remove, or store adjustable ridging wings to reduce soil action. Reducing ridging wing width should reduce soil action. (pg. 5 - 8)
6. Reduce sweep cutting width. Smaller blade packages should reduce soil action. (pg. 4 - 5)

TROUBLESHOOTING

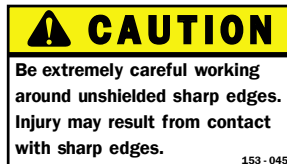


• **AVOID CRUSHING.** Lower implement to the ground, place tractor in park, turn off engine, and remove key. Park implement on a clean, dry, and level surface. An uneven surface could cause implement to shift or fall, resulting in personal injury or death, as well as implement damage.

• **USE BAR STANDS TO SUPPORT THE IMPLEMENT.** Securely support all implement components that must be raised. Remove any buildup of grease, oil, or debris prior to working on implement.

PROBLEM: Implement does not trail straight.

SOLUTION OPTIONS:



1. Check gauge wheel, center couler, and sweep standard depth. If row units are not uniformly adjusted, the implement may not trail straight. (pg. 5 - 2, 5 - 4)
2. Ensure rear tooling options are uniformly adjusted. If row units are not uniformly adjusted, the implement may not trail straight.
3. Slightly increase center couler depth. Increasing center couler depth provides additional lateral implement stability. It is possible for the center couler to hold the row unit out of the ground if the center couler is adjusted to run too deep. (pg. 5 - 4)
4. Mirrored barring off disc installation on left and right sides of implement may help with implement trailing straight. (pg. 4 - 4)

⚠ PRACTICE SAFE MAINTENANCE



- Proper maintenance is your responsibility. Poor maintenance can lead to serious injury or death. Always use proper tools for the job.

- **AVOID CRUSHING.** Lower implement to the ground, place tractor in park, turn off engine, and remove key. Park implement on a clean, dry, and level surface. An uneven surface could cause implement to shift or fall, resulting in personal injury or death, as well as implement damage.

- **USE BAR STANDS TO SUPPORT THE IMPLEMENT.** Securely support all implement components that must be raised. Remove any buildup of grease, oil, or debris prior to performing maintenance.



- **AVOID CRUSHING.** Do not stand between tractor and implement when connecting or disconnecting implement. Serious injury or death can result from being trapped between the tractor and implement.



- **AVOID ENTANGLEMENT.** Never lubricate or service implement in motion. Keep away from power driven parts while in operation. Disengage power sources prior to performing maintenance. Serious injury or death can result from contact with power driven parts while in operation.



- Be extremely careful working around unshielded sharp edges. Injury may result from contact with sharp edges.



- Escaping pressurized hydraulic fluid can penetrate skin, resulting in serious injury. Relieve hydraulic system pressure before connecting or disconnecting tractor. Use cardboard or wood, **NOT BODY PARTS**, to check for suspected hydraulic leaks. Wear protective gloves and safety glasses or goggles when working with hydraulic systems. If an accident occurs, see a doctor immediately for proper treatment.

PRACTICE SAFE MAINTENANCE

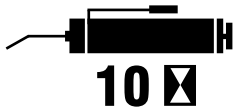


- **SERVICE TIRES SAFELY.** Tire and rim separation could result in serious injury or death. Do not over inflate. When inflating tires keep to the side, not in front or rear of the wheel assembly. Only mount or dismount tires if you possess proper equipment, otherwise contact a trained professional. Always maintain correct tire pressure. Inspect tires and wheels daily. Do not operate tires with low pressure, cuts, visible damage, or missing hardware.

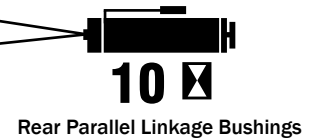
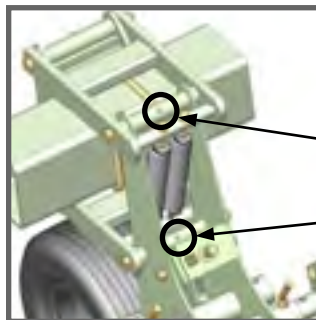
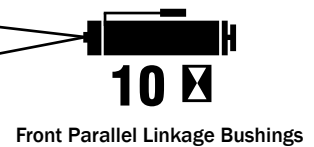
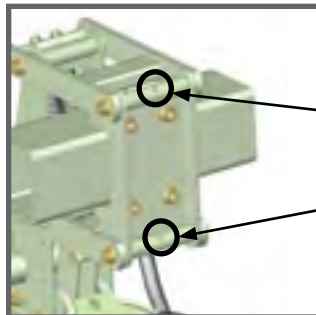


- Make sure there is adequate ventilation. Never operate a combustion engine in an enclosed area. Exhaust fumes can cause asphyxiation.
- Keep all parts in good condition and properly installed. Replace damaged or missing parts immediately.
- Remove tools and unused parts from implement prior to operation.

LUBRICATION

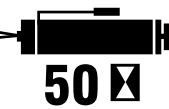
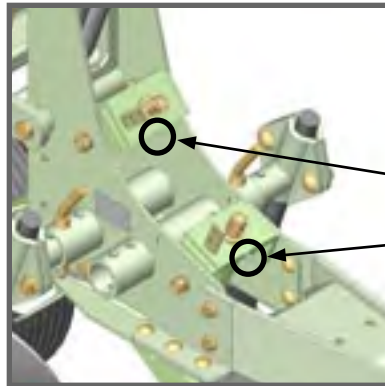


- Grease - use high quality multi-purpose grease. Follow recommended 10 hour service interval illustrated below.

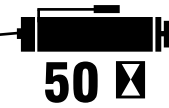
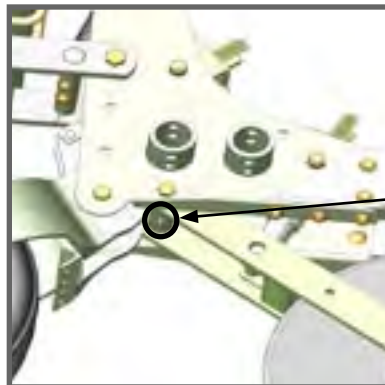


LUBRICATION

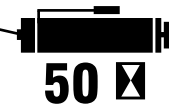
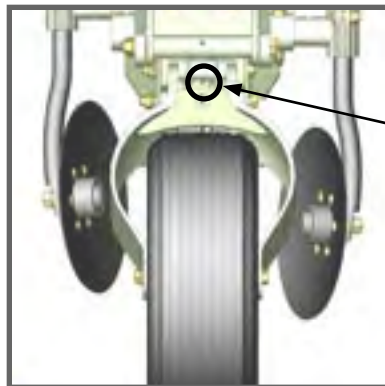
- Grease - use high quality multi-purpose grease.
Follow recommended 50 hour service interval illustrated below.



Adjustment Screw Assemblies
Gauge Wheel and Center Coupler



Center Coupler Fork Bushing

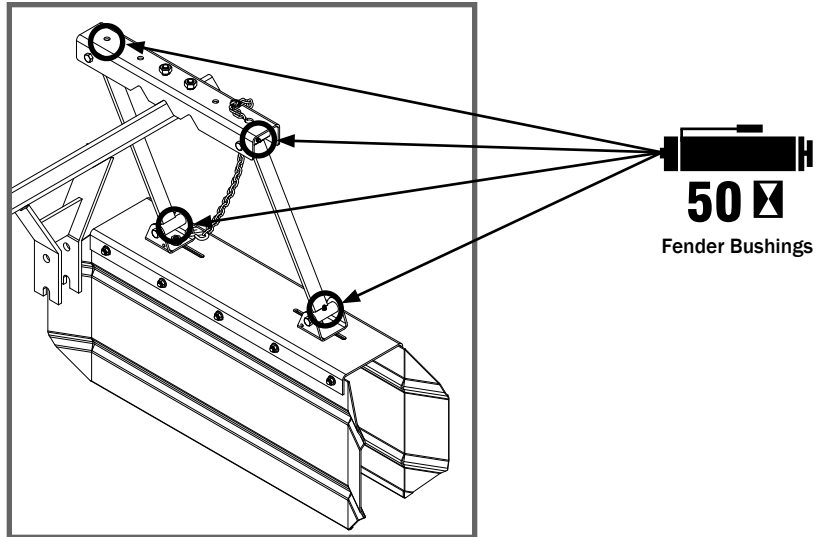


Gauge Wheel Bushing

LUBRICATION



- Grease - use high quality multi-purpose grease. Follow recommended 50 hour service interval illustrated below.



IMPLEMENT INSPECTION



- When replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore implement to original specifications. Replace broken or worn parts immediately. Contact your Orthman dealer for replacement parts.
- During break-in (40 hours), check hardware for proper torque every 10 to 20 hours. (pg. 7 - 5)
- Before each use, check hardware for wear and proper torque. (pg. 7 - 5) Replace damaged or missing hardware with hardware of an identical grade to restore implement to original specifications.
- Inspect tires and wheels daily. Do not operate with low pressure, cuts, visible damage, or missing hardware.
- Do not allow debris to build up on any surface of the implement.
- Replace all shields and guards. Be sure all tools, parts, and service equipment are removed prior to transporting equipment.



TORQUE SPECIFICATIONS

RECOMMENDED DRY BOLT TORQUE

SAE GRADE 5

Bolt Size	ft. - lb.
3/8	32
7/16	52
1/2	80
9/16	115
5/8	160
3/4	280
7/8	455
1	680
1 1/8	850
1 1/4	1200

SAE GRADE 8

Bolt Size	ft. - lb.
3/8	36
7/16	59
1/2	88
9/16	130
5/8	175
3/4	315
7/8	510
1	760
1 1/8	1075
1 1/4	1500

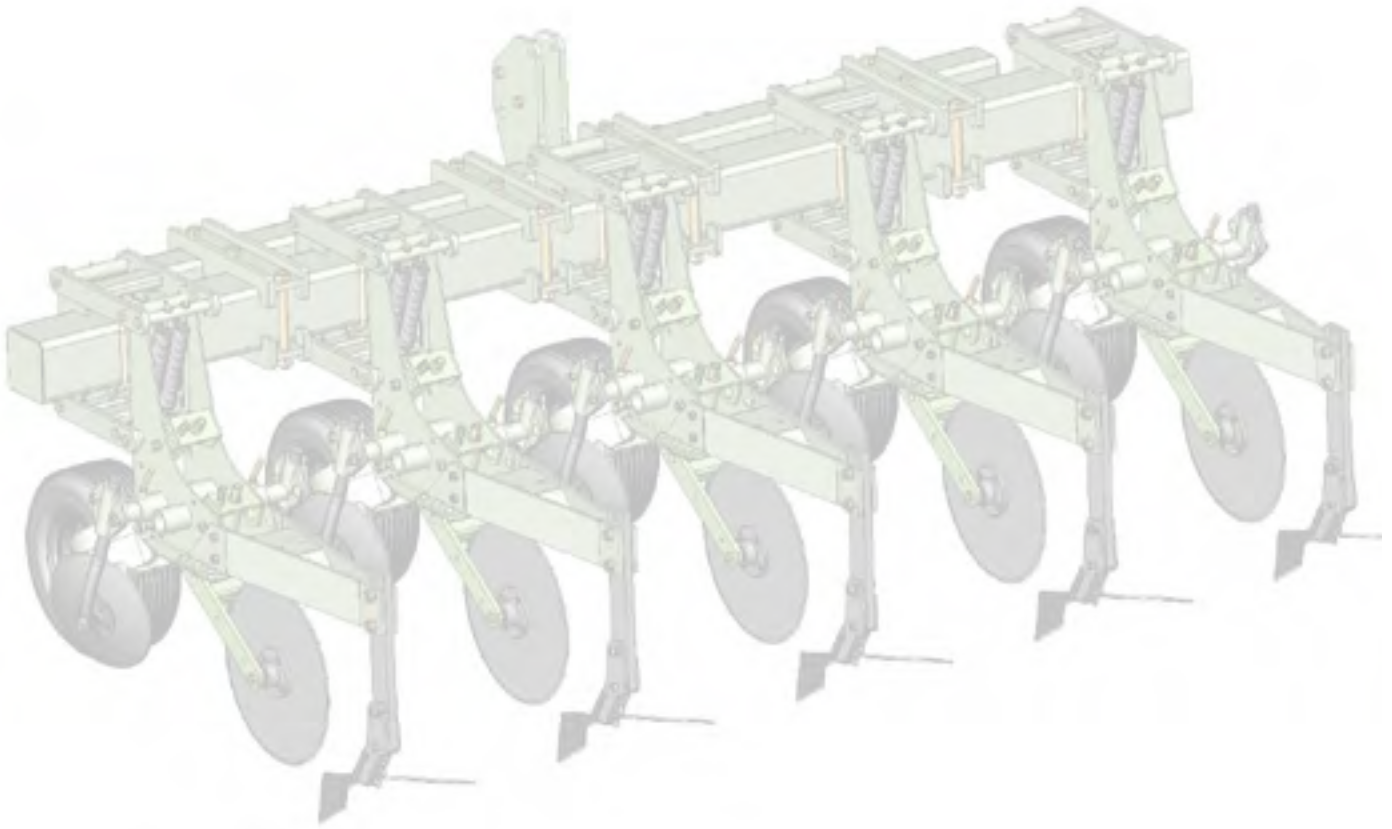
⚠ IMPLEMENT STORAGE

- Clean seasonally to avoid corrosion and rust. Inspect decals and replace if missing or damaged. Contact your Orthman dealer for replacement decals. (pg. 2 - 8)
- Grease all zerks regardless of hourly interval prior to storage. (pg. 7 - 2)
- Check all hardware according to torque specifications prior to storage. (pg. 7 - 5)
- Replace worn or damaged parts prior to storage.
- Store inside if possible. Storing implement inside will prolong the life of 8325 cultivator components.
- Lower implement to the ground to take hydraulic pressure off the tractor three point hitch. Hydraulic systems tend to settle, endangering anything underneath implement.
- **AVOID CRUSHING.** Lower implement to the ground, place tractor in park, turn off engine, and remove key. Store implement on a clean, dry, and level surface. An uneven surface could cause implement to shift or fall, resulting in personal injury or death, as well as implement damage.



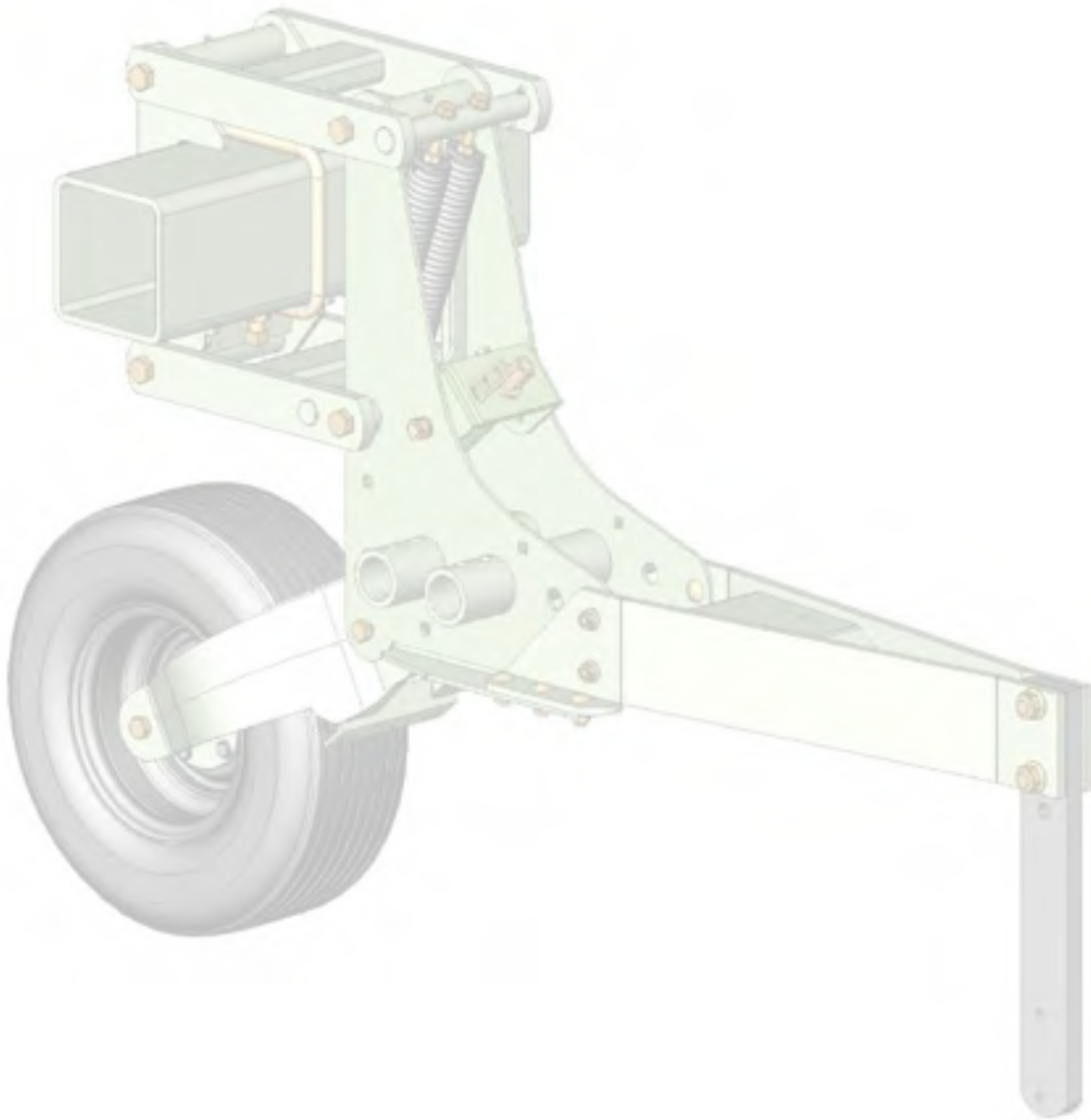
- **USE BAR STANDS TO SUPPORT THE IMPLEMENT.** Securely support all implement components that must be raised. Store implement away from human activity.

NOTES



8325

NOTES



8325